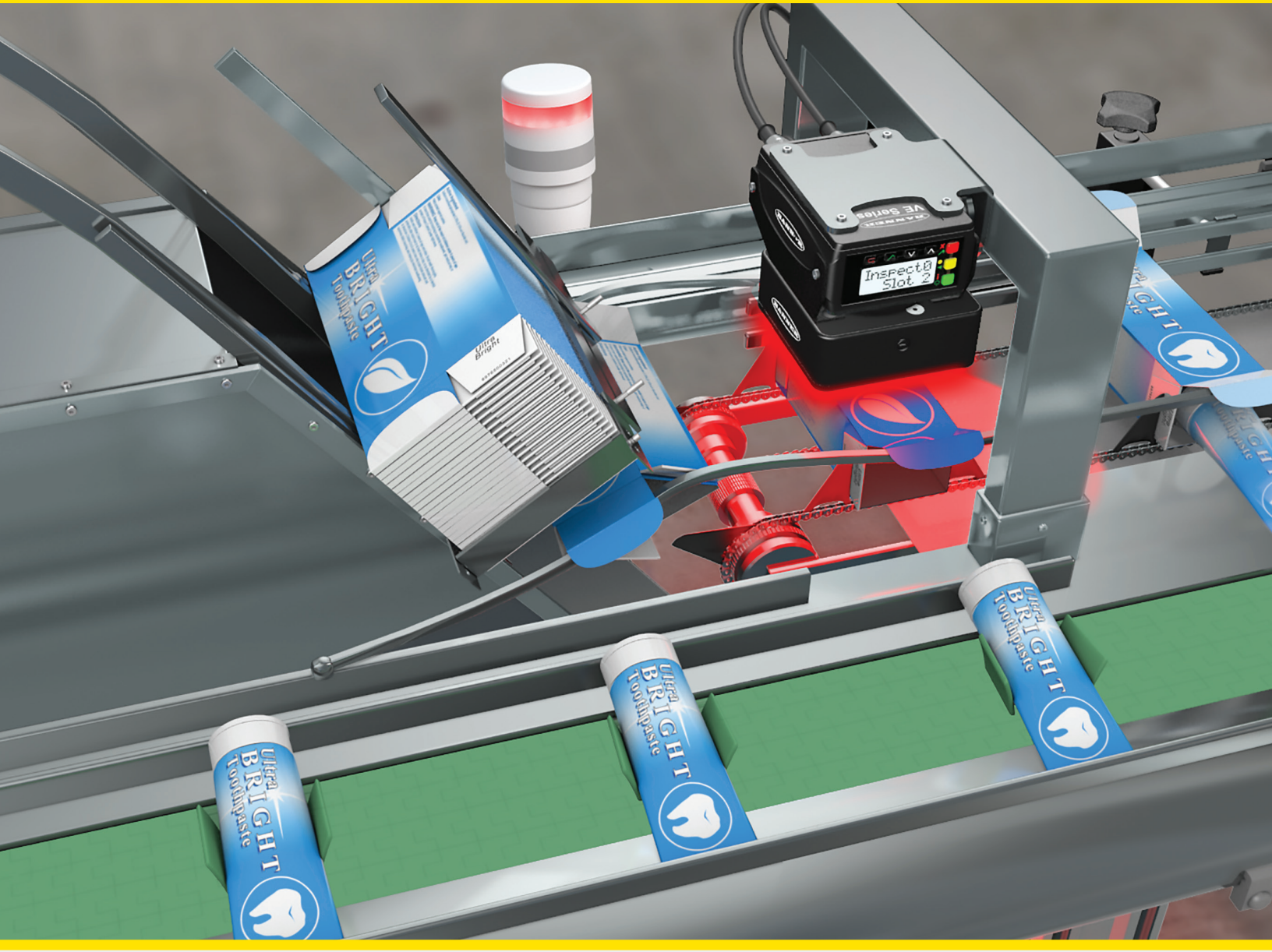
VE Smart Camera Series



Smart Camera

- Robust metal housing
- Intuitive programming software
- Powerful inspection and ID capabilities

BANNER®

ПРОМЭЛЕКТРОНИКА/ sales@prom-elec.com

Compact, Durable, Versatile

The VE Smart Camera is built to stand up to industrial environments and can solve many vision applications.

Durable Design



Robust, aluminum housing for harsh environments

C-mount lens for a variety of applications

Status and Troubleshooting



Bright LED indicators to easily view camera status

Two-line, eight-character display and push buttons for troubleshooting and viewing camera status

- Perform product change or trigger
- Troubleshoot and clear errors
- Change or view IP address, MAC address, or Ethernet speed
- View firmware, focus number or status

Connections



Ethernet connector with Gigabit Ethernet communication speed

Discrete communication to external devices using five user-configurable optically isolated I/O

Power Banner Vision lights directly from the camera



Compact size



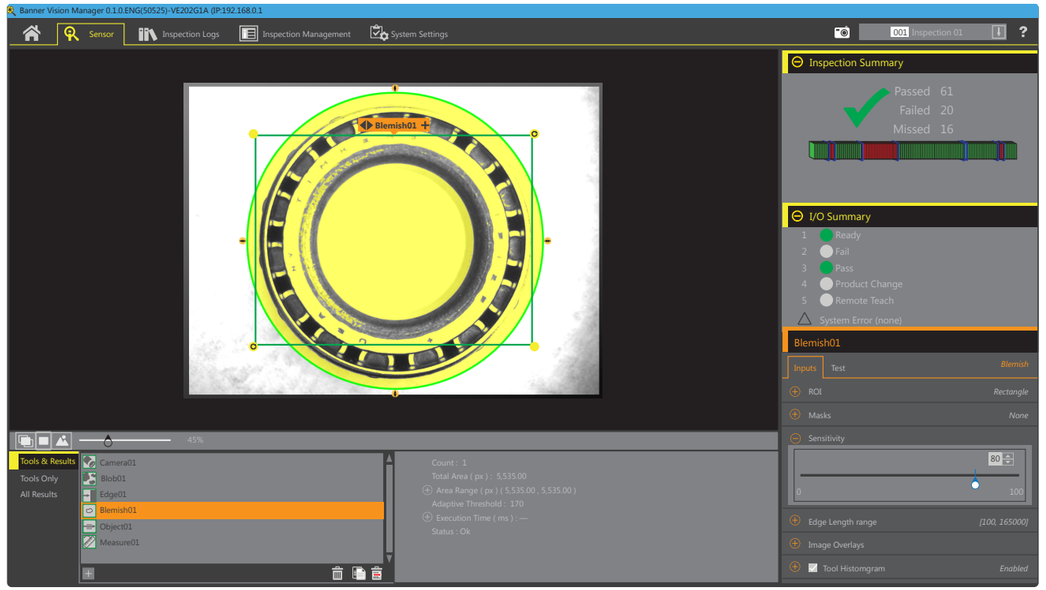
Optional IP67 lens cover for washdown environments



Variety of lights available to accommodate any application

Intuitive Software

VE Vision Manager software: Easy configuration, powerful functions.

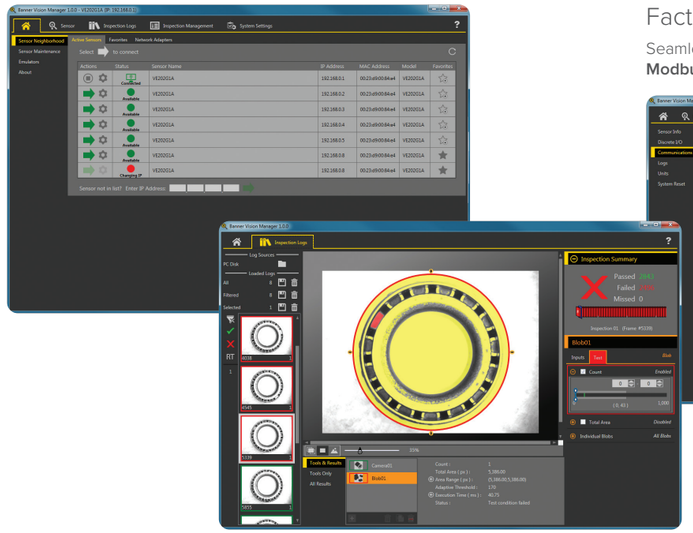


Runtime Editing

Easy-to-use configuration software with full runtime editing allows for changes to be made quickly with no costly downtime from stopping and starting inspections. Start using today by downloading at www.bannerengineering.com/vision-manager.

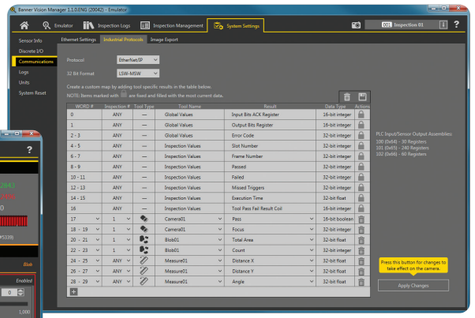
Full Software Emulator

Connect to live cameras or full software emulator for building inspections offline



Factory Communications

Seamlessly interface with the factory floor using **EtherNet/IP, Modbus/TCP, PROFINET, and Serial** communications



Inspection Analysis

Review past inspection results, view system logs, and quickly configure inputs and outputs

Solutions for:

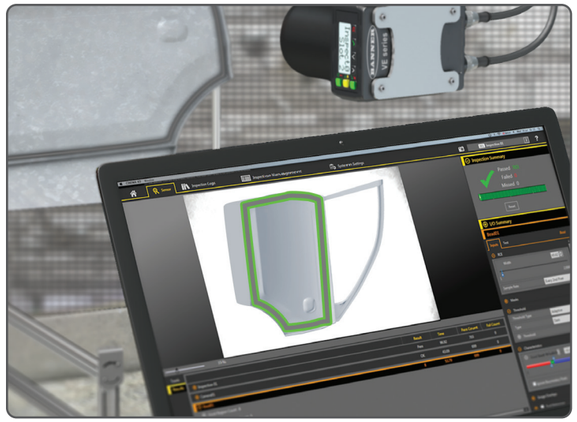
Presence/Absence
- Count vials in a tray
- Verify correct labeling

Orientation/Position
- Verify the orientation of an IC chip
- Send part location to a pick-and-place robot

Flaw Detection
- Calculate the eccentricity of pizza crust
- Identify burn marks on a nonwoven web

Measuring
- Measure critical dimensions of a stamped part
- Measure bottle cap height

Identification
- Track and Trace as parts transition through the supply chain
- Package verification for tracking, sorting and inventory management



Door Panel Adhesive Inspection

Challenge

During vehicle assembly, a track of adhesive is applied along the perimeter of a door. Excessive adhesive can burst through the seams requiring cleanup, while an insufficient amount of adhesive will not seal the panel correctly.

Solution

The Bead Tool can inspect each door panel for the presence and amount of adhesive, and provide real time feedback of improper bead application.





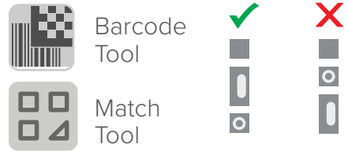
Cell Phone Inspection

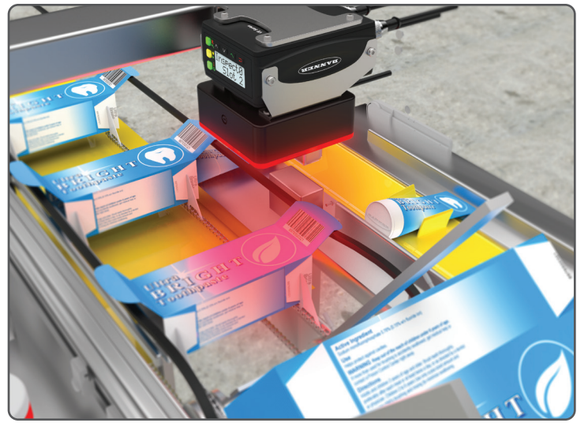
Challenge

Cell phones are comprised of many small electric parts and connectors. Manually inspecting to ensure the components are present and correctly installed is difficult and impractical. In addition, traceability of the production process is critical as parts transition through each phase.

Solution

The 5MP VE Series Smart Camera allows for a higher resolution inspection and identification. With vision tools the camera can detect the presence and position of components, and by combining with barcode reading the assembly can be tracked through the entire production process with the use of one device.





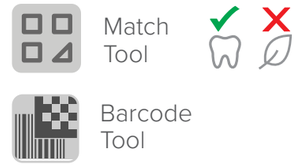
Packaging Inspection

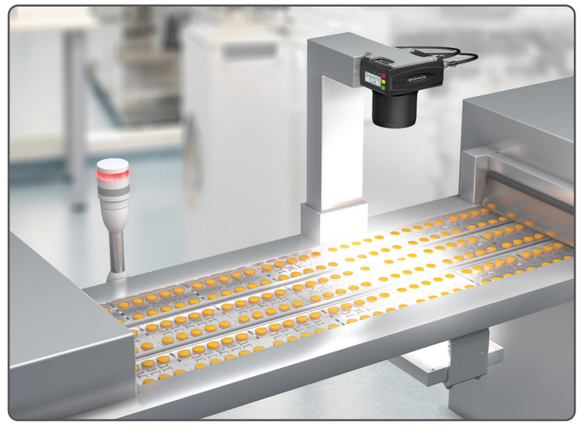
Challenge

During packaging, tubes of toothpaste need to be placed into cartons. A logo on the tube indicates the specific type of toothpaste inside the box. Frequent product changeover, printing mistakes, human error and other factors can result in packaging errors.

Solution

A VE Series Smart Camera reads the barcode to check and see if matches the correct product data for the toothpaste tubes being filled. It then uses a Match Tool to inspect and verify the product logo on each box before the corresponding tube of toothpaste is inserted.





Blister Pack Inspection

Challenge

Pharmaceutical companies package medications into blister packs. Before being sealed, each cell must be inspected to verify that the tablet has been correctly placed and that the tablet is whole.

Solution

Using the Blob Tool the VE counts and measures multiple rows of tablets in a single inspection.



Sortation Conveyor Inspection

Challenge

Each tray is inspected to verify it is empty before a package is placed on the tray. The package can be any color, shape, and size and can be located anywhere on the tray.

Solution

The VE Series Smart Camera with the 5mp imager uses the Blemish Tool to inspect the entire tray to detect if the smallest package was still on the tray before loading.

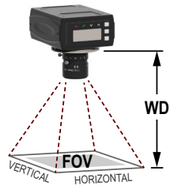




Select a camera resolution



Choose lens based on Field of View (FOV) and Working Distance (WD)





Optional filters create additional contrast



IP67 lens covers or ring lights available for additional protection

Family: **VE**

Resolution: **202**

- **200** = WVGA, 752 x 480 pixels
- **201** = 1.3 MP, 1280 x 1024 pixels
- **202** = 2 MP, 1600 x 1200 pixels
- **205** = 5 MP, 2592 x 2048 pixels

Imager: **G1**

- **G1** = Grayscale

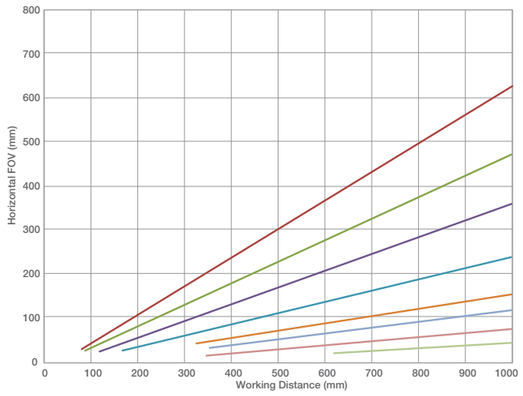
Device Type*: **A**

- **A** = Vision
- **B** = ID
- **C** = Vision + ID

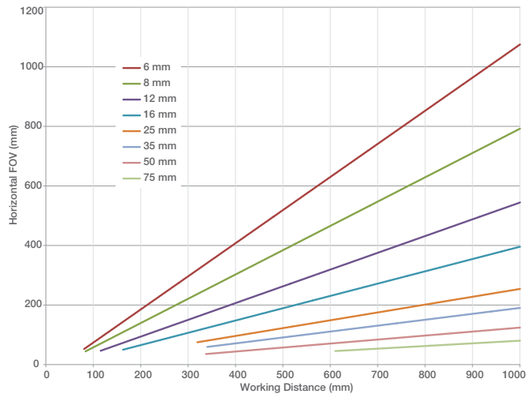
* Vision models offer full suite of vision inspection capabilities, Identification (ID) models offer barcode reading capability. Vision + ID models offer full inspection and identification capabilities. See product specifications for full tool listing.

Lens Charts

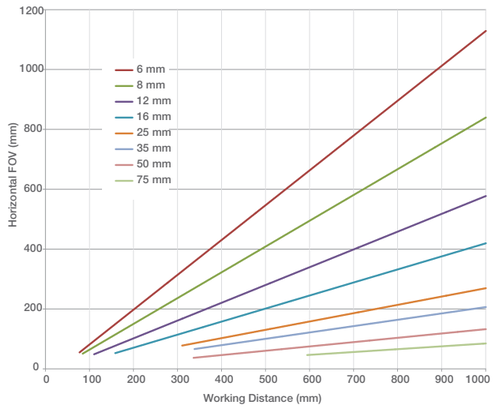
WVGA, 752 x 480 pixels



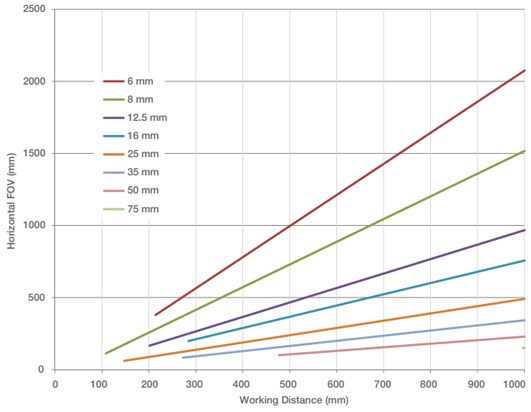
1.3 MP, 1280 x 1024 pixels



2 MP, 1600 x 1200 Pixels



5 MP, 2592 x 2048 Pixels



Megapixel C-mount Lenses

for use with WVGA, 1.3 MP, or 2 MP cameras

Focal Length	Model
6 mm	**LCF06LEVMP**
8 mm	**LCF08LEVMP**
12 mm	**LCF12LEVMP**
16 mm	**LCF16LEVMP**
25 mm	**LCF25LEVMP**
35 mm	**LCF35LEVMP**
50 mm	**LCF50LEVMP**
75 mm	**LCF75LEVMP**

1" Format C-Mount Lenses

for use with 5 MP cameras

Focal Length	Model
6 mm	**LCF06LK1F**
8 mm	**LCF08LK1F**
12 mm	**LCF12LK1F**
16 mm	**LCF16LK1F**
25 mm	**LCF25LK1F**
35 mm	**LCF35LK1F**
50 mm	**LCF50LK1F**
75 mm	**LCF75LK1F**

Contact factory or visit www.bannerengineering.com for additional lens information and a comprehensive product offering.

Bandpass Filters

for use with Megapixel C-mount Lenses*

Type	Model
Blue	**FLTB470-27**
Green	**FLTG525-27**
Infrared	**FLTI850-27**
Red	**FLTR635-27**
Dark Red	**FLTR660-27**
Linear Polarizer	**FLTPR032-27**

* For use with 8 to 35 mm focal lengths. Contact the factory for additional options.

Sealed Lens Covers

painted aluminum covers for IP67 rating (work with most lenses)

	Borosillicate Glass Window	Polycarbonate Window
60 mm	**VELC60-BG**	**VELC60-PC**
85 mm	**VELC85-BG**	**VELC85-PC**

Sealed Ring Lights

IP67 lights that are powered and controlled by camera (work with most lenses)

	Borosillicate Glass Window	Polycarbonate Window
Blue	**LEDBRV75BM**	**LEDBRV75PM**
Green	**LEDGRV75BM**	**LEDGRV75PM**
Infrared	**LEDIRV75BM**	**LEDIRV75PM**
Red	**LEDRRV75BM**	**LEDRRV75PM**
White	**LEDWRV75BM**	**LEDWRV75PM**

Specifications



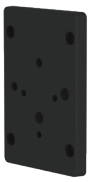
Power	12 to 30 V dc
Discrete I/O	1 Trigger IN 5 programmable I/O
Output Configuration	Optically isolated
Lens	C-mount
Communication	10/100/1000 Mbps Ethernet
Communication Protocols	Ethernet/IP, Modbus/TCP, PCCC, PROFINET, TCP/IP, FTP, HTTP web server, and RS-232
Acquisition	256 grayscale levels - Image Size / Frames Per Second (fps)*: 752 x 480 pixels / 60 fps 1280 x 1024 pixels / 60 fps 1600 x 1200 pixels / 50 fps 2592 x 2048 pixels / 22 fps * Frames per Second: maximum listed, depends on inspection settings
Construction	Housing: Aluminum Label: Polyester
Connections	Communications: M12, 8-pin Euro-style male Light Connector: M8, 3-pin Pico-style female Power, Discrete I/O: M12, 12-pin Euro-style female
Environmental Rating	IEC IP67 with optional lens cover
Software Tools	Vision Models: Average Gray, Bead, Blemish, Blob, Line Detect,Circle Detect, Edge, Locate, Logic, Match, Math, Measure, Object ID Models: Barcode, Locate, Logic, Math Vision+ID Models: All Tools listed above
Certifications	c UL us LISTED CE

This product includes software developed by the University of California, Berkeley and its contributors

Accessories



SMBVERA
Right-angle bracket



SMBVEMP
Mounting plate with M8x1.25, 10-32, and 1/2-20 adapter holes

Type 	Length	Model
12-Pin M12/Euro-Style with Open Shield	1.83 m (6 ft)	**MQDC2S-1206**
	4.57 m (15 ft)	**MQDC2S-1215**
	9.14 m (30 ft)	**MQDC2S-1230**
	15.2 m (50 ft)	**MQDC2S-1250**
	22.9 m (75 ft)	**MQDC2S-1275**

For right-angle models add **RA** to the model number (example, **MQDC2S-1250RA)**

Type 	Length	Model
RJ45 Ethernet to 8-Pin Threaded M12/Euro-Style (Cat5e Shielded)	1.83 m (6 ft)	**STP-M12-806**
	4.57 m (15 ft)	**STP-M12-815**
	9.14 m (30 ft)	**STP-M12-830**



Vision Lighting

Lighting is the key to creating all-important contrast between the feature of interest and its background. Contact Banner for more information about our wide Vision Lighting product offering.

BANNER
more sensors, more solutions

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