

SWITCHING SENSORS

EVERYTHING IN VIEW FOR PROPER SWITCHING

In this area, you will find sensor solutions that detect an object optoelectronically, ultrasonically or inductively and output a robust switching signal. Select here from a large number of different operating principles and designs.



"The topic of usability as a distinguishing feature of our devices is becoming increasingly important today. With regard to mounting, alignment, commissioning and exchangeability, we are the industry benchmark in many areas – convince yourself."

Dr. Marie-Theres Heine,
Product Manager – Switching Sensors



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/ OPTICAL SENSORS

WE USE LIGHT TO PROVIDE SOLUTIONS TO MANY DIFFERENT PROBLEMS

One of our core competencies are sensors that perform their detection tasks with light in a wide range of forms. For all applications that are to be solved in this way, we are able to offer you a reliable and efficient solution from our extensive product line.



Photoelectric Sensors/Light Scanners, Cubic Housing

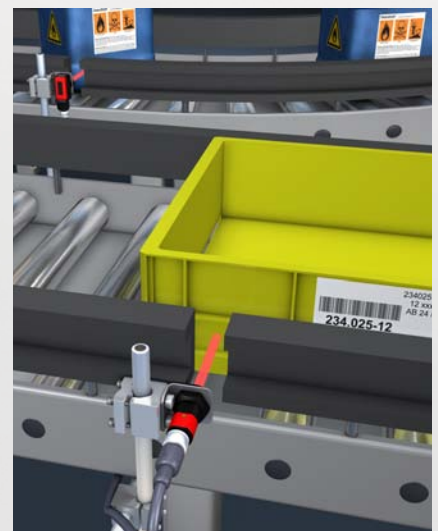
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//PHOTOELECTRIC SENSORS/ LIGHT SCANNERS, CUBIC HOUSING

THE ONLY THING STANDARD HERE IS THE HOUSING SHAPE

The products in this area are characterized by their cubic design. With their various mounting options, they cover a wide range of installation situations. Here, you will find reliable sensors with different operating principles for a variety of detection tasks in a wide range of environmental conditions.

SELECTION TABLE – cubic series

Series	Dimensions in mm (B×H×T)	Housing material		Operating principle	Typ. operating range limit	Light source			Max. switching frequency	Response time	Special object features		
		Plastic	Metal			Infrared light	Red light	Laser			Shiny surface (metallic, foil coated object)	Transparent medium (glass, PET, foil)	Small part
 2	8x23x12	●		Throughbeam sensor	0...2 m	●			385 Hz	1.3 ms			●
				Retro-reflective sensor	0.05...3.1 m	●			700 Hz	0.72 ms			●
				Diff. refl. scanner with backgr. suppr.	15/30/50 mm	●			700 Hz	0.72 ms	●		●
 3B	11x32x17	●		Throughbeam sensor	0...10 m	●			1000 Hz	0.5 ms			
				Retro-reflective sensor	0...6 m	●	●		1000 Hz	0.5 ms	●	●	●
				Energetic light scanner	0...750 mm	●			1000 Hz	0.5 ms			
				Diff. refl. scanner with backgr. suppr.	5...400 mm	●			1000 Hz	0.5 ms	●		●
 5	14x33x20	●		Throughbeam sensor	0...15 m	●			500 Hz	1 ms			
				Retro-reflective sensor	0.02...6 m	●			500 Hz	1 ms			
				Energetic light scanner	0...1 m	●			500 Hz	1 ms			
				Light scanner with fading	0...0.28 m	●			500 Hz	1 ms			
 53	14x54x20	●		Throughbeam sensor	0...10 m	●			1000 Hz	0.25 ms			
				Retro-reflective sensor	0...5 m	●	●		2000 Hz	0.25 ms		●	●
				Diff. refl. scanner with backgr. suppr.	5...400 mm	●			2000 Hz	0.5 ms	●		
 55	14x36x25	●		Throughbeam sensor	0...10 m	●			1000 Hz	0.5 ms			
				Retro-reflective sensor	0.02...6 m	●	●		2000 Hz	0.25 ms		●	●
				Diff. refl. scanner with backgr. suppr.	5...400 mm	●			2000 Hz	0.25 ms	●		●
 25B	15x39x29	●		Throughbeam sensor	0...24 m	●			500 Hz	1 ms			
				Retro-reflective sensor	0.05...15 m	●	●		2000 Hz	0.25 ms	●	●	●
				Energetic light scanner	5...800 mm	●			500 Hz	1 ms			
				Diff. refl. scanner with backgr. suppr.	0...1000 mm	●	●		1000 Hz	0.5 ms	●		●
 28	15x47x32	●		Throughbeam sensor	0...15 m	●			500 Hz	1 ms			
				Retro-reflective sensor	0.02...6 m	●			500 Hz	1 ms			
				Energetic light scanner	0...0.85 m	●			500 Hz	1 ms			
				Light scanner with fading	0...0.25 m	●			500 Hz	1 ms			
 18	15x50x33	●											
				Retro-reflective sensor	0...7.2 m	●			500 Hz	0.33 ms		●	●
 8	15x48x38	●		Throughbeam sensor	0...100 m	●	●		2800 Hz	0.18 ms			●
				Retro-reflective sensor	0...21 m	●	●		2800 Hz	0.18 ms		●	●
				Light scanners	5...800 mm	●			1500 Hz	0.33 ms			
				Diff. refl. scanner with backgr. suppr.	7...400 mm	●	●		2000 Hz	0.25 ms	●		●
 95	17x66x35	●		Throughbeam sensor	0...20 m	●	●		1000 Hz	0.5 ms			
				Retro-reflective sensor	0...9 m	●			1000 Hz	0.5 ms		●	●
				Energetic light scanner	10...900 mm	●			1000 Hz	0.5 ms			
				Diff. refl. scanner with backgr. suppr.	5...500 mm	●	●		1000 Hz	0.5 ms	●		
 46B	18x75x43	●		Throughbeam sensor	0...60 m	●			500 Hz	1 ms			
				Retro-reflective sensor	0.05...18 m	●			500 Hz	1 ms	●		
				Energetic light scanner	30...1100 mm	●			500 Hz	1 ms			
				Diff. refl. scanner with backgr. suppr.	0...2500 mm	●	●		1000 Hz	0.5 ms	●		●
 96	30x90x70	●	●	Throughbeam sensor	0...150 m	●	●		500 Hz	1 ms			
				Retro-reflective sensor	0...28 m	●	●		1000 Hz	0.5 ms		●	
				Energetic light scanner	20...1200 mm	●	●		1000 Hz	0.5 ms			
				Diff. refl. scanner with backgr. suppr.	10...6500/30000 mm	●	●	●	300 Hz	1.67 ms	●		

Switching
SensorsMeasuring
SensorsProducts for
Safety at Work

Identification

Data Transmission /
Control ComponentsIndustrial Image
Processing

Accessories

/// 2 Series

With the various miniature sensors of the 2 series – from scanner to photoelectric sensor – you are fully prepared for a range of different applications. The miniature sensors show their strengths above all in situations with limited installation space, e. g. in the areas of handling technology and robotics.



Direct access to the online product selector at www.leuze.com/en/br2

Throughbeam Sensors

With their very small light spot, these classic throughbeam photoelectric sensors are predestined for the reliable detection of small parts. Their miniature format also allows them to be mounted in constrained spaces.

LSR 2

With the LSR2 throughbeam photoelectric sensor, large ranges or high performance reserves are possible depending on the application. They feature a PinPoint LED for producing a small, homogeneous and highly visible light spot.

Benefits:

- Large ranges
- High performance reserves possible
- PinPoint LED for producing a small, homogeneous and highly visible light spot
- Ideally suited for the detection of small parts

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50112127	► LSSR 2	0 ... 1.6 m 0 ... 2 m		LED, red			DC	Cable, 2,000 mm
50112133	◄ LSER 2/42D	0 ... 1.6 m 0 ... 2 m	385 Hz		Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50112130	◄ LSER 2/42	0 ... 1.6 m 0 ... 2 m	385 Hz		Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable, 2,000 mm
50112129	► LSSR 2,150-S12	0 ... 1.6 m 0 ... 2 m		LED, red			DC	Cable with M12 connector, 150 mm, M12, plastic
50112135	◄ LSER 2/42D,150-S12	0 ... 1.6 m 0 ... 2 m	385 Hz		Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 150 mm, M12, plastic
50112132	◄ LSER 2/42,150-S12	0 ... 1.6 m 0 ... 2 m	385 Hz		Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable with M12 connector, 150 mm, M12, plastic
50116172	► LSSR 2,8,150-S8.3	0 ... 1.6 m 0 ... 2 m		LED, red			DC	Cable with M12 connector, 150 mm, M8, plastic
50116173	◄ LSER 2/4,150-S8.3	0 ... 1.6 m 0 ... 2 m	385 Hz		Transistor, PNP, light switching		DC	Cable with M12 connector, 150 mm, M8, plastic
50112128	► LSSR 2,150-S8	0 ... 1.6 m 0 ... 2 m		LED, red			DC	Cable with M12 connector, 150 mm, M8, plastic
50112134	◄ LSER 2/42D,150-S8	0 ... 1.6 m 0 ... 2 m	385 Hz		Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 150 mm, M8, plastic
50112131	◄ LSER 2/42,150-S8	0 ... 1.6 m 0 ... 2 m	385 Hz		Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable with M12 connector, 150 mm, M8, plastic

► transmitter / ◄ receiver

Retro-Reflective Sensors

Through the use of polarized light, these photoelectric sensors can even reliably detect objects with glossy surfaces.

PRK 2

With the PRK 2 retro-reflective photoelectric sensor, large operating ranges or high performance reserves are possible depending on the application. They feature glass optics and polarized light for reliable switching behavior with glossy surfaces.

Benefits:

- Large ranges
- High performance reserves possible
- PinPoint LED for producing a small, homogeneous and highly visible light spot
- Ideally suited for the detection of small parts
- Glass optics and polarized light for reliable switching behavior with glossy surfaces

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50112139	PRK 2/42D	0.07 ... 3.5 m 0.07 ... 4 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50112141	PRK 2/42D,150-S12	0.07 ... 3.5 m 0.07 ... 4 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 150 mm, M12, plastic
50112140	PRK 2/42D,150-S8	0.07 ... 3.5 m 0.07 ... 4 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 150 mm, M8, plastic
50112136	PRK 2/42	0.07 ... 3.5 m 0.07 ... 4 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable, 2,000 mm
50112138	PRK 2/42,150-S12	0.07 ... 3.5 m 0.07 ... 4 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable with M12 connector, 150 mm, M12, plastic
50112137	PRK 2/42,150-S8	0.07 ... 3.5 m 0.07 ... 4 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable with M12 connector, 150 mm, M8, plastic

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Light Scanners with Background Suppression

These scanners score big thanks, in particular, to their small light spot and good background suppression. They thereby detect even the smallest components without being influenced by objects in the background.

HRTR 2

The HRTR 2 miniature diffuse reflection light scanner convinces with a very small, homogeneous and laser-like light spot. The background suppression, which is permanently set to various ranges, allows even dark objects to be reliably detected against a light background.

Benefits:

- Miniature diffuse reflection light scanners with visible red light
- Homogeneous light beam with very small laser-like light spot
- Very good background suppression

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50120855	HRTR 2/2-50F,150-S8.3	0.004 ... 0.046 m 0.001 ... 0.06 m	700 Hz	LED, red	Transistor, NPN, light switching		DC	Cable with M12 connector, 150 mm, M8, plastic
50112126	HRTR 2/42D-50F,150-S12	0.004 ... 0.046 m 0.001 ... 0.06 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 150 mm, M12, plastic
50112125	HRTR 2/42D-50F,150-S8	0.004 ... 0.046 m 0.001 ... 0.06 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 150 mm, M8, plastic
50112124	HRTR 2/42D-50F	0.004 ... 0.046 m 0.001 ... 0.06 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50112123	HRTR 2/42-50F,150-S12	0.004 ... 0.046 m 0.001 ... 0.06 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable with M12 connector, 150 mm, M12, plastic
50112122	HRTR 2/42-50F,150-S8	0.004 ... 0.046 m 0.001 ... 0.06 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable with M12 connector, 150 mm, M8, plastic
50112121	HRTR 2/42-50F	0.004 ... 0.046 m 0.001 ... 0.06 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable, 2,000 mm
50112120	HRTR 2/42D-30F,150-S12	0.005 ... 0.028 m 0.001 ... 0.035 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 150 mm, M12, plastic
50112119	HRTR 2/42D-30F,150-S8	0.005 ... 0.028 m 0.001 ... 0.035 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 150 mm, M8, plastic
50112118	HRTR 2/42D-30F	0.005 ... 0.028 m 0.001 ... 0.035 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50112117	HRTR 2/42-30F,150-S12	0.005 ... 0.028 m 0.001 ... 0.035 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable with M12 connector, 150 mm, M12, plastic
50112116	HRTR 2/42-30F,150-S8	0.005 ... 0.028 m 0.001 ... 0.035 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable with M12 connector, 150 mm, M8, plastic
50112115	HRTR 2/42-30F	0.005 ... 0.028 m 0.001 ... 0.035 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable, 2,000 mm
50112114	HRTR 2/42D-15F,150-S12	0.004 ... 0.014 m 0.001 ... 0.018 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 150 mm, M12, plastic
50112113	HRTR 2/42D-15F,150-S8	0.004 ... 0.014 m 0.001 ... 0.018 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 150 mm, M8, plastic
50112112	HRTR 2/42D-15F	0.004 ... 0.014 m 0.001 ... 0.018 m	700 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50112111	HRTR 2/42-15F,150-S12	0.004 ... 0.014 m 0.001 ... 0.018 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable with M12 connector, 150 mm, M12, plastic
50112110	HRTR 2/42-15F,150-S8	0.004 ... 0.014 m 0.001 ... 0.018 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable with M12 connector, 150 mm, M8, plastic
50112109	HRTR 2/42-15F	0.004 ... 0.014 m 0.001 ... 0.018 m	700 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable, 2,000 mm

Measured against a white object with 90 % diffuse reflection

/// 3 Series



The versatile range of models in the 3 series enables use in a variety of applications, such as in packaging technology, handling technology and production. In their performance class, these sensors offer the greatest range of features of all competitors and impress with large ranges and improved performance reserves. Refined technologies for spurious and extraneous light suppression and for fast alignment and commissioning round out the advantages.



Direct access to the online product selector at www.leuze.com/en/br3

Throughbeam Sensors

Reliable, standard photoelectric sensors with large performance reserves and simple commissioning.

LSR 3B

The LSR 3B throughbeam photoelectric sensor offers reliable object detection independent of the environmental conditions. The transmitter is optionally available with activation input of the receiver with warning output for increased availability.

Benefits:

- High performance reserve
- Transmitter with small, homogeneous light spot by means of pin-point LED
- Transmitter optionally with activation input
- Warning output (optional for the receiver) for increased availability

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50108509	► LSSR 3B.8-S8	0.05 ... 8.5 m 0.05 ... 10 m		LED, red			DC	Connector, M8, metal
50108514	◄ LSER 3B/66-S8	0.05 ... 8.5 m 0.05 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, metal
50108517	◄ ILSER 3B/4-S8	0.05 ... 8.5 m 0.05 ... 10 m	1,000 Hz		Transistor, PNP, light switching	Transistor, PNP, U _B switching	DC	Connector, M8, metal
50108508	► LSSR 3B-S8	0.05 ... 8.5 m 0.05 ... 10 m		LED, red			DC	Connector, M8, metal
50108514	◄ LSER 3B/66-S8	0.05 ... 8.5 m 0.05 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, metal
50108515	◄ LSER 3B/66.1-S8	0.05 ... 8.5 m 0.05 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, metal
50108511	► LSSR 3B.8,5000	0.05 ... 8.5 m 0.05 ... 10 m		LED, red			DC	Cable, 5,000 mm
50108519	◄ LSER 3B/66,5000	0.05 ... 8.5 m 0.05 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm
50111732	◄ LSER 3B/44.1,5000	0.05 ... 8.5 m 0.05 ... 10 m	1,000 Hz		Transistor, PNP, light switching (PNP)/ dark switching (NPN)	Transistor, PNP, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm
50108510	► LSSR 3B.8	0.05 ... 8.5 m 0.05 ... 10 m		LED, red			DC	Cable, 2,000 mm
50108519	◄ LSER 3B/66,5000	0.05 ... 8.5 m 0.05 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm
50108516	◄ LSER 3B/66	0.05 ... 8.5 m 0.05 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 2,000 mm
50111440	► LSSR 3B,200-S12	0.05 ... 8.5 m 0.05 ... 10 m		LED, red			DC	Cable with M12 connector, 200 mm, M12, plastic
50111442	◄ LSER 3B/66,200-S12	0.05 ... 8.5 m 0.05 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with M12 connector, 200 mm, M12, plastic
50111441	► LSSR 3B.8,200-S12	0.05 ... 8.5 m 0.05 ... 10 m		LED, red			DC	Cable with M12 connector, 200 mm, M12, plastic
50111442	◄ LSER 3B/66,200-S12	0.05 ... 8.5 m 0.05 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with M12 connector, 200 mm, M12, plastic
50108512	► LSSR 3B.8,200-S8	0.05 ... 8.5 m 0.05 ... 10 m		LED, red			DC	Cable with M12 connector, 200 mm, M8, plastic
50108518	◄ ILSER 3B/4,200-S8	0.05 ... 8.5 m 0.05 ... 10 m	1,000 Hz		Transistor, PNP, light switching	Transistor, PNP, U _B switching	DC	Cable with M12 connector, 200 mm, M8, plastic

► transmitter / ◄ receiver

Retro-Reflective Sensors

In this area you will find a wide range of sensors that function according to the reflection principle including special sensors for the detection of transparent media, sensors for extremely small components or for combination with a polished, metallic surface as reflector.

PRK 3B

Reliable sensor with a high performance reserve primarily for small, misaligned reflectors and environments with heavy soiling.

Benefits:

- Reliable object detection with small, mis-adjusted reflectors
- Reliable object detection with large range
- Reliable object detection with heavy soiling

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50106865	PRK 3B/6D.7-S8	0.02 ... 5 m 0.02 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, dark switching		DC	Connector, M8, plastic
50109581	PRK 3B/6-S8.3	0.02 ... 5 m 0.02 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching		DC	Connector, M8, metal
50104698	PRK 3B/6.7-S8	0.02 ... 5 m 0.02 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching		DC	Connector, M8, plastic
50104697	PRK 3B/6.7	0.02 ... 5 m 0.02 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching		DC	Cable, 2,000 mm
50104694	PRK 3B/66-S8	0.02 ... 5 m 0.02 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, metal
50106078	PRK 3B/66.1-S8	0.02 ... 5 m 0.02 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, metal
50104693	PRK 3B/66	0.02 ... 5 m 0.02 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50118016	PRK 3B/66.1	0.02 ... 5 m 0.02 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50104696	PRK 3B/66,200-S12	0.02 ... 5 m 0.02 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M12, plastic
50104695	PRK 3B/66,200-S8	0.02 ... 5 m 0.02 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, plastic

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 3B.22

The specialist for positioning tasks with a high performance reserve and simple adjustment by means of lockable teach button or teach input.

Benefits:

- Positioning with high accuracy
- Short range with foil reflectors
- Autocollimation principle for use at zero distance

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50106418	PRK 3B/6D.22-S8	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Connector, M8, metal
50104700	PRK 3B/6.22-S8	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Connector, M8, metal
50109385	PRK 3B/6.2-S8.3	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Connector, M8, metal
50104699	PRK 3B/6.22	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable, 2,000 mm
50105762	PRK 3B/6.22,200-S12	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M12, plastic
50104701	PRK 3B/6.22,200-S8	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M8, plastic
50114099	PRK 3B/6.2,200-S8.3	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M8, plastic
50110775	PRK 3B/4D.22,200-S8	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, PNP, light/dark reversible	DC	Cable with M12 connector, 200 mm, M8, plastic

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Switching Sensors

Measuring Sensors

Products for Safety at Work

Identification

Data Transmission / Control Components

Industrial Image Processing

Accessories

PRKL 3B.22

The world's first laser autocollimator in this size, specially designed for the detection of parts as small as 0.1 mm.

Benefits:

- Reliable detection of objects with a diameter ≥ 0.1 mm
- Object detection through slits, holes and gaps with extremely small dimensions
- Especially designed for the detection of fast events and small parts

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50104706	PRKL 3B/6.22-S8	0 ... 2 m 0 ... 3 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Connector, M8, metal
50106475	PRKL 3B/6D.22-S8	0 ... 2 m 0 ... 3 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Connector, M8, metal
50109484	PRKL 3B/6.2-S8.3	0 ... 2 m 0 ... 3 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Connector, M8, metal
50104705	PRKL 3B/6.22	0 ... 2 m 0 ... 3 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Cable, 2,000 mm
50105764	PRKL 3B/6.22,200-S12	0 ... 2 m 0 ... 3 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M12, plastic
50114872	PRKL 3B/6.2,200-S8.3	0 ... 2 m 0 ... 3 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M8, plastic
50104707	PRKL 3B/6.22,200-S8	0 ... 2 m 0 ... 3 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M8, plastic

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 3B.42 / RKR 3B.42

Especially designed for the detection of transparent media such as glass, PET (PRK devices) and foils thinner than 20 μ m (RKR devices). The lockable teach button and the teach input enable simple adjustment.

Benefits:

- Particularly suited for highly transparent PET and glass bottles as well as foils
- Easy adjustment via lockable teach button or teach input

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50108026	PRK 3B/6D.46	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable, 2,000 mm
50112473	PRK 3B/6.42-S8	0 ... 3 m 0 ... 3.6 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Connector, M8, metal
50112474	PRK 3B/6D.42-S8	0 ... 3 m 0 ... 3.6 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Connector, M8, metal
50113326	PRK 3B/6.42,200-S12	0 ... 3 m 0 ... 3.6 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M12, plastic
50113324	PRK 3B/6D.42,200-S12	0 ... 3 m 0 ... 3.6 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M12, plastic
50113325	PRK 3B/6.42,200-S8	0 ... 3 m 0 ... 3.6 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M8, plastic
50114873	PRK 3B/6.42,5000	0 ... 3 m 0 ... 3.6 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable, 5,000 mm
50113327	PRK 3B/6.42	0 ... 3 m 0 ... 3.6 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable, 2,000 mm
50104703	RKR 3B/6.42-S8	0 ... 1.5 m 0 ... 1.8 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Connector, M8, metal
50105763	RKR 3B/6.42,200-S12	0 ... 1.5 m 0 ... 1.8 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M12, plastic
50104704	RKR 3B/6.42,200-S8	0 ... 1.5 m 0 ... 1.8 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M8, plastic
50104702	RKR 3B/6.42	0 ... 1.5 m 0 ... 1.8 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable, 2,000 mm
50107914	RKR 3B/6D.42	0 ... 1.5 m 0 ... 1.8 m	1,000 Hz	LED, red	Transistor, push-pull, light/dark reversible	DC	Cable, 2,000 mm

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRKL 3B.42

The laser retro-reflective photoelectric sensor for detecting and counting glass bottles – especially in the case of small gaps between the objects.

Benefits:

- For highly transparent full and empty bottles as well as foils
- Detection or counting of highly transparent objects
- Especially in the case of small gaps between the objects

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50115117	PRKL 3B/6.42-S8	0 ... 0.4 m 0 ... 0.5 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Connector, M8, metal
50120275	PRKL 3B/6.4-S8.3	0 ... 0.4 m 0 ... 0.5 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Connector, M8, metal
50115116	PRKL 3B/6.42	0 ... 0.4 m 0 ... 0.5 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Cable, 2,000 mm
50115119	PRKL 3B/6.42,200-S12	0 ... 0.4 m 0 ... 0.5 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M12, plastic
50115118	PRKL 3B/6.42,200-S8	0 ... 0.4 m 0 ... 0.5 m	2,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	DC	Cable with M12 connector, 200 mm, M8, plastic

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

RKR 3B.x1

For applications in which no reflector can be mounted, this photoelectric sensor is especially well suited for switching on a metallic background as an alternative to a reflector.

Benefits:

- Sensor with unpolarized red light for switching on a polished metal plate as reflector
- Extra large light spot for high angle tolerance

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50122232	RKR 3B/66.11-S8	0.02 ... 6.5 m 0.02 ... 7 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, metal
50109023	RKR 3B/66.11	0.02 ... 6.5 m 0.02 ... 7 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50113267	RKR 3B/22D.01,200-S8	0.02 ... 4 m 0.02 ... 5 m	1,500 Hz	LED, red	Transistor, NPN, dark switching (PNP)/light switching (NPN)	Transistor, NPN, light switching (PNP)/dark switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, plastic

Energetic Light Scanners

An economical scanner for standard applications in which there are no special requirements on background suppression.

RTFR 3B

This model is suited for scanning distances of up to 400 mm. Fading suppresses objects in the background.

Benefits:

- Fading – object suppression in background
- Potentiometer for scanning range adjustment
- High switching frequency for detection of fast events

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50108499	RTFR 3B/6D-S8.3	0 ... 0.42 m 0 ... 0.45 m	1,000 Hz	LED, red	Transistor, push-pull, dark switching		DC	Connector, M8, metal
50108500	RTFR 3B/6D.7-S8	0 ... 0.42 m 0 ... 0.45 m	1,000 Hz	LED, red	Transistor, push-pull, dark switching		DC	Connector, M8, plastic
50108498	RTFR 3B/6-S8.3	0 ... 0.42 m 0 ... 0.45 m	1,000 Hz	LED, red	Transistor, push-pull, light switching		DC	Connector, M8, metal
50108495	RTFR 3B/66-S8	0 ... 0.42 m 0 ... 0.45 m	1,000 Hz	LED, red	Transistor, push-pull, light switching	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, metal
50108497	RTFR 3B/6.7-S8	0 ... 0.42 m 0 ... 0.45 m	1,000 Hz	LED, red	Transistor, push-pull, light switching		DC	Connector, M8, plastic
50108501	RTFR 3B/6.7	0 ... 0.42 m 0 ... 0.45 m	1,000 Hz	LED, red	Transistor, push-pull, light switching		DC	Cable, 2,000 mm
50108496	RTFR 3B/66	0 ... 0.42 m 0 ... 0.45 m	1,000 Hz	LED, red	Transistor, push-pull, light switching	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm

Detailed information on the typical scanning area can be found in the respective data sheet (online)

RTR 3B

If larger ranges are needed for standard applications, this energetic diffuse reflection light scanner with scanning range adjustment is the best choice.

Benefits:

- Large ranges up to 750 mm
- Potentiometer for scanning range adjustment
- High switching frequency for detection of fast events

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50108505	RTR 3B/66-S8	0 ... 0.7 m 0 ... 0.75 m	1,000 Hz	LED, red	Transistor, push-pull, light switching	Transistor, push-pull, dark switching	DC	Connector, M8, metal
50109061	RTR 3B/6.7-S8	0 ... 0.7 m 0 ... 0.75 m	1,000 Hz	LED, red	Transistor, push-pull, light switching		DC	Connector, M8, plastic
50108506	RTR 3B/66	0 ... 0.7 m 0 ... 0.75 m	1,000 Hz	LED, red	Transistor, push-pull, light switching	Transistor, push-pull, dark switching	DC	Cable, 2,000 mm
50109250	RTR 3B/6.7	0 ... 0.7 m 0 ... 0.75 m	1,000 Hz	LED, red	Transistor, push-pull, light switching		DC	Cable, 2,000 mm
50109065	RTR 3B/2.7-S8	0 ... 0.7 m 0 ... 0.75 m	1,000 Hz	LED, red	Transistor, NPN, light switching		DC	Connector, M8, plastic
50109251	RTR 3B/2.7	0 ... 0.7 m 0 ... 0.75 m	1,000 Hz	LED, red	Transistor, NPN, light switching		DC	Cable, 2,000 mm

Detailed information on the typical scanning area can be found in the respective data sheet (online)

Light Scanners with Background Suppression

These sensors are suited for the reliable detection of objects against a background. Available in a variety of special designs, the 3B series offers robust and efficient solutions, even for tricky applications such as the detection of objects with colored structure, objects with openings or highly polished surfaces.

HRT(R) 3B

Scanner with red light or infrared light with very good b/w detection thresholds and reliable switching nearly independent of the background.

Benefits:

- Exact scanning range adjustment through 8-turn potentiometer
- Also available with infrared light (HRT 3B)

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50107922	HRTR 3B/6D.7	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, dark switching (PNP)/light switching (NPN)		DC	Cable, 2,000 mm
50108408	HRTR 3B/6-S8.3	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M8, metal
50107229	HRTR 3B/66-S8	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, metal
50107241	HRTR 3B/6.7-S8	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M8, plastic
50107228	HRTR 3B/66	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50107240	HRTR 3B/6.7	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Cable, 2,000 mm
50107298	HRTR 3B/66,200-S12	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M12, plastic
50107230	HRTR 3B/66,200-S8	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, plastic
50107239	HRTR 3B/22-S8	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M8, metal
50107918	HRTR 3B/2.7	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, NPN, light switching		DC	Cable, 2,000 mm
50107238	HRTR 3B/22	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50107233	HRTR 3B/44-S8	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M8, metal
50109753	HRTR 3B/44,5000	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 5,000 mm
50107235	HRTR 3B/44	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50107236	HRTR 3B/44,200-S12	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50112465	HRTR 3B/44-95,200-S8	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M8, plastic
50107232	HRTR 3B/4,200-S8.3	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, PNP, light switching		DC	Cable with M12 connector, 200 mm, M8, plastic
50110659	HRT 3B/44	0.005 ... 0.6 m 0.005 ... 0.6 m	1,000 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm

Typ. operating range with a black/white error < 10%

HRTL 3B

Compact laser scanner for the reliable detection of small parts and highly precise positioning in fast processes. Models are available in laser classes 1 and 2.

Benefits:

- Especially designed for the detection of fast events and small parts
- For applications with high demands on positioning and reproducibility
- Standard design in laser class 1
- Extended scanning area with very good b/w behavior in laser class 2

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50114582	HRTL 3B/66.C2-S8	0.015 ... 0.5 m 0.015 ... 0.5 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, metal
50114763	HRTL 3B/66.C2	0.015 ... 0.5 m 0.015 ... 0.5 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50114765	HRTL 3B/66.C2,200-S12	0.015 ... 0.5 m 0.015 ... 0.5 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M12, plastic
50114764	HRTL 3B/66.C2,200-S8	0.015 ... 0.5 m 0.015 ... 0.5 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, plastic
50114581	HRTL 3B/66-S8	0.015 ... 0.4 m 0.015 ... 0.4 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, metal
50114760	HRTL 3B/66	0.015 ... 0.4 m 0.015 ... 0.4 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50114762	HRTL 3B/66,200-S12	0.015 ... 0.4 m 0.015 ... 0.4 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M12, plastic
50114761	HRTL 3B/66,200-S8	0.015 ... 0.4 m 0.015 ... 0.4 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, plastic

Typ. operating range with a black/white error < 10%

HRTR 3B-(X)L

With its very large light spot, this sensor type is suitable for the detection of objects with openings, holes and grooves.

Benefits:

- Especially designed for the detection of objects with openings, holes and grooves
- Also for detecting transparent foils and bottles

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50111444	HRTR 3B/6D-XL-S8.3	0.005 ... 0.05 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, push-pull, dark switching (PNP)/light switching (NPN)		DC	Connector, M8, metal
50107247	HRTR 3B/66-XL-S8	0.005 ... 0.05 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, metal
50109485	HRTR 3B/6-XL-S8.3	0.005 ... 0.05 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M8, metal
50107246	HRTR 3B/66-XL	0.005 ... 0.05 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50107249	HRTR 3B/66-XL,200-S12	0.005 ... 0.05 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M12, plastic
50107248	HRTR 3B/66-XL,200-S8	0.005 ... 0.05 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, plastic
50111443	HRTR 3B/44-L-S8	0.005 ... 0.05 m 0.005 ... 0.1 m	150 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M8, metal
50107299	HRTR 3B/4-XL-S8	0.005 ... 0.05 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, PNP, light switching		DC	Connector, M8, metal
50107250	HRTR 3B/44-XL-S8	0.005 ... 0.05 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M8, metal
50124155	HRTR 3B/44-L,200-S12	0.005 ... 0.05 m 0.005 ... 0.1 m	150 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50107251	HRTR 3B/44-XL,200-S12	0.005 ... 0.05 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50113317	HRTR 3B/44-L,200-S8	0.005 ... 0.05 m 0.005 ... 0.1 m	150 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M8, plastic

Typ. operating range with a black/white error < 10%

Switching Sensors

Measuring Sensors

Products for Safety at Work

Identification

Data Transmission / Control Components

Industrial Image Processing

Accessories

HRTR 3B-S

Sensor for demanding detection tasks with small, homogeneous light spot, very good background suppression and excellent b/w detection thresholds for reliable switching on glossy objects and objects with colored structure.

Benefits:

- Small, homogeneous light spot by means of pin-point LED
- Exact scanning range adjustment through 8-turn potentiometer

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50107243	HRTR 3B/66-S-S8	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, metal
50108407	HRTR 3B/6-S-S8.3	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M8, metal
50110809	HRTR 3B/66-S,5000	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 5,000 mm
50107242	HRTR 3B/66-S	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50107245	HRTR 3B/66-S,200-S12	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M12, plastic
50109051	HRTR 3B/6-S,200-S8.3	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Cable with M12 connector, 200 mm, M8, plastic
50107244	HRTR 3B/66-S,200-S8	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, plastic

Typ. operating range with a black/white error < 10 %

HRTR 3B-V

Special scanner with V-optics for the reliable detection of planar, reflecting, highly polished or transparent objects.

Benefits:

- For the reliable detection of flat, reflective or highly glossy surfaces
- Also suited for transparent objects

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50114769	HRTR 3B/66-V-S8	0.015 ... 0.2 m 0.015 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, metal
50114766	HRTR 3B/66-V	0.015 ... 0.2 m 0.015 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50114768	HRTR 3B/66-V,200-S12	0.015 ... 0.2 m 0.015 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M12, plastic
50114767	HRTR 3B/66-V,200-S8	0.015 ... 0.2 m 0.015 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, plastic
50115641	HRTR 3B/2.7-V	0.015 ... 0.2 m 0.015 ... 0.2 m	1,000 Hz	LED, red	Transistor, NPN, light switching		DC	Cable, 2,000 mm
50122262	HRTR 3B/66-VXL-S8	0.01 ... 0.09 m 0.01 ... 0.09 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, metal

Typ. operating range with a black/white error < 10%

SMARTER CUSTOMER SERVICE



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/// 5 Series



The 5 series photoelectric sensors, with their compact cubic design, are always the right choice when powerful and robust standard detection is needed, e. g., in conveyor or packaging technology. The integrated M3 metal threaded sleeves and the cable outlet, which is available either pointing downward or to the rear, open many options, particularly in situations with limited installation space. From a technological perspective as well, the 5 series – with a large range, large brightVision® light spot and active A²LS extraneous light suppression – offers everything one expects in a modern photoelectric sensor.



Direct access to the online product selector at www.leuze.com/en/br5

Throughbeam Sensors

Compact, cubic throughbeam photoelectric sensor for constrained spaces with proven technical features.

L5

The one-way principle makes possible the reliable detection of even flat objects with a high performance reserve and reduces the risk of a system standstill. Deactivation inputs enable testing of the sensor. In addition, optimized beam geometry and the highly visible brightVision® light spot simplify alignment.

Benefits:

- High performance reserve
- Simple alignment by means of optimized beam geometry
- Simple detection of flat objects
- Transmitter deactivation for testing and networking

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50117695	▶ LS5/9D-M8	0 ... 10 m 0 ... 15 m		LED, red			DC	Connector, M8, plastic
50117689	◀ LE5/2N-M8	0 ... 10 m 0 ... 15 m	500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M8, plastic
50117692	◀ LE5/4P-M8	0 ... 10 m 0 ... 15 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M8, plastic
50117694	▶ LS5/9D	0 ... 10 m 0 ... 15 m		LED, red			DC	Cable, 2,000 mm
50117688	◀ LE5/2N	0 ... 10 m 0 ... 15 m	500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50117691	◀ LE5/4P	0 ... 10 m 0 ... 15 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50117693	▶ LS5/9D-200-M12	0 ... 10 m 0 ... 15 m		LED, red			DC	Cable with M12 connector, 200 mm, M12, plastic
50117683	◀ LE5/2N-200-M12	0 ... 10 m 0 ... 15 m	500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50117690	◀ LE5/4P-200-M12	0 ... 10 m 0 ... 15 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic

▶ transmitter / ◀ receiver

Retro-Reflective Sensors

Compact retro-reflective photoelectric sensors for constrained spaces, on transport systems for example.

PRK5

A polarization filter ensures the reliable suppression of direct reflections and, together with the high performance reserve of the sensor, enables reliable detection. In addition, optimized beam geometry and the highly visible brightVision® light spot simplify alignment.

Benefits:

- Homogeneous light spot for safe switching behavior and easy alignment
- Safe suppression of direct reflection due to polarization filter

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50117703	PRK5/2N-M8	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M8, plastic
50117707	PRK5/2N	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50117702	PRK5/2N-200-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50117706	PRK5/4P-M8	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M8, plastic

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50117705	PRK5/4P	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50123266	PRK5/4P-800-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 800 mm, M12, plastic
50123267	PRK5/4P-350-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 350 mm, M12, plastic
50122066	PRK5/4X-200-M8.1	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching		DC	Cable with M12 connector, 200 mm, snap-in, M8, plastic
50117704	PRK5/4P-200-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50122106	PRK5/4-200-M8.3	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching		DC	Cable with M12 connector, 200 mm, M8, plastic
50122446	PRK5/4P-200-M8	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M8, plastic

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic Light Scanners

Compact cubic light scanner for standard detection tasks. This sensor performs detection directly on an object and requires no reflector.

ET5 / FT5

These red-light scanners in the compact plastic housing facilitate robust object detection for homogeneous or similar objects. Through the simple sensitivity adjustment with two-level teach (object/background), they are particularly flexible in use. These sensors feature the A²LS active ambient light suppression and easy alignment through brightly visible brightVision® light spot.

Benefits:

- Energetic reflection light scanner with light/dark switching
- Scanning range adjustment via teach-in
- Simple mounting with integrated M3 metal threaded sleeves
- Compact installation possible due to cable outlet at the rear or bottom
- Full control through green and yellow indicator LEDs and complementary outputs
- Robust plastic housing acc. to IP 67 for industrial application

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50122581	ET5.3/2N-M8	0.001 ... 0.7 m 0 ... 1 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M8, plastic
50122583	ET5.3/2N-200-M12	0.001 ... 0.7 m 0 ... 1 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50122582	ET5.3/2N	0.001 ... 0.7 m 0 ... 1 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122578	ET5.3/4P-M8	0.001 ... 0.7 m 0 ... 1 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M8, plastic
50122580	ET5.3/4P-200-M12	0.001 ... 0.7 m 0 ... 1 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50122579	ET5.3/4P	0.001 ... 0.7 m 0 ... 1 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122575	FT5.3/2N-M8	0.001 ... 0.215 m 0 ... 0.28 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M8, plastic
50122577	FT5.3/2N-200-M12	0.001 ... 0.215 m 0 ... 0.28 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50122576	FT5.3/2N	0.001 ... 0.215 m 0 ... 0.28 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122572	FT5.3/4P-M8	0.001 ... 0.215 m 0 ... 0.28 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M8, plastic
50122574	FT5.3/4P-200-M12	0.001 ... 0.215 m 0 ... 0.28 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50122573	FT5.3/4P	0.001 ... 0.215 m 0 ... 0.28 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm

/// 8 Series



This extensive series offers a wide variety of operating principles and functions in a sturdy metal housing with very compact dimensions. With degrees of protection of IP 67 and IP 69K, the sensors are well suited for a range of industrial applications with glass pane, e. g., in packaging technology or special-purpose machinery manufacture, particularly in rough conditions. The turning device plug simplifies integration in constrained spaces.



Direct access to the online product selector at www.leuze.com/en/br8

Throughbeam Sensors

Reliable throughbeam photoelectric sensors with visible red light for a wide variety of industrial applications.

LS 8

Powerful throughbeam photoelectric sensors with visible red light suitable for applications in packaging systems.

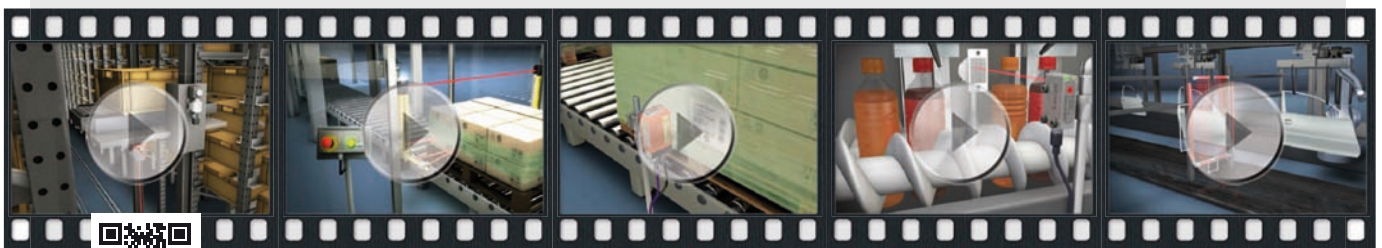
Benefits:

- Push-pull or NPN/PNP outputs immune to interference
- M12 turning connector or cable connection
- With adjustable focal point
- Sensitivity adjustment with potentiometer

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50036358	► LSSRL 8.9-S12	0 ... 60 m 0 ... 100 m		Laser, red			DC	Connector, M12, metal
50036359	◄ LSERL 8/24.01-S12	0 ... 60 m 0 ... 100 m	2,800 Hz		Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Connector, M12, metal
50037083	► LSSRL 8.9	0 ... 60 m 0 ... 100 m		Laser, red			DC	Cable, 2,000 mm
50037084	◄ LSERL 8/24.01	0 ... 60 m 0 ... 100 m	2,800 Hz		Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable, 2,000 mm
50036354	► LSSR 8-S12	0 ... 12 m 0 ... 20 m		LED, red			DC	Connector, M12, metal
50036569	◄ LSER 8/66-S12	0 ... 12 m 0 ... 20 m	1,500 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, metal
50036356	◄ LSER 8/44-S12	0 ... 12 m 0 ... 20 m	1,500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50036355	► LSSR 8	0 ... 12 m 0 ... 20 m		LED, red			DC	Cable, 2,000 mm
50036570	◄ LSER 8/66	0 ... 12 m 0 ... 20 m	1,500 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 2,000 mm
50036357	◄ LSER 8/44	0 ... 12 m 0 ... 20 m	1,500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50038787	► LSSR 8/A.8-S12	0 ... 12 m 0 ... 20 m		LED, red	AS-Interface IO			Connector, M12, metal
50038788	◄ ILSER 8/A-S12	0 ... 12 m 0 ... 20 m	2,800 Hz		AS-Interface IO			Connector, M12, metal

► transmitter / ◄ receiver

SMARTER APPLICATION KNOW-HOW



Take a look at our product clips: www.leuze.com/en/product-clips

Retro-Reflective Sensors

Compact retro-reflective photoelectric sensors with sensitivity adjustment via potentiometer for integration in constrained spaces.

PRK(L)8

Retro-reflective photoelectric sensors with visible red light or laser and degree of protection IP 67 and IP 69K.

Benefits:

- Push-pull or NPN/PNP outputs immune to interference
- M12 turning connector or cable connection
- Sensitivity adjustment with potentiometer or teach-in

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50036364	PRKL 8/24.91-S12	0 ... 19 m 0 ... 21 m	2,800 Hz	Laser, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Connector, M12, metal
50115689	PRKL 8/24.99-S12	0 ... 19 m 0 ... 21 m	2,800 Hz	Laser, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Connector, M12, metal
50036365	PRKL 8/24.91	0 ... 19 m 0 ... 21 m	2,800 Hz	Laser, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable, 2,000 mm
50038789	IPRK 8/A-S12	0.1 ... 6.4 m 0.1 ... 8 m	1,500 Hz	LED, red	AS-Interface IO			Connector, M12, metal
50036362	PRK 8/66-S12	0.1 ... 6.4 m 0.1 ... 8 m	1,500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, metal
50036363	PRK 8/66	0.1 ... 6.4 m 0.1 ... 8 m	1,500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50036360	PRK 8/44-S12	0.1 ... 6.4 m 0.1 ... 8 m	1,500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50036361	PRK 8/44	0.1 ... 6.4 m 0.1 ... 8 m	1,500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50037133	PRK 8/66.11-S12	0 ... 5 m 0 ... 7 m	1,500 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, metal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 8.4x

Retro-reflective photoelectric sensor specially designed for single-lane bottle transport and transparent media.

Benefits:

- Autocollimation principle for transparent media
- Tracking function in the event of contamination
- Sensitivity adjustment with potentiometer or teach-in
- Push-pull switching outputs immune to interference
- M12 turning connector or cable connection

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50037135	PRK 8/66.42-S12	0 ... 2 m 0 ... 2.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, metal
50037134	PRK 8/66.41-S12	0 ... 2 m 0 ... 2.4 m	1,500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, metal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Light Scanners

Powerful reflection light scanner with visible red light.

(I)RTR 8 / VRTR 8

These light scanners feature a visible red light and are perfectly suited for rough environmental conditions. In addition, models with foreground suppression (VRTR 8) are available.

Benefits:

- Push-pull, PNP outputs or AS-Interface IO
- Scanning range adjustment with potentiometer
- M12 turning connector or cable connection
- Visible red light

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50038790	IRTR 8/A-800-S12	0.01 ... 0.6 m 0.01 ... 0.8 m	1,500 Hz	LED, red	AS-Interface IO			Connector, M12, metal
50036368	RTR 8/66-800-S12	0.01 ... 0.6 m 0.01 ... 0.8 m	1,500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, metal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50036369	RTR 8/66-800	0.01 ... 0.6 m 0.01 ... 0.8 m	1,500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50036366	RTR 8/44-800-S12	0.01 ... 0.6 m 0.01 ... 0.8 m	1,500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50036367	RTR 8/44-800	0.01 ... 0.6 m 0.01 ... 0.8 m	1,500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50036374	VRTR 8/66-250-S12	0 ... 0.25 m 0 ... 0.25 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, metal
50036375	VRTR 8/66-250	0 ... 0.25 m 0 ... 0.25 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50036372	VRTR 8/44-250-S12	0 ... 0.25 m 0 ... 0.25 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Light Scanners with Background Suppression

Reflection light scanner with background suppression and visible red light or infrared light.

(I)HRT 8 / HRTL 8 / HRTR 8

Powerful reflection light scanners with multiturn potentiometer, specially designed for detecting glossy objects.

Benefits:

- Detection of shining objects
- Adjustable background suppression via multiturn potentiometer
- Push-pull or NPN/PNP outputs immune to interference
- M12 turning connector or cable connection
- High switching frequency

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50102705	HRTL 8/66-350-S12	0.007 ... 0.35 m 0.007 ... 0.4 m	200 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, metal
50103709	HRTL 8/66-350,5000	0.007 ... 0.35 m 0.007 ... 0.4 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 5,000 mm
50036370	HRTL 8/24-350-S12	0.007 ... 0.35 m 0.007 ... 0.4 m	2,000 Hz	Laser, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Connector, M12, metal
50036371	HRTL 8/24-350	0.007 ... 0.35 m 0.007 ... 0.4 m	2,000 Hz	Laser, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable, 2,000 mm
50102704	HRTL 8/66-150-S12	0.01 ... 0.15 m 0.01 ... 0.2 m	200 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, metal
50115688	HRTL 8/66.09-150-S12	0.025 ... 0.15 m 0.025 ... 0.2 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, metal
50038482	HRTL 8/24-150-S12	0.01 ... 0.15 m 0.01 ... 0.2 m	2,000 Hz	Laser, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Connector, M12, metal
50038483	HRTL 8/24-150	0.01 ... 0.15 m 0.01 ... 0.2 m	2,000 Hz	Laser, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Cable, 2,000 mm
50036352	HRTR 8/66-350-S12	0.007 ... 0.35 m 0.007 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, metal
50108224	HRTR 8/66-350,5000	0.007 ... 0.35 m 0.007 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 5,000 mm
50036353	HRTR 8/66-350	0.007 ... 0.35 m 0.007 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50036350	HRTR 8/44-350-S12	0.007 ... 0.35 m 0.007 ... 0.4 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50036351	HRTR 8/44-350	0.007 ... 0.35 m 0.007 ... 0.4 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50103360	IHRT 8/4-100-S12	0.03 ... 0.1 m 0.03 ... 0.1 m	200 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, U _s switching	DC	Connector, M12, metal
50039650	HRT 8/66.6-350-S12	0.007 ... 0.35 m 0.007 ... 0.4 m	1,000 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, metal
50103361	IHRT 8/4-200-S12	0.04 ... 0.2 m 0.04 ... 0.2 m	200 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, U _s switching	DC	Connector, M12, metal

/// 18 Series



These retro-reflective photoelectric sensors in coated metal housing with glass optics were designed specially for detecting transparent PET and glass bottles, plastic foils as well as flat glass. The patented tracking process extends the cleaning interval many times over; short response times and minimal jitter ensure reliable control of fast processes. The versatile fastening options with integrated thread facilitate mounting and the models with aligned abeam optics make alignment unnecessary.



Direct access to the online product selector at www.leuze.com/en/br18

Retro-Reflective Sensors

Polarized and unpolarized retro-reflective photoelectric sensors with autocollimation optics for the detection of foils and transparent media are available. In line with application requirements, three different types of adjustment options (270 ° potentiometer, teach button, 11-turn potentiometer) are available.

(P)RK18B / (I)PRK 18

Polarized and unpolarized retro-reflective photoelectric sensors for the reliable detection of highly transparent bottles, foils and glass panes.

Benefits:

- Reliable detection of containers for single bottles
- Precisely adjustable switching point via 270 ° potentiometer, teach button, 11-turn potentiometer
- Coated with chemical nickel
- Models with high optical accuracy available thanks to calibrated optical system
- Large temperature compensation
- Tracking for contamination compensation
- Front and side mounting systems with M4 thread

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50117373	RK18B.1/2N-M12	0 ... 6 m 0 ... 7.2 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, metal
50117357	PRK18B.1/2N-M12	0 ... 6 m 0 ... 7.2 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, metal
50117372	RK18B.1/2N-6000	0 ... 6 m 0 ... 7.2 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 6,000 mm
50117356	PRK18B.1/2N-6000	0 ... 6 m 0 ... 7.2 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 6,000 mm
50117375	RK18B.1/4P-M12	0 ... 6 m 0 ... 7.2 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50117359	PRK18B.1/4P-M12	0 ... 6 m 0 ... 7.2 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50117374	RK18B.1/4P-6000	0 ... 6 m 0 ... 7.2 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 6,000 mm
50117358	PRK18B.1/4P-6000	0 ... 6 m 0 ... 7.2 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 6,000 mm
50117364	PRK18B.T2/NX-M12	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, NPN, dark switching		DC	Connector, M12, metal
50117366	PRK18B.T3/2N-M12	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, metal
50117377	RK18B.T2/2N-M12	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, metal
50117360	PRK18B.T2/2N-6000	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 6,000 mm
50117361	PRK18B.T2/PX-M12	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, PNP, dark switching		DC	Connector, M12, metal
50117365	PRK18B.T2/4X-M12	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, PNP, dark switching		DC	Connector, M12, metal
50124944	PRK18B.XT3/4P-M12	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50124945	PRK18B.XT2/4P-M12	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50117363	PRK18B.T2/4P-M12	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, PNP, dark switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50117379	RK18B.T2/4P-M12	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50117367	PRK18B.T3/4P-M12	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50117362	PRK18B.T2/4P-6000	0 ... 4 m 0 ... 4.8 m	1,500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 6,000 mm
50117369	PRK18B.FXT3/2N-M12	0 ... 3 m 0 ... 3.6 m	5,000 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, metal
50121228	PRK18B.TT3/2N-M12	0 ... 3 m 0 ... 3.6 m	1,500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, metal
50033552	IPRK 18/4 DL.41	0 ... 3 m 0 ... 4 m	1,000 Hz	LED, red	Transistor, PNP, dark switching	Transistor, PNP, U _s switching	DC	Connector, M12, stainless steel
50033554	PRK 18/24 DL.42	0 ... 3 m 0 ... 4 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, NPN, light switching	DC	Connector, M12, stainless steel
50032798	PRK 18/24 DL.46	0 ... 3 m 0 ... 4 m	1,000 Hz	LED, red	Transistor, PNP, dark switching	Transistor, NPN, light switching	DC	Connector, M12, stainless steel
50124943	PRK18B.XTT3/4P-M12	0 ... 3 m 0 ... 3.6 m	1,500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50117371	PRK18B.FXT3/4P-M12	0 ... 3 m 0 ... 3.6 m	5,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50121229	PRK18B.TT3/4P-M12	0 ... 3 m 0 ... 3.6 m	1,500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50115193	PRK 18/44 L.43	0 ... 3 m 0 ... 4 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel
50034119	IPRK 18/A.1 L.4	0 ... 2.4 m 0 ... 3 m	500 Hz	LED, red	AS-Interface IO			Connector, M12, stainless steel
50040278	IPRK 18/A L.46	0 ... 2.4 m 0 ... 3 m	1,000 Hz	LED, red	AS-Interface IO			Connector, M12, stainless steel
50030077	IPRK 18/A L.4	0 ... 2.4 m 0 ... 3 m	500 Hz	LED, red	AS-Interface IO			Connector, M12, stainless steel
50106974	IPRK 18/V L.03	0 ... 1 m 0 ... 1.2 m	1,000 Hz	LED, red	Transistor, PNP, light switching		DC	Connector, M12, stainless steel

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

/// 25 Series



This series covers all operating principles – from the throughbeam photoelectric sensor to the scanner with background suppression – and have been optimized for a wide range of different applications, especially in intralogistics and packaging technology. Protection ratings IP 67 and IP 66 as well as the active suppression of extraneous light enable use in a wide range of industrial sectors. A number of different options, such as activation input or warning output, facilitate a high level of process reliability and, thus, system availability.



Direct access to the online product selector at www.leuze.com/en/br25

Throughbeam Sensors

The photoelectric sensors of this series offer a high performance reserve and are suited for use in rough, industrial environments.

LSR 25B

The standard LSR 25B throughbeam photoelectric sensor convinces with its large range and its versatile options for increasing process reliability (warning, testing).

Benefits:

- Photoelectric sensor with very high performance reserve
- Suitable for use in rough, industrial environment
- Various options for increasing the process reliability (warning, test activation)

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50108478	► LSSR 25B.8-S12	0 ... 20 m 0 ... 24 m		LED, red			DC	Connector, M12, plastic
50108483	◄ LSR 25B/66-S12	0 ... 20 m 0 ... 24 m	500 Hz		Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50108487	◄ ILSR 25B/4-S12	0 ... 20 m 0 ... 24 m	500 Hz		Transistor, PNP, light switching (PNP)/dark switching (NPN)	Transistor, PNP, U _s switching	DC	Connector, M12, plastic

► transmitter / ◄ receiver

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50108477	► LSSR 25B-S12	0 ... 20 m 0 ... 24 m		LED, red			DC	Connector, M12, plastic
50108484	◄ LSER 25B/66.1-S12	0 ... 20 m 0 ... 24 m	500 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic
50108483	◄ LSER 25B/66-S12	0 ... 20 m 0 ... 24 m	500 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic
50108487	◄ ILSER 25B/4-S12	0 ... 20 m 0 ... 24 m	500 Hz		Transistor, PNP, light switching (PNP)/ dark switching (NPN)	Transistor, PNP, U _s switching	DC	Connector, M12, plastic
50108479	► LSSR 25B.8-S8	0 ... 20 m 0 ... 24 m		LED, red			DC	Connector, M8, plastic
50108485	◄ LSER 25B/66-S8	0 ... 20 m 0 ... 24 m	500 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, plastic
50108480	► LSSR 25B.8	0 ... 20 m 0 ... 24 m		LED, red			DC	Cable, 2,000 mm
50108486	◄ LSER 25B/66	0 ... 20 m 0 ... 24 m	500 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 2,000 mm
50110872	► LSSR 25B,200-S8.1	0 ... 20 m 0 ... 24 m		LED, red			DC	Cable with connector, 200 mm, snap-in, M8, metal
50110873	◄ LSER 25B/4,200-S8.1	0 ... 20 m 0 ... 24 m	500 Hz		Transistor, PNP, light switching		DC	Cable with connector, 200 mm, snap-in, M8, metal
50110922	► LSSR 25B,200-S12	0 ... 20 m 0 ... 24 m		LED, red			DC	Cable with connector, 200 mm, M12, metal
50110923	◄ LSER 25B/4,200-S12	0 ... 20 m 0 ... 24 m	500 Hz		Transistor, PNP, light switching		DC	Cable with connector, 200 mm, M12, metal

► transmitter / ◄ receiver

Retro-Reflective Sensors

In addition to normal polarized retro-reflective photoelectric sensors, the 25B series with variants is ideally suited for the reliable detection of stretch-wrapped pallets or for very precise positioning.

(I)PRK 25B

The standard (I)PRK 25B retro-reflective photoelectric sensor ensures high system availability, even under extreme environmental conditions. Additional functions, such as warning and activation, further increase process reliability.

Benefits:

- High system availability under extreme environmental conditions
- Additional functions, e. g. warning, activation, for increasing the process reliability

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50104223	PRK 25B/66-S12	0.08 ... 8 m 0.05 ... 10 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic
50104230	PRK 25B/66.1-S12	0.08 ... 8 m 0.05 ... 10 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic
50104224	PRK 25B/66-S8	0.08 ... 8 m 0.05 ... 10 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, plastic
50104225	PRK 25B/66	0.08 ... 8 m 0.05 ... 10 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 2,000 mm
50104226	PRK 25B/66,200-S12	0.08 ... 8 m 0.05 ... 10 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50105739	PRK 25B/66,100-S8	0.08 ... 8 m 0.05 ... 10 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with M12 connector, 100 mm, M8, metal
50104229	IPRK 25B/4,200-S12	0.08 ... 8 m 0.05 ... 10 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, U _s switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50104228	IPRK 25B/4-S12	0.05 ... 8 m 0.05 ... 10 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, U _s switching	DC	Connector, M12, plastic
50104227	PRK 25B/4.8-S12	0.05 ... 8 m 0.05 ... 10 m	500 Hz	LED, red	Transistor, PNP, light switching		DC	Connector, M12, plastic
50109432	PRK 25B/44-S12	0.05 ... 8 m 0.05 ... 10 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50113771	PRK 25B/4,200-S8.1	0.05 ... 8 m 0.05 ... 10 m	500 Hz	LED, red	Transistor, PNP, light switching		DC	Cable with connector, 200 mm, snap-in, M8, metal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

(I)PRK 25B.3

The (I)PRK 25B.3 retro-reflective photoelectric sensor is optimized for use in the areas of material flow, intralogistics and packaging technology. It is particularly well suited for the reliable detection of stretch-wrapped pallets, foil-wrapped objects or laminated surfaces.

Benefits:

- Optimized for use in the areas of material flow/intralogistics and packaging technology
- Reliable function even with stretch-wrapped pallets

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50104243	PRK 25B/66.31-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50104236	PRK 25B/66.3-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50104237	PRK 25B/66.3-S8	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, plastic
50104244	PRK 25B/66.31-S8	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, plastic
50104238	PRK 25B/66.3	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50104245	PRK 25B/66.31	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50106203	PRK 25B/66.30,200-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50104240	PRK 25B/66.3,200-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50104239	PRK 25B/66.3,200-S8	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, metal
50118424	PRK 25B/4D.3,2000-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, PNP, dark switching		DC	Cable with M12 connector, 2,000 mm, M12, metal
50108549	PRK 25B/4D.3,200-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, PNP, dark switching		DC	Cable with connector, 200 mm, M12, metal
50104242	PRK 25B/4D.3-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, PNP, dark switching, AS-Interface, connection via coupling module		DC	Connector, M12, plastic
50104241	PRK 25B/4D.3-S8	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, PNP, dark switching, AS-Interface, connection via coupling module		DC	Connector, M8, plastic
50117202	PRK 25B/44.3-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50104247	PRK 25B/4.38-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, PNP, light switching		DC	Connector, M12, plastic
50104246	IPRK 25B/4.3-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, U _B switching	DC	Connector, M12, plastic
50120578	PRK 25B/44.3,200-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, 200 mm, M12, metal
50108111	IPRK 25B/4.3,200-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, U _B switching	DC	Cable with connector, 200 mm, M12, metal
50110924	PRK 25B/4.3,200-S12	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, PNP, light switching, AS-Interface, connection via coupling module		DC	Cable with connector, 200 mm, M12, metal
50110874	PRK 25B/4.3,200-S8.1	0.05 ... 6 m 0.05 ... 8 m	500 Hz	LED, red	Transistor, PNP, light switching, AS-Interface, connection via coupling module		DC	Cable with M12 connector, 200 mm, M8, metal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRKL 25B

The PRKL 25B laser retro-reflective photoelectric sensor offers reliable detection of small parts and objects, even at large ranges. Its optimum light beam propagation predestines it for positioning and counting applications.

Benefits:

- Reliable detection of small parts/objects
- Optimum light beam propagation for positioning and counting applications

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50104233	PRKL 25B/6.81-S12	0.3 ... 12 m 0.05 ... 15 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M12, plastic
50104231	PRKL 25B/66.1-S12	0.3 ... 12 m 0.05 ... 15 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50104234	PRKL 25B/66.1-S8	0.3 ... 12 m 0.05 ... 15 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, plastic

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Switching
SensorsMeasuring
SensorsProducts for
Safety at Work

Identification

Data Transmission /
Control ComponentsIndustrial Image
Processing

Accessories

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50104235	PRKL 25B/66.1	0.3 ... 12 m 0.05 ... 15 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50104232	PRKL 25B/4D.1-S12	0.3 ... 12 m 0.05 ... 15 m	2,000 Hz	Laser, red	Transistor, PNP, dark switching, AS-Interface, connection via coupling module		DC	Connector, M12, plastic
50110921	PRKL 25B/4.1,200-S12	0.3 ... 12 m 0.05 ... 15 m	2,000 Hz	Laser, red	Transistor, PNP, light switching, AS-Interface, connection via coupling module		DC	Cable with connector, 200 mm, M12, metal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic Light Scanners

An economical scanner for standard applications in which there are no special requirements on background suppression.

RTFR 25B

With its fading function, the RTFR 25B diffuse reflection light scanner is able to suppress objects in the background. The scanning range is set electrically by means of a potentiometer.

Benefits:

- Fading – object suppression in background
- Short response behavior for detecting fast events
- Electrical scanning range adjustment via potentiometer

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50108476	RTR 25B/66-S12	0.01 ... 0.6 m 0.01 ... 0.65 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50108472	RTFR 25B/66-S12	0 ... 0.6 m 0 ... 0.65 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50108474	RTFR 25B/66-S8	0 ... 0.6 m 0 ... 0.65 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, plastic
50108475	RTFR 25B/66	0 ... 0.6 m 0 ... 0.65 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm

Light Scanners with Background Suppression

These sensors are suited for the reliable detection of objects against a background. Available in a variety of special designs, the 25B series offers robust and efficient solutions, even for tricky applications such as the detection of extremely dark objects or objects with colored structure or objects with openings. An additional indicator LED signals the switching state, even in covered installation situations.

HRT 25B

The HRT 25B infrared light scanner with background suppression reliably detects even very dark surfaces. It combines large ranges with an above-average performance reserve.

Benefits:

- Universal application
- Reliable with materials/surfaces having low reflectance
- Mechanical adjustment of scanning range
- Background suppression
- Additional status LEDs on the front side of the sensor

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50114874	HRT 25B/66-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50115134	HRT 25B/66-S8	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, plastic
50115127	HRT 25B/6-S8	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M8, plastic
50115131	HRT 25B/66	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50115133	HRT 25B/66,200-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50115123	HRT 25B/6.8,200-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Cable with connector, 200 mm, M12, metal
50115132	HRT 25B/66,200-S8	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, metal
50122100	HRT 25B/2	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, NPN, light switching		DC	Cable, 2,000 mm
50115122	HRT 25B/4D-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, PNP, dark switching		DC	Connector, M12, plastic

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50120272	HRT 25B/4D,200-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, PNP, dark switching		DC	Cable with connector, 200 mm, M12, metal
50115130	HRT 25B/44-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50115129	HRT 25B/44-S8	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M8, plastic
50123982	HRT 25B/44,200-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic

HRTR 25B

The HRTR 25B universal red-light scanner with background suppression combines reliable detection and good background suppression with great ease of use.

Benefits:

- Brightly visible brightVision® light spot
- Mechanical adjustment of scanning range
- Background suppression
- Additional status LEDs on the front side of the sensor

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50114491	HRTR 25B/66-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic
50115144	HRTR 25B/6-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)		DC	Connector, M12, plastic
50115153	HRTR 25B/66-S8	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, plastic
50115140	HRTR 25B/6	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)		DC	Cable, 2,000 mm
50115150	HRTR 25B/66	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 2,000 mm
50115152	HRTR 25B/66,200-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50121903	HRTR 25B/6,200-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)		DC	Cable with M12 connector, 200 mm, M12, plastic
50115151	HRTR 25B/66,200-S8	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, metal
50115137	HRTR 25B/4D,200-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, PNP, dark switching		DC	Cable with connector, 200 mm, M12, metal
50115136	HRTR 25B/4D,200-S8	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, PNP, dark switching		DC	Cable with M12 connector, 200 mm, M8, metal
50115147	HRTR 25B/44-S12	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50115146	HRTR 25B/44-S8	0 ... 1 m 0 ... 1 m	250 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M8, plastic
50116721	HRTR 25B/66,5000	0 ... 1 m 0 ... 1 m	250 Hz	LED, infrared, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm

HRTR 25B-XL

With its large light spot, the HRTR 25B-XL diffuse reflection light scanner with background suppression is well suited for the reliable detection of meshed containers, such as lattice boxes.

Benefits:

- Optimized light spot for reliable detection of meshed containers
- Reliable positioning on glossy, metallic surfaces with openings (e. g. slide bolts)
- Brightly visible brightVision® light spot
- Additional status LEDs on the front side of the sensor

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50114876	HRTR 25B/66-XL-S12	0 ... 0.6 m 0 ... 0.6 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic
50116532	HRTR 25B/66-XL	0 ... 0.6 m 0 ... 0.6 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 2,000 mm
50115158	HRTR 25B/66-XL,200-S12	0 ... 0.6 m 0 ... 0.6 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50115157	HRTR 25B/66-XL,200-S8	0 ... 0.6 m 0 ... 0.6 m	250 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with M12 connector, 200 mm, M8, metal
50115139	HRTR 25B/4D-XL-S12	0 ... 0.6 m 0 ... 0.6 m	250 Hz	LED, red	Transistor, PNP, dark switching		DC	Connector, M12, plastic
50116808	HRTR 25B/4D-XL,200-S12	0 ... 0.6 m 0 ... 0.6 m	250 Hz	LED, red	Transistor, PNP, dark switching		DC	Cable with connector, 200 mm, M12, metal

HRTR 25B-S

With its focused light spot, the HRTR 25B-S diffuse reflection light scanner with background suppression is ideally suited for the reliable detection of objects with glossy surfaces and with surfaces that have colored structure. This makes it the sensor of choice for complex applications, such as in packaging technology.

Benefits:

- Focused light spot for the reliable detection of objects with glossy and inconsistently structured surfaces
- High switching frequency and short response time for detection of fast events
- Additional status LEDs on the front side of the sensor

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50114875	HRTR 25B/66-S-S12	0 ... 1 m 0 ... 1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50115145	HRTR 25B/6-S-S12	0 ... 1 m 0 ... 1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M12, plastic
50115142	HRTR 25B/6.8-S-S12	0 ... 1 m 0 ... 1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M12, plastic
50115156	HRTR 25B/66-S-S8	0 ... 1 m 0 ... 1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, plastic
50115155	HRTR 25B/66-S,200-S12	0 ... 1 m 0 ... 1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50115149	HRTR 25B/44-S-S12	0 ... 1 m 0 ... 1 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic

/// 28 Series



The 28 series sensors are reliable, powerful photoelectric sensors that are predestined for many standard detection tasks in materials handling, packaging technology and machines for special applications. They offer large ranges and numerous technical highlights, such as the highly visible brightVision® light spot for simple alignment or the front- and plug-side M18 mounting option, at an absolutely convincing, economical price. Moreover, the fiber-reinforced, cubic plastic housing with rating and the IP 67 A²LS active suppression of extraneous light facilitate especially robust detection, even in rough industrial environments.



Direct access to the online product selector at www.leuze.com/en/br28

Throughbeam Sensors

Solid, cubic throughbeam photoelectric sensor for standard detection tasks with transmitter and receiver.

L28

The one-way principle makes possible the reliable detection of even flat objects with a high performance reserve and reduces the risk of a system standstill. Deactivation inputs enable testing of the sensor. In addition, optimized beam geometry and the highly visible brightVision® light spot simplify alignment.

Benefits:

- High performance reserve
- Simple alignment by means of optimized beam geometry
- Simple detection of flat objects
- Transmitter deactivation for testing and networking

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50117928	▶ LS28/9D-M12	0 ... 10 m 0 ... 15 m		LED, red			DC	Connector, M12, plastic
50117932	◀ LE28/2N-M12		500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50117930	◀ LE28/4P-M12		500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50117929	▶ LS28/9D	0 ... 10 m 0 ... 15 m		LED, red			DC	Cable, 2,000 mm
50117933	◀ LE28/2N		500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50117931	◀ LE28/4P		500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm

▶ transmitter / ◀ receiver

Retro-Reflective Sensors

Solid, cubic, polarized retro-reflective photoelectric sensor for installation situations in which a retro-reflector can be used.

PRK28

A polarization filter ensures the reliable suppression of direct reflections and, together with the high performance reserve of the sensor, enables reliable detection. In addition, optimized beam geometry and the highly visible brightVision® light spot simplify alignment.

Benefits:

- Homogeneous light spot for safe switching behavior and easy alignment
- Safe suppression of direct reflection due to polarization filter

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50117926	PRK28/2N-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50117927	PRK28/2N	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122589	PRK28/2N-200-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50117924	PRK28/4P-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50117925	PRK28/4P	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122584	PRK28/4P-200-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic Light Scanners

Sturdy cubic light scanner for standard detection tasks. This sensor performs detection directly on an object and requires no reflector.

ET28 / FT28

These red-light scanners in the solid plastic housing facilitate robust object detection for homogeneous or similar objects. Through the simple sensitivity adjustment with two-level teach (object/background), they are particularly flexible in use. These sensors feature the A²LS active ambient light suppression and quick and easy alignment through brightly visible brightVision® light spot.

Benefits:

- Energetic reflection light scanner with light/dark switching
- Scanning range adjustment via teach-in
- Universal option for M18 hole mounting at the front and connector side
- Simple through-hole mounting with housing-side anti-rotation protection for mounting nuts
- Full control through green and yellow indicator LEDs and complementary outputs
- Robust plastic housing acc. to IP 67 for industrial application

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50122599	ET28.3/2N-M12	0.001 ... 0.65 m 0.001 ... 0.85 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122601	ET28.3/2N	0.001 ... 0.65 m 0.001 ... 0.85 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122600	ET28.3/2N-200-M12	0.001 ... 0.65 m 0.001 ... 0.85 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50122596	ET28.3/4P-M12	0.001 ... 0.65 m 0.001 ... 0.85 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122598	ET28.3/4P	0.001 ... 0.65 m 0.001 ... 0.85 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122597	ET28.3/4P-200-M12	0.001 ... 0.65 m 0.001 ... 0.85 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50122593	FT28.3/2N-M12	0.001 ... 0.21 m 0 ... 0.25 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122595	FT28.3/2N	0.001 ... 0.21 m 0 ... 0.25 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122594	FT28.3/2N-200-M12	0.001 ... 0.21 m 0 ... 0.25 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic
50122590	FT28.3/4P-M12	0.001 ... 0.21 m 0 ... 0.25 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122592	FT28.3/4P	0.001 ... 0.21 m 0 ... 0.25 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122591	FT28.3/4P-200-M12	0.001 ... 0.21 m 0 ... 0.25 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable with M12 connector, 200 mm, M12, plastic

/// 46 Series



With high performance reserves and large ranges, these sensors with plastic housing are ideal for use in conveyor and storage systems, in the wood-processing industry and in special-purpose machinery manufacture. The extended series of sensors, with large lenses, protection ratings IP 67 and IP 69K, and the patented autocontrol performance reserve warning, opens many application fields.



Direct access to the online product selector at www.leuze.com/en/br46

Throughbeam Sensors

Reliable, red-light photoelectric sensors with large range, optimized ray geometry for simple alignment, robust switching behavior and maximum functional reliability.

LSR 46B

The LSR 46B throughbeam photoelectric sensor features a high performance reserve and a switching state display that is visible over the entire range.

Benefits:

- Switching state display clearly visible up to the max. range
- Robust behavior thanks to optimized beam geometry
- Simple alignment and check through SAT 5 alignment aid

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50108527	► LSSR 46B.8-S12	0 ... 50 m 0 ... 60 m		LED, red			DC	Connector, M12, plastic
50108532	◄ LSR 46B/66-S12	0 ... 50 m 0 ... 60 m	500 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic
50108536	◄ ILSER 46B/4-S12	0 ... 50 m 0 ... 60 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, U _s switching	DC	Connector, M12, plastic
50108526	► LSSR 46B-S12	0 ... 50 m 0 ... 60 m		LED, red			DC	Connector, M12, plastic
50108533	◄ LSR 46B/66.1-S12	0 ... 50 m 0 ... 60 m	500 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic
50108532	◄ LSR 46B/66-S12	0 ... 50 m 0 ... 60 m	500 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic
50108536	◄ ILSER 46B/4-S12	0 ... 50 m 0 ... 60 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, U _s switching	DC	Connector, M12, plastic
50108529	► LSSR 46B	0 ... 50 m 0 ... 60 m		LED, red			DC	Cable, 2,000 mm
50108535	◄ LSR 46B/66	0 ... 50 m 0 ... 60 m	500 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 2,000 mm
50108528	► LSSR 46B,200-S12	0 ... 50 m 0 ... 60 m		LED, red			DC	Cable with connector, 200 mm, M12, metal
50108534	◄ LSR 46B/66,200-S12	0 ... 50 m 0 ... 60 m	500 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50119367	◄ LSR 46B/4D,200-S12	0 ... 50 m 0 ... 60 m	100 Hz		Transistor, PNP, dark switching		DC	Cable with connector, 200 mm, M12, metal
50110929	► LSSR 46B-S-S12	0 ... 40 m 0 ... 44 m		LED, red			DC	Connector, M12, plastic
50110930	◄ LSR 46B/66-S-S12	0 ... 40 m 0 ... 44 m	100 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic

► transmitter / ◄ receiver

Retro-Reflective Sensors

Reliable retro-reflective photoelectric sensors with extremely large performance reserves for high system availability.

PRK 46B

This retro-reflective photoelectric sensor for large operating ranges offers high performance reserves for reliable object detection even with small, soiled or misaligned reflectors.

Benefits:

- Maximum performance reserve within the operating range
- Reliable object detection with heavily soiled or mis-adjusted reflectors

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50119714	PRK 46B/7D,5000	0.05 ... 15 m 0.5 ... 18 m	20 Hz	LED, red	Relay, make-contact, dark switching		DC	Cable, 5,000 mm
50103080	PRK 46B/7D-S12	0.05 ... 15 m 0.05 ... 18 m	20 Hz	LED, red	Relay, make-contact, dark switching		DC	Connector, M12, plastic
50113009	PRK 46B/66D-S12	0.05 ... 15 m 0.05 ... 18 m	500 Hz	LED, red	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	DC	Connector, M12, plastic
50103082	PRK 46B/66.01-S12	0.05 ... 15 m 0.05 ... 18 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50103070	PRK 46B/66-S12	0.05 ... 15 m 0.05 ... 18 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50107068	PRK 46B/66	0.05 ... 15 m 0.05 ... 18 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50103071	PRK 46B/66, 200-S12	0.05 ... 15 m 0.05 ... 18 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50105986	PRK 46B/44-S12	0.05 ... 15 m 0.05 ... 18 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50103074	IPRK 46B/4-S12	0.05 ... 15 m 0.05 ... 18 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, U _s switching	DC	Connector, M12, plastic
50119366	PRK 46B/4D,200-S12	0.1 ... 8 m 0.1 ... 10 m	500 Hz	LED, red	Transistor, PNP, dark switching		DC	Cable with M12 connector, 200 mm, M12, plastic

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

(I)PRK 46B.2

Special type of the retro-reflective photoelectric sensor of this series optimized for use on roller conveyors with large functional reliability even with stretch-wrapped pallets.

Benefits:

- Optimized for use on roller conveyors
- Reliable function even with stretch-wrapped pallets

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50105156	PRK 46B/6.2-S12	0.1 ... 8 m 0.1 ... 10 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M12, plastic
50103072	PRK 46B/66.2-S12	0.1 ... 8 m 0.1 ... 10 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50103073	PRK 46B/66.2, 200-S12	0.1 ... 8 m 0.1 ... 10 m	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50105987	PRK 46B/4D.2-S12	0.1 ... 8 m 0.1 ... 10 m	500 Hz	LED, red	Transistor, PNP, dark switching		DC	Connector, M12, plastic
50111655	IPRK 46B/4D.2-S12	0.1 ... 8 m 0.1 ... 10 m	500 Hz	LED, red	Transistor, PNP, dark switching	Transistor, PNP, U _s switching	DC	Connector, M12, plastic
50103076	IPRK 46B/4.2-S12	0.1 ... 8 m 0.1 ... 10 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, U _s switching	DC	Connector, M12, plastic
50105106	PRK 46B/44.2-S12	0.1 ... 8 m 0.1 ... 10 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50103084	PRK 46B/4.82-S12	0.1 ... 8 m 0.1 ... 10 m	500 Hz	LED, red	Transistor, PNP, light switching		DC	Connector, M12, plastic

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Switching Sensors

Measuring Sensors

Products for Safety at Work

Identification

Data Transmission / Control Components

Industrial Image Processing

Accessories

Light Scanners with Background Suppression

Large range of reflection light scanners that utilizes background suppression to deliver reliable results even with changing backgrounds. In addition to laser photoelectric sensors, solutions with IO-Link for format changeover are also available.

(I)HRT 46B

Optimized, infrared light scanner for the reliable detection of dark and glossy objects at large ranges and very small black/white error.

Benefits:

- Very high performance reserve
- Very small black/white error
- Optimized for glossy, dark objects and large ranges

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50106562	HRT 46B/7-S12	0 ... 2.5 m 0 ... 2.5 m	20 Hz	LED, infrared	Relay, make-contact, light switching		DC	Connector, M12, plastic
50106547	HRT 46B/66-S12	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50112805	HRT 46B/66	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 2,000 mm
50106548	HRT 46B/66,200-S12	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50106552	IHRT 46B/4D-S12	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, PNP, dark switching	Transistor, PNP, U _B switching	DC	Connector, M12, plastic
50106550	HRT 46B/4D-S12	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, PNP, dark switching		DC	Connector, M12, plastic
50109551	HRT 46B/4D,200-S12	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, PNP, dark switching		DC	Cable with connector, 200 mm, M12, metal
50106554	IHRT 46B/4D,200-S12	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, PNP, dark switching	Transistor, PNP, U _B switching	DC	Cable with connector, 200 mm, M12, metal
50106549	HRT 46B/4-S12	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, PNP, light switching		DC	Connector, M12, plastic
50106551	IHRT 46B/4-S12	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, U _B switching	DC	Connector, M12, plastic
50106546	HRT 46B/44-S12	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50114869	HRT 46B/44	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50106553	IHRT 46B/4,200-S12	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, U _B switching	DC	Cable with connector, 200 mm, M12, metal

Typ. operating range with a black/white error < 10%

HRTR 46B

Universal, red-light scanner, either with mechanical adjustment or teach-in function or teach input. The scanner is equipped with an extra bright light spot for very simple alignment.

Benefits:

- Models with mechanical adjustment and teach-in
- Remote teach via teach line
- High performance reserve
- Very visible, bright light spot
- Protection against manipulation by means of a lockable button

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50114032	HRTR 46B/6.22-S12	0.02 ... 1.8 m 0.02 ... 1.8 m	200 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M12, plastic
50106555	HRTR 46B/66-S12	0.02 ... 1.8 m 0.02 ... 1.8 m	200 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50114034	HRTR 46B/6.22,200-S12	0.02 ... 1.8 m 0.02 ... 1.8 m	200 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Cable with connector, 200 mm, M12, metal
50106556	HRTR 46B/66,200-S12	0.02 ... 1.8 m 0.02 ... 1.8 m	200 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50106558	HRTR 46B/4D-S12	0.02 ... 1.8 m 0.02 ... 1.8 m	200 Hz	LED, red	Transistor, PNP, dark switching		DC	Connector, M12, plastic
50113432	HRTR 46B/4D, 200-S12	0.02 ... 1.8 m 0.02 ... 1.8 m	200 Hz	LED, red	Transistor, PNP, dark switching		DC	Cable with connector, 200 mm, M12, metal
50106557	HRTR 46B/4-S12	0.02 ... 1.8 m 0.02 ... 1.8 m	200 Hz	LED, red	Transistor, PNP, light switching		DC	Connector, M12, plastic

Typ. operating range with a black/white error < 10%

HRTR 46B-Teach (2 switching points)

This scanner features two individually adjustable switching points and can be configured via the teach button or the integrated IO-Link interface. The optimum solution for simple, 2-point controls or format changeovers.

Benefits:

- Output of 2 individually adjustable switching points
- Intelligent configuration and diagnostics via IO-Link interface
- Quick format conversions by adjusting the scanning range in millimeters via the interface
- Optimum price/performance ratio for 2-point controls

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50118554	HRTR 46B/L6.23-S12	0.02 ... 1.8 m 0.02 ... 1.8 m	100 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN), IO-Link	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	DC	Connector, M12, plastic
50114037	HRTR 46B/L4.23-S12	0.02 ... 1.8 m 0.02 ... 1.8 m	100 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN), IO-Link	Transistor, PNP, light switching	DC	Connector, M12, plastic

Typ. operating range with a black/white error < 10%

HRTL 46B

Laser scanner for very precise positioning and reliable detection of small parts, available in either laser class 1 or 2.

Benefits:

- Models in laser class 1 and 2 available
- Precise positioning and detection of small parts

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50110806	HRTL 46B/6.8-S12	0.05 ... 1.2 m 0.05 ... 1.2 m	1,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M12, plastic
50106560	HRTL 46B/66-S12	0.05 ... 1.2 m 0.05 ... 1.2 m	1,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic
50106561	HRTL 46B/66,200-S12	0.05 ... 1.2 m 0.05 ... 1.2 m	1,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with connector, 200 mm, M12, metal
50113308	HRTL 46B/66.1-S12	0.05 ... 0.8 m 0.05 ... 0.8 m	1,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic

Typ. operating range with a black/white error < 10%

HRT 46B, narrow beam

Scanner with particularly narrow infrared LED beam, e. g., for the detection of objects from below between the rollers of a roller conveyor.

Benefits:

- Detection through a gap ≥ 6 mm
- Reliable detection of wood, metal and plastic pallets
- Simple alignment
- Large optics ensure low sensitivity to soiling

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50111640	HRT 46B/66.1-S12	0 ... 2.5 m 0 ... 2.5 m	200 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic

Typ. operating range with a black/white error < 10%

HRTR 46B-S

Special solution for the reliable detection of even objects with colored structure against a background. Typical applications are found in the wood and packaging industries.

Benefits:

- Small light spot and very good background suppression
- Reliable detection of objects with colored structure located in front of a background
- Optimized for applications in the wood and packaging industries
- Typical actuation distances: 100–300 mm

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50106559	HRTR 46B/66-S-S12	0.01 ... 0.7 m 0.01 ... 0.7 m	200 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M12, plastic

Typ. operating range with a black/white error < 10%

Reference Scanner

The reference scanner employs a detection process patented by Leuze. With this process, the scanner is taught against a fixed background – the reference. Like a retro-reflective photoelectric sensor, the scanner returns a switching signal if the reference is no longer detected. The sensor is the optimum solution for demanding detection tasks for which no reflector can be mounted.

HRTR 46B-Teach

Reliable detection of glossy, dark or partially transparent objects from above over a conveying belt or other fixed background (e. g., machine base). Commissioning via teach-in. The sensor can be optimally adjusted to the application via the IO-Link interface.

Benefits:

- Very reliable detection of glossy, dark or partially transparent objects on a conveying belt or in front of a fixed background
- Quick commissioning through teach-in on a conveying belt or background
- Intelligent configuration and diagnostics via IO-Link interface

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50114036	HRTR 46B/L.221-S12	0.2 ... 0.5 m 0.2 ... 0.5 m	100 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN), IO-Link	DC	Connector, M12, plastic

Distance on fixed background (reference)

/// 53 Series



These sensors were specially designed for sensitive hygiene applications, e. g., in the pharmaceutical, cosmetic and food industries. Their housing is consistently designed for preventing bacterial carry-overs with its scratch resistant and non-diffusive plastic screen. The unique fastening concept, which consists of a mounting trunnion with 12 mm diameter and G6 fit, ensures a gas-tight connection between sensor and machine.



Direct access to the online product selector at www.leuze.com/en/br53

Throughbeam Sensors

These stainless steel throughbeam photoelectric sensors in HYGIENE design are specially suited for use in challenging environments.

LSR 53

These photoelectric sensors have a large operating range and feature a visible red light spot for easy alignment.

Benefits:

- 316L stainless steel housing in HYGIENE-Design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- A²LS – Active Ambient Light Suppression
- High switching frequency for detection of fast events

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50108736	► LSSR 53.8-S8	0 ... 8.5 m 0 ... 10 m		LED, red			DC	Connector, M8, stainless steel
50108742	◄ LSR 53/66-S8	0 ... 8.5 m 0 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel

► transmitter / ◄ receiver

Retro-Reflective Sensors

Polarized and unpolarized retro-reflective photoelectric sensors for transport systems, for exact positioning as well as models for detection of PET and glass bottles and plastic foils are available. In addition, there is a laser device specially designed for the detection of small parts.

PRK(L)53.22

Polarized retro-reflective photoelectric sensors with visible red light in stainless steel housing in the HYGIENE design.

Benefits:

- 316L stainless steel housing in HYGIENE-Design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- High switching frequency for detection of fast events
- Easy adjustment via lockable teach button or teach input

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50107605	PRKL 53/6.22-S8	0 ... 2 m 0 ... 3 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M8, stainless steel
50107603	PRK 53/6.22-S8	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M8, stainless steel
50121898	PRK 53/6.22,5000	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Cable, 5,000 mm

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 53.42 / RKR 53.42

Stainless steel sensors with autocollimation optics and red light with ranges of up to 3m for transparent objects, both in a polarized design for glass panes (PRK devices) and a non-polarized design for foils (RKR devices).

Benefits:

- 316L stainless steel housing in HYGIENE-Design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- High switching frequency for detection of fast events
- Easy adjustment via lockable teach button or teach input

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50112476	PRK 53/6D.42-S8	0 ... 3 m 0 ... 3.5 m	1,000 Hz	LED, red	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel
50112475	PRK 53/6.42-S8	0 ... 3 m 0 ... 3.5 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M8, stainless steel
50107607	RKR 53/6.42-S8	0 ... 1.5 m 0 ... 1.8 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M8, stainless steel

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Light Scanners with Background Suppression

These light scanners with precise adjustment via multiturn potentiometer are designed for particularly reliable switching. With models that work on nearly any background, optimized versions for highly glossy objects and objects with colored structures as well for the detection of gaps and openings are available.

HRTL 53 / HRTR 53

Depending on the design, these scanners offer a large scanning range or small light spots for the reliable detection of glossy, structured objects. A model with elongated light spot specially produced for transparent objects or objects with openings is also available for delivery.

Benefits:

- 316L stainless steel housing in HYGIENE-Design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Exact adjustment of the scanning range via 8-gear spindle
- Collimated light beam propagation with small beam diameter permits identical switching behavior within the specified scanning range

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50115203	HRTL 53/66-S8	0.015 ... 0.4 m 0.015 ... 0.4 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel
50115202	HRTL 53/66,5000	0.015 ... 0.4 m 0.015 ... 0.4 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm
50107499	HRTR 53/66-S8	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel
50121900	HRTR 53/66,5000	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50107503	HRTR 53/66-S-S8	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel
50121899	HRTR 53/66-S,5000	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm
50107507	HRTR 53/66-XL-S8	0.005 ... 0.1 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel
50120622	HRTR 53/66-V-S8	0.015 ... 0.1 m 0.015 ... 0.1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel
50122261	HRTR 53/66-VXL-S8	0.01 ... 0.09 m 0.01 ... 0.09 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel

/// 55 series



This stainless steel sensor series show their strength particularly in the wet areas of your production line. With the innovative WASH-DOWN design, it is possible to thoroughly clean the entire system with all common cleaning agents and processes. The non-diffusive and chemically-stable materials prevent bacterial carry-overs and ensure the functional capability of the systems for years to come. The fact that their fastening systems are compatible to those of the standard series makes integration easier.



CDRH

Direct access to the online product selector at www.leuze.com/en/br55

Throughbeam Sensors

Stainless steel throughbeam photoelectric sensors in the WASH-DOWN design with standard hole pattern for use in wet areas.

LSR 55

Models with three different connections specially designed for detection of fast events are available for delivery. The enclosed optics design reliably prevents bacterial carry-overs.

Benefits:

- 316L stainless steel housing in WASH-DOWN-Design
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Scratch resistant and non-diffusive plastic front cover
- High switching frequency for detection of fast events

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50108715	► LSSR 55.8-S8	0 ... 8.5 m 0 ... 10 m		LED, red			DC	Connector, M8, stainless steel
50108721	◄ LSER 55/66-S8	0 ... 8.5 m 0 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel
50111969	► LSSR 55.8,5000	0 ... 8.5 m 0 ... 10 m		LED, red			DC	Cable, 5,000 mm
50111970	◄ LSER 55/66,5000	0 ... 8.5 m 0 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm
50108717	► LSSR 55.8,200-S12	0 ... 8.5 m 0 ... 10 m		LED, red			DC	Cable with connector, 200 mm, M12, stainless steel
50108723	◄ LSER 55/66,200-S12	0 ... 8.5 m 0 ... 10 m	1,000 Hz		Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with connector, 200 mm, M12, stainless steel

► transmitter / ◄ receiver

Retro-Reflective Sensors

Polarized and unpolarized retro-reflective photoelectric sensors for transport systems, for object positioning as well as autocollimation models for bottle and foil detection are available for delivery. In addition, there are laser devices with higher switching frequency specially designed for the detection of small parts.

PRK(L) 55

Polarized retro-reflective photoelectric sensors available with red light in V4A/316L and as laser models. The autocollimation function ensures precise detection of even highly-glossy objects.

Benefits:

- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Scratch resistant and non-diffusive plastic front cover
- A²LS – Active Ambient Light Suppression
- High switching frequency for detection of fast events
- Easy adjustment via lockable teach button or teach input

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50105797	PRKL 55/6.22,200-S12	0 ... 4 m 0 ... 3.5 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Cable with connector, 200 mm, M12, stainless steel
50105796	PRKL 55/6.22-S8	0 ... 4 m 0 ... 5 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M8, stainless steel
50114072	PRKL 55/6.22,5000	0 ... 4 m 0 ... 5 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Cable, 5,000 mm
50105804	PRK 55/66-S8	0.2 ... 5 m 0 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, stainless steel
50111966	PRK 55/66,5000	0.2 ... 5 m 0 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable, 5,000 mm
50105805	PRK 55/66,200-S12	0.2 ... 5 m 0 ... 6 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with connector, 200 mm, M12, stainless steel
50105792	PRK 55/6.22-S8	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Connector, M8, stainless steel
50111967	PRK 55/6.22,5000	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Cable, 5,000 mm
50105793	PRK 55/6.22,200-S12	0 ... 4 m 0 ... 5 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		DC	Cable with connector, 200 mm, M12, stainless steel

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 55.42 / RKR 55.42

Polarized and unpolarized retro-reflective photoelectric sensors especially for the detection of highly transparent bottles, foils (RKR devices) and glass panes (PRK devices) are available.

Benefits:

- Particularly suited for thin, highly transparent foils with thickness < 20 µm
- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Scratch resistant and non-diffusive plastic front cover
- High switching frequency for detection of fast events
- May also be used with glass reflectors (TG)
- Easy adjustment via lockable teach button or teach input

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50112992	PRK 55/6D.42-S8	0 ... 3 m 0 ... 3.5 m	1,000 Hz	LED, red	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Connector, M8, stainless steel
50112478	PRK 55/6D.42,200-S12	0 ... 3 m 0 ... 3.5 m	1,000 Hz	LED, red	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	DC	Cable with connector, 200 mm, M12, stainless steel
50112991	PRK 55/6.42-S8	0 ... 3 m 0 ... 3.5 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	DC	Connector, M8, stainless steel
50112477	PRK 55/6.42,200-S12	0 ... 3 m 0 ... 3.5 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	DC	Cable with connector, 200 mm, M12, stainless steel
50114071	PRK 55/6.42,5000	0 ... 3 m 0 ... 3.5 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	DC	Cable, 5,000 mm
50105794	RKR 55/6.42-S8	0 ... 1.5 m 0 ... 1.8 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	DC	Connector, M8, stainless steel

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50105795	RKR 55/6.42,200-S12	0 ... 1.5 m 0 ... 1.8 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Cable with connector, 200 mm, M12, stainless steel
50114073	RKR 55/6.42,5000	0 ... 1.5 m 0 ... 1.8 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Cable, 5,000 mm

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Light Scanners with Background Suppression

These light scanners with precise adjustment via multiturn potentiometer are designed for particularly reliable switching and can be used on nearly any background. Other models are optimized for highly-glossy and structured objects as well as the detection of grids and gaps.

HRTL 55 / HRTR 55

Depending on the design, these scanners offer a large scanning range or small light spots for the reliable detection of even glossy, structured objects. Models with elongated light spot for transparent objects or objects with openings are also available for delivery. A model with V-optics for polished object surfaces is also available.

Benefits:

- Enclosed optics design prevents bacterial carry-overs
- ECOLAB and CleanProof+ tested
- Scratch resistant and non-diffusive plastic front cover
- Exact adjustment of the scanning range via 8-gear spindle
- Very good black/white behavior and reliable switching, even on glossy objects and objects with colored structure
- Small, homogeneous light spot for detecting small parts
- A²LS – Active Ambient Light Suppression
- High switching frequency for detection of fast events

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50115204	HRTL 55/66,200-S12	0.015 ... 0.4 m 0.015 ... 0.4 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, stainless steel
50115206	HRTL 55/66-S8	0.015 ... 0.4 m 0.015 ... 0.4 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel
50115205	HRTL 55/66,5000	0.015 ... 0.4 m 0.015 ... 0.4 m	2,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm
50107496	HRTR 55/66-XL-S8	0.005 ... 0.1 m 0.005 ... 0.1 m	1,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel
50107484	HRTR 55/66-S8	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel
50107492	HRTR 55/66,200-S12	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with connector, 200 mm, M12, stainless steel
50111968	HRTR 55/66,5000	0.005 ... 0.4 m 0.005 ... 0.4 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm
50107493	HRTR 55/66-S-S8	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M8, stainless steel
50107495	HRTR 55/66-S,200-S12	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable with connector, 200 mm, M12, stainless steel
50114069	HRTR 55/66-S,5000	0.005 ... 0.2 m 0.005 ... 0.2 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm
50120623	HRTR 55/66-V,200-S12	0.015 ... 0.1 m 0.015 ... 0.1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, 200 mm, M12, stainless steel
50107498	HRTR 55/66-XL,200-S12	0.005 ... 0.1 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, 200 mm, M12, stainless steel
50114070	HRTR 55/66-XL,5000	0.005 ... 0.1 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 5,000 mm
50117199	HRTR 55/22-XL,5000	0.005 ... 0.1 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 5,000 mm
50116828	HRTR 55/44-XL,5000	0.005 ... 0.1 m 0.005 ... 0.1 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 5,000 mm

/// 95 Series



Series 95 is available as throughbeam photoelectric sensors, retro-reflective photoelectric sensors and light scanners in versions used for PET, foil and glass detection. Moreover, the sturdy housing with degree of protection IP 67 / IP 69K and the A²LS active ambient light suppression facilitate especially reliable detection, even in rough industrial environments.



Direct access to the online product selector at www.leuze.com/en/br95

Throughbeam Sensors

Throughbeam photoelectric sensors with glass optics and high performance reserve using visible red light or infrared light.

LS 95

Sturdy throughbeam photoelectric sensors with high performance reserve using visible red light or infrared light. The series has complementary switching outputs for light/dark switching as a control function.

Benefits:

- Activation input and warning output
- Sensitivity adjustment via multiturn potentiometer
- Complementary switching outputs for light/dark switching or as a control function

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50034509	► LSR 95/2.8 SE-L.1	0 ... 12 m 0 ... 18 m		LED, red			DC	Connector, M12, stainless steel
50034510	◄ ILSR 95/44 E-L.1	0 ... 12 m 0 ... 18 m	1,000 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel
50026835	► LS 95/2.8 SE-L.1	0 ... 12 m 0 ... 20 m		LED, infrared			DC	Connector, M12, stainless steel
50026836	◄ ILS 95/44 E-L.1	0 ... 12 m 0 ... 20 m	1,000 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel

► transmitter / ◄ receiver

Retro-Reflective Sensors

These retro-reflective photoelectric sensors with glass optics are available with visible red light or infrared light.

(I)PRK 95

Reliable retro-reflective photoelectric sensors with performance reserves for high system availability. The sensitivity adjustment is performed via multiturn potentiometer.

Benefits:

- With autocollimation principle
- Sensitivity adjustment via multiturn potentiometer
- Activation input and warning output
- Version with focus at 100 mm

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50034511	PRK 95/44 L	0 ... 6 m 0 ... 6 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel
50034512	IPRK 95/44 L.5	0.15 ... 6 m 0.15 ... 9 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel
50102613	IPRK 95/44 L.21	0 ... 4.2 m 0 ... 6 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel
50022680	IPRK 95/44 L.2	0 ... 4.2 m 0 ... 6 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel
50030257	IPRK 95/4.8 L.2	0 ... 4.2 m 0 ... 6 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, U _s switching	DC	Connector, M12, stainless steel
50027993	PRK 95/4 L.2	0 ... 3.4 m 0 ... 5 m	200 Hz	LED, red	Transistor, PNP, light switching		DC	Connector, M12, stainless steel
50022681	IPRK 95/44 L.3	0 ... 0.3 m 0 ... 0.3 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 95.4

Retro-reflective photoelectric sensors for reliable detection of transparent media (e. g. clear glass, PET, foil)

Benefits:

- User controlled sensitivity adjustment for transparent objects
- Autocollimation principle for transparent media
- Activation input and warning output

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50027095	PRK 95/A L.4	0 ... 1.8 m 0 ... 3 m		LED, red	AS-Interface IO			Connector, M12, stainless steel
50025609	PRK 95/44 L.4	0 ... 1.8 m 0 ... 3 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic light scanners

Light scanners are transmitter and receiver in one and react to the light reflected by the object to be detected, and therefore do not need a separate reflector. The switching distance possible is therefore dependent on the reflection properties of the object.

IRK(R) 95 / RKR 95

Light scanner using red light or infrared light with operating range adjustable via potentiometer. The exact adjustment is performed via multiturn potentiometer.

Benefits:

- Very good black/white behavior
- Exact adjustment via multiturn potentiometer
- Warning output
- PNP outputs for light/dark switching

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50034513	RKR 95/44-600 L	0.02 ... 0.6 m 0.02 ... 0.9 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel
50025612	IRKR 95/44-250 L	0.01 ... 0.25 m 0.01 ... 0.4 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel
50025611	IRK 95/44-250 L	0.01 ... 0.25 m 0.01 ... 0.4 m	1,000 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel

Light Scanners with Background Suppression

These sturdy light scanners with adjustable background suppression are available with visible red light or infrared light. They are suited for many applications.

FRK(R) 95

These scanners feature a very good black/white behavior and are particularly well-suited for glossy surfaces.

Benefits:

- Scanner with adjustable background suppression using visible red light or infrared light
- Very good black/white behavior
- Optimized for glossy/inclined surfaces
- Models with focused light beam
- NPN/PNP outputs for light/dark switching

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50034514	FRKR 95/44-350 L	0.005 ... 0.35 m 0.005 ... 0.5 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel
50025610	FRKR 95/44-150 L	0.012 ... 0.15 m 0.012 ... 0.19 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel
50034515	FRK 95/44-350 L	0.005 ... 0.35 m 0.005 ... 0.5 m	1,000 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel
50022794	FRK 95/22-150 L	0.012 ... 0.15 m 0.012 ... 0.23 m	1,000 Hz	LED, infrared	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, stainless steel
50019925	FRK 95/44-150 L	0.012 ... 0.15 m 0.012 ... 0.23 m	1,000 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, stainless steel

/// 96 Series



Regardless of operating principle, regardless of whether metal or plastic housing, regardless of whether DC or AC supply – the sensors of this series are all-rounders. With their large optical surface, IP 67 or IP 69K safety class and optional optics heating, they will win you over with their reliable detection with high performance reserves, large operating ranges and a multitude of options under rough environmental conditions.



Direct access to the online product selector at www.leuze.com/en/br96

Throughbeam Sensors

Throughbeam photoelectric sensors with particularly high performance reserve using visible red light or infrared light and numerous options.

LS 96

Sturdy throughbeam photoelectric sensors with high performance reserve using visible red light or infrared light for standard applications. Models with optics heatings are also available for delivery.

Benefits:

- Complementary outputs for standard applications and a wide range of input and output variants for optimal adaptation to the application
- Versatile options with warning output, activation input and switching delay
- Models with optics heating for use at low temperatures

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50103290	► LSS 96M-1090-43	0 ... 120 m 0 ... 150 m		LED, infrared			DC	Connector, M12, metal
50103291	◄ LSE 96M/P-3012-41	0 ... 120 m 0 ... 150 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50106871	► LSS 96M-1093-24	0 ... 120 m 0 ... 150 m		LED, infrared			DC	Terminal
50033328	◄ LSE 96M/P-3012-21	0 ... 120 m 0 ... 150 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50025228	► LSS 96M-1070-43			LED, infrared			DC	Connector, M12, metal
50034128	◄ LSE 96M/P-3010-41	0 ... 120 m 0 ... 150 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50025205	◄ LSE 96M/P-1040-42	0 ... 50 m 0 ... 65 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, light switching	DC	Connector, M12, metal
50025223	► LSS 96M-1090-24			LED, infrared			DC	Terminal
50033328	◄ LSE 96M/P-3012-21	0 ... 120 m 0 ... 150 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50025201	◄ LSE 96M/P-1130-22	0 ... 50 m 0 ... 65 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, light switching	DC	Terminal
50025225	► LSS 96M-1070-23			LED, infrared			DC	Terminal
50082296	◄ LSE 96M/P-3010-21	0 ... 120 m 0 ... 150 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50031295	◄ LSE 96M/N-1010-27	0 ... 50 m 0 ... 65 m	500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Terminal
50080081	► LSS 96M-1350-26			LED, infrared			AC/DC	Terminal
50031651	◄ LSE 96M/R-3310-25	0 ... 120 m 0 ... 150 m	20 Hz		Relay, break-contact/ make-contact, light switching	Relay, dark switching	AC/DC	Terminal
50080080	◄ LSE 96M/R-1310-25	0 ... 50 m 0 ... 65 m	20 Hz		Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50025254	► LSS 96K-1070-43	0 ... 50 m 0 ... 65 m		LED, infrared			DC	Connector, M12, plastic
50025258	◄ LSE 96K/P-1010-41	0 ... 50 m 0 ... 65 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50080483	◄ LSE 96K/P-1030-41	0 ... 50 m 0 ... 65 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50103004	◄ LSE 96K/P-1015-45	0 ... 50 m 0 ... 65 m	500 Hz		Transistor, PNP, light switching		DC	Connector, M12, plastic

► transmitter / ◄ receiver

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50025253	► LSS 96K-1350-26	0 ... 50 m 0 ... 65 m		LED, infrared			AC/DC	Terminal
50025256	◄ LSE 96K/R-1320-25	0 ... 50 m 0 ... 65 m	20 Hz		Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50025257	◄ LSE 96K/R-1310-25	0 ... 50 m 0 ... 65 m	20 Hz		Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50025255	► LSS 96K-1070-23	0 ... 50 m 0 ... 65 m		LED, infrared			DC	Terminal
50025259	◄ LSE 96K/P-1030-21	0 ... 50 m 0 ... 65 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50108812	► LSS 96K-1079-43	0 ... 30 m 0 ... 35 m		LED, infrared			DC	Connector, M12, plastic
50108813	◄ LSE 96K/P-1039.1-41	0 ... 30 m 0 ... 35 m	500 Hz		Transistor, PNP, light/dark reversible		DC	Connector, M12, plastic
50032129	► LSS 96M-1206-43	0 ... 30 m 0 ... 39 m		LED, red			DC	Connector, M12, metal
50025197	◄ LSE 96M/P-1170-42	0 ... 30 m 0 ... 39 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, light switching	DC	Connector, M12, metal
50032128	◄ LSE 96M/P-1816-41	0 ... 30 m 0 ... 39 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50031574	► LSS 96M-120W-43	0 ... 30 m 0 ... 39 m		LED, red			DC	Connector, M12, metal
50031575	◄ LSE 96M/P-181W-41	0 ... 30 m 0 ... 39 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50025217	► LSS 96M-1200-23	0 ... 30 m 0 ... 39 m		LED, red			DC	Terminal
50025195	◄ LSE 96M/P-1170-22	0 ... 30 m 0 ... 39 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, light switching	DC	Terminal
50080657	► LSS 96K-1213-24	0 ... 30 m 0 ... 39 m		LED, red			DC	Terminal
50030269	◄ LSE 96K/P-1140-21	0 ... 30 m 0 ... 39 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50032004	► LSS 96M-175W-26	0 ... 30 m 0 ... 39 m		LED, red			AC/DC	Terminal
50032003	◄ LSE 96M/R-176W-25	0 ... 30 m 0 ... 39 m	20 Hz		Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50082040	► LSS 96M-180W-44	0 ... 30 m 0 ... 39 m		LED, red	AS-Interface IO			Connector, M12, metal
50082039	◄ LSE 96M/A-182W-44	0 ... 30 m 0 ... 39 m	500 Hz		AS-Interface IO			Connector, M12, metal

► transmitter / ◄ receiver

Retro-Reflective Sensors

Polarized and unpolarized retro-reflective photoelectric sensors with particularly high performance reserve using visible red light or infrared light and other options.

(P)RK 96

Polarized and unpolarized retro-reflective photoelectric sensors with large operating range using visible red light. Extensive input/output models for optimal adaptation to the application. The product range also contains sensors for detection of transparent objects (e. g. clear glass, PET, foil)

Benefits:

- Complementary outputs for standard applications and a wide range of input and output variants for optimal adaptation to the application
- Connection via M12 connector or terminal compartment
- Multiple options with warning output, activation input, switching delays and optics heating for use at low temperatures

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50041042	PRK 96K/P-3368-41	0.3 ... 26 m 0.1 ... 28 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50107216	PRK 96K/R-3428.1-25	0.3 ... 20 m 0.1 ... 24 m	20 Hz	LED, red	Relay, break-contact/ make-contact, light/dark reversible		AC/DC	Terminal
50035351	PRK 96K/R-3428-25	0.3 ... 20 m 0.1 ... 24 m	20 Hz	LED, red	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50082067	PRK 96M/A-3410-44	0.3 ... 15 m 0.1 ... 18 m	1,000 Hz	LED, red	AS-Interface IO			Connector, M12, metal
50082066	PRK 96M/R-3420-25	0.3 ... 15 m 0.1 ... 18 m	20 Hz	LED, red	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50061111	PRK 96M/R-3430-25	0.3 ... 15 m 0.1 ... 18 m	20 Hz	LED, red	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50102379	PRK 96M/N-3366-27	0.3 ... 15 m 0.1 ... 18 m	1,000 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Terminal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50061452	PRK 96M/P-3380-41	0.3 ... 15 m 0.1 ... 18 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50082065	PRK 96M/P-3360-21	0.3 ... 15 m 0.1 ... 18 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50105587	PRK 96K/R-1420.1-25	0.3 ... 8 m 0.1 ... 10 m	20 Hz	LED, red	Relay, break-contact/ make-contact, light/dark reversible		AC/DC	Terminal
50025167	PRK 96K/R-1420-25	0.3 ... 8 m 0.1 ... 10 m	20 Hz	LED, red	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50025168	PRK 96K/R-1430-25	0.3 ... 8 m 0.1 ... 10 m	20 Hz	LED, red	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50104279	PRK 96M/P-1361.1-47	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light/dark reversible		DC	Connector, M12, metal
50103216	PRK 96K/P-1360.1-41	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light/dark reversible		DC	Connector, M12, plastic
50031549	PRK 96M/P-1400-42	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50025186	PRK 96M/P-1370-42	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, light switching	DC	Connector, M12, metal
50082092	PRK 96M/P-1361-47	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50080477	PRK 96M/P-1362-47	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50025166	PRK 96K/P-1380-41	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50025165	PRK 96K/P-1360-41	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50109208	PRK 96M/P-1375-22	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50025182	PRK 96M/P-1370-22	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, light switching	DC	Terminal
50025163	PRK 96K/P-1360-21	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50025178	PRK 96M/P-1400-22	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50080476	PRK 96K/P-1361-29	0.3 ... 8 m 0.1 ... 10 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50081325	PRK 96K/N-1380-46	0 ... 8 m 0.1 ... 10 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, metal
50105622	PRK 96M/P-1832-41	0 ... 7 m 0 ... 8.5 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50082060	PRK 96M/P-2838-28	0 ... 7 m 0 ... 8.5 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50080484	RK 96K/R-1560-25	0.3 ... 15 m 0.1 ... 18 m	20 Hz	LED, infrared	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50030648	RK 96M/P-1440-21	0.3 ... 15 m 0.1 ... 18 m	1,000 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

PRK 96-183x / PRK 96-185x

Polarized retro-reflective photoelectric sensors with large operating range and red light especially for the detection of highly transparent foils.

Benefits:

- Autocollimation principle allows use at zero distance and provides a constant performance reserve across the entire operating range
- Visible red light
- Complementary outputs, sensitivity adjustment and delay before start-up for optimal adaptation to the application
- Connection via comfortable terminal compartment up to 1.5 mm² or metal M12 connector

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50029881	PRK 96M/R-1858-25	0 ... 7 m 0 ... 8.5 m	20 Hz	LED, red	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50080760	PRK 96M/P-1838-41	0 ... 7 m 0 ... 8.5 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50029880	PRK 96M/P-1838-21	0 ... 7 m 0 ... 8.5 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50080470	PRK 96M/R-1850-25	0 ... 1.5 m 0 ... 1.85 m	20 Hz	LED, red	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50080469	PRK 96M/P-1830-41	0 ... 1.5 m 0 ... 1.85 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50028975	PRK 96M/P-1830-21	0 ... 1.5 m 0 ... 1.85 m	1,000 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic Light Scanners

Energetic light scanners with good black/white behavior and large scanning range.

RT 96

Reliable light scanners with potentiometer for sensitivity adjustment for the minimal short range.

Benefits:

- Sensitivity adjustment via potentiometer
- Complementary switching outputs and delay before start-up for optimal adaptation to the application
- Minimal short range
- Connection via M12 connector or terminal compartment

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50041598	RT 96M/R-1574-800-25	0.02 ... 0.8 m 0.02 ... 1.2 m	20 Hz	LED, infrared	Relay, break-contact/ make-contact, light switching	Relay, dark switching	AC/DC	Terminal
50041595	RT 96K/N-1444-800-46	0.02 ... 0.8 m 0.02 ... 1.2 m	1,000 Hz	LED, infrared	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50041597	RT 96M/P-1474-800-42	0.02 ... 0.8 m 0.02 ... 1.2 m	1,000 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50081178	RT 96K/P-1444-800-41	0.02 ... 0.8 m 0.02 ... 1.2 m	1,000 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50081177	RT 96K/P-1444-800-21	0.02 ... 0.8 m 0.02 ... 1.2 m	1,000 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal

Light Scanners with Background Suppression

Powerful light scanners with background suppression for particularly large operating range.

HRT 96

Light scanners with adjustable background suppression using visible red light and infrared light with versatile options such as switching delays, activation input and optics heating.

Benefits:

- Complementary outputs, scanning range adjustment and delay before start-up for optimal adaptation to the application
- Connection via M12 connector or terminal compartment
- Multiple options with switching delays, activation input and optics heating for use at low temperatures
- Up to three programmable switching points for short range/distant range

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50080048	HRT 96M/A-1670-800-44	0.1 ... 0.8 m 0.1 ... 1.2 m	300 Hz	LED, red	AS-Interface IO			Connector, M12, metal
50025126	HRT 96M/P-1640-800-41	0.1 ... 0.8 m 0.1 ... 1.2 m	300 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50080047	HRT 96M/P-1630-800-41	0.1 ... 0.8 m 0.1 ... 1.2 m	300 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50032127	HRT 96M/P-1636-800-41	0.1 ... 0.8 m 0.1 ... 1.2 m	300 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50038471	HRT 96K/P-1631-800-47	0.1 ... 0.8 m 0.1 ... 1.2 m	300 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50081464	HRT 96K/P-1640-800-41	0.1 ... 0.8 m 0.1 ... 1.2 m	300 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50080242	HRT 96K/P-1630-800-41	0.1 ... 0.8 m 0.1 ... 1.2 m	300 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50080327	HRT 96K/P-1630-800-21	0.1 ... 0.8 m 0.1 ... 1.2 m	300 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50025124	HRT 96M/P-1640-800-21	0.1 ... 0.8 m 0.1 ... 1.2 m	300 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50060858	HRT 96M/P-3604-2000-42	0.1 ... 2 m 0.1 ... 2.5 m	300 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, light switching	DC	Connector, M12, metal
50060857	HRT 96M/P-1600-2000-42	0.1 ... 2 m 0.1 ... 2.5 m	300 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, light switching	DC	Connector, M12, metal
50113909	HRT 96M/P-1620-1800-41	0.1 ... 1.8 m 0.1 ... 2 m	100 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50105667	HRT 96K/P-1600-1800-41	0.1 ... 1.8 m 0.1 ... 2 m	300 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50025112	HRT 96M/A-1660-1200-44	0.1 ... 1.2 m 0.1 ... 1.8 m	300 Hz	LED, infrared	AS-Interface IO			Connector, M12, metal
50080075	HRT 96M/R-1690-1200-25	0.1 ... 1.2 m 0.1 ... 1.8 m	20 Hz	LED, infrared	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50080076	HRT 96M/R-1680-1200-25	0.1 ... 1.2 m 0.1 ... 1.8 m	20 Hz	LED, infrared	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50025131	HRT 96K/R-1690-1200-25	0.1 ... 1.2 m 0.1 ... 1.8 m	20 Hz	LED, infrared	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50025132	HRT 96K/R-1680-1200-25	0.1 ... 1.2 m 0.1 ... 1.8 m	20 Hz	LED, infrared	Relay, break-contact/ make-contact, light switching		AC/DC	Terminal
50040358	HRT 96M/N-1606-1200-27	0.1 ... 1.2 m 0.1 ... 1.8 m	300 Hz	LED, infrared	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Terminal
50103217	HRT 96K/P-1600.1-1200-41	0.1 ... 1.2 m 0.1 ... 1.8 m	300 Hz	LED, infrared	Transistor, PNP, light/dark reversible		DC	Connector, M12, plastic
50025133	HRT 96K/P-1600-1200-41	0.1 ... 1.2 m 0.1 ... 1.8 m	300 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50025118	HRT 96M/P-1610-1200-41	0.1 ... 1.2 m 0.1 ... 1.8 m	300 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50061102	HRT 96M/P-1620-1200-41	0.1 ... 1.2 m 0.1 ... 1.8 m	300 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, metal
50103090	HRT 96K/P-1607-1200-49	0.1 ... 1.2 m 0.1 ... 1.8 m	300 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50025116	HRT 96M/P-1610-1200-21	0.1 ... 1.2 m 0.1 ... 1.8 m	300 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50025135	HRT 96K/P-1600-1200-21	0.1 ... 1.2 m 0.1 ... 1.8 m	300 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal
50025114	HRT 96M/P-1620-1200-21	0.1 ... 1.2 m 0.1 ... 1.8 m	300 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Terminal

HRT(I)L 96B

Laser light scanners with large detection range for universal application (visible red light or infrared light). The time lock prevents inadvertent changes to switching points.

Benefits:

- Light propagation time measurement makes use possible under difficult environmental conditions (brightness, light, interfering contours)
- Extremely simple operation, teachable switching points and teach input
- Time lock prevents unintentional changing of the switching points
- Optimized for positioning applications and reliable object detection (e. g. compartment occupation check, shelf positioning, collision protection)
- Diagnostics function
- Sensors in laser class 1 and 2 available





Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50115690	HRTL 96B M/66.04S-S12	0.15 ... 25 m 0.1 ... 30 m	100 Hz	Laser, red	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50113800	HRTL 96B M/66.02S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, red	Transistor, push-pull, dark switching	Transistor, push-pull, dark switching	DC	Connector, M12, metal
50112803	HRTL 96B M/6.49.02S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)		DC	Connector, M12, metal
50111208	HRTL 96B M/C66.01S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50110952	HRTL 96B M/V66.01S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50114306	HRTL 96B M/C66.03S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50108889	HRTL 96B M/66.01S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50112862	HRTL 96B M/66.9.03S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50111815	HRTL 96B M/6.4.02S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)		DC	Connector, M12, metal
50110990	HRTL 96B M/6.9S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50112804	HRTL 96B M/666.01S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50116678	HRTL 96B M/C66.01.C1S-S12	0.1 ... 6 m 0.05 ... 6.5 m	50 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50115016	HRTL 96B M/66.01S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, infrared	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50115015	HRTL 96B M/C66.01S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, infrared	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	DC	Connector, M12, metal
50117920	HRTL 96B M/66.03S-S12	0.1 ... 6 m 0.05 ... 6.5 m	100 Hz	Laser, infrared	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, metal

//PHOTOELECTRIC SENSORS/ LIGHT SCANNERS, CYLINDRICAL HOUSING

TO KEEP YOUR PROCESS RUNNING SMOOTHLY

The common characteristic of sensors from this area is their cylindrical design. This facilitates extremely simple and fast mounting in the system.

SELECTION TABLE – cubic series

Series	Dimensions in mm (B×H×T)	Housing material			Operating principle	Typ. operating range limit	Light source			Max. switching frequency	Response time	Special object features		
		Plastic	Metal	Stainless steel			Infrared light	Red light	Laser			Shiny surface (metallic, foil coated object)	Transparent medium (glass, PET, foil)	Small part
 318	M18×50	●	●		Throughbeam sensor	0...120 m			●	5000 Hz	0.1 ms			●
					Retro-reflective sensor	0.02...15 m		●	●	5000 Hz	0.1 ms			●
					Energetic light scanner	0...1000 mm		●	●	5000 Hz	0.1 ms			●
					Diff. refl. scanner with backgr. suppr.	1...140 mm		●		1000 Hz	0.5 ms			
					Light scanner with fading	0...280 mm		●		500 Hz	1 ms			
 328	M18×46			●	Throughbeam sensor	0...15 m		●		500 Hz	1 ms			
					Retro-reflective sensor	0.02...6 m		●		500 Hz	1 ms			
					Energetic light scanner	1...1000 mm		●		500 Hz	1 ms			
					Light scanner with fading	1...280 mm		●		500 Hz	1 ms			
 412	M12×55	●			Throughbeam sensor	0...8 m		●		500 Hz	1 ms			
					Retro-reflective sensor	0.05...1.6 m		●		700 Hz	0.7 ms			
					Energetic light scanner	0...400 mm		●		700 Hz	0.7 ms			
 618	M18×60	●			Throughbeam sensor	0...12 m	●			500 Hz	1 ms			
					Retro-reflective sensor	0...7 m		●		500 Hz	1 ms			
					Energetic light scanner	0...300 mm	●			500 Hz	1 ms			

/// 318-plastic Series



Our 318B family of photoelectric sensors is proof that affordable and functional do not have to be a contradiction in terms. A robust plastic sleeve, reliable detection behavior and the intelligent omni-mount mounting process for M18 hole mounting make these sensors the first choice for standard detection tasks in many areas of application.



*1 only 318 series
*2 only 318B series

Direct access to the online product selector at www.leuze.com/en/br318-k

Throughbeam Sensors

The photoelectric sensors of this series offer a high performance reserve and are suited for use in rough, industrial environments.

L318B

The L318B throughbeam photoelectric sensor offers simple alignment with its optimized beam geometry. It is also suitable for the simple detection of flat objects. Deactivation inputs enable testing of the sensor. The simple fine adjustment with omni-mount, the embedded mounting option and variants with axial and angled optics round out the portfolio.

Benefits:

- High performance reserve
- Simple alignment by means of optimized beam geometry
- Simple detection of flat objects

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50116853	► LS318B/9D-M12	0 ... 10 m 0 ... 15 m		LED, red			DC	Connector, M12, plastic
50116845	◄ LE318B/2N-M12	0 ... 10 m 0 ... 15 m	500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50116847	◄ LE318B/4P-M12	0 ... 10 m 0 ... 15 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50116852	► LS318B/9D	0 ... 10 m 0 ... 15 m		LED, red			DC	Cable, 2,000 mm
50116844	◄ LE318B/2N	0 ... 10 m 0 ... 15 m	500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50116846	◄ LE318B/4P	0 ... 10 m 0 ... 15 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50116855	► LS318B.W/9D-M12	0 ... 5.5 m 0 ... 8 m		LED, red			DC	Connector, M12, plastic
50116849	◄ LE318B.W/2N-M12	0 ... 5.5 m 0 ... 8 m	500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50116851	◄ LE318B.W/4P-M12	0 ... 5.5 m 0 ... 8 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50116854	► LS318B.W/9D	0 ... 5.5 m 0 ... 8 m		LED, red			DC	Cable, 2,000 mm
50116848	◄ LE318B.W/2N	0 ... 5.5 m 0 ... 8 m	500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50116850	◄ LE318B.W/4P	0 ... 5.5 m 0 ... 8 m	500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm

transmitter / receiver

Retro-Reflective Sensors

Through the use of polarized light, these photoelectric sensors can even reliably detect objects with glossy surfaces.

PRK318B

Reliable suppression of direct reflections through polarization filter and optimized beam path for fast commissioning. The simple fine adjustment with omni-mount, the embedded mounting option and variants with axial and angled optics round out the portfolio.

Benefits:

- High performance reserve
- Safe suppression of direct reflection due to polarization filter

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50116857	PRK318B/2N-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50116856	PRK318B/2N	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50116859	PRK318B/4P-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50116858	PRK318B/4P	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50116861	PRK318B.W/2N-M12	0.02 ... 4 m 0.02 ... 5 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50116860	PRK318B.W/2N	0.02 ... 4 m 0.02 ... 5 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50116863	PRK318B.W/4P-M12	0.02 ... 4 m 0.02 ... 5 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50116862	PRK318B.W/4P	0.02 ... 4 m 0.02 ... 5 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic Light Scanners

These sensors perform detection directly on an object and require no reflector. Versions are available that have been optimized for various distances.

ET318B / FT318B

These red-light scanners facilitate robust object detection for homogeneous or similar objects. Through the simple sensitivity adjustment with two-level teach (object/back-ground), they are particularly flexible in use. These sensors feature the A²LS active ambient light suppression and easy alignment through brightly visible brightVision® light spot

Benefits:

- Energetic reflection light scanner with light/dark switching
- Scanning range adjustment via teach-in
- Axial and 90° light beam gate for flexible integration
- Simple fine adjustment via Omnimount
- Embedded mounting option
- Full control through green and yellow indicator LEDs and complementary outputs
- Robust plastic housing acc. to IP 67 for industrial application

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50122564	ET318B.3/2N-M12	0.001 ... 0.7 m 0 ... 1 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122565	ET318B.3/2N	0.001 ... 0.7 m 0 ... 1 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122562	ET318B.3/4P-M12	0.001 ... 0.7 m 0 ... 1 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122563	ET318B.3/4P	0.001 ... 0.7 m 0 ... 1 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122560	ET318B.W3/2N-M12	0.005 ... 0.35 m 0.001 ... 0.45 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122561	ET318B.W3/2N	0.005 ... 0.35 m 0.001 ... 0.45 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122558	ET318B.W3/4P-M12	0.005 ... 0.35 m 0.001 ... 0.45 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122559	ET318B.W3/4P	0.005 ... 0.35 m 0.001 ... 0.45 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122556	FT318B.3/2N-M12	0.001 ... 0.215 m 0 ... 0.28 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122557	FT318B.3/2N	0.001 ... 0.215 m 0 ... 0.28 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122554	FT318B.3/4P-M12	0.001 ... 0.215 m 0 ... 0.28 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122555	FT318B.3/4P	0.001 ... 0.215 m 0 ... 0.28 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122552	FT318B.W3/2N-M12	0.002 ... 0.1 m 0 ... 0.12 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122553	FT318B.W3/2N	0.002 ... 0.1 m 0 ... 0.12 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122550	FT318B.W3/4P-M12	0.002 ... 0.1 m 0 ... 0.12 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122551	FT318B.W3/4P	0.002 ... 0.1 m 0 ... 0.12 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm

Light Scanners with Background Suppression

These diffuse reflection light scanners with background suppression and highly visible red light spot are well-suited for detection of fast events thanks to their high switching frequency.

HRTR 318

Light scanner with very short, robust housing with straight optics and active ambient light suppression.

Benefits:

- Exact background suppression, electronically adjustable
- Nearly colour-independent object detection
- Clearly visible red light spot
- High switching frequency for detection of fast events
- A²LS - Active Ambient Light Suppression
- Very short, robust cylindrical stainless steel or plastic housing with straight optics

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50106085	HRTR 318K/66-120-S12	0.001 ... 0.12 m 0.001 ... 0.14 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic
50106089	HRTR 318K/66-120	0.001 ... 0.12 m 0.001 ... 0.14 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 2,000 mm

/// 318-metal Series



The stainless steel metal housing and the range of models make these sensors from the 318 series interesting for all customers who are looking a sensor program with sturdy mounting and metal nuts for challenging applications.



Direct access to the online product selector at www.leuze.com/en/br318-m

Throughbeam Sensors

Throughbeam photoelectric sensors with long operating range in red laser light and straight optics.

LS(L)318

Throughbeam photoelectric laser sensors in stainless steel housing in cylindrical M18 design.

Benefits:

- Sensitivity adjustment via potentiometer
- Fixed beam geometry, convergent
- Activation input for testing and interlinking of the sensor
- Complementary switching outputs for light/dark switching or as a control function

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50083172	► LSSL 318M-S12			Laser, red			DC	Connector, M12, plastic
50083176	◄ LSEL 318M/P-S12	0 ... 100 m 0 ... 120 m	5,000 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50083180	◄ LSEL 318M/P-B5-S12	0 ... 15 m 0 ... 18 m	5,000 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50083171	► LSSL 318M			Laser, red			DC	Cable, 2,000 mm
50083175	◄ LSEL 318M/P	0 ... 100 m 0 ... 120 m	5,000 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50083179	◄ LSEL 318M/P-B5	0 ... 15 m 0 ... 18 m	5,000 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm

► transmitter / ◄ receiver

Retro-Reflective Sensors

Polarized retro-reflective photoelectric sensors with straight optics and very short construction for application in limited spaces.

PRKL 318

Polarized and unpolarized laser retro-reflective photoelectric sensors in sturdy stainless steel housing in cylindrical M18 design. LED and laser devices are available.

Benefits:

- Sturdy cylindrical stainless steel housing M18, degree of protection IP 67 for industrial application
- Sensitivity adjustment via potentiometer
- Fixed beam geometry, convergent
- Complementary switching outputs for light/dark switching or as a control function

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50083184	PRKL 318M/P-S12	0.15 ... 11 m 0.12 ... 15 m	5,000 Hz	Laser, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50083183	PRKL 318M/P	0.15 ... 11 m 0.12 ... 15 m	1,000 Hz	Laser, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic Light Scanners

Energetic diffuse reflection light scanner with straight optics for application in limited spaces.

RTL 318

Energetic diffuse reflection light scanner in cylindrical M18 design.

Benefits:

- Sensitivity adjustment via potentiometer
- Fixed beam geometry, convergent
- Complementary switching outputs for light/dark switching or as a control function

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50083188	RTL 318M/P-300-S12	0 ... 0.3 m 0 ... 0.35 m	5,000 Hz	Laser, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic

Light scanners with background suppression

Diffuse reflection scanners with background suppression and straight optics.

HRTR 318

Light scanners with background suppression and highly visible red light spot in cylindrical M18 design for nearly color-independent object detection.

Benefits:

- Exact background suppression, electronically adjustable
- Nearly colour-independent object detection
- Clearly visible red light spot
- A²LS – Active Ambient Light Suppression

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50106086	HRTR 318M/66-120-S12	0.001 ... 0.12 m 0.001 ... 0.14 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Connector, M12, plastic
50106090	HRTR 318M/66-120	0.001 ... 0.12 m 0.001 ... 0.14 m	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/ dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/ light switching (NPN)	DC	Cable, 2,000 mm

/// 328 Series



The 328 series photoelectric sensor family unifies the sturdiness of a stable stainless steel metal thread in the plastic housing with high functionality, all at a low price. With their reliable detection behavior, the versatile mounting options thanks to extensive accessories and models with axial and angled optics, these sensors are the perfect choice for standard detection tasks in many challenging areas of application.



Direct access to the online product selector at www.leuze.com/en/br328

Throughbeam Sensors

The photoelectric sensors of this series offer a high performance reserve and are suited for use in industrial environments with their metal thread in the plastic housing.

L328

The L328 throughbeam photoelectric sensor in the sturdy plastic housing with metal thread simplifies alignment thanks to optimized beam geometry. It is also suitable for the simple detection of flat objects. The simple fine adjustment and deactivation inputs for testing the sensor round out the portfolio of these sensors.

Benefits:

- High performance reserve
- Simple alignment by means of optimized beam geometry
- Simple detection of flat objects

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50122702	► LS328/9D-M12	0 ... 10 m 0 ... 15 m		LED, red			DC	Connector, M12, plastic
50122711	◄ LE328/2N-M12		500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122709	◄ LE328/4P-M12		500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122699	► LS328/XX-M12	0 ... 10 m 0 ... 15 m		LED, red			DC	Connector, M12, plastic
50122708	◄ LE328/4X-M12		500 Hz		Transistor, PNP, light switching		DC	Connector, M12, plastic
50122703	► LS328/9D	0 ... 10 m 0 ... 15 m		LED, red			DC	Cable, 2,000 mm
50122712	◄ LE328/2N		500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122710	◄ LE328/4P		500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122700	► LS328.W/9D-M12	0 ... 5.5 m 0 ... 8 m		LED, red			DC	Connector, M12, plastic
50122706	◄ LE328.W/2N-M12		500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122704	◄ LE328.W/4P-M12		500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122701	► LS328.W/9D	0 ... 5.5 m 0 ... 8 m		LED, red			DC	Cable, 2,000 mm
50122707	◄ LE328.W/2N		500 Hz		Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122705	◄ LE328.W/4P		500 Hz		Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm

► transmitter / ◄ receiver

Switching
SensorsMeasuring
Sensors

Retro-Reflective Photoelectric Sensor

These retro-reflective photoelectric sensors with metal thread can reliably detect objects even with glossy surfaces through the use of polarized light.

PRK328

Reliable blanking of direct reflections by the polarization filter, an optimized beam path for quick commissioning and simple fine adjustment characterize these sensors in the sturdy plastic housings with metal thread.

Benefits:

- High performance reserve
- Safe suppression of direct reflection due to polarization filter

Products for
Safety at Work

Identification

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50122697	PRK328.3/2N-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122698	PRK328.3/2N	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122695	PRK328.3/4P-M12	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122696	PRK328.3/4P	0.02 ... 4.5 m 0.02 ... 6 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122691	PRK328.W3/2N-M12	0.02 ... 4 m 0.02 ... 5 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122694	PRK328.W3/2N	0.02 ... 4 m 0.02 ... 5 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122689	PRK328.W3/4P-M12	0.02 ... 4 m 0.02 ... 5 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122690	PRK328.W3/4P	0.02 ... 4 m 0.02 ... 5 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Data Transmission /
Control ComponentsIndustrial Image
Processing

Accessories

Energetic Light Scanners

These sturdy sensors with metal thread in the plastic housing perform detection directly on an object and do not require a reflector. Versions are available for various distances.

ET328 / FT328

These red light scanners in the sturdy plastic housing with metal thread facilitate robust object detection. The simple adjustment to the object through the teach button with two levels makes installation a piece of cake. These sensors feature the A²LS active ambient light suppression and easy alignment through brightly visible brightVision® light spot.

Benefits:

- Energetic reflection light scanner with light/dark switching
- Scanning range adjustment via teach-in
- Axial and 90° light beam gate for flexible integration
- Sturdy plastic housing with stainless steel threaded sleeve with cylindrical M18 design
- Full control through green and yellow indicator LEDs and complementary outputs

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Switching output 2	Voltage type	Connection
50122728	ET328.3/2N-M12	0.001 ... 0.7 m 0.001 ... 1 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122729	ET328.3/2N	0.001 ... 0.7 m 0.001 ... 1 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122726	ET328.3/4P-M12	0.001 ... 0.7 m 0.001 ... 1 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122727	ET328.3/4P	0.001 ... 0.7 m 0.001 ... 1 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122724	ET328.W3/2N-M12	0.005 ... 0.35 m 0.001 ... 0.45 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122725	ET328.W3/2N	0.005 ... 0.35 m 0.001 ... 0.45 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122721	ET328.W3/4P-M12	0.005 ... 0.35 m 0.001 ... 0.45 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122722	ET328.W3/4P	0.005 ... 0.35 m 0.001 ... 0.45 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122719	FT328.3/2N-M12	0.001 ... 0.215 m 0.001 ... 0.280 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122720	FT328.3/2N	0.001 ... 0.215 m 0.001 ... 0.280 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122717	FT328.3/4P-M12	0.001 ... 0.215 m 0.001 ... 0.280 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122718	FT328.3/4P	0.001 ... 0.215 m 0.001 ... 0.280 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm
50122715	FT328.W3/2N-M12	0.002 ... 0.1 m 0 ... 0.12 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Connector, M12, plastic
50122716	FT328.W3/2N	0.002 ... 0.1 m 0 ... 0.12 m	500 Hz	LED, red	Transistor, NPN, light switching	Transistor, NPN, dark switching	DC	Cable, 2,000 mm
50122713	FT328.W3/4P-M12	0.002 ... 0.1 m 0 ... 0.12 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Connector, M12, plastic
50122714	FT328.W3/4P	0.002 ... 0.1 m 0 ... 0.12 m	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, dark switching	DC	Cable, 2,000 mm

SMARTER PRODUCT USABILITY

It's the accessories that make our range of products complete.

We place great value on, e. g., flexible mounting solutions and simple integration through variable connection technology, alignment aids and innovative mounting systems. Pre-configured and pre-mounted systems also facilitate fast and simple commissioning of, e. g., muting systems for applications in safety at work.



Discover our extensive line of accessories on the web at: www.leuze.com/en/accessories



/// 412 Series



The extremely compact M12 design of the 412 series opens many interesting applications, e. g., in assembly and handling technology or packaging technology.



Direct access to the online product selector at www.leuze.com/en/br412

Throughbeam Sensors

Short and compact throughbeam photoelectric sensors with visible red light.

LS 412

Throughbeam photoelectric sensors with visible red light in cylindrical M12 design.

Benefits:

- Slim and short cylindrical metal housing M12
- Sensitivity adjustment for optimum adaptation to the application
- Light/dark switching via control cable

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50081431	SET LS 412M/P-S12	0 ... 6 m 0 ... 8 m	500 Hz	LED, red	Transistor, PNP, light/dark reversible	DC	Connector, M12, metal
50081432	LS 412M/P	0 ... 6 m 0 ... 8 m	500 Hz	LED, red	Transistor, PNP, light/dark reversible	DC	Cable, 2,000 mm

Set consists of transmitter and receiver

Retro-Reflective Sensors

Short and compact retro-reflective photoelectric sensors with visible red light and polarization filter.

PRK 412

Retro-reflective photoelectric sensor in slim metal housing is well-suited for detection of fast events thanks to the high switching frequency.

Benefits:

- High switching frequency for detection of fast events
- Slim and short cylindrical metal housing M12
- Light/dark switching via control cable

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50081407	PRK 412M/P-S12	0.15 ... 1.3 m 0.15 ... 1.6 m	700 Hz	LED, red	Transistor, PNP, light/dark reversible	DC	Connector, M12, metal
50081408	PRK 412M/P	0.15 ... 1.3 m 0.15 ... 1.6 m	700 Hz	LED, red	Transistor, PNP, light/dark reversible	DC	Cable, 2,000 mm

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic Light Scanners

Short and compact energetic light scanner with visible red light.

RT 412

Energetic retro-reflective photoelectric sensor with visible red light in cylindrical M12 design for detection of fast events.

Benefits:

- High switching frequency for detection of fast events
- Slim and short cylindrical metal housing M12
- Light/dark switching via control cable

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50081409	RT 412M/P-200-S12	0 ... 0.2 m 0 ... 0.4 m	700 Hz	LED, red	Transistor, PNP, light/dark reversible	DC	Connector, M12, metal
50081410	RT 412M/P-200	0 ... 0.2 m 0 ... 0.4 m	700 Hz	LED, red	Transistor, PNP, light/dark reversible	DC	Cable, 2,000 mm

/// 618 Series

With its full-metal housing, this M18 design makes no compromises in terms of maximum robustness.



Direct access to the online product selector at www.leuze.com/en/br618

Throughbeam Sensors

Sturdy throughbeam photoelectric sensors with infrared light.

LS 618

Throughbeam photoelectric sensors with infrared light and light/dark switching via control cable.

Benefits:

- Sturdy metal housing in cylindrical M18 design
- Sensitivity adjustment for optimum adaptation to the application
- Dual LED display for easy commissioning
- M12 connector for fast installation

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50038451	SET LS 618/4-S12	0 ... 10 m 0 ... 12 m	500 Hz	LED, infrared	Transistor, PNP, light/dark reversible	DC	Connector, M12, metal

Set consists of transmitter and receiver

Retro-Reflective Sensors

Retro-reflective photoelectric sensors with red light in sturdy metal housing.

PRK 618

Retro-reflective photoelectric sensor with light/dark switching via control cable.

Benefits:

- Sturdy metal housing in cylindrical M18 design
- Sensitivity adjustment for optimum adaptation to the application
- Dual LED display for easy commissioning
- M12 connector for fast installation

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50038450	PRK 618/4-S12	0 ... 5 m 0 ... 7 m	500 Hz	LED, red	Transistor, PNP, light/dark reversible	DC	Connector, M12, metal

Detailed information on operating ranges in combination with reflectors can be found in the respective data sheet (online)

Energetic Light Scanners

Energetic light scanner with infrared light in sturdy metal housing.

RT 618

Energetic reflection light scanner with light/dark switching via control cable.

Benefits:

- Sturdy metal housing in cylindrical M18 design
- Sensitivity adjustment for optimum adaptation to the application
- Dual LED display for easy commissioning
- M12 connector for fast installation

Part no.	Part description	Operating range [m] Op. range limit [m]	Switching frequency	Light source	Switching output 1	Voltage type	Connection
50038449	RT 618/4-200-S12	0 ... 0.2 m 0 ... 0.3 m	500 Hz	LED, infrared	Transistor, PNP, light/dark reversible	DC	Connector, M12, metal

//SENSORS FOR POTENTIALLY EXPLOSIVE AREAS

DETECT WITHOUT RISK

The use of optoelectronic sensors in potentially explosive areas requires specially protected devices. Our extensive product line offers powerful sensors in all common technologies.

/// 92 Series



The Series 92 Ex sensors are available as reflection light scanners, retro-reflective photoelectric sensors or throughbeam photoelectric sensors and reliably detect objects at distances of 300 mm up to 12 m. The intrinsically safe sensors transmit switching signals to the VS 403 isolated switching amplifier by way of the NAMUR interface. The temperature class for explosive gas areas is T6; for explosive dust areas it is 80 °C.



Benefits:

- Compact construction with robust diecast zinc housing and glass optics for protection against environmental influences
- Switching output acc. to IEC 60947-5-6 (NAMUR)
- EU type examination certificate DMT 03 ATEX E 029 for zone 1/21
- Large range from 0.3 to 12 m

Direct access to the online product selector at www.leuze.com/en/br92-ex

Part no.	Part description	Operating range [m] Op. range limit [m]	Ex device category / Ex-zone	Switching frequency	Light source	Switching output 1	Connection
50080722	► LS 92/3 SE-L Ex	0 ... 12 m 0 ... 15.6 m	2/1/21	60 Hz	LED, infrared	NAMUR	Connector, M12, metal
50080721	◄ LS 92/3 E-L Ex	0 ... 12 m 0 ... 15.6 m	2/1/21			NAMUR	Connector, M12, metal
50080723	PRK 92/3 L Ex	0.2 ... 5 m 0.2 ... 5 m	2/1/21	60 Hz	LED, infrared	NAMUR	Connector, M12, metal
50080724	FRK 92/3-300 L Ex	0.03 ... 0.3 m 0.03 ... 0.3 m	2/1/21	60 Hz	LED, infrared	NAMUR	Connector, M12, metal

LS 92: throughbeam photoelectric sensors; PRK 92: retro-reflective photoelectric sensors; FRK 92: light scanners with background suppression
► transmitter / ◄ receiver

/// 55 Series



The sensors are developed for all category 3G and 3D applications. With their small dimensions, they fit even in constrained spaces. The sensors and the protective housing are made of stainless steel and are also suitable for demanding operating conditions. Currently available are retro-reflective photoelectric sensors and scanners with background suppression. The temperature class for explosive gas areas is T4; for explosive dust areas it is 70 °C.



Benefits:

- Diffuse reflection light scanner with visible red light and adjustable background suppression
- Stainless steel device housing and protective housing
- Exact adjustment of the scanning range via 8-gear spindle
- Very good black/white behavior and reliable switching nearly independent of the object or background properties
- Fast alignment through brightVision®
- A²LS – Active Ambient Light Suppression

Direct access to the online product selector at www.leuze.com/en/br55-ex

Part no.	Part description	Operating range [m] Op. range limit [m]	Ex device category / Ex-zone	Switching frequency	Light source	Switching output 1	Switching output 2	Connection
50115207	PRK 55/6D.42-S8.3 Ex	0 ... 3 m 0 ... 3.5 m	3/2/22	1,000 Hz	LED, red	Transistor, push-pull, dark switching (PNP)/light switching (NPN)		Connector, M8, stainless steel
50119364	PRK 55/6.42-S8 Ex	0 ... 3 m 0 ... 3.5 m	3/2/22	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)		Connector, M8, stainless steel
50115269	HRTR 55/66-S8 Ex	0.005 ... 0.4 m 0.005 ... 0.4 m	3/2/22	1,000 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	Connector, M8, stainless steel

PRK 55: retro-reflective photoelectric sensors; HRTR 55: light scanners with background suppression

/// 46 Series



Due to their high performance reserve, these devices are used for reliable detection even with heavy soiling in category 3G and 3D applications. The product spectrum encompasses familiar operating principles such as throughbeam photoelectric sensor, retro-reflective photoelectric sensor or scanner with background suppression. The temperature class for explosive gas areas is T4; for explosive dust areas it is 90 °C.

**Benefits:**

- Scanner with adjustable background suppression through multiturn potentiometer
- Reliable detection of light and dark, as well as inclined or sloped surfaces
- Fast connection through Ultra-Lock™ fast locking
- Complementary switching outputs for optimal adaptation to the application
- Warning output for increased availability
- A²LS – Active Ambient Light Suppression

Direct access to the online product selector at www.leuze.com/en/br46-ex

Part no.	Part description	Operating range [m] Op. range limit [m]	Ex device category/Ex-zone	Switching frequency	Light source	Switching output 1	Switching output 2	Connection
50111519	► LSSR 46B/200-S12 S-Ex n	0 ... 50 m 0 ... 60 m	3/2/22	500 Hz	LED, red			Cable with connector, 200 mm, M12, metal
50111520	◄ LSR 46B/66,200-S12 S-Ex n	0 ... 50 m 0 ... 60 m	3/2/22	500 Hz		Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	Cable with connector, 200 mm, M12, metal
50114409	HRTL 46B/66,200-S12 S-Ex n	0.05 ... 1.2 m 0.05 ... 1.2 m	3/2/22	1,000 Hz	Laser, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	Cable with connector, 200 mm, M12, metal
50108593	PRK 46B/66.01,200-S12 S-Ex n	0.05 ... 15 m 0.05 ... 18 m	3/2/22	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	Cable with connector, 200 mm, M12, metal
50108591	PRK 46B/66,200-S12 S-Ex n	0.05 ... 15 m 0.05 ... 18 m	3/2/22	500 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	Cable with connector, 200 mm, M12, metal
50108945	IPRK 46B/4,200-S12 S-Ex n	0.05 ... 15 m 0.05 ... 18 m	3/2/22	500 Hz	LED, red	Transistor, PNP, light switching	Transistor, PNP, U _s switching	Cable with connector, 200 mm, M12, metal
50108589	HRTR 46B/66,200-S12 S-Ex n	0 ... 1.8 m 0 ... 1.8 m	3/2/22	200 Hz	LED, red	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	Cable with connector, 200 mm, M12, metal
50108587	HRT 46B/66,200-S12 S-Ex n	0 ... 2.5 m 0 ... 2.5 m	3/2/22	200 Hz	LED, infrared	Transistor, push-pull, light switching (PNP)/dark switching (NPN)	Transistor, push-pull, dark switching (PNP)/light switching (NPN)	Cable with connector, 200 mm, M12, metal
50108943	IHRT 46B/4,200-S12 S-Ex n	0 ... 2.5 m 0 ... 2.5 m	3/2/22	200 Hz	LED, infrared	Transistor, PNP, light switching	Transistor, PNP, U _s switching	Cable with connector, 200 mm, M12, metal

LS 46B: throughbeam photoelectric sensors; PRK 46B: retro-reflective photoelectric sensors; HRT 46B: light scanners with background suppression
► transmitter / ◄ receiver

/// 96 Series



These sensors were specially designed for applications that require large ranges in categories 3G and 3D. The product line covers all operating principles. The temperature class for explosive gas areas is T4; for explosive dust areas it is 70 °C.

**Benefits:**

- Scanner with adjustable background suppression using visible red light
- Robust metal housing with shock-resistant optical window, degree of protection IP 67/ IP 69K for industrial application
- Complementary switching outputs
- Scanning range adjustment and delay before start-up
- Connection via comfortable terminal compartment

Direct access to the online product selector at www.leuze.com/en/br96-ex

Part no.	Part description	Operating range [m] Op. range limit [m]	Ex-device category / Ex-zone	Switching frequency	Light source	Switching output 1	Connection
50111015	► LSS 96M-1079-23 Ex n	0 ... 120 m 0 ... 150 m	3/2/22		LED, infrared		Terminal
50111016	◄ LSE 96M/P-3019-21 Ex n	0 ... 120 m 0 ... 150 m	3/2/22	500 Hz		Transistor, PNP, light switching	Terminal
50111088	PRK 96M/P-3369-21 Ex n	0.1 ... 15 m 0.1 ... 18 m	3/2/22	1,000 Hz	LED, red	Transistor, PNP, light/dark reversible	Terminal
50109523	PRK 96M/P-2838-28 Ex n	0.1 ... 7 m 0.1 ... 8.5 m	3/2/22	1,000 Hz	LED, infrared	Transistor, PNP, light/dark reversible	Terminal
50111087	HRT 96M/P-1639-800-21 Ex n	0.1 ... 0.8 m 0.1 ... 1.2 m	3/2/22	300 Hz	LED, infrared	Transistor, PNP, light/dark reversible	Terminal
50111089	HRT 96M/P-1649-800-21 Ex n	0.1 ... 0.8 m 0.1 ... 1.2 m	3/2/22	300 Hz	LED, infrared	Transistor, PNP, light/dark reversible	Terminal

LS 96: throughbeam photoelectric sensors; PRK 96: retro-reflective photoelectric sensors; HRT 96: light scanners with background suppression
► transmitter / ◄ receiver

/ INDUCTIVE SWITCHES

RELIABLE DETECTION OF METALLIC PARTS

Some detection tasks are not very well suited to optical solutions. Coming into play here are inductive switches which reliably detect metallic parts even under the most adverse conditions. An array of designs, short reaction times and large ranges make our inductive sensors the right solutions for practically all fields of application in industrial automation.



Standard Sensors, Cubic Housing

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Standard Sensors, Cylindric Housing

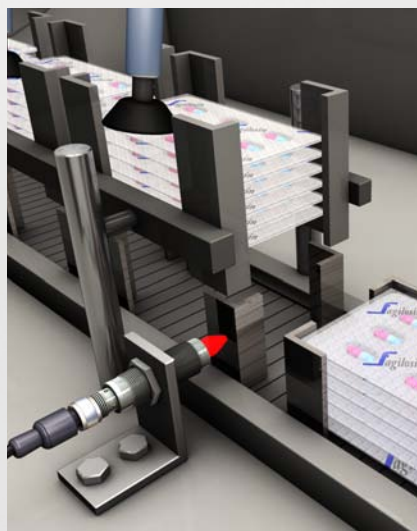
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Miniature Sensors

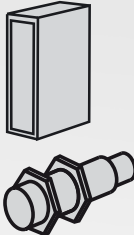











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All Stainless Steel Sensors

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SELECTION TABLE – cubic series

	Series	Dimensions in mm (HxBxL) / (ØxL)	Typ. scan. range limit S _n	Installation		Switching output / function				Max. switching frequency	Operating voltage	Connection		Housing material			Degree of protection	
				Embedded	Non-embedded	PNP	NPN	NO - normally open	NC - normally closed			M8 connector	M12 connector	Cable, 2 m, PVC	Chromium-plated brass	Plastic (PA)	Stainless steel	IP 67
	IS240	40x12x26	4.0 mm	●		●	●	●	●	1400 Hz	10...30 V DC	●		●	●		●	
			8.0 mm		●	●	●	●	●	1400 Hz	10...30 V DC	●		●	●		●	
	IS244	40x40x67 40x40x120	20.0 mm	●		●	●	●	●	150 Hz	10...30 V DC		●	●		●		●
			40.0 mm		●	●	●	●	●	150 Hz	10...30 V DC		●	●		●		●
	IS255	5x5x25	1.5 mm	●		●	●	●	○	3000 Hz	10...30 V DC	○		●	●			●
	IS288	8x8x50	1.5 mm	●		●	●	●	○	5000 Hz	10...30 V DC	●		●	●			●
			2.0 mm	●		●	○	●	●	3000 Hz	10...30 V DC	●		●	●			●
			3.0 mm	●		●	○	●	○	1000 Hz	10...30 V DC	●		●	●			●
	IS204	Ø 4x25	1.5 mm	●		●	○	●	○	3000 Hz	10...30 V DC	○		●			●	●
	IS205	M5x38	1.5 mm	●		●	○	●	○	3000 Hz	10...30 V DC	●		●			●	●
	IS206	Ø 6.5x35	2.0 mm	●		●	○	●	○	5000 Hz	10...30 V DC	●		●			●	●
			3.0 mm	●		●	○	●	○	1000 Hz	10...30 V DC			●			●	●
	IS208	M8x45	1.5 mm	●		●	○	●		5000 Hz	10...30 V DC	●	●	●			●	●
			2.0 mm	●		●	●	●	●	5000 Hz	10...30 V DC	●		●			●	●
			2.5 mm		●	●	○	●		5000 Hz	10...30 V DC	●	●	●			●	●
			4.0 mm		●	●	○	●	○	3500 Hz	10...30 V DC	●		●			●	●
	IS212	M12x50	2.0 mm	●		●	○	●		3000 Hz	10...30 V DC		●	●	●			●
			4.0 mm	●		●	●	●	●	2000 Hz	10...30 V DC		●	●	●			●
			4.0 mm		●	●	○	●		2000 Hz	10...30 V DC		●	●	●			●
			6.0 mm ¹⁾	●		●	○	●		800 Hz	10...30 V DC	●					●	●
			6.0 mm	●		●	●	●	○	600 Hz	10...30 V DC	●	●	●	●			●
			8.0 mm		●	●	●	●	○	1500 Hz	10...30 V DC	●	●	●	●			●
			10.0 mm ¹⁾		●	●	○	●		400 Hz	10...30 V DC	●					●	●
			10.0 mm		●	●	○	●	○	400 Hz	10...30 V DC	●	●	●	●			●
	IS218	M18x50	5.0 mm	●		●	○	●		2000 Hz	10...30 V DC		●	●	●			●
			8.0 mm	●		●	●	●	●	1500 Hz	10...30 V DC	●	●	●	●			●
			8.0 mm		●	●	○	●		2000 Hz	10...30 V DC	●	●	●	●			●
			10.0 mm ¹⁾	●		●	○	●		200 Hz	10...30 V DC	●					●	●
			12.0 mm	●		●	●	●	○	500 Hz	10...30 V DC	●	●	●	●			●
			20.0 mm ¹⁾		●	●	○	●		200 Hz	10...30 V DC	●					●	●
			20.0 mm		●	●	○	●	○	200 Hz	10...30 V DC	●	●	●	●			●
	IS230	M30x60	10.0 mm	●		●	○	●		1200 Hz	10...30 V DC		●	●	●			●
			15.0 mm		●	●	○	●		700 Hz	10...30 V DC	●	●	●	●			●
			20.0 mm ¹⁾	●		●	○	●		100 Hz	10...30 V DC	●					●	●
			22.0 mm	●		●	●	●	●	200 Hz	10...30 V DC	●	●	●	●			●
			40.0 mm ¹⁾		●	●	○	●		100 Hz	10...30 V DC	●					●	●
			40.0 mm		●	●	●	●	○	90 Hz	10...30 V DC	●	●	●	●			●

1) Food+Beverage version

○ = on request

//STANDARD SENSORS, CUBIC HOUSING

SMALL DESIGNS FOR BIG REQUIREMENTS

These standard cubic sensors can be universally applied for a wide variety of detection tasks. Cubic designs are available in both plastic and metal housings.

/// IS 288



With a laterally aligned sensor field, space and cost-saving integration is possible. Using our special supports, the sensors can even be mounted in the groove of an ITEM profile.



Benefits:

- Laterally aligned sensor field for space and hence cost-saving integration
- Short response times for reliable detection in dynamic processes to increase machine productivity

Direct access to the online product selector at www.leuze.com/en/is288

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50112890	IS 288MP/4NO-3E0-S8.3	0 ... 2.4 mm 3 mm	1,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M8	Metal
50112889	IS 288MP/4NO-3E0	0 ... 2.4 mm 3 mm	1,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50113783	IS 288MP/4NC-2E0	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	Cable, 2,000 mm	Metal
50112888	IS 288MP/4NO-2E0-S8.3	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M8	Metal
50112887	IS 288MP/4NO-2E0	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50113208	IS 288MP/2NO-1E5	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50112886	IS 288MP/4NO-1E5-S8.3	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M8	Metal
50112885	IS 288MP/4NO-1E5	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal

/// IS 240



With its cubic design, this sensor is ideal for lateral mounting on conveying belts.



Benefits:

- Cubic construction for simple mounting on the side
- Quick and easy installation and commissioning saves mounting times and guarantees the highest availability
- Wider scanning ranges offer high functional reliability
- Very clearly visible status display for reliable detection and commissioning even at long distances

Direct access to the online product selector at www.leuze.com/en/is240

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Switching output 2	Connection	Material
50114204	IS 240PP/22-4E0-S8.4	0 ... 3.2 mm 4 mm	1,400 Hz	Embedded	Transistor, NPN, make-contact (NO)	Transistor, NPN, break-contact (NC)	Connector, M8	Plastic
50114203	IS 240PP/22-4E0	0 ... 3.2 mm 4 mm	1,400 Hz	Embedded	Transistor, NPN, make-contact (NO)	Transistor, NPN, break-contact (NC)	Cable, 2,000 mm	Plastic
50114208	IS 240PP/44-4E0-S8.4	0 ... 3.2 mm 4 mm	1,400 Hz	Embedded	Transistor, PNP, make-contact (NO)	Transistor, PNP, break-contact (NC)	Connector, M8	Plastic

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Switching output 2	Connection	Material
50117797	IS 240PP/4N0-4E0-S8.3	0 ... 3.2 mm 4 mm	1,400 Hz	Embedded	Transistor, PNP, make-contact (NO)		Connector, M8	Plastic
50114207	IS 240PP/44-4E0	0 ... 3.2 mm 4 mm	1,400 Hz	Embedded	Transistor, PNP, make-contact (NO)	Transistor, PNP, break-contact (NC)	Cable, 2,000 mm	Plastic
50114206	IS 240PP/22-8N0-S8.4	0 ... 6.4 mm 8 mm	1,400 Hz	Non-embed- ded	Transistor, NPN, make-contact (NO)	Transistor, NPN, break-contact (NC)	Connector, M8	Plastic
50114205	IS 240PP/22-8N0	0 ... 6.4 mm 8 mm	1,400 Hz	Non-embed- ded	Transistor, NPN, make-contact (NO)	Transistor, NPN, break-contact (NC)	Cable, 2,000 mm	Plastic
50114210	IS 240PP/44-8N0-S8.4	0 ... 6.4 mm 8 mm	1,400 Hz	Non-embed- ded	Transistor, PNP, make-contact (NO)	Transistor, PNP, break-contact (NC)	Connector, M8	Plastic
50114209	IS 240PP/44-8N0	0 ... 6.4 mm 8 mm	1,400 Hz	Non-embed- ded	Transistor, PNP, make-contact (NO)	Transistor, PNP, break-contact (NC)	Cable, 2,000 mm	Plastic

/// IS 244



With a sensor field that can be aligned in five directions, this compact sensor sees almost everything. Versions with M12 connector or convenient terminal compartment leave nothing to be desired.



Benefits:

- Sensor field can be oriented in five directions for flexible mounting and simplified machine construction
- Status displays visible from all sides for reliable detection and commissioning
- Models with comfortable terminal compartment or M12 connector

Direct access to the online product selector at www.leuze.com/en/is244

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Switching output 2	Connection	Material
50114215	ISS 244PP/22-20E-S12	0 ... 16.2 mm 20 mm	150 Hz	Embedded	Transistor, NPN, make-contact (NO)	Transistor, NPN, break-contact (NC)	Connector, M12	Plastic
50114211	IS 244PP/22-20E-TB.4	0 ... 16.2 mm 20 mm	150 Hz	Embedded	Transistor, NPN, make-contact (NO)	Transistor, NPN, break-contact (NC)	Terminal	Plastic
50114217	ISS 244PP/44-20E-S12	0 ... 16.2 mm 20 mm	150 Hz	Embedded	Transistor, PNP, make-contact (NO)	Transistor, PNP, break-contact (NC)	Connector, M12	Plastic
50114213	IS 244PP/44-20E-TB.4	0 ... 16.2 mm 20 mm	150 Hz	Embedded	Transistor, PNP, make-contact (NO)	Transistor, PNP, break-contact (NC)	Terminal	Plastic
50114216	ISS 244PP/22-40N-S12	0 ... 32.4 mm 40 mm	150 Hz	Non-embed- ded	Transistor, NPN, make-contact (NO)	Transistor, NPN, break-contact (NC)	Connector, M12	Plastic
50114212	IS 244PP/22-40N-TB.4	0 ... 32.4 mm 40 mm	150 Hz	Non-embed- ded	Transistor, NPN, make-contact (NO)	Transistor, NPN, break-contact (NC)	Terminal	Plastic
50114218	ISS 244PP/44-40N-S12	0 ... 32.4 mm 40 mm	150 Hz	Non-embed- ded	Transistor, PNP, make-contact (NO)	Transistor, PNP, break-contact (NC)	Connector, M12	Plastic
50114214	IS 244PP/44-40N-TB.4	0 ... 32.4 mm 40 mm	150 Hz	Non-embed- ded	Transistor, PNP, make-contact (NO)	Transistor, PNP, break-contact (NC)	Terminal	Plastic

SMARTER APPLICATION KNOW-HOW



Trade shows

Reliable systems for 2D- and 3D-measurement of distances and objects



Positioning

Sensor technology for quick positioning accurate down to the millimeter



Safeguarding

Economical solutions in all areas of safety at work



Identification

Innovative code readers and RFID systems

Additional application highlights can be found under: www.leuze.com/en/practice

//STANDARD SENSORS, CYLINDRIC HOUSING

ROBUST SENSORS IN CYLINDRICAL DESIGN

The cylindrical inductive sensors are the perfect solution for many applications thanks to their short, slim metal housing. Due to their extra short versions from M8 to M30, they are particularly well-suited for tight installation situations.

/// IS 208



With a diameter of just 8 mm, this small standard sensor can be custom-integrated in applications.



Benefits:

- Large scanning ranges allow you to choose a smaller construction and thus save space and costs for the mechanical machine parts
- The sensor can be mounted at a greater distance from moving parts. This helps to avoid damage and ensures the machine availability
- The high sensitivity of the sensors makes them the inexpensive solution for special applications, e.g. for close-range detection of small parts

Direct access to the online product selector at www.leuze.com/en/is208

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50109656	IS 208MM/2NO-2E0-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, NPN, make-contact (NO)	Connector, M8	Stainless steel
50109655	IS 208MM/2NO-2E0	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Stainless steel
50109654	IS 208MM/4NC-2E0-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	Connector, M8	Stainless steel
50113211	IS 208MM/4NC-2E0	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	Cable, 2,000 mm	Stainless steel
50117201	ISS 208MM/4NO-2E0-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M8	Stainless steel
50109653	IS 208MM/4NO-2E0-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M8	Stainless steel
50109652	IS 208MM/4NO-2E0	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Stainless steel
50114051	IS 208MM/4NO-2E0,200-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable with connector, 200 mm, M8	Stainless steel
50118369	ISS 208MM/4NO-2E0,200-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable with connector, 200 mm, M8	Stainless steel
50113207	IS 208MM/2NC-1E5	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, NPN, break-contact (NC)	Cable, 2,000 mm	Stainless steel
50109642	IS 208MM/2NO-1E5	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Stainless steel
50112444	IS 208MM/4NC-1E5	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	Cable, 2,000 mm	Stainless steel
50109641	IS 208MM/4NO-1E5-S12	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Stainless steel
50109640	IS 208MM/4NO-1E5-S8.3	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M8	Stainless steel
50122455	IS 208MM/4NO-1E5,5000	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 5,000 mm	Stainless steel
50109639	IS 208MM/4NO-1E5	0 ... 1.2 mm 1.5 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Stainless steel
50109662	IS 208MM/2NO-4NO-S8.3	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embed- ded	Transistor, NPN, make-contact (NO)	Connector, M8	Stainless steel
50109661	IS 208MM/2NO-4NO	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embed- ded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Stainless steel
50109660	IS 208MM/4NC-4NO-S8.3	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embed- ded	Transistor, PNP, break-contact (NC)	Connector, M8	Stainless steel
50109659	IS 208MM/4NO-4NO-S8.3	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embed- ded	Transistor, PNP, make-contact (NO)	Connector, M8	Stainless steel
50109658	IS 208MM/4NO-4NO	0 ... 3.2 mm 4 mm	3,500 Hz	Non-embed- ded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Stainless steel
50109649	IS 208MM/2NO-2N5	0 ... 2 mm 2.5 mm	5,000 Hz	Non-embed- ded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Stainless steel
50109647	IS 208MM/4NO-2N5-S12	0 ... 2 mm 2.5 mm	5,000 Hz	Non-embed- ded	Transistor, PNP, make-contact (NO)	Connector, M12	Stainless steel
50109646	IS 208MM/4NO-2N5-S8.3	0 ... 2 mm 2.5 mm	5,000 Hz	Non-embed- ded	Transistor, PNP, make-contact (NO)	Connector, M8	Stainless steel
50114490	ISS 208MM/4NO-2N5-S8.3	0 ... 2 mm 2.5 mm	5,000 Hz	Non-embed- ded	Transistor, PNP, make-contact (NO)	Connector, M8	Stainless steel
50109645	IS 208MM/4NO-2N5	0 ... 2 mm 2.5 mm	5,000 Hz	Non-embed- ded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Stainless steel

Switching
SensorsMeasuring
SensorsProducts for
Safety at Work

Identification

Data Transmission /
Control ComponentsIndustrial Image
Processing

Accessories

/// IS 212



Even this standard design with M12 external thread has its special features: Increased scanning ranges with a small design save space and money.

**Benefits:**

- Large scanning ranges allow you to choose a smaller construction and thus save space and costs
- The sensor can be mounted at a greater distance from moving parts
- The high sensitivity of the sensors makes them the inexpensive solution for special applications, e.g. for close-range detection of small parts
- Sturdy all-metal housing for permanent operation

Direct access to the online product selector at www.leuze.com/en/is212

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50109688	ISS 212MM/2NO-6EO-S12	0 ... 4.8 mm 6 mm	800 Hz	Embedded	Transistor, NPN, make-contact (NO)	Connector, M12	Metal
50109682	IS 212MM/2NO-6EO	0 ... 4.8 mm 6 mm	800 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50109679	ISS 212MM/4NO-6EO-S12	0 ... 4.8 mm 6 mm	800 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109678	IS 212MM/4NO-6EO	0 ... 4.8 mm 6 mm	800 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50109677	IS 212MM/2NC-4EO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, NPN, break-contact (NC)	Connector, M12	Metal
50114380	IS 212MM/2NC-4EO	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, NPN, break-contact (NC)	Cable, 2,000 mm	Metal
50109687	ISS 212MM/2NO-4EO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, NPN, make-contact (NO)	Connector, M12	Metal
50109675	IS 212MM/2NO-4EO	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50109674	IS 212MM/4NC-4EO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	Connector, M12	Metal
50109676	ISS 212MM/4NC-4EO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	Connector, M12	Metal
50109685	ISS 212MM/4NO-4EO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109673	IS 212MM/4NO-4EO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109672	IS 212MM/4NO-4EO	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50109684	ISS 212MM/4NO-4EO	0 ... 3.2 mm 4 mm	2,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50109666	IS 212MM/2NO-2EO	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50111870	IS 212MM/4NC-2EO-S12	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	Connector, M12	Metal
50109665	IS 212MM/4NO-2EO-S12	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109664	IS 212MM/4NO-2EO	0 ... 1.6 mm 2 mm	3,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50111952	IS 212MM/2NO-10N	0 ... 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50114052	IS 212MM/4NC-10N-S12	0 ... 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	Connector, M12	Metal
50109680	ISS 212MM/4NO-10N-S12	0 ... 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109689	IS 212MM/4NO-10N	0 ... 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50120274	IS 212MM/2NO-8NO-S12	0 ... 6.4 mm 8 mm	1,500 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Connector, M12	Metal
50112806	IS 212MM/2NO-8NO	0 ... 6.4 mm 8 mm	1,500 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50112808	IS 212MM/4NO-8NO-S12	0 ... 6.4 mm 8 mm	1,500 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50112807	IS 212MM/4NO-8NO	0 ... 6.4 mm 8 mm	1,500 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50121012	IS 212MM/2NC-4NO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, NPN, break-contact (NC)	Connector, M12	Metal
50109671	IS 212MM/2NO-4NO-S12	0 ... 3.2 mm 4 mm	1,500 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Connector, M12	Metal
50109670	IS 212MM/2NO-4NO	0 ... 3.2 mm 4 mm	1,500 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50112209	ISS 212MM/2NO-4NO	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50112914	IS 212MM/4NC-4NO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, PNP, break-contact (NC)	Connector, M12	Metal

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50109669	IS 212MM/4NO-4NO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50111963	ISS 212MM/4NO-4NO-S12	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109668	IS 212MM/4NO-4NO	0 ... 3.2 mm 4 mm	2,000 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal

/// IS 218



In spite of the compact design in an M18 housing, these sensors don't skimp on power and can be quickly and easily integrated in the machine.

**Benefits:**

- Wide spectrum of available scanning ranges enables application in limited spaces
- The sensor can be mounted at a greater distance from moving parts
- The high sensitivity of the sensors makes them the inexpensive solution for special applications, e. g. for close-range detection of small parts
- Sturdy all-metal housing for permanent operation

Direct access to the online product selector at www.leuze.com/en/is218

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50109708	ISS 218MM/2NO-12E-S12	0 ... 9.7 mm 12 mm	500 Hz	Embedded	Transistor, NPN, make-contact (NO)	Connector, M12	Metal
50111954	IS 218MM/2NO-12E	0 ... 9.7 mm 12 mm	500 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50120273	ISS 218MM/4NC-12E-S12	0 ... 9.7 mm 12 mm	500 Hz	Embedded	Transistor, PNP, break-contact (NC)	Connector, M12	Metal
50114427	IS 218 MM/4NO-12E-S12	0 ... 9.7 mm 12 mm	500 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109707	ISS 218MM/4NO-12E-S12	0 ... 9.7 mm 12 mm	500 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109706	IS 218MM/4NO-12E	0 ... 9.7 mm 12 mm	500 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50109703	ISS 218MM/2NO-8E0-S12	0 ... 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, NPN, make-contact (NO)	Connector, M12	Metal
50109704	IS 218MM/2NO-8E0-S12	0 ... 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, NPN, make-contact (NO)	Connector, M12	Metal
50112104	IS 218MM/2NO-8E0	0 ... 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50109702	IS 218MM/4NC-8E0-S12	0 ... 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, break-contact (NC)	Connector, M12	Metal
50109701	IS 218MM/4NO-8E0-S12	0 ... 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50111743	ISS 218MM/4NO-8E0-S12	0 ... 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109700	IS 218MM/4NO-8E0	0 ... 6.4 mm 8 mm	1,500 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50109694	IS 218MM/2NO-5E0	0 ... 4 mm 5 mm	2,000 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50118521	IS 218MM/4NC-5E0	0 ... 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, break-contact (NC)	Cable, 2,000 mm	Metal
50112293	ISS 218MM/4NO-5E0-S12	0 ... 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109693	IS 218MM/4NO-5E0-S12	0 ... 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50112915	ISS 218MM/4NO-5E0	0 ... 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50109692	IS 218MM/4NO-5E0	0 ... 4 mm 5 mm	2,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50111953	IS 218MM/2NO-20N	0 ... 16.2 mm 20 mm	200 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50109710	ISS 218MM/4NO-20N-S12	0 ... 16.2 mm 20 mm	200 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109709	IS 218MM/4NO-20N	0 ... 16.2 mm 20 mm	200 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50109699	IS 218MM/2NO-8NO-S12	0 ... 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Connector, M12	Stainless steel
50109698	IS 218MM/2NO-8NO	0 ... 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50109697	IS 218MM/4NO-8NO-S12	0 ... 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109696	IS 218MM/4NO-8NO	0 ... 6.4 mm 8 mm	2,000 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal

/// IS 230



With a scanning range of up to 40 mm, this series in the M30 design opens the greatest possible flexibility during mounting.

**Benefits:**

- Wide spectrum of available scanning ranges enables application in limited spaces
- The sensor can be mounted at a greater distance from moving parts
- The high sensitivity of the sensors makes them the inexpensive solution for special applications, e. g. for close-range detection of small parts
- Sturdy all-metal housing for permanent operation

Direct access to the online product selector at www.leuze.com/en/is230

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50109723	IS 230MM/2NO-22E	0 ... 17.8 mm 22 mm	200 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50109722	IS 230MM/4NC-22E-S12	0 ... 17.8 mm 22 mm	200 Hz	Embedded	Transistor, PNP, break-contact (NC)	Connector, M12	Metal
50109721	IS 230MM/4NO-22E-S12	0 ... 17.8 mm 22 mm	200 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109720	IS 230MM/4NO-22E	0 ... 17.8 mm 22 mm	200 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50109714	IS 230MM/2NO-10E	0 ... 8.1 mm 10 mm	1,200 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50111871	IS 230MM/4NC-10E-S12	0 ... 8.1 mm 10 mm	1,200 Hz	Embedded	Transistor, PNP, break-contact (NC)	Connector, M12	Metal
50109713	IS 230MM/4NO-10E-S12	0 ... 8.1 mm 10 mm	1,200 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109712	IS 230MM/4NO-10E	0 ... 8.1 mm 10 mm	1,200 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50109728	IS 230MM/2NO-40N	0 ... 32.4 mm 40 mm	100 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50109727	IS 230MM/4NO-40N-S12	0 ... 32.4 mm 40 mm	100 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109726	IS 230MM/4NO-40N	0 ... 32.4 mm 40 mm	100 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50109719	IS 230MM/2NO-15N-S12	0 ... 12.1 mm 15 mm	700 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Connector, M12	Metal
50109718	IS 230MM/2NO-15N	0 ... 12.1 mm 15 mm	700 Hz	Non-embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50109717	IS 230MM/4NO-15N-S12	0 ... 12.1 mm 15 mm	700 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Metal
50109716	IS 230MM/4NO-15N	0 ... 12.1 mm 15 mm	700 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal

SMARTER PRODUCT USABILITY

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//MINIATURE SENSORS

SPACE IN THE SMALLEST SYSTEM

For constrained spaces and special applications, Leuze electronic offers miniature sensor versions in a wide range of designs.

/// IS 255



This subminiature sensor in a cubic housing measuring just 5 x 5 mm doesn't need to hide.



Benefits:

- Laterally aligned sensor field for space and hence cost-saving integration
- Short response times for reliable detection in dynamic processes

Direct access to the online product selector at www.leuze.com/en/is255

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50113210	IS 255MP/2NO-1E5	0 ... 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, NPN, make-contact (NO)	Cable, 2,000 mm	Metal
50113209	IS 255MP/4NO-1E5	0 ... 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50117200	IS 255MP/4NO-1E5,200-S8.3	0 ... 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable with connector, 200 mm, M8	Metal

/// IS 204



A cylindrical sensor with a diameter of just 4 mm fits in every system.



Benefits:

- Very small construction for integration in extremely confined spaces
- Large scanning ranges offer broad application flexibility and sufficient function reserves for reliable detection even of different metals
- Short response times for reliable detection in dynamic processes

Direct access to the online product selector at www.leuze.com/en/is204

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50113478	IS 204MP/4NO-1E5	0 ... 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Stainless steel

/// IS 205

With its M5 fine thread, this sensor can be very easily mounted even in constrained spaces.

**Benefits:**

- Very small construction for integration in extremely confined spaces
- Clearly visible indicator for precise alignment
- Short response times for reliable detection in dynamic processes

Direct access to the online product selector at www.leuze.com/en/is205

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50113212	IS 205MM/4NO-1E5-S8.3	0 ... 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M8	Stainless steel
50113213	IS 205MM/4NO-1E5	0 ... 1.2 mm 1.5 mm	3,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Stainless steel

/// IS 206

This miniature sensor convinces with scanning ranges of up to 3.0 mm with completely flush mounting.

**Benefits:**

- Very small construction for integration in extremely confined spaces
- Large scanning ranges offer broad application flexibility and sufficient function reserves for reliable detection even of different metals
- Short response times for reliable detection in dynamic processes

Direct access to the online product selector at www.leuze.com/en/is206

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50109686	IS 206MP/4NO-3E0	0 ... 2.4 mm 3 mm	1,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Metal
50111438	ISS 206MP/4NO-2E0-S8.3	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M8	Stainless steel
50111437	IS 206MP/4NO-2E0	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable, 2,000 mm	Stainless steel
50121902	IS 206MP/4NO-2E0,300-S8.3W	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable with M12 connector, 300 mm, M8	Stainless steel
50121901	IS 206MP/4NO-2E0,150-S8.3W	0 ... 1.6 mm 2 mm	5,000 Hz	Embedded	Transistor, PNP, make-contact (NO)	Cable with M12 connector, 150 mm, M8	Stainless steel

//ALL STAINLESS STEEL SENSORS

WITH CONSIDERABLE DISTANCE

When used in the food or pharmaceuticals industry, sensors must satisfy high requirements, particularly with regard to the resistance of their housings to aggressive substances. All stainless steel designs are an optimum solution here.

/// IS 212



With their robust housing made of stainless steel, these sensors withstand even aggressive cleaning processes encountered in food and pharmaceutical production.



Benefits:

- Sturdy all-metal housing for high, permanent machine availability
- Housing of stainless steel 316L with degree of protection IP 69K for food & beverage applications
- Large scanning ranges on stainless steel objects for reliable detection of machine parts, e.g. on packaging machinery in the foodstuffs sector

Direct access to the online product selector at www.leuze.com/en/is212

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50109738	IS 212FM/4N0.5F-10N-S12	0 ... 8.1 mm 10 mm	400 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Stainless steel
50109736	IS 212FM/4N0.5F-6E0-S12	0 ... 4.8 mm 6 mm	600 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Stainless steel

/// IS 218



Like the IS 212 series, these sensors likewise withstand aggressive cleaning processes and, in addition, offer a larger scanning range.



Benefits:

- Sturdy all-metal housing for high, permanent machine availability
- Housing of stainless steel 316L with degree of protection IP 69K for food & beverage applications
- Large scanning ranges on stainless steel objects for reliable detection of machine parts, e.g. on packaging machinery in the foodstuffs sector

Direct access to the online product selector at www.leuze.com/en/is218

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50109734	IS 218FM/4N0.5F-20N-S12	0 ... 16.2 mm 20 mm	200 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Stainless steel
50109732	IS 218FM/4N0.5F-10E-S12	0 ... 8.1 mm 10 mm	300 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Stainless steel

/// IS 230



With a scanning range of up to 40 mm, this series in the M30 all stainless steel design offers the greatest possible flexibility during mounting.

**Benefits:**

- Sturdy all-metal housing for high, permanent machine availability
- Housing of stainless steel 316L with degree of protection IP 69K for food & beverage applications
- Large scanning ranges on stainless steel objects for reliable detection of machine parts, e.g. on packaging machinery in the foodstuffs sector

Direct access to the online product selector at www.leuze.com/en/is230

Part no.	Part description	Operating range Sa Typ. operating range limit Sn	Switching frequency	Type of installation	Switching output 1	Connection	Material
50111436	IS 230FM/4NO.5F-40N-S12	0 ... 32.4 mm 40 mm	90 Hz	Non-embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Stainless steel
50111435	IS 230FM/4NO.5F-20E-S12	0 ... 16.2 mm 20 mm	100 Hz	Embedded	Transistor, PNP, make-contact (NO)	Connector, M12	Stainless steel

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for large distances

**brightvision[®]**

Simplified commissioning of
sensors through highly visible
light spot

**omnimount.**

Integrated mounting and
alignment concept without
additional components

thinkmodular.

Freely selectable range of functions

**integrated**connectivity.

The most important fieldbus interfaces in one unit



Additional usability highlights can be found under: www.leuze.com/en/products

/ ULTRASONIC SENSORS

THE ALL-ROUNDERS AMONG THE SENSORS

Ultrasonic sensors are used whenever optical systems reach their limits. Hence, partially and fully transparent or extremely dark objects can be detected just as easily as objects with reflecting surfaces or objects in dusty, vaporous or humid environments.

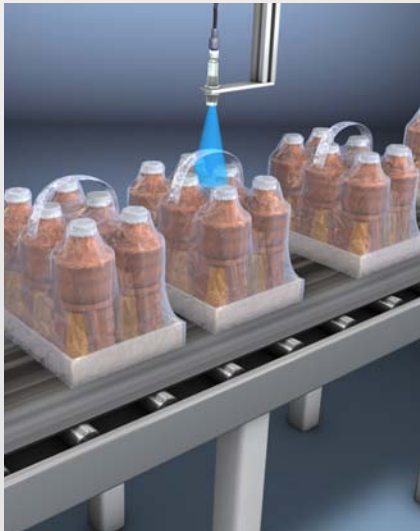


Ultrasonic Sensors, Cubic Housing

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//ULTRASONIC SENSORS, CUBIC HOUSING

SPECIALISTS FOR REFLECTIVE SURFACES

Our ultrasonic sensors in the cubic design feature a very good background suppression based on the reliable runtime measurement. Due to the largely surface-independent switching behavior, they are particularly well-suited for sound-reflecting materials.

/// 18 Series



This ultrasonic sensor features a high sound pressure and is thus suitable even for air transport systems.



Benefits:

- Detection of narrow gaps
- Reliable object detection even in humid and foggy environment
- Metal housing
- Sensitivity adjustment via step switch
- Insensitive to dust

Direct access to the online product selector at www.leuze.com/en/br18u

Part no.	Part description	Operating range	Switching frequency	Switching output 1	Switching output 2	Ultrasonic lobe	Connection
50103365	► LSSU 18-S12	0 ... 0.65 m	100 Hz			standard	Connector, M12
50103364	◄ LSEU 18/24-S12	0 ... 0.65 m	100 Hz	Transistor, PNP, make-contact (NO)	Transistor, NPN, make-contact (NO)	standard	Connector, M12

Operating range: over the whole temperature range, measured object $\geq 20 \times 20 \text{ mm}^2$
 ► transmitter / ◄ receiver

/// 420 Series



From narrow to wide, this diffuse reflection ultrasonic scanner offers three different opening angles and sound lobes.



Benefits:

- Small ultrasonic scanner in plastic housing with degree of protection IP 67
- Various opening angles and sound cone geometries
- Switching behavior largely independent of surface properties
- Precise switching point adjustment through teach-in on the device and via a cable
- Protection against erroneous operation by automatically locking teach button

Direct access to the online product selector at www.leuze.com/en/br420u

Part no.	Part description	Operating range	Switching frequency	Switching output 1	Ultrasonic lobe	Connection
50113989	HRTU 420/4NC.2-S-S8	0.01 ... 0.2 m	50 Hz	Transistor, PNP, break-contact (NC)	Narrow	Connector, M8
50113992	HRTU 420/4NO.2-S-S8	0.01 ... 0.2 m	50 Hz	Transistor, PNP, make-contact (NO)	Narrow	Connector, M8
50113983	HRTU 420/2NC.2-S-S8	0.01 ... 0.2 m	50 Hz	Transistor, NPN, break-contact (NC)	Narrow	Connector, M8
50113986	HRTU 420/2NO.2-S-S8	0.01 ... 0.2 m	50 Hz	Transistor, NPN, make-contact (NO)	Narrow	Connector, M8
50113988	HRTU 420/4NC.2-S8	0.04 ... 0.4 m	20 Hz	Transistor, PNP, break-contact (NC)	standard	Connector, M8
50113991	HRTU 420/4NO.2-S8	0.04 ... 0.4 m	20 Hz	Transistor, PNP, make-contact (NO)	standard	Connector, M8
50113982	HRTU 420/2NC.2-S8	0.04 ... 0.4 m	20 Hz	Transistor, NPN, break-contact (NC)	standard	Connector, M8
50113985	HRTU 420/2NO.2-S8	0.04 ... 0.4 m	20 Hz	Transistor, NPN, make-contact (NO)	standard	Connector, M8
50113987	HRTU 420/4NC.2-L-S8	0.1 ... 1 m	10 Hz	Transistor, PNP, break-contact (NC)	Wide	Connector, M8
50113990	HRTU 420/4NO.2-L-S8	0.1 ... 1 m	10 Hz	Transistor, PNP, make-contact (NO)	Wide	Connector, M8
50113981	HRTU 420/2NC.2-L-S8	0.1 ... 1 m	10 Hz	Transistor, NPN, break-contact (NC)	Wide	Connector, M8
50113984	HRTU 420/2NO.2-L-S8	0.1 ... 1 m	10 Hz	Transistor, NPN, make-contact (NO)	Wide	Connector, M8

//ULTRASONIC SENSORS, CYLINDRIC HOUSING

EXPERTS IN CYLINDRICAL DESIGN

The cylindrical ultrasonic sensors with particularly thin sound cone are specially designed for the detection of small objects or objects in very small openings and for distance, height and dimension measurements of objects in many different areas of application.

/// 412 Series



The cylindrical M12 design with two different opening angles ensures high flexibility during installation and use.



Benefits:

- Metal housing M12
- Precise switching point adjustment via line teach
- Especially narrow sound cone available

Direct access to the online product selector at www.leuze.com/en/br412u

Part no.	Part description	Operating range	Switching frequency	Switching output 1	Ultrasonic lobe	Connection
50113995	HRTU 412/4NC.2-S-S12	0.01 ... 0.2 m	50 Hz	Transistor, PNP, break-contact (NC)	Narrow	Connector, M12
50113993	HRTU 412/4NO.2-S-S12	0.01 ... 0.2 m	50 Hz	Transistor, PNP, make-contact (NO)	Narrow	Connector, M12
50113999	HRTU 412/2NC.2-S-S12	0.01 ... 0.2 m	50 Hz	Transistor, NPN, break-contact (NC)	Narrow	Connector, M12
50113997	HRTU 412/2NO.2-S-S12	0.01 ... 0.2 m	50 Hz	Transistor, NPN, make-contact (NO)	Narrow	Connector, M12
50113996	HRTU 412/4NC.2-S12	0.04 ... 0.4 m	20 Hz	Transistor, PNP, break-contact (NC)	Narrow	Connector, M12
50113994	HRTU 412/4NO.2-S12	0.04 ... 0.4 m	20 Hz	Transistor, PNP, make-contact (NO)	Narrow	Connector, M12
50114000	HRTU 412/2NC.2-S12	0.04 ... 0.4 m	20 Hz	Transistor, NPN, break-contact (NC)	Narrow	Connector, M12
50113998	HRTU 412/2NO.2-S12	0.04 ... 0.4 m	20 Hz	Transistor, NPN, make-contact (NO)	Narrow	Connector, M12

/// 418 Series



Short design, teachable and up to two independent switching outputs are the key features of this series. Also optionally available with angled head, which enables a sound outlet at 90° to the longitudinal axis of the M18 sensor. Versions available with temperature compensation and IO-Link.



*1 not for 418B series

Benefits:

- Precise switching point adjustment through teach or via IO-Link
- One teach button per switching output
- Models with temperature compensation
- Operating mode setting and configuration via IO-Link (multiplex, parallel, throughbeam)
- Small dead zone at long range

Direct access to the online product selector at www.leuze.com/en/br418u

Part no.	Part description	Operating range	Switching frequency	Switching output 1	Switching output 2	Interface	Ultrasonic lobe	Connection
50038636	HRTU 418WM/P-5020-200-S12	0.03 ... 0.2 m	10 Hz	Transistor, PNP, make-contact (NO)			standard	Connector, M12
50124268	HTU418B-400/4T4-M12	0.025 ... 0.4 m	7 Hz	Transistor, PNP, break-contact/make-contact	Transistor, PNP, break-contact/make-contact		standard	Connector, M12
50124269	HTU418B-400/4TX-M12	0.025 ... 0.4 m	7 Hz	Transistor, PNP, break-contact/make-contact			standard	Connector, M12
50109017	HRTU 418WM/P-5220-400-S12	0.025 ... 0.4 m	10 Hz	Transistor, PNP, make-contact (NO)	Transistor, PNP, break-contact/make-contact		standard	Connector, M12

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Part no.	Part description	Operating range	Switching frequency	Switching output 1	Switching output 2	Interface	Ultrasonic lobe	Connection
50124267	HTU418B-400.X3/LT4-M12	0.025 ... 0.4 m	7 Hz	Transistor, push-pull, break-contact/make-contact	Transistor, PNP, break-contact/make-contact	IO-Link	standard	Connector, M12
50038640	HRTU 418WM/P-3020-700-S12	0.1 ... 0.7 m	5 Hz	Transistor, PNP, make-contact (NO)			standard	Connector, M12
50109019	HRTU 418WM/P-5220-700-S12	0.05 ... 0.7 m	5 Hz	Transistor, PNP, make-contact (NO)	Transistor, PNP, break-contact/make-contact		standard	Connector, M12
50124270	HTU418B-1000/4TX-M12	0.15 ... 1 m	8 Hz	Transistor, PNP, break-contact/make-contact			standard	Connector, M12
50124272	HTU418B-1300/4T4-M12	0.15 ... 1.3 m	8 Hz	Transistor, PNP, break-contact/make-contact	Transistor, PNP, break-contact/make-contact		standard	Connector, M12
50124271	HTU418B-1300.X3/LT4-M12	0.15 ... 1.3 m	8 Hz	Transistor, push-pull, break-contact/make-contact	Transistor, PNP, break-contact/make-contact	IO-Link	standard	Connector, M12

/// 430 Series



Whenever large ranges are needed, the M30 sensors from the 430 series are the right choice. Two separate switching outputs can be set independently by means of teach button or IO-Link. A total of ten of these sensors can be easily synchronized with a cable.



Benefits:

- Particularly compact design: M30
- Precise switching point adjustment through teach or via IO-Link
- One teach button per switching output
- Operating mode setting and configuration via IO-Link (multiplex, parallel, throughbeam)
- High accuracy through temperature compensation
- Small dead zone at long range

Direct access to the online product selector at www.leuze.com/en/br430u

Part no.	Part description	Operating range	Switching frequency	Switching output 1	Switching output 2	Ultrasonic lobe	Connection
50036263	VRTU 430M/P-2110-3000-S12	0.4 ... 3 m	2 Hz	Transistor, PNP, break-contact/make-contact	Transistor, PNP, break-contact/make-contact	standard	Connector, M12
50036264	VRTU 430M/P-1110-6000-S12	0.6 ... 6 m	1 Hz	Transistor, PNP, break-contact/make-contact	Transistor, PNP, break-contact/make-contact	standard	Connector, M12

SMARTER CUSTOMER SERVICE



Product selector

Intuitive web applications for convenient product selection



Our goal is to further focus our performance and offer our customers something that they can only find from the sensor people – “smart sensor business”

Ann-Kathrin Waldow,
Employee in the
Customer Care Center

The appropriate product for every application: www.leuze.com/en/products



/ FIBER OPTIC SENSORS

HOW TO BEND LIGHT AROUND A CORNER

With the use of fiber optics and appropriate amplifiers, the area of application of optoelectronic sensors is considerably expanded. The flexible fiber optics with various head shapes can be integrated in nearly any system design. The detection range is dependent on the fiber optics and amplifiers used.

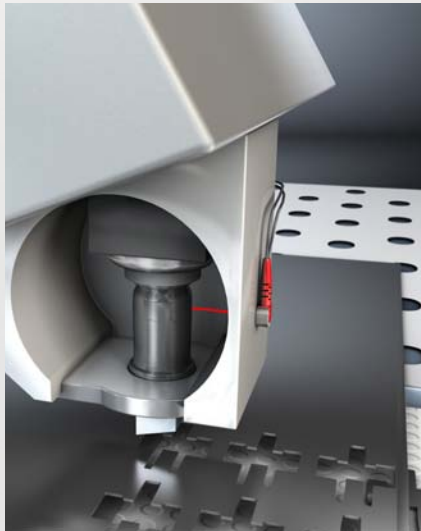


Amplifiers

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//AMPLIFIERS

SIMPLE SETUP AND CONTROL

The optical fibers are plugged into the amplifier. Depending on the model, the ranges of the fibers and the available functions vary.

/// LV461



The series satisfies all basic requirements: 20-turn potentiometer for high-resolution sensitivity adjustments, two switches for light/dark switching and for selecting between larger range or higher switching frequency.



Benefits:

- Mode changeover: range/response time
- Light/dark switching
- 20-turn potentiometer for sensitivity adjustment

Direct access to the online product selector at www.leuze.com/en/lv461

Part no.	Part description	Light source	Switching output 1	Switching output 2	Supply voltage	Connection	Operational controls
50118399	LV461.1/P2-150-M8	LED, red	Transistor, PNP	Transistor, NPN	DC	Connector, 150 mm, M8	Multiturn potentiometer
50118398	LV461.1/P2	LED, red	Transistor, PNP	Transistor, NPN	DC	Cable, 2,000 mm	Multiturn potentiometer Control buttons

/// LV462



The series has a 4-digit display for displaying the switching threshold. The setting is made with the +/- button. A switch for light/dark switching and simple menu functions for setting the range and various timing functions complement the device features.



Benefits:

- 4-digit display
- High dynamics
- Time functions configurable on the device
- Sensitivity levels configurable on the device
- Light/dark switching
- Easy sensitivity adjustment via AutoSet function

Direct access to the online product selector at www.leuze.com/en/lv462

Part no.	Part description	Light source	Switching output 1	Supply voltage	Connection	Operational controls
50118400	LV462.4/4	LED, red	Transistor, PNP	DC	Cable, 2,000 mm	Control buttons Slide switch
50118401	LV462.4/4X-150-M8	LED, red	Transistor, PNP	DC	Cable with M12 connector, 150 mm, M8	Control buttons Slide switch
50118402	LV462.4/2	LED, red	Transistor, NPN	DC	Cable, 2,000 mm	Control buttons Slide switch
50118403	LV462.4/2X-150-M8	LED, red	Transistor, NPN	DC	Cable with M12 connector, 1,500 mm, M8	Control buttons Slide switch

/// LV463



The high-performance LV463 fiber optic sensor convinces with its extensive setting options for operating ranges, sensitivities and time functions. The signal value, and at the same time the switching threshold, are shown on two easy-to-read displays. Three different teach modes considerably simplify configuration. Also available as IO-Link variant.

**Benefits:**

- Double display to show signals and switching thresholds in parallel
- 3 different teach modes for fast sensor setting
- Extensive configuration options, e. g. for operating range, sensitivity or time functions
- Internal multiplex operation of up to six units for preventing mutual interference
- Also available as IO-Link variant

Direct access to the online product selector at www.leuze.com/en/lv463

Part no.	Part description	Light source	Switching output 1	Switching output 2	Supply voltage	Connection	Operational controls
50122456	LV463.7/L4-M8	LED, red	Transistor, PNP, IO-Link	Transistor, push-pull	DC	Connector, M8	Slide switch Rocker pressure switch
50122460	LV463.7/L4	LED, red	Transistor, PNP, IO-Link	Transistor, push-pull	DC	Cable, 2,000 mm	Slide switch Rocker pressure switch
50122457	LV463.7/L4-150-M12	LED, red	Transistor, PNP, IO-Link	Transistor, push-pull	DC	Cable with M12 connector, 150 mm, M12	Slide switch Rocker pressure switch
50122459	LV463.7/L4-150-M8	LED, red	Transistor, PNP, IO-Link	Transistor, push-pull	DC	Cable with M12 connector, 150 mm, M8	Slide switch Rocker pressure switch
50118405	LV463.7/4T-M8	LED, red	Transistor, PNP		DC	Connector, M8	Slide switch Rocker pressure switch
50118404	LV463.7/4T	LED, red	Transistor, PNP		DC	Cable, 2,000 mm	Slide switch Rocker pressure switch
50118407	LV463.7/4T-150-M12	LED, red	Transistor, PNP		DC	Cable with M12 connector, 150 mm, M12	Slide switch Rocker pressure switch
50118406	LV463.7/4T-150-M8	LED, red	Transistor, PNP		DC	Cable with M12 connector, 150 mm, M8	Slide switch Rocker pressure switch
50119070	LV463.7/4-150-M8.3	LED, red	Transistor, PNP		DC	Cable with M12 connector, 150 mm, M8	Slide switch Rocker pressure switch
50118409	LV463.7/2T-M8	LED, red	Transistor, NPN		DC	Connector, M8	Slide switch Rocker pressure switch
50118408	LV463.7/2T	LED, red	Transistor, NPN		DC	Cable, 2,000 mm	Slide switch Rocker pressure switch
50118411	LV463.7/2T-150-M12	LED, red	Transistor, NPN		DC	Cable with M12 connector, 150 mm, M12	Slide switch Rocker pressure switch
50119071	LV463.7/2-150-M8.3	LED, red	Transistor, NPN		DC	Cable with M12 connector, 150 mm, M8	Slide switch Rocker pressure switch
50118410	LV463.7/2T-150-M8	LED, red	Transistor, NPN		DC	Cable with M12 connector, 150 mm, M8	Slide switch Rocker pressure switch

/// LVSR 325



Typical for this series of fiber optic cable control devices are the simple calibration by means of teach-in for optimum sensitivity adjustment and a control input for activation or for remote calibration. This design is available in variants for Ø 4 mm fiber optics.

**Benefits:**

- For plastic or glass fiber optics
- Teach-in for optimum sensitivity adjustment
- Activation or teach input, warning output

Direct access to the online product selector at www.leuze.com/en/lvsr325

Part no.	Part description	Light source	Switching output 1	Supply voltage	Connection	Operational controls
50081301	LVSR 325K/P-402-S8	LED, red	Transistor, PNP	DC	Connector, M8	Control buttons
50081300	LVSR 325K/P-401	LED, red	Transistor, PNP	DC	Cable, 2,000 mm	Control buttons

//FIBER OPTICS

PLASTIC OR GLASS – DEPENDING ON THE AREA OF APPLICATION

For simple integration, each is available in a range of different designs and fiber optics cross sections.

/// Plastic Fiber Optics



Plastic fiber optic cables are available for scanner operation or for the throughbeam principle. The selection is made depending on the design of the fiber head and the functional characteristics of the fibers. A very wide selection of different fiber optics are available, including with bend protection.

Benefits:

- Large selection of fiber optics
- Fiber optics with injection-molded bending protection
- Fiber optics with lateral optics
- Cross-section converter
- Fiber optics with V-optics
- Attachment lens for greater ranges or higher precision

Direct access to the online product selector at www.leuze.com/en/plastic-fo

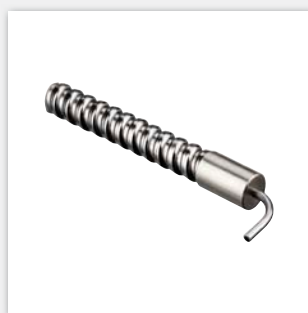
Part no.	Part description	Operating principle	Design	Fiber length	Outer diameter	Light beam exit	Minimum object diameter	Fiber sheathing material
50117738	KF-LE-220	One-way principle	Cylindrical	2,000 mm	1 mm	Front	0.03 mm	PE
50117775	KFX-LD-320-Q	One-way principle	Cylindrical	2,000 mm	1.25 mm	Front	0.05 mm	PE
50117771	KFX-LD-320	One-way principle	Cylindrical	2,000 mm	1.25 mm	Front	0.05 mm	PE
50117767	KFX-LD-420	One-way principle	Cylindrical	2,000 mm	1.25 mm	Front	0.05 mm	PE
50117776	KFX-LA-220	One-way principle	Cylindrical	2,000 mm	1.25 mm	Front	0.03 mm	PE
50117777	KFX-LD-120	One-way principle	Cylindrical	2,000 mm	1.25 mm	Front	0.05 mm	PE
50117741	KF-LD-210-32	One-way principle	Cylindrical	2,000 mm	1.25 mm	Lateral	0.05 mm	PE
50117768	KFX-LH-420	One-way principle	Cylindrical	2,000 mm	2.2 mm	Front	0.5 mm	PE
50117772	KFX-LH-320	One-way principle	Cylindrical	2,000 mm	2.2 mm	Front	0.5 mm	PE
50117769	KFX-LY-420	One-way principle	Cylindrical	2,000 mm	2.2 mm	Front	0.5 mm	PE
50117750	KF-LY-77TZ-20	One-way principle	Cylindrical	2,000 mm	2.2 mm	Lateral	0.5 mm	PE
50117766	KFX-L-420	One-way principle	Cylindrical	2,000 mm	2.2 mm	Front	0.5 mm	PE
50117774	KFX-L-320-Q	One-way principle	Cylindrical	2,000 mm	2.2 mm	Front	0.5 mm	PE
50117770	KFX-L-320	One-way principle	Cylindrical	2,000 mm	2.2 mm	Front	0.5 mm	PE
50117739	KF-L-320-D-T14L	One-way principle	Cylindrical	2,000 mm	2.2 mm	Lateral	0.1 mm	PE
50117773	KFX-LY-320	One-way principle	Cylindrical	2,000 mm	2.2 mm	Front	0.5 mm	PE
50117740	KF-LH-305-D	One-way principle	Cylindrical	2,000 mm	2.2 mm	Lateral	0.1 mm	PE
50117749	KF-LC32-12	One-way principle	Cylindrical	900 mm	2.8 mm	Lateral	0.1 mm	PE
50122327	KF-LP-FU96-520-Q	One-way principle	Cylindrical	2,000 mm	4 mm	Lateral	0.5 mm	PTFE
50122328	KF-LP-FU92-520-Q	One-way principle	Cylindrical	2,000 mm	4 mm	Front	0.5 mm	PTFE
50117737	KF-ETE-220	Scanning principle	Cylindrical	2,000 mm	1 mm	Front	0.05 mm	PE
50117761	KFX-ETC-320-Q	Scanning principle	Cylindrical	2,000 mm	1.25 mm	Front	0.05 mm	PE
50117758	KFX-ETA-320	Scanning principle	Cylindrical	2,000 mm	1.25 mm	Front	0.05 mm	PE
50117756	KFX-ETC-420	Scanning principle	Cylindrical	2,000 mm	1.25 mm	Front	0.05 mm	PE
50117755	KFX-ETA-420	Scanning principle	Cylindrical	2,000 mm	1.25 mm	Front	0.05 mm	PE
50117762	KFX-ETD-320-Q	Scanning principle	Cylindrical	2,000 mm	1.25 mm	Front	0.05 mm	PE
50117759	KFX-ETC-320	Scanning principle	Cylindrical	2,000 mm	1.25 mm	Front	0.05 mm	PE
50117760	KFX-ETD-320	Scanning principle	Cylindrical	2,000 mm	1.25 mm	Front	0.1 mm	PE
50117757	KFX-ETD-420	Scanning principle	Cylindrical	2,000 mm	1.25 mm	Front	0.1 mm	PE
50117763	KFX-ETC7-120	Scanning principle	Cylindrical	2,000 mm	1.25 mm	Front	0.05 mm	PE
50117764	KFX-ETY-67TZ-20	Scanning principle	Cylindrical	2,000 mm	2.2 mm	Lateral	0.2 mm	PE
50117753	KFX-ETC-620	Scanning principle	Cylindrical	2,000 mm	2.2 mm	Front	0.1 mm	PE
50117752	KFX-ET-620	Scanning principle	Cylindrical	2,000 mm	2.2 mm	Front	0.2 mm	PE
50117754	KFX-ETH-620	Scanning principle	Cylindrical	2,000 mm	2.2 mm	Front	0.2 mm	PE
50121079	KFX-ET-605	Scanning principle	Cylindrical	500 mm	2.2 mm	Front	0.2 mm	PE
50117748	KF-LW-FU53-20	One-way principle	Cubic	2,000 mm	1 mm	Lateral	0.1 mm	PE
50117745	KF-LW-FU57-20	One-way principle	Cubic	2,000 mm	1 mm	Lateral	0.1 mm	PE
50117743	KF-L-10MLD-20	One-way principle	Cubic	2,000 mm	2.2 mm	Lateral	1 mm	PE
50117744	KF-L-15MLD-10	One-way principle	Cubic	2,000 mm	2.2 mm	Lateral	1 mm	PE
50117751	KF-LY-U09-20	One-way principle	Cubic	2,000 mm	2.2 mm	Lateral		PE
50117747	KF-L-50ML-20	One-way principle	Cubic	2,000 mm	2.2 mm	Lateral	2 mm	PE

A LV4xx series amplifier is required for operation!

Part no.	Part description	Operating principle	Design	Fiber length	Outer diameter	Light beam exit	Minimum object diameter	Fiber sheathing material
50117742	KF-L-10ML-10	One-way principle	Cubic	1,000 mm	2.2 mm	Front	1 mm	PE
50117778	KFX-L-20ML-20	One-way principle	Cubic	2,000 mm	2.8 mm	Front	1 mm	PE
50117746	KF-L-30ML-20	One-way principle	Cubic	2,000 mm	2.8 mm	Lateral	1 mm	PE
50117733	KF-ETW-FU47-20	Scanning principle	Cubic	2,000 mm	1 mm	Lateral	0.1 mm	PE
50117734	KF-ETW-K10-20	Scanning principle	Cubic	2,000 mm	1 mm	Lateral	0.1 mm	PE
50117735	KF-ETB-38V-20	Scanning principle	Cubic	2,000 mm	1.3 mm	Lateral		PE
50117727	KF-ET-10ML-20	Scanning principle	Cubic	2,000 mm	1.25 mm	Front	1 mm	PE
50117728	KF-ET-15MLD-20	Scanning principle	Cubic	1,000 mm	1.25 mm	Lateral	1 mm	PE
50117736	KF-ETH-38H-20	Scanning principle	Cubic	2,000 mm	2.2 mm	Lateral		PE
50117732	KF-ETY-20MLSD-20	Scanning principle	Cubic	2,000 mm	2.2 mm	Lateral	0.5 mm	PE
50117765	KFX-ET-20ML-20	Scanning principle	Cubic	2,000 mm	2.2 mm	Front	1 mm	PE
50117730	KF-ET-30ML-20	Scanning principle	Cubic	2,000 mm	2.2 mm	Lateral	1 mm	PE
50117731	KF-ET-50ML-20	Scanning principle	Cubic	2,000 mm	2.2 mm	Lateral	2 mm	PE
50117729	KF-ET-20MLS-20	Scanning principle	Cubic	2,000 mm	2.2 mm	Front	1 mm	PE

A LV4xx series amplifier is required for operation!

/// Glass Fiber Optics



For applications with high temperature resistance, glass fiber optics are often used. The selection is made depending on the design of the fiber head and the sheathing material. For connecting to LVSR 325 fiber optic amplifiers.

Benefits:

- Wide variety of types of glass fiber optics
- Mechanically robust metal sheathing designs, partially from corrosion-proof stainless steel
- Use also possible at high temperatures
- Special solutions for vacuum-sealed light feed-throughs

Direct access to the online product selector at www.leuze.com/en/glass-fo

Part no.	Part description	Operating principle	Design	Fiber length	Outer diameter	Light beam exit	Fiber sheathing material
50022139	GF 5000/4 LS-VA	One-way principle	Cylindrical	5,000 mm	4.5 mm	Front	Stainless steel
50024604	GF 3000/4 LS-MS	One-way principle	Cylindrical	3,000 mm	4.5 mm	Front	Brass nickel-plated
50039145	GF 3000/4 LS-VA	One-way principle	Cylindrical	3,000 mm	4.5 mm	Front	Stainless steel
50009331	GF 2000/4 LS-VA	One-way principle	Cylindrical	2,000 mm	4.5 mm	Front	Stainless steel
50000051	GF 2000/4 LS-MS	One-way principle	Cylindrical	2,000 mm	4.5 mm	Front	Brass nickel-plated
50021192	GF 1500/4 LS-MS	One-way principle	Cylindrical	1,500 mm	4.5 mm	Front	Brass nickel-plated
50018698	GF 1500/4 LS-VA	One-way principle	Cylindrical	1,500 mm	4.5 mm	Front	Stainless steel
50001033	GF 1000/4 LS-MS	One-way principle	Cylindrical	1,000 mm	4.5 mm	Front	Brass nickel-plated
50000044	GF 1000/1 LS-VA	One-way principle	Cylindrical	1,000 mm	4.5 mm	Front	Stainless steel
50001032	GF 1000/1 LS-MS	One-way principle	Cylindrical	1,000 mm	4.5 mm	Front	Brass nickel-plated
50000036	GF 1000/1 LS-SI	One-way principle	Cylindrical	1,000 mm	4.5 mm	Front	Silicone
50000045	GF 1000/4 LS-VA	One-way principle	Cylindrical	1,000 mm	4.5 mm	Front	Stainless steel
50006779	GF 500/1 LS-SI	One-way principle	Cylindrical	500 mm	4.5 mm	Front	Silicone
50001031	GF 500/4 LS-MS	One-way principle	Cylindrical	500 mm	4.5 mm	Front	Brass nickel-plated
50001030	GF 500/1 LS-MS	One-way principle	Cylindrical	500 mm	4.5 mm	Front	Brass nickel-plated
50000043	GF 500/4 LS-VA	One-way principle	Cylindrical	500 mm	4.5 mm	Front	Stainless steel
50000042	GF 500/1 LS-VA	One-way principle	Cylindrical	500 mm	4.5 mm	Front	Stainless steel
50036128	GF 3000/4 LS-SI	One-way principle	Cylindrical	3,000 mm	5.4 mm	Front	Silicone
50121081	GF 3000/4 LS-SI-W.1	One-way principle	Cylindrical	3,000 mm	5.4 mm	Lateral	Silicone
50121080	GF 2000/4 LS-SI-W.1	One-way principle	Cylindrical	2,000 mm	5.4 mm	Lateral	Silicone
50041611	GF 2000/4 LS-SI	One-way principle	Cylindrical	2,000 mm	5.4 mm	Front	Silicone
50000037	GF 1000/4 LS-SI	One-way principle	Cylindrical	1,000 mm	5.4 mm	Front	Silicone
50000035	GF 500/4 LS-SI	One-way principle	Cylindrical	500 mm	5.4 mm	Front	Silicone
50105340	GF 600/1 RT-MS-D5-L10	Scanning principle	Cylindrical	600 mm	4.5 mm	Front	Brass nickel-plated
50034368	GF 600/1 RT-SI-W-1,5	Scanning principle	Cylindrical	600 mm	4.5 mm	Lateral	Silicone
50000040	GF 1000/1 RT-SI	Scanning principle	Cylindrical	1,000 mm	5.4 mm	Front	Silicone
50000038	GF 500/1 RT-SI	Scanning principle	Cylindrical	500 mm	5.4 mm	Front	Silicone
50041477	GF 6000/4 RT-MS	Scanning principle	Cylindrical	6,000 mm	6 mm	Front	Brass nickel-plated
50105274	GF 5000/4 RT-MS	Scanning principle	Cylindrical	5,000 mm	6 mm	Front	Brass nickel-plated
50022551	GF 3000/4 RT-MS	Scanning principle	Cylindrical	3,000 mm	6 mm	Front	Brass nickel-plated
50039392	GF 2500/4 RT-MS	Scanning principle	Cylindrical	2,500 mm	6 mm	Front	Brass nickel-plated

A LVSR 325 series amplifier is required for operation!

Part no.	Part description	Operating principle	Design	Fiber length	Outer diameter	Light beam exit	Fiber sheathing material
50000053	GF 2000/4 RT-MS	Scanning principle	Cylindrical	2,000 mm	6 mm	Front	Brass nickel-plated
50019341	GF 1500/1 RT-MS	Scanning principle	Cylindrical	1,500 mm	6 mm	Front	Brass nickel-plated
50023019	GF 1500/4 RT-MS	Scanning principle	Cylindrical	1,500 mm	6 mm	Front	Brass nickel-plated
50001037	GF 1000/4 RT-MS	Scanning principle	Cylindrical	1,000 mm	6 mm	Front	Brass nickel-plated
50001036	GF 1000/1 RT-MS	Scanning principle	Cylindrical	1,000 mm	6 mm	Front	Brass nickel-plated
50000048	GF 1000/1 RT-VA	Scanning principle	Cylindrical	1,000 mm	6 mm	Front	Stainless steel
50000046	GF 500/1 RT-VA	Scanning principle	Cylindrical	500 mm	6 mm	Front	Stainless steel
50001034	GF 500/1 RT-MS	Scanning principle	Cylindrical	500 mm	6 mm	Front	Brass nickel-plated
50001035	GF 500/4 RT-MS	Scanning principle	Cylindrical	500 mm	6 mm	Front	Brass nickel-plated
50011508	GF 1000/1 RT-MS.1	Scanning principle	Cylindrical	1,000 mm	6.5 mm	Lateral	Brass nickel-plated
50041742	GF 3500/4 RT-VA	Scanning principle	Cylindrical	3,500 mm	7 mm	Front	Stainless steel
50041741	GF 2500/4 RT-VA	Scanning principle	Cylindrical	2,500 mm	7 mm	Front	Stainless steel
50000054	GF 2000/4 RT-VA	Scanning principle	Cylindrical	2,000 mm	7 mm	Front	Stainless steel
50010567	GF 1500/4 RT-VA	Scanning principle	Cylindrical	1,500 mm	7 mm	Front	Stainless steel
50000049	GF 1000/4 RT-VA	Scanning principle	Cylindrical	1,000 mm	7 mm	Front	Stainless steel
50000047	GF 500/4 RT-VA	Scanning principle	Cylindrical	500 mm	7 mm	Front	Stainless steel
50060384	GF 3000/4 RT-SI	Scanning principle	Cylindrical	3,000 mm	7.5 mm	Front	Silicone
50010820	GF 2000/4 RT-SI	Scanning principle	Cylindrical	2,000 mm	7.5 mm	Front	Silicone
50000041	GF 1000/4 RT-SI	Scanning principle	Cylindrical	1,000 mm	7.5 mm	Front	Silicone
50000039	GF 500/4 RT-SI	Scanning principle	Cylindrical	500 mm	7.5 mm	Front	Silicone

A LVSR 325 series amplifier is required for operation!

SMARTER APPLICATION KNOW-HOW

We are constantly working on challenges and important issues in our target markets.



Safety at work



Ex-protection



IO-Link



Laser class 1



ID technologies



Connectivity

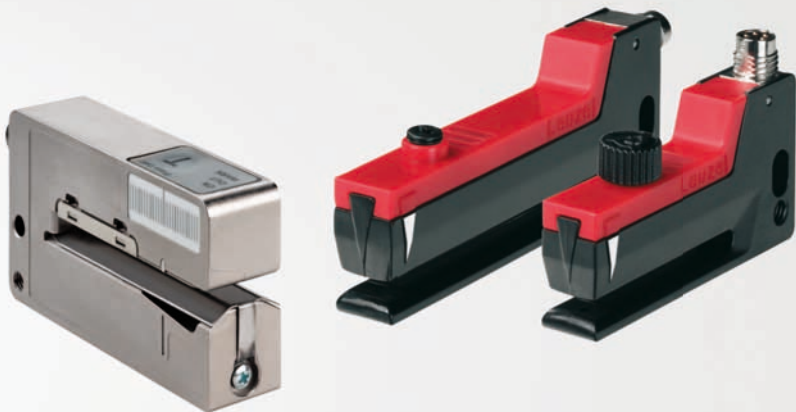


Find out more in our user knowledge and topic center: www.leuze.com/en/topics

/ FORKED SENSORS

NOTHING GETS PAST THESE FORKS

Sensors of this series combine transmitter and receiver into a single device and therefore feature high operational safety. They are characterized by simple mounting without alignment work as well as high sensitivity. The sensors are used for detecting small parts or for detecting labels and print marks, even on transparent foils.

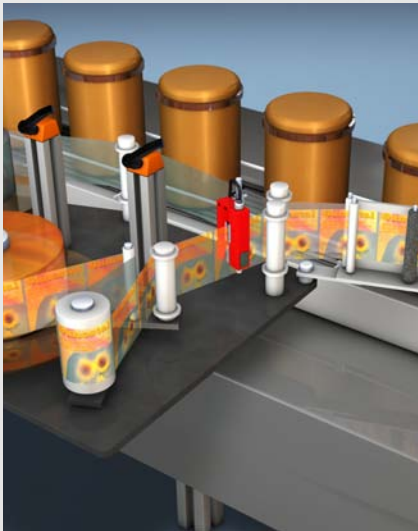
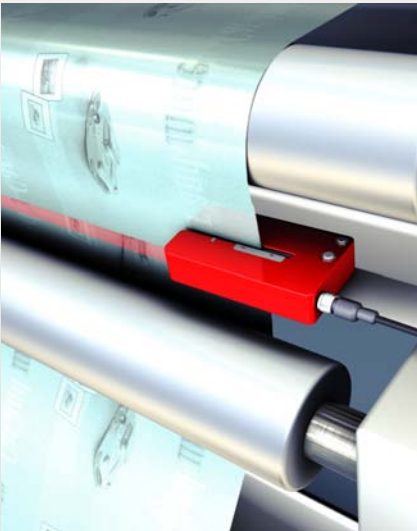


Forked Sensors for Object Detection

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Forked Sensors for Label Detection

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Switching
Sensors

Measuring
Sensors

Products for
Safety at Work

Identification

Data Transmission /
Control Components

Industrial Image
Processing

Accessories

//FORKED SENSORS FOR OBJECT DETECTION

MAXIMUM PRECISION FOR THE SMALLEST PARTS

The design of these sensors makes them the ideal choice for the detection of small parts. High sensitivities and fast reaction times facilitate simple and reliable integration of these sensors in fast automation processes.

/// GS 04



This series, with mouth widths from 20 to 220 mm, can be optimally adapted to a given application by means of their sensitivity adjustment and light/dark switching. Laser variants can be used to reliably detect even the smallest parts.



Benefits:

- Sensitivity adjustment and light/dark switching for optimum adaptation to the application
- Sensitivity adjustment on the back of the fork
- Robust metal housing and glass optics for protection against environmental influences
- Transmitter and receiver are installed in the same housing, therefore easy and fast mounting (complex mounting brackets and extensive alignment not necessary)

Direct access to the online product selector at www.leuze.com/en/gs04

Part no.	Part description	Mouth width	Switching frequency	Light source	Switching output	Response time	Connection
50110793	GSL 04M/P-30-S8	30 mm	5,000 Hz	Laser, red	Transistor, PNP, light/dark reversible	0.1 ms	Connector, M8
50124703	GSL 04M/N-30-S8	30 mm	5,000 Hz	Laser, red	Transistor, NPN, light/dark reversible	0.1 ms	Connector, M8
50110794	GSL 04M/P-50-S8	50 mm	5,000 Hz	Laser, red	Transistor, PNP, light/dark reversible	0.1 ms	Connector, M8
50110795	GSL 04M/P-80-S8	80 mm	5,000 Hz	Laser, red	Transistor, PNP, light/dark reversible	0.1 ms	Connector, M8
50110792	GS 04M/P-20-S8	20 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8
50110782	GS 04M/P-30-S8	30 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8
50110791	GS 04M/N-30-S8	30 mm	1,500 Hz	LED, red	Transistor, NPN, light/dark reversible	0.33 ms	Connector, M8
50110783	GS 04M/P-50-S8	50 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8
50110789	GS 04M/N-50-S8	50 mm	1,500 Hz	LED, red	Transistor, NPN, light/dark reversible	0.33 ms	Connector, M8
50110784	GS 04M/P-80-S8	80 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8
50110790	GS 04M/N-80-S8	80 mm	1,500 Hz	LED, red	Transistor, NPN, light/dark reversible	0.33 ms	Connector, M8
50110785	GS 04M/P-120-S8	120 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8
50110787	GS 04M/N-120-S8	120 mm	1,500 Hz	LED, red	Transistor, NPN, light/dark reversible	0.33 ms	Connector, M8
50110786	GS 04M/P-220-S8	220 mm	1,500 Hz	LED, red	Transistor, PNP, light/dark reversible	0.33 ms	Connector, M8
50110788	GS 04M/N-220-S8	220 mm	1,500 Hz	LED, red	Transistor, NPN, light/dark reversible	0.33 ms	Connector, M8

/// GS 21



The compact forked photoelectric sensor with a mouth width of 8 mm and a switching frequency of 1000 Hz is suitable for the detection of small parts and aperture discs.



Benefits:

- GaAs top photoelectric sensor in constant light operation with gallium arsenide transmitter diode ensures a long lifetime
- Fast amplifier with high switching frequency for detection of short events (e. g. gaps between labels)
- Transistor output – separate switching amplifier not required

Direct access to the online product selector at www.leuze.com/en/gs21

Part no.	Part description	Mouth width	Switching frequency	Light source	Switching output	Response time	Connection
50013967	GS 21/4 G,5000	8 mm	1,000 Hz	LED, infrared	Transistor, PNP, light switching	0.5 ms	Cable, 5,000 mm

//FORKED SENSORS FOR LABEL DETECTION

RELIABLE DETECTION IN A WIDE RANGE OF DIFFERENT APPLICATIONS

Precise and fast detection – even at high web speeds – and the reliable detection of a wide range of material combinations and surfaces. These are the criteria professional sensors must meet for labeling applications. And here we offer the right solution for every application with our wide line of different designs and operating principles, from light to ultrasonics.

/// GS 61



Optical forked photoelectric sensor in slim-line design with 3 mm mouth width for exact detection of labels on base material.



Benefits:

- Simple sensitivity adjustment via multiturn potentiometer or optionally via teach-in function
- Slimline-design (reduced fork height) for installation directly at the dispensing edge
- Removable operating head for comfortable potentiometer adjustment
- Without tool
- Smallest dimensions of all industrial forked photoelectric sensors with an excellent price/performance ratio

Direct access to the online product selector at www.leuze.com/en/gs61

Part no.	Part description	Principle of physics	Mouth width	Switching frequency	Light source	Switching output 1	Response time	Connection
50110765	GS 61/6.2-S8.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8
50110108	GS 61/6.2-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8
50110761	GS 61/6-S8.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8
50110763	GS 61/6.2-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8
50110112	GS 61/6-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8
50110110	GS 61/6-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Connector, M8
50112425	GS 61/6.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable, 2,000 mm
50110769	GS 61/6	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable, 2,000 mm
50112424	GS 61/6.3,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable with connector, M12, 200 mm
50112422	GS 61/6.2,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable with connector, M12, 200 mm
50112423	GS 61/6,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	0.05 ms	Cable with connector, M12, 200 mm
50110766	GS 61/6D.2-S8.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8
50110762	GS 61/6D-S8.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8
50110109	GS 61/6D.2-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8
50110111	GS 61/6D-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8
50110113	GS 61/6D-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8
50110764	GS 61/6D.2-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Connector, M8
50110770	GS 61/6D	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable, 2,000 mm
50110767	GS 61/6.2	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable, 2,000 mm
50110768	GS 61/6D.2	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable, 2,000 mm
50112426	GS 61/6D.2,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable with connector, M12, 200 mm
50112427	GS 61/6D,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	0.05 ms	Cable with connector, M12, 200 mm

/// GS 63



This optical forked photoelectric sensor in metal housing with 3 mm mouth width and 60 mm mouth depth and low response time is ideally suited for wider labels.

**Benefits:**

- High switching frequency and short response time guarantee very good repeatability
- Easy adjustment via lockable teach button or teach input
- Slimline-design (reduced fork height) for installation directly at the dispensing edge
- ALC (auto level control) function: maximum performance reserve via automatic online optimization of the switching threshold
- Warning output for the display of teach or function errors

Direct access to the online product selector at www.leuze.com/en/gs63

Part no.	Part description	Principle of physics	Mouth width	Switching frequency	Light source	Switching output 1	Switching output 2	Response time	Connection
50112617	GS 63/6-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap		0.05 ms	Connector, M8
50110104	GS 63/6.3-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap		0.05 ms	Connector, M8
50112618	GS 63/6-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap		0.05 ms	Connector, M8
50110106	GS 63/6.3-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap		0.05 ms	Connector, M8
50110759	IGS 63/6.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	Transistor, push-pull, 0 V switching	0.05 ms	Cable, 2,000 mm
50112615	GS 63/6	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap		0.05 ms	Cable, 2,000 mm
50112428	IGS 63/6.3,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap	Transistor, push-pull, 0 V switching	0.05 ms	Cable with connector, M12, 200 mm
50112616	GS 63/6,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal in label gap		0.05 ms	Cable with connector, M12, 200 mm
50112620	GS 63/6D-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label		0.05 ms	Connector, M8
50110105	GS 63/6D.3-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label		0.05 ms	Connector, M8
50110107	GS 63/6D.3-S8V	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label		0.05 ms	Connector, M8
50110760	IGS 63/6D.3	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	Transistor, push-pull, 0 V switching	0.05 ms	Cable, 2,000 mm
50112619	GS 63/6D	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label		0.05 ms	Cable, 2,000 mm
50112429	IGS 63/6D.3,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label	Transistor, push-pull, 0 V switching	0.05 ms	Cable with connector, M12, 200 mm
50113790	GS 63/6D,200-S12	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label		0.05 ms	Cable with connector, M12, 200 mm
50118090	GS 63/6D,200-S8	Optical	3 mm	10,000 Hz	LED, infrared	Transistor, push-pull, switching signal on label		0.05 ms	Cable with connector, M8, 200 mm

/// GK 14



The capacitive forked sensor is particularly well suited for transparent labels without metallic coating.

**Benefits:**

- Forked sensor for reliable detection of transparent and opaque labels
- PNP and NPN transistor output for optimum adaptation to the controller
- Robust metal housing with beveled inlet edges
- Inverting input for easy adaptation of the output signal level

Direct access to the online product selector at www.leuze.com/en/gk14

Part no.	Part description	Principle of physics	Mouth width	Switching frequency	Switching output 1	Switching output 2	Response time	Connection
50026371	GK 14/24 L	Capacitive	1 mm	5,000 Hz	Transistor, PNP, switching signal in label gap, reversible	Transistor, NPN, switching signal in label gap, reversible	0.1 ms	Connector, M12
50031714	GK 14/24 L.2	Capacitive	1 mm	5,000 Hz	Transistor, PNP, switching signal in label gap, reversible	Transistor, NPN, switching signal in label gap, reversible	0.1 ms	Connector, M12

/// GSU 06



This forked sensor with metal housing is very well suited for the detection of foil labels, metallic-coated foil labels and thin metal foils. A special variant for paper tear monitoring is also available.

**Benefits:**

- Reliable detection of foil labels on foil carriers or paper carriers, paper labels on paper carriers, metallic foil labels and thin metal foils
- Simple adjustment via teach-in by pressing a button or remote calibration 1
- Static PNP and NPN transistor outputs for optimum adaptation to the controller
- M8/M12 connector or cable version

Direct access to the online product selector at www.leuze.com/en/gsu06

Part no.	Part description	Principle of physics	Mouth width	Switching output 1	Switching output 2	Response time	Connection
50039638	GSU 06/24-2-S8	Ultrasonics	2.5 mm	Transistor, PNP, switching signal in label gap	Transistor, NPN, switching signal in label gap	0.3 ms	Connector, M8
50040191	GSU 06/24-2	Ultrasonics	2.5 mm	Transistor, PNP, switching signal in label gap	Transistor, NPN, switching signal in label gap	0.3 ms	Cable, 2,000 mm
50040190	GSU 06/24D-2-S8	Ultrasonics	2.5 mm	Transistor, PNP, switching signal on label	Transistor, NPN, switching signal on label	0.3 ms	Connector, M8
50040192	GSU 06/24D-2	Ultrasonics	2.5 mm	Transistor, PNP, switching signal on label	Transistor, NPN, switching signal on label	0.3 ms	Cable, 2,000 mm
50108819	GSU 06/24D-2,200-S12	Ultrasonics	2.5 mm	Transistor, PNP, switching signal on label	Transistor, NPN, switching signal on label	0.3 ms	Cable with connector, M12, 200 mm

The switching frequency is dependent on the conveyor speed, label length and spacing between labels

/// GSU 14C



Ultrasonic forked sensor for reliable detection and universal application. With its large mouth width, this ultrasonic forked sensor is also suitable for fan-fold flyers and booklets.

**Benefits:**

- Reliable detection of foil labels on foil carriers, foil labels on paper carriers, paper labels on paper carriers, metallic foil labels and thin metal foils

Direct access to the online product selector at www.leuze.com/en/gsu14c

Part no.	Part description	Principle of physics	Mouth width	Switching output 1	Switching output 2	Response time	Connection
50116933	GSU 14C/66.3-S12	Ultrasonics	4 mm	Transistor, push-pull, switching signal in label gap	Transistor, push-pull, switching signal on label	0.2 ms	Connector, M12
50116934	GSU 14C/66D.3-S12	Ultrasonics	4 mm	Transistor, push-pull, switching signal on label	Transistor, push-pull, switching signal in label gap	0.2 ms	Connector, M12
50116935	GSU 14C/66D.31-S12	Ultrasonics	4 mm	Transistor, push-pull, switching signal on label	Transistor, push-pull, switching signal in label gap	0.2 ms	Connector, M12

/// IGSU 14C



Worth special mention are EasyTeach (press button – dispense labels – done!), ALC function and a warning output for signalization of teach or function errors. With the large mouth width, the forked sensor is also suitable for fan-fold flyers or booklets.

**Benefits:**

- Forked sensor for reliable detection of foil labels on foil carriers or paper carriers, paper labels on paper carriers, metallic foil labels and thin metal foils
- Model for the reliable detection of splice on paper web or plastic web
- easyTeach function: press button – dispense labels – done
- ALC function (auto level control): maximum performance reserve via automatic online optimization of the switching threshold

Direct access to the online product selector at www.leuze.com/en/igsu14c

Part no.	Part description	Principle of physics	Mouth width	Switching frequency	Switching output 1	Switching output 2	Response time	Connection
50116937	IGSU 14C/6.31-S12	Ultrasonics	4 mm	2,000 Hz	Transistor, push-pull, switching signal in label gap, reversible	Transistor, push-pull, 0 V switching	0.2 ms	Connector, M12
50116936	IGSU 14C/6.3-S12	Ultrasonics	4 mm	2,000 Hz	Transistor, push-pull, switching signal in label gap, reversible	Transistor, push-pull, 0 V switching	0.2 ms	Connector, M12
50116938	IGSU 14C/6D.3-S12	Ultrasonics	4 mm	2,000 Hz	Transistor, push-pull, switching signal on label, reversible	Transistor, push-pull, 0 V switching	0.2 ms	Connector, M12

Splice inspection

50115736	IGSU 14C/6.3SD-S12	Ultrasonics	4 mm	2,000 Hz	Transistor, push-pull, switching signal on splice, reversible	Transistor, push-pull, 0 V switching	0.25 ms	Connector, M12
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SMARTER CUSTOMER SERVICE



24 h support

On-Call Service and technical support all around the clock



"In our Service Center in Owen, we have a lot of expert colleagues who, as sensor people, can reliably handle your questions and problems – and are happy to help you around the clock."

Simone Fischer,
Customer Advisor in the
Customer Care Center

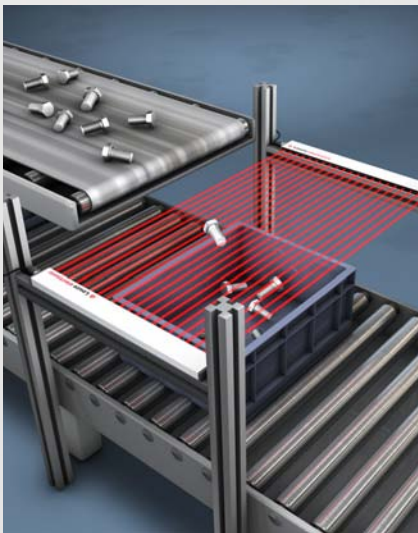
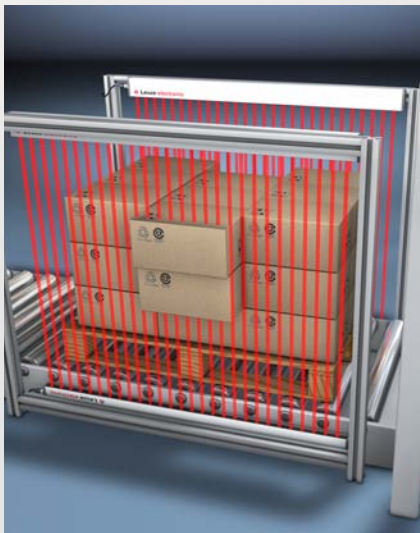
You can reach the sensor people around the clock www.leuze.com/en/support



/ LIGHT CURTAINS

OBJECT DETECTION MADE EASY

The switching light curtains from Leuze electronic are able to monitor a large measurement field and respond if sensor beams in the field are interrupted. Various resolutions and measurement field lengths enable reliable use in a variety of applications.



Switching
Sensors

Measuring
Sensors

Products for
Safety at Work

Identification

Data Transmission /
Control Components

Industrial Image
Processing

Accessories

/// VARIO B



The system, which consists of a transmitter and receiver, generates a monitoring field of many infrared light beams and produces a reliable switching signal as soon as objects penetrate this monitoring field. Easy installation, its small design as well as the integrated, configurable evaluation unit make the VARIO B an economical and flexible sensor solution.

**Benefits:**

- Beam spacing from 5 to 100 mm
- Monitoring height from 35 to 3100 mm
- Modular construction 8 to 64 beams
- Measurement field range from 700 to 5000 mm
- Parallel and diagonal beams for increased detection reliability
- Independently configurable PNP or NPN outputs
- Assignment of different monitoring areas to switching outputs
- Warning signal in the case of soiling
- Electronic calibration of the light barrier optimizes object detection in every situation
- Very small housing dimensions, therefore flexible application possibilities (10 × 27 mm or 12 × 85 mm)
- Low installation effort
- Adaptability to tricky applications through configuration via software on the PC (VARIOsoft)

Direct access to the online product selector at www.leuze.com/en/variob

PART NUMBER CODES – light curtains VARIO B, transmitters

V	B	T	-	1	2	.	5	-	6	8	8	-	S	8
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Model

VBT VARIO B transmitter

Beam spacing

5	5 mm
12.5	12.5 mm
25	25 mm
50	50 mm
100	100 mm

Measurement field length

XXXX Measurement field length [mm], dependent on beam spacing

Electrical connection

S8	M8 connector, 4-pin, axial
4000	Connection cable 4 m

PART NUMBER CODES – light curtains VARIO B, receivers

I	V	B	R	/	2	-	1	2	.	5	-	6	8	8	-	0	0	-	S	8
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Model

IVBR VARIO B receiver with warning output

Output

2	NPN
4	PNP

Beam spacing

5	5 mm
12.5	12.5 mm
25	25 mm
50	50 mm
100	100 mm

Measurement field length

XXXX Measurement field length [mm], dependent on beam spacing

Measurement function

00	Parallel beam method, light switching
01	Parallel and diagonal beam method, light switching
02	Parallel beam method, dark switching
03	Parallel and diagonal beam method, dark switching

Electrical connection

S8	M8 connector, 4-pin, axial
4000	Connection cable 4 m

Part no.	Part description	Beam spacing	Measurement field length	No. of beams	Operating range	Switching outputs	Switching output	Output functions	Connection
50107869	► VBT-5-35-S8	5 mm	35 mm	8	0.7 ... 5 m				Connector, M8
50107869-00	◄ IVBR/4-5-35-00-S8	5 mm	35 mm	8		2	Transistor, PNP, light switching	Switching output, warning output	Connector, M8
50107869-10	◄ IVBR/2-5-35-00-S8	5 mm	35 mm	8		2	Transistor, NPN, light switching	Switching output, warning output	Connector, M8
50107888	► VBT-12.5-88-S8	12.5 mm	88 mm	8	0.7 ... 5 m				Connector, M8
50107888-00	◄ IVBR/4-12.5-88-00-S8	12.5 mm	88 mm	8		2	Transistor, PNP, light switching	Switching output, warning output	Connector, M8
50107888-10	◄ IVBR/2-12.5-88-00-S8	12.5 mm	88 mm	8		2	Transistor, NPN, light switching	Switching output, warning output	Connector, M8
50107911	► VBT-25-175-S8	25 mm	175 mm	8	0.7 ... 5 m				Connector, M8
50107911-00	◄ IVBR/4-25-175-00-S8	25 mm	175 mm	8		2	Transistor, PNP, light switching	Switching output, warning output	Connector, M8
50107911-10	◄ IVBR/2-25-175-00-S8	25 mm	175 mm	8		2	Transistor, NPN, light switching	Switching output, warning output	Connector, M8
50107936	► VBT-25-2175.4000	25 mm	2,175 mm	88	0.7 ... 5 m				Cable, 4,000 mm
50107936-00	◄ IVBR/4-25-2175-00.4000	25 mm	2,175 mm	88		2	Transistor, PNP, light switching	Switching output, warning output	Cable, 4,000 mm
50107939	► VBT-50-350-S8	50 mm	350 mm	8	0.7 ... 5 m				Connector, M8
50107939-00	◄ IVBR/4-50-350-00-S8	50 mm	350 mm	8		2	Transistor, PNP, light switching	Switching output, warning output	Connector, M8
50107939-10	◄ IVBR/2-50-350-00-S8	50 mm	350 mm	8		2	Transistor, NPN, light switching	Switching output, warning output	Connector, M8
50107970	► VBT-100-700-S8	100 mm	700 mm	8	0.7 ... 5 m				Connector, M8
50107970-00	◄ IVBR/4-100-700-00-S8	100 mm	700 mm	8		2	Transistor, PNP, light switching	Switching output, warning output	Connector, M8
50107970-10	◄ IVBR/2-100-700-00-S8	100 mm	700 mm	8		2	Transistor, NPN, light switching	Switching output, warning output	Connector, M8

The factory-set configuration of the switching outputs can be changed at a later time using the VARIOsoft configuration software

Further products of this series can be found on our website

► transmitter / ◄ receiver

Switching Sensors

Measuring Sensors

Products for Safety at Work

Identification

Data Transmission / Control Components

Industrial Image Processing

Accessories

SMARTER APPLICATION KNOW-HOW

Efficiency you can feel!

We have already developed many practical solutions with a focus on increasing efficiency. You can find a selection of application examples on our website which will show you how we work and how our customers benefit from this.



See how our applications work in practice: www.leuze.com/en/practice

Duty

Safeguarding

Access guarding

Danger area safeguarding

Point of operation guarding

Detecting

Orientation detection

Presence inspection

Identification

2D-code

Bar code

RFID

Measurement

Dimension, contour, volume

Distance

Emissions

Level

Speed

Positioning

Monitoring & checking

Control engineering

Machine protection / collision prevention

Object protection

Quality control

Optical data transmission

Reset

Apply

/ SPECIAL SENSORS

RELIABLE, EVEN WHEN THINGS GET CHALLENGING

Under this heading are sensor solutions that must perform special detection tasks or which were developed for specific applications. Here you will find contrast scanners and luminescence scanners as well as color sensors.



Contrast Scanners

Page 105

Luminescence Scanners

Page 107

Color Sensors

Page 108



//CONTRAST SCANNERS

THE CONTRAST MAKES THE DIFFERENCE

This sensor type can use various light sources – such as white light, laser-generated red light or RGB light – to very precisely detect and compare contrasts and report the results to the process with minimal signal jitter. Through the automatic selection of the right transmitter colors, various color or gray value combinations can be reliably detected.

/// KRT 3B



The contrast scanners of the KRT 3B series distinguish between grayscale values, enabling them to detect minimal contrasts. As a result, a check can be performed for the presence of text or imprints or so-called marks detected.



Benefits:

- Scanning range 14.5 mm/60 mm (laser)
- Multicolor (RGB), white or laser light
- Various teach-in processes,
- Switching-threshold correction via EasyTune
- Min. response time 50 µs
- Switching frequency up to 10 kHz
- Pulse stretching
- IO-Link interface

Direct access to the online product selector at www.leuze.com/en/krt3b

Part no.	Part description	Operating range	Switching frequency	Light source	Digital switching output	Interface	Connection
50110592	KRTL 3B/4.3111-S8	0.04 ... 0.08 m	4,000 Hz	Laser, red	Transistor, PNP, light/dark reversible		Connector, M8
50110594	KRTL 3B/4.3111,200-S12	0.04 ... 0.08 m	4,000 Hz	Laser, red	Transistor, PNP, light/dark reversible		Cable with connector, 200 mm, M12
50110593	KRTL 3B/2.3111-S8	0.04 ... 0.08 m	4,000 Hz	Laser, red	Transistor, NPN, light/dark reversible		Connector, M8
50110595	KRTL 3B/2.3111,200-S12	0.04 ... 0.08 m	4,000 Hz	Laser, red	Transistor, NPN, light/dark reversible		Cable with connector, 200 mm, M12
50111321	KRTL 3B/6.3111-S8	0.04 ... 0.08 m	4,000 Hz	Laser, red	Transistor, push-pull, light/dark reversible	IO-Link	Connector, M8
50110580	KRTW 3B/4.1321-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible		Connector, M8
50111769	KRTW 3B/4.2121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible		Connector, M8
50110576	KRTW 3B/4.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible		Connector, M8
50110572	KRTW 3B/4.1110-S8	0.0125 ... 0.0165 m	6,000 Hz	LED, white	Transistor, PNP, light/dark reversible		Connector, M8
50110578	KRTW 3B/4.1121,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible		Cable with connector, 200 mm, M12
50110582	KRTW 3B/4.1321,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible		Cable with connector, 200 mm, M12
50110577	KRTW 3B/2.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible		Connector, M8
50110573	KRTW 3B/2.1110-S8	0.0125 ... 0.0165 m	6,000 Hz	LED, white	Transistor, NPN, light/dark reversible		Connector, M8
50110581	KRTW 3B/2.1321-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible		Connector, M8
50110579	KRTW 3B/2.1121,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible		Cable with connector, 200 mm, M12
50110583	KRTW 3B/2.1321,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible		Cable with connector, 200 mm, M12
50111320	KRTW 3B/6.1321-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, push-pull, light/dark reversible	IO-Link	Connector, M8
50111319	KRTW 3B/6.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, white	Transistor, push-pull, light/dark reversible	IO-Link	Connector, M8
50110584	KRTM 3B/4.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M8
50110588	KRTM 3B/4.1221-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M8
50111768	KRTM 3B/4.2121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M8
50110586	KRTM 3B/4.1121,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Cable with connector, 200 mm, M12
50110590	KRTM 3B/4.1221,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Cable with connector, 200 mm, M12
50110589	KRTM 3B/2.1221-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Connector, M8
50110585	KRTM 3B/2.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Connector, M8
50110587	KRTM 3B/2.1121,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Cable with connector, 200 mm, M12
50110591	KRTM 3B/2.1221,200-S12	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Cable with connector, 200 mm, M12
50118393	KRTM 3B/6.2121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible	IO-Link	Connector, M8
50111312	KRTM 3B/6.1121-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible	IO-Link	Connector, M8
50111313	KRTM 3B/6.1221-S8	0.0125 ... 0.0165 m	10,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible	IO-Link	Connector, M8

/// KRT 55



Wherever food, beverages, pharmaceutical products or even cosmetics are manufactured, processed and packaged, hygienic design has become a central requirement. These contrast scanners in WASH-DOWN design can withstand even more intensive cleaning and disinfection cycles. The IO-Link interface facilitates simple adaptation to complex applications.

**Benefits:**

- Stainless steel housing AISI 316L
- Scanning range 13 mm
- RGB or white light
- Various teach-in processes
- Switching-threshold correction via EasyTune
- Response time 50 µs
- Switching frequency 10 kHz
- Pulse stretching
- IO-Link interface

Direct access to the online product selector at www.leuze.com/en/krt55

Part no.	Part description	Operating range	Switching frequency	Light source	Digital switching output	Interface	Connection
50111642	KRTW 55/4.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible		Connector, M8
50114075	KRTW 55/4.1121,5000	0.011 ... 0.015 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible		Cable, 5,000 mm
50110602	KRTW 55/4.1121,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, white	Transistor, PNP, light/dark reversible		Cable with connector, 200 mm, M12
50110601	KRTW 55/2.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible		Connector, M8
50110603	KRTW 55/2.1121,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, white	Transistor, NPN, light/dark reversible		Cable with connector, 200 mm, M12
50111641	KRTW 55/6.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, white	Transistor, push-pull, light/dark reversible	IO-Link	Connector, M8
50110613	KRTM 55/4.1221-S8	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M8
50111644	KRTM 55/4.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M8
50114074	KRTM 55/4.1121,5000	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Cable, 5,000 mm
50110615	KRTM 55/4.1221,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Cable with connector, 200 mm, M12
50110611	KRTM 55/4.1121,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Cable with connector, 200 mm, M12
50110614	KRTM 55/2.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Connector, M8
50110610	KRTM 55/2.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Connector, M8
50110616	KRTM 55/2.1221,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Cable with connector, 200 mm, M12
50110612	KRTM 55/2.1121,200-S12	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Cable with connector, 200 mm, M12
50111643	KRTM 55/6.1121-S8	0.011 ... 0.015 m	10,000 Hz	LED, RGB	Transistor, push-pull, light/dark reversible	IO-Link	Connector, M8

/// KRT 20



With jitter times < 7 µs, with precise, round and small light spots, with memory bank administration and freely programmable interface, with perfect temperature compensation, these devices in a robust metal housing can handle even the fastest processes.

**Benefits:**

- Metal housing with interchangeable lenses
- Scanning ranges of 12/20 mm and 50 mm
- Very high resolution
- Response time 10 ms
- Switching frequency 50 kHz
- Switching and analog output
- Temperature compensation
- Pulse stretching
- Switching-threshold changeover
- Freely programmable
- Rectangular or round light-spot profile

Direct access to the online product selector at www.leuze.com/en/krt20

Part no.	Part description	Operating range	Switching frequency	Light source	Digital switching output	Analog switching output	Connection
50116177	KRTM 20M/P-50-6320-S12	0.045 ... 0.055 m	50,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M12
50041007	KRTM 20M/V-20-0004-S12	0.018 ... 0.022 m	16,000 Hz	LED, RGB	Transistor, PNP, light switching	Current	Connector, M12
50035674	KRTM 20M/V-20-0001-S12	0.018 ... 0.022 m	16,000 Hz	LED, RGB	Transistor, PNP, light switching	Current	Connector, M12
50113435	KRTM 20M/P-20-6320-S12	0.018 ... 0.022 m	50,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M12
50114202	KRTM 20M/P-20-3320-S12	0.018 ... 0.022 m	50,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M12
50113438	KRTM 20M/C-20-6526-S12	0.018 ... 0.022 m	50,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible	Current	Connector, M12
50113437	KRTM 20M/C-20-6626-S12	0.018 ... 0.022 m	50,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible	Current	Connector, M12
50114201	KRTM 20M/N-20-3320-S12	0.018 ... 0.022 m	50,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Connector, M12
50113436	KRTM 20M/N-20-6320-S12	0.018 ... 0.022 m	50,000 Hz	LED, RGB	Transistor, NPN, light/dark reversible		Connector, M12
50116474	KRTM 20M/P-12-6420-S12	0.011 ... 0.013 m	50,000 Hz	LED, RGB	Transistor, PNP, light/dark reversible		Connector, M12

Other scanning ranges of 12 ± 1 mm, 20 ± 2 mm or 50 ± 5 mm are possible by changing the lens

//LUMINESCENCE SCANNERS

I SEE WHAT YOU DON'T SEE

This sensor detects both visible as well as invisible luminescent markings. It sends the result as switching output or analog value and is used primarily for sorting and inspection tasks in areas in which other detection methods fail to supply reliable results or where the markings should not or must not be visible.

/// LRT 8



With various light spot profiles, filters, transmitter variants and accessories, this compact design includes everything needed for detecting luminescent objects.



Benefits:

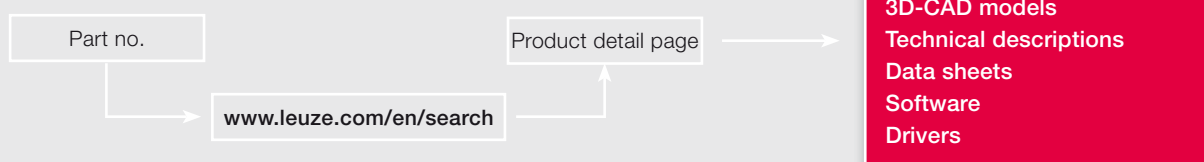
- Scanning ranges up to 200 mm
- Very compact metal construction
- Switching frequency 1.5 kHz
- Sensitivity adjustment via potentiometer
- Turnable M12 connector
- Filter variants

Direct access to the online product selector at www.leuze.com/en/lrt8

Part no.	Part description	Operating range	Light source	Switching frequency	Switching output 1	Switching output 2	Connection
50119032	LRT 8/24.14-150-S12	0 ... 0.4 m	LED, UV	1,500 Hz	Transistor, PNP, light switching	Transistor, NPN, light switching	Connector, M12
50124693	LRT 8/44.14-150-S12	0 ... 0.4 m	LED, UV	1,500 Hz	Transistor, PNP, light switching	Transistor, PNP, dark switching	Connector, M12
50116732	LRT 8/24.16-80-S12	0 ... 0.1 m	LED, UV	1,500 Hz	Transistor, PNP, light switching	Transistor, NPN, light switching	Connector, M12
50109343	LRT 8/24.04-100-S12	0 ... 0.22 m	LED, UV	1,500 Hz	Transistor, PNP, light switching	Transistor, NPN, light switching	Connector, M12
50124694	LRT 8/44.04-100-S12	0 ... 0.22 m	LED, UV	1,500 Hz	Transistor, PNP, light switching	Transistor, PNP, dark switching	Connector, M12
50041840	LRT 8/24.04-50-S12	0 ... 0.15 m	LED, UV	1,500 Hz	Transistor, PNP, light switching	Transistor, NPN, light switching	Connector, M12
50119033	LRT 8/24.10-150-S12	0 ... 0.5 m	LED, blue	1,500 Hz	Transistor, PNP, light switching	Transistor, NPN, light switching	Connector, M12

SMARTER CUSTOMER SERVICE

The quickest way to find matching accessories and technical downloads:



On the product detail pages you will find comprehensive technical downloads: www.leuze.com/en/products

//COLOR SENSORS

ALWAYS GOOD WHEN THINGS GET COLORFUL

This sensor type detects colors and compares them to a stored reference value. They are the right solution whenever the color of an object or marking can serve as a sorting or inspection criteria. Depending on the configuration and specified tolerance values of the system, the result is output as a switching signal.

/// CRT 20B



Thanks to extensive configuration options and 1 or 4 color channels with individually adjustable color tolerance, this series can be used for fast processes with short response times.



Benefits:

- 12.5 mm or 60 mm scanning range
- Very robust metal construction
- Simple teach-in of up to four reference colors
- Sensitivity adjustment following teach-in
- Color tolerance separately adjustable per color channel
- Switching frequency up to 6 kHz
- Extensive configuration options
- Turnable M12 connector

Direct access to the online product selector at www.leuze.com/en/crt20b

Part no.	Part description	Operating range	Switching frequency	Light source	Switching outputs	Connection	Application
50109597	CRT 20B M/P-60-001-S12	0.051 ... 0.069 m	6,000 Hz	LED, RGB	1	Connector, M12	Detection of one color
50109595	CRT 20B M/N-60-001-S12	0.051 ... 0.069 m	6,000 Hz	LED, RGB	1	Connector, M12	Detection of one color
50109599	CRT 20B M/N-60-004-S12	0.051 ... 0.069 m	3,500 Hz	LED, RGB	4	Connector, M12	Detection of four colors
50109601	CRT 20B M/P-60-004-S12	0.051 ... 0.069 m	3,500 Hz	LED, RGB	4	Connector, M12	Detection of four colors
50109596	CRT 20B M/P-12-001-S12	0.0095 ... 0.0155 m	6,000 Hz	LED, RGB	1	Connector, M12	Detection of one color
50109594	CRT 20B M/N-12-001-S12	0.0095 ... 0.0155 m	6,000 Hz	LED, RGB	1	Connector, M12	Detection of one color
50109598	CRT 20B M/N-12-004-S12	0.0095 ... 0.0155 m	3,500 Hz	LED, RGB	4	Connector, M12	Detection of four colors
50109600	CRT 20B M/P-12-004-S12	0.0095 ... 0.0155 m	3,500 Hz	LED, RGB	4	Connector, M12	Detection of four colors

/// CRT 442



If only one color channel is needed, this compact design is both a simple as well as a reliable solution.



Benefits:

- 12.5 mm scanning range
- Very small plastic construction
- Simple teach-in of the reference color
- One color channel
- Adjustable color tolerance
- 1.5 kHz switching frequency
- M12 connector

Direct access to the online product selector at www.leuze.com/en/crt442

Part no.	Part description	Operating range	Switching frequency	Light source	Switching outputs	Connection	Application
50109602	CRT 442 K/N-12-001-S12	0.0105 ... 0.0145 m	1,500 Hz	LED, RGB	1	Connector, M12	Detection of one color
50109603	CRT 442 K/P-12-001-S12	0.0105 ... 0.0145 m	1,500 Hz	LED, RGB	1	Connector, M12	Detection of one color

/// CRT 448



This series with 3 color channels and the scan function for color gradients can be used flexibly in many areas of applications.

**Benefits:**

- 22 mm or 32 mm scanning range
- Small plastic construction
- Simple teach-in of three reference colors
- Scan function for color gradients
- Color tolerance separately adjustable per color channel
- 500 Hz switching frequency
- Configuration options
- Turnable M12 connector

Direct access to the online product selector at www.leuze.com/en/crt448

Part no.	Part description	Operating range	Switching frequency	Light source	Switching outputs	Connection	Application
50121293	CRT 448.S3/222-M12	0.012 ... 0.032 m	500 Hz	LED, white	3	Connector, M12	Detection of three colors
50121294	CRT 448.S3/444-M12	0.012 ... 0.032 m	500 Hz	LED, white	3	Connector, M12	Detection of three colors
50121292	CRT 448.L3/444-M12	0.018 ... 0.022 m	500 Hz	LED, white	3	Connector, M12	Detection of three colors
50121291	CRT 448.L3/222-M12	0.018 ... 0.022 m	500 Hz	LED, white	3	Connector, M12	Detection of three colors

Switching Sensors

Measuring Sensors

Products for Safety at Work

Identification

Data Transmission / Control Components

Industrial Image Processing

Accessories

SMARTER APPLICATION KNOW-HOW

You need application know-how – we have the required expertise in your sector of industry!



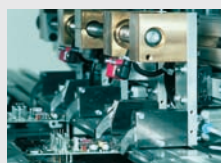
Conveyor and storage systems



Automotive industry



Packaging industry



Robotics/handling



Machine tools



Laboratory analysis



More on our industry-specific knowledge: www.leuze.com/en/industry