ABR Series

Imager-Based 1D and 2D Barcode Readers

- Reliable with advanced capabilities to solve tough traceability applications
- Compact, flexible, all-in-one solution for industrial environments
- Easy integration, connection, and programming

BANNER®

Tracking Products through Packaging

Challenges

- Inconsistent quality of barcodes printed on glossy, shiny, or reflective packaging material
- Multiple product labels with barcodes printed in different orientations
- Limited space available to deploy barcode reader

Solution

- ABR 3000 has robust decoding capability to read damaged, deformed, and overprinted codes
- Ability to read multiple 1D or 2D codes in any orientation
- Complete, all-in-one solution in an ultra-compact housing

Reliable Detection of Small 2D Codes on Vials

Challenges

- 2D codes store lot codes, formulation, and expiration dates on pill bottles
- Presence and accuracy of codes must be verified for product recalls/quality assurance
- Limited space requires a reader with small housing and adjustable focus

Solution

- Compact housing and adjustable focus of ABR 3000 enables flexible deployment in limited space
- USB communication interfaces with laboratory equipment
- Detects missing or incorrect codes and sends an output alarm

Small DPM Codes on Electronic Components

Challenges

- 2D codes are directly marked on electronic components
- Contains dense information on the component, such as serial number
- DPM codes are low-contrast and thus more difficult to read
- A reader must read the multiple component codes with high accuracy

Solution

- ABR 7000 features 2 MP for small, challenging DPM codes
- Polarized windows reduce glare from shiny materials
- Customizable light configurations ensure higher contrast for reliable code reads
- Autofocus allows for product line changeover without readjusting on the device

Packages of Varying Height with Multiple 1D and 2D Barcodes

Challenges

- Multiple 1D and 2D barcodes printed on each label
- Barcode position and orientation varies with the location of each package on the conveyor
- Box height varies with each line changeover

Solution

- ABR 7000 is capable of reading multiple 1D and 2D barcodes in a single inspection
- Wide field-of-view enables inspections over a large area
- Autofocus lens easily adapt to changes in box size when the line changes over

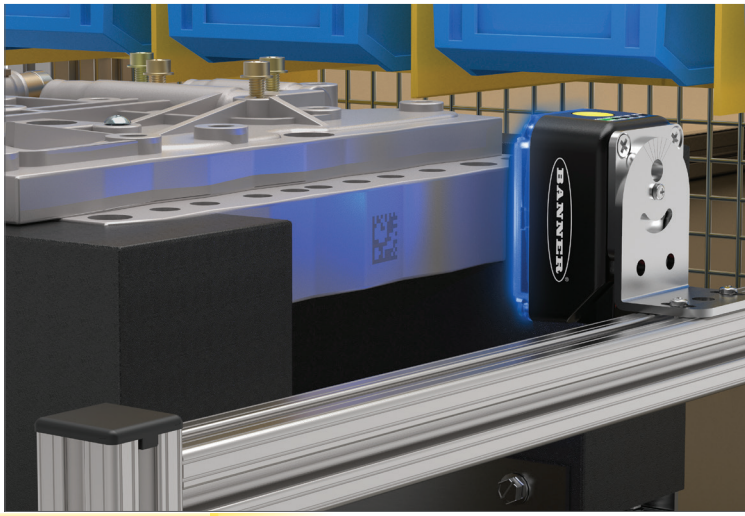
Low Contrast DPM Codes on Automotive Components

Challenges

- 2D codes are etched into automotive components
- Low contrast between the barcodes and the metal background
- Challenging environment with physical hazards common to manufacturing
- Each component must be tracked through the manufacturing process

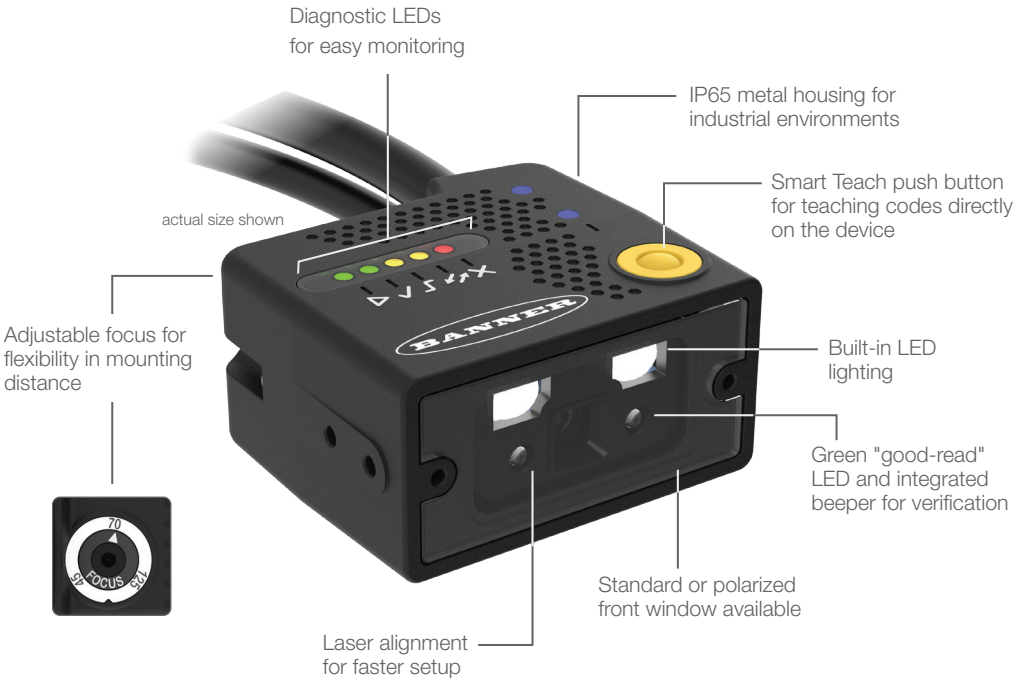
Solution

- ABR 7000's superior decoding capabilities and a high-resolution imager enable reliable reading of Direct Part Mark (DPM) and other difficult barcodes
- Powerful multicolored DPM lighting provides optimal illumination on etched, reflective, textured, and other challenging surfaces
- Rugged, IP67-rated housing protects against industrial hazards
- Ethernet connectivity for communicating with factory floor

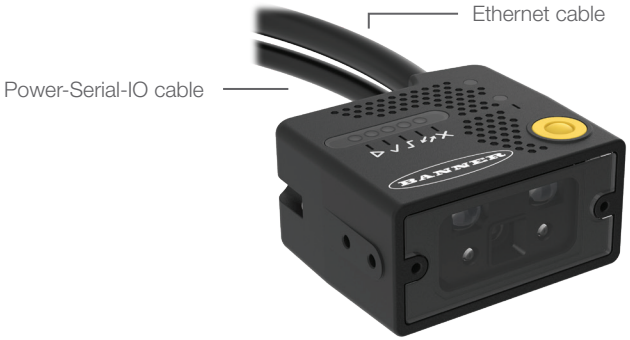


ABR 3000 Series – Ultracompact Design, Powerful Capabilities

- Barcode reader with compact housing for tight spaces
- Two resolutions and adjustable focus for application flexibility
- Easy setup and operation using a push button or remotely with software interface

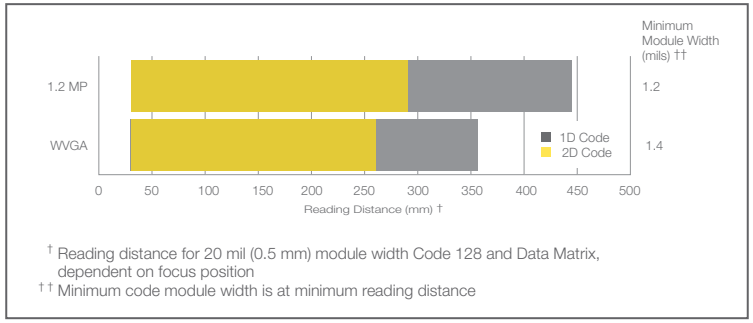


USB communication models for tight industrial spaces



Ethernet models for communicating on the factory floor

1D and 2D Reading Range by Model



† Reading distance for 20 mil (0.5 mm) module width Code 128 and Data Matrix, dependent on focus position

†† Minimum code module width is at minimum reading distance

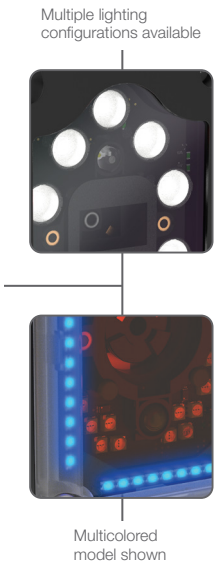
Series	Family	Resolution/ Lens		Lighting	Front Window	Communication Type	Code Type
ABR	3	106	–	W	S	U	1
	3			W = White	S = Standard P = Polarized*	U = USB E = Ethernet	1 = 1D 2 = 1D + 2D

009 = WVGA 752x480 pixels (9 mm lens)
106 = 1.2MP 1280x960 pixels (6 mm lens)

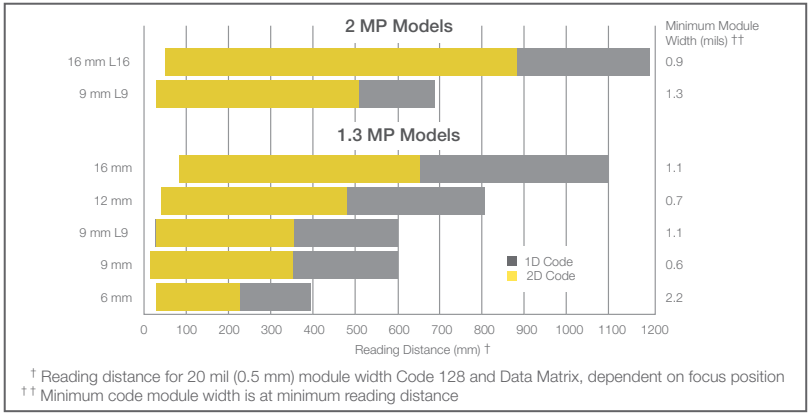
* Only available in 1.2MP models

ABR 7000 Series – Power and Versatility to Solve Any Application

- High-resolution imager and fast processing time to solve tough applications on the assembly line
- Autofocus model available for faster setup and product line changes
- Superior integrated lighting for long-range use, low-contrast codes, and direct part marking (DPM) applications



1D and 2D Reading Range by Model



† Reading distance for 20 mil (0.5 mm) module width Code 128 and Data Matrix, dependent on focus position
†† Minimum code module width is at minimum reading distance

Series	Family	Resolution	Lens		Lighting	Front Window	Communication Type	Code Type
ABR	7	1	06	–	R	S	E	2

7

1 = 1.3MP 1280x1024 pixels

06 = 6 mm
09 = 9 mm
L9* = 9 mm
12 = 12 mm
16 = 16 mm

R = Red
M = Multicolored**
W = White

S = Standard
P = Polarized***

E = Ethernet

2 = 1D + 2D

2 = 2MP 1600x1200 pixels

L9* = 9 mm
L16* = 16 mm

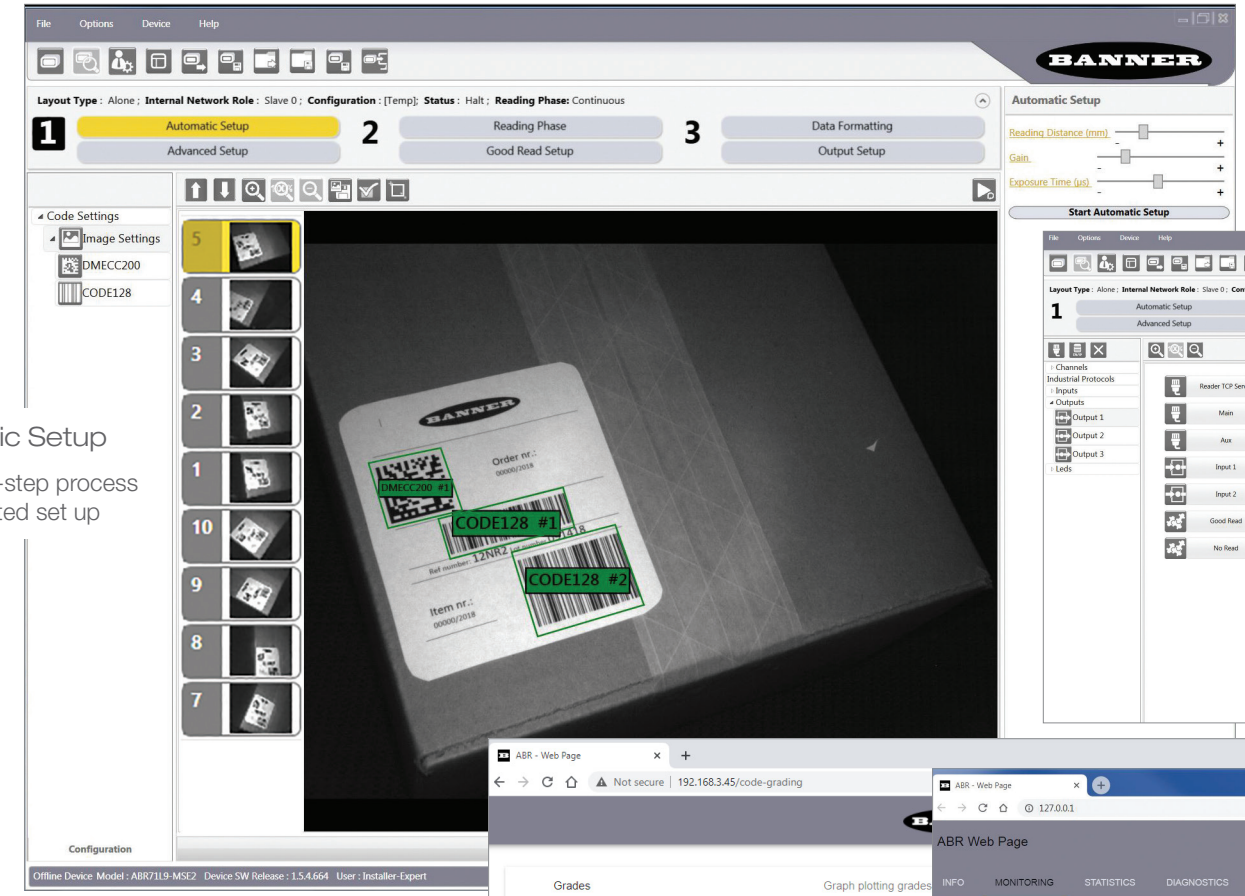
R = Red
W = White

S = Standard†
D = Diffused††
P = Polarized††

* Liquid lens autofocus
** Red and blue LEDs for optimized reading of DPM codes, available on 6 mm and 9 mm models only
*** White light only, L9 lens

† White light only
†† Red light only

Barcode Manager Software – Easy-to-Use, Advanced Capabilities

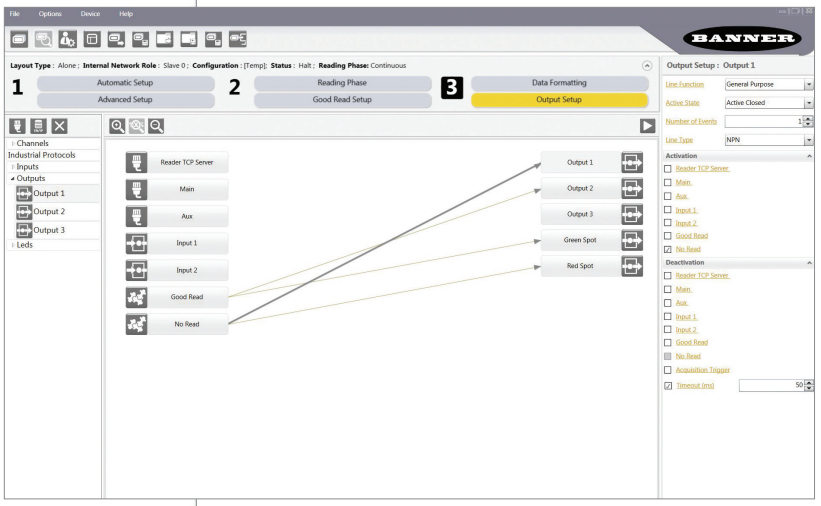


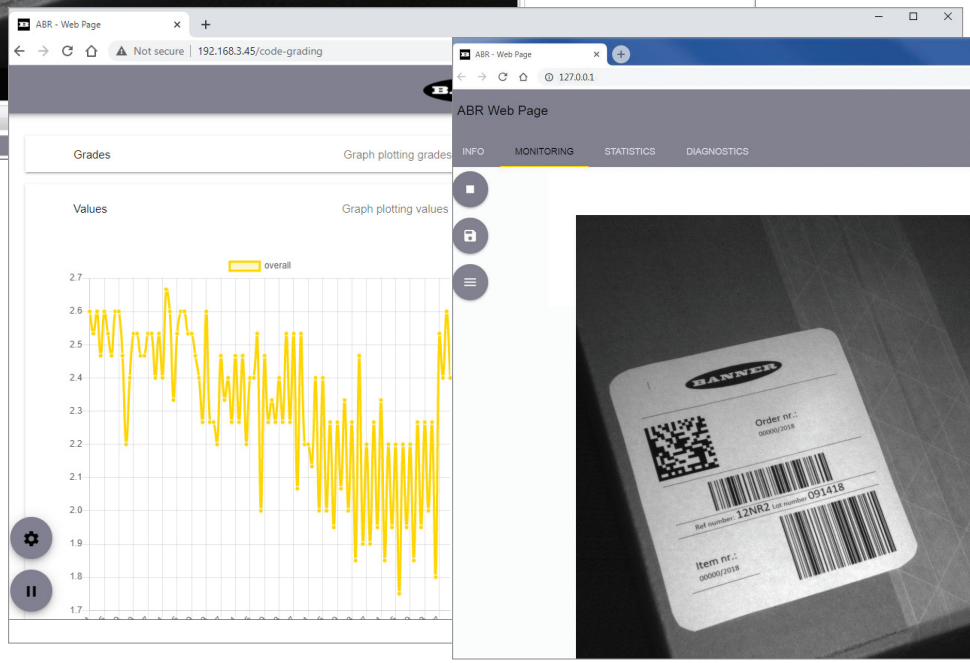
Automatic Setup

Quick, one-step process for automated set up

Configure

Intuitive flowchart programming and diverse configuration options





Remotely Monitor

Web interface for monitoring, configuring and reviewing statistics

Barcode Manager Features

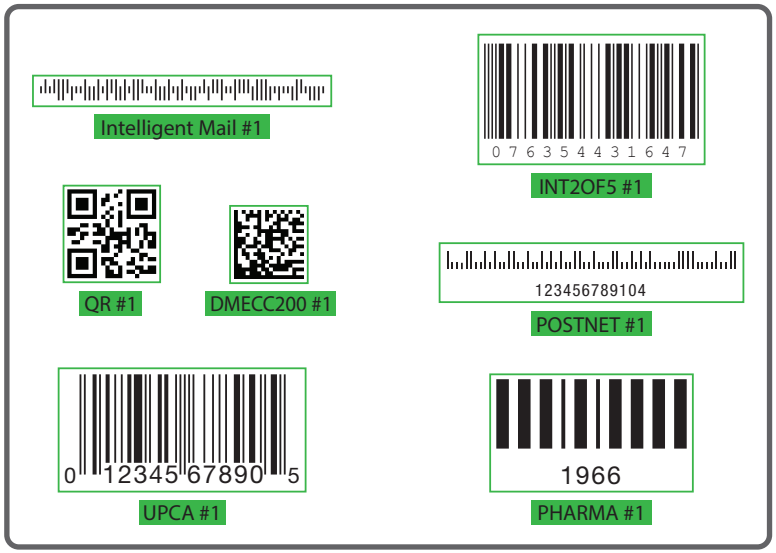
Image Filtering: The following image filters are available: Erode, Dilate, Close, Open, Contrast Stretching, Histogram Equalization, Smoothing, Sharpening, Deblurring, Black Enhancement, White Enhancement

Code Grading: ABR readers can be used to evaluate printed or marked symbols according to the ISO/IEC 16022, 18004, AIM DPM, and ISO/IEC 15416 standards

Multihead Networking: Connect multiple ABR 7000 models together with ID-Net for complex applications

Presentation Mode: Automatically reads the barcode when a part is presented to the reader and motion is detected

Webserver: Available for all models for viewing, monitoring and making changes remote from any device



Capable of reading the following codes

1-D and Stacked

- PDF417 (Standard and Micro)
- Code 128 (GS1-128)
- Code 39 (Standard and Full ASCII)
- Code 32
- MSI
- Standard 2 of 5
- Matrix 2 of 5
- Interleaved 2 of 5
- Codabar
- Code 93
- Pharmacode
- UPC (EAN-8/13-UPC-A/E)
- GS1 DataBar Family
- Composite Symbologies
- Plessey

2D

- Data Matrix ECC 200 (Standard, GS1, DPM)
- QR Code (Standard, DPM)
- Micro QR Code
- MAXICODE
- Aztec Code
- Dotcode

Postal

- Australia Post
- Royal Mail 4 State Customer
- Kix Code
- Japan Post
- PLANET
- POSTNET
- POSTNET (+BB)
- Intelligent Mail
- Swedish Post

Cordsets

For Use with ABR Ethernet Models

17-pin M12 female shielded (for power, serial and IO)

MQDC2S-1706
2 m (6.5 ft)
MQDC2S-1715
5 m (15 ft)
MQDC2S-1730
9 m (30 ft)

4-pin M12 D-code to RJ45 Ethernet for Ethernet Communication

STP-M12D-406
2 m (6.5 ft)
STP-M12D-415
5 m (15 ft)
STP-M12D-430
9 m (30 ft)

For Use with ABR USB Models (ABR 3000 only)

Power and USB Communication only

17-pin M12 female to USB

MQDEC-1703SS-USB

OR

Power, USB Communication, IO and Serial Communication

17-pin M12 female shielded (for power, serial and IO)

MQDC2S-1706
2 m (6.5 ft)
MQDC2S-1715
5 m (15 ft)
MQDC2S-1730
9 m (30 ft)

Splitter cable. 17-pin M12 female trunk with one 17-pin M12 male branch and one USB branch

CSB-M121701USB02M121702

Memory Module

TCNM-ACMK-100
Provides backup and restore capability when used with a Connection Box

Connection Box

TCNM-ACBB1
Provide simplified wiring and connection for ABR readers

For Use with TCNM-ACBB1 Connection Box

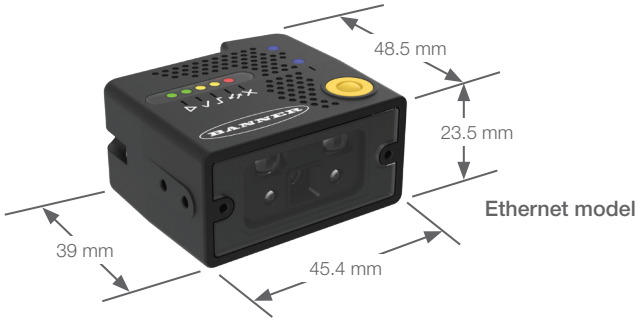
17-pin M12 female to DB25 (replaces MQDC2S-17xx)

MQDEC-1703SS-DB25
0.9 m (3 ft)

17-pin female to 17-pin male shielded (optional extension cable)

MQDEC-1706SS
2 m (6.5 ft)
MQDEC-1715SS
5 m (15 ft)
MQDEC-1730SS
9 m (30 ft)

ABR 3000 Models



Ethernet model

USB model

Specifications

	3000 Models	7000 Models
Supply Voltage	5 to 30 V dc	10 to 30 V dc
Consumption	0.4 A (at 5 V) to 0.1 A (at 30 V) maximum	0.7 A (at 10 V) to 0.2 A (at 30 V) maximum
Communication Protocols	EtherNet/IP, Modbus/TCP, USB, RS-232, RS422, FTP, SLMP	EtherNet/IP, Modbus/TCP, RS-232, RS422, FTP, SLMP
Communication Speed	Main RS232 or RS422 full duplex: 2400 bit/s to 115200 bit/s USB Models: USB 2.0 Hi-Speed Ethernet Models: 10/100 Mbit/s	Main RS232 or RS422 full duplex: 2400 bit/s to 115200 bit/s Auxiliary - RS232: 2400 to 115200 bit/s Ethernet: 10/100 Mbit/s
Inputs	Input 1 (External Trigger) and Input 2: Protected against short-circuits	Input 1 (External Trigger) and Input 2: Opto-isolated and polarity insensitive
Outputs	2 NPN or PNP short circuit protected	3 NPN or PNP short circuit protected
Imager	WVGA: 752 × 480 pixels, CMOS 1.2MP: 1280 × 960 pixels, CMOS	1.3 MP: 1280 × 1024 pixels, CMOS 2MP: 1600 x 1200 pixels, CMOS
Frame Rate	WVGA: 57 frames/sec 1.2MP: 36 frames/sec	1.3MP: 60 frames/sec 2MP: 45 frames/sec
Construction	Aluminum, Plastic Window	Aluminum, Plastic Window
Operating Conditions	0 to +45 °C (+32 to +113 °F) 90% maximum relative humidity	0 to +50 °C (+32 to +122 °F) Liquid Lens: 0 to +45 °C (+32 to +113 °F) 90% maximum relative humidity
Environmental Rating	IEC IP65	IEC IP67
Other	Smart Teach button (configurable via Barcode Manager), beeper	Smart Teach button (configurable via Barcode Manager), beeper
Parameter Storage	Permanent memory (Flash)	Permanent memory (Flash)
Certifications	CE cULus	

ABR 7000 Models

ABR72L16-WSE2 and ABR72L9-RPE2

PN 208394 rev. B

1-888-373-6767
www.bannerengineering.com

more sensors, more solutions