QCM50 Series

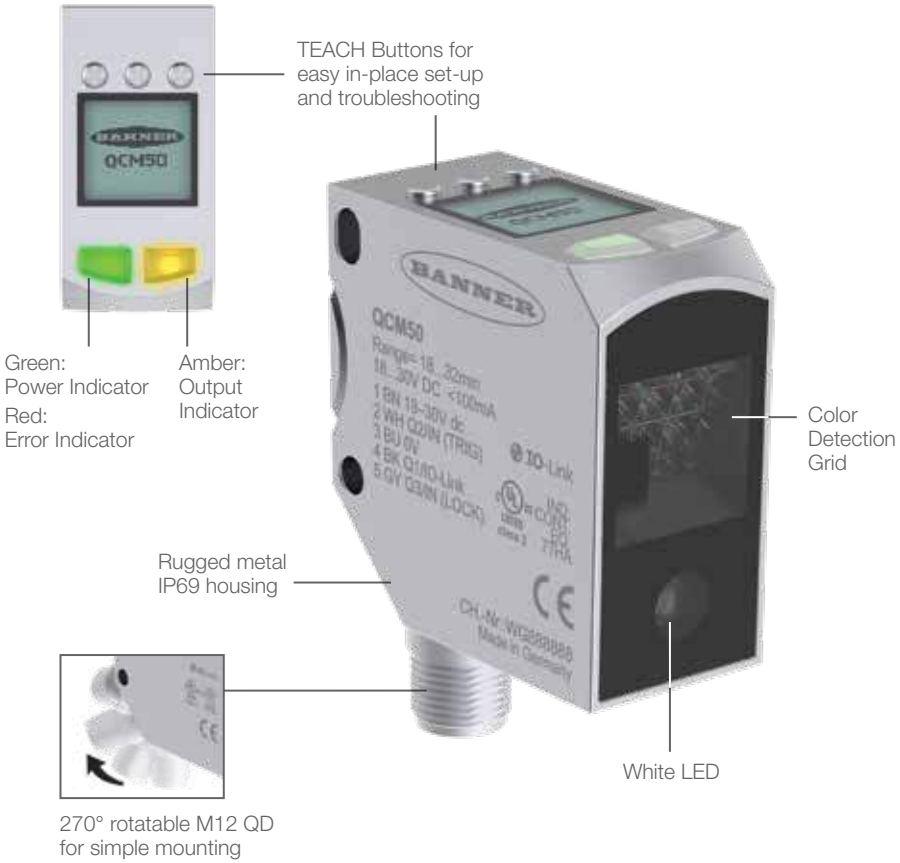
High-Performance Color Sensor with IO-Link

- Reliable color detection across the entire range of the sensor
- Up to 12 colors can be detected with one sensor, which saves inventory costs, enables faster changeover, and increases quality control
- Anti-glare model is available to reliably detect reflective targets
- Intuitive configuration with integrated digital display and on-board buttons
- IO-Link communication for remote configuration and intensity data visualization

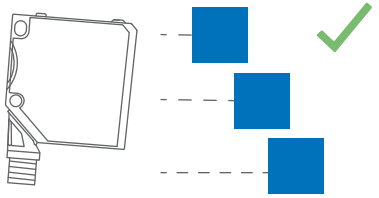
BANNER®

Reliable Detection of Up to 12 Colors in One Sensor

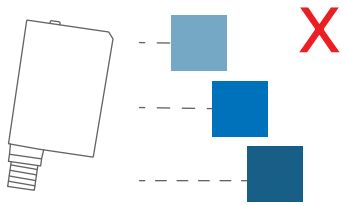
Reduce sensor inventory costs, enable faster changeover, and increase quality control



Consistent Color Inspection Regardless of Distance



The QCM50 uses advanced technology to provide a consistent color value

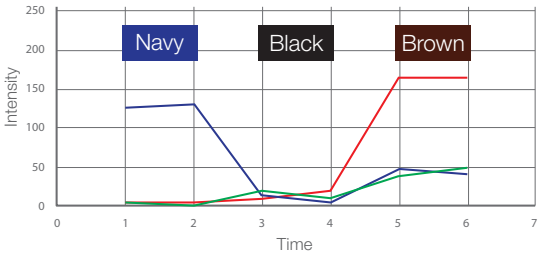


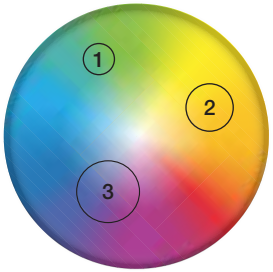
Competitive sensors will return a different color value for the same object at a slightly closer or greater distance

Access Red, Blue, Green and Intensity Values Over IO-Link

- Can differentiate between very similar colors based on these values
- Can replicate the best of both teach modes by using Best Fit Mode and utilizing custom color tolerances in Parameter Data (similar to color mode)

RGB Parameter Data of Similar Color Targets





Circles represent taught colors, and circle size represents tolerance setting. The smaller the circle, the tighter the tolerance.

Color Mode: Color Validation

Sensor detects and evaluates colors within a specified tolerance. Simply teach a color and select a tolerance from 1-9. Parts that are outside of the tolerance range will not trigger an output.

Color mode is ideal for applications:

- When “bad” colors are not known
- To verify part color falls within a specified tolerance

Each section represents a taught color. The sensor will select whichever is closest – section 1, 2, or 3

Best Fit Mode: Sorting of Known Colors

Sensor *always* matches the target to the closest of two or more taught colors. To prevent unwanted switching, teaching the background color is recommended.

Best fit mode is ideal for applications:

- When “bad” colors are known
- To differentiate between very similar known colors

Blister Pack Inspection

Challenge

- A solution is needed that can see through the reflective plastic of the blister pack to verify the presence and color of the tablets
- In pharmaceutical packaging, each pocket of a blister pack must contain a tablet, and each tablet must be the correct color
- For example, a pack of daytime cold medication must contain only daytime tablets (Color A) and not night-time tablets (Color B)

Solution

- **Anti-glare models** of the QCM50 color sensor see through the shiny packaging to reliably confirm tablet presence and color
- Used in color mode, the sensor verifies the taught color and detects incorrect color tablets
- The QCM50 also differentiates between the tablet color and the background color to detect a missing tablet
- The QCM50 is a cost-effective alternative to a vision solution, and anti-glare models can store up to 7 color settings to verify a wide variety of tablet color combinations

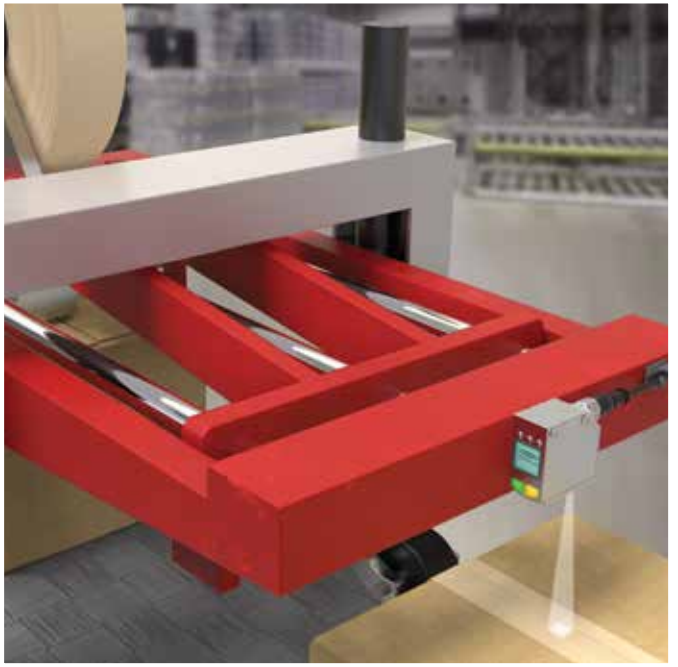
Correct Part Verification

Challenge

- Automotive trim packages can vary with each vehicle on the line, and many interior trim pieces are interchangeable and available in multiple, similar colors
- Individual trim pieces must be inspected at each stage of assembly to ensure the correct trim piece is applied to the correct vehicle
- As assembly progresses, correcting problems becomes more difficult, so an error-proofing solution is critical

Solution

- **Small spot models** of the QCM50 color sensor feature a 4 x 4 mm spot at 40 mm to ensure reliable detection of specific colors by limiting color transitions
- The QCM50 can store up to 12 different colors to verify a wide range of trim colors with a single device
- Utilizing IO-Link, users can visualize Red, Green, Blue and intensity values, enabling extremely fine color differentiation



Tape Detection

Challenge

- Mounting several inches above the target is challenging for traditional color sensors
- The limited contrast between the color of the tape and the color of the box can be challenging for traditional sensors to reliably detect
- Before shipment, a sensor must verify that the tape is present to ensure the box will not open and contents will not fall out of the box in transit

Solution

- **Long Range models** enables flexible mounting up to 150 mm above the application
- The QCM50 color sensor easily differentiates between very similar shades of color to reliably detect brown tape on a brown box
- Used in color mode, the QCM50 sensor validates the taught color (the brown tape) to identify when the tape is missing so the issue can be corrected before shipment

Order Now

Models	Feature	Teach Mode	Range (mm)	Spot Size (mm)	Outputs	Stored Colors	Connection
QCM50-K3D25-Q8-5	Anti-Glare	Color, Best Fit	18 to 32	6 × 6 at 25	3 Discrete	7	Integral 5-pin M12/Euro-style quick disconnect
QCM50-K1D40-Q8-4*		Color			1 Discrete	1	Integral 4-pin M12/Euro-style quick disconnect
QCM50-K3D40-Q8-5	Small Spot	Color, Best Fit	18 to 60	4 × 4 at 40	3 Discrete	7	Integral 5-pin M12/Euro-style quick disconnect
QCM50-K5D40-Q8-8		Color, Best Fit			5 Discrete	12	Integral 8-pin M12/Euro-style quick disconnect
QCM50-K1D60-Q8-4*		Color			1 Discrete	1	Integral 4-pin M12/Euro-style quick disconnect
QCM50-K3D60-Q8-5	Long Range	Color, Best Fit	20 to 150	8 × 8 at 60	3 Discrete	7	Integral 5-pin M12/Euro-style quick disconnect
QCM50-K5D60-Q8-8		Color, Best Fit			5 Discrete	12	Integral 8-pin M12/Euro-style quick disconnect

* Remote teach mode available

Supply Voltage and Current	18 to 30 V dc Less than 60 mA, exclusive of load
Vibration and Mechanical shock	EN 60947-5-2
Light Used	White LED
Output Response Time	33 ms (user adjustable)
LED Class	LED risk group 2 (EN 62471:2008)

Construction	Materials: Zinc die-cast, matte chrome housing; PMMA front screen and display
Environmental Conditions	Operating: –20 to +55 °C (–4 to +131°F) Storage: –20 to +80 °C (–4 to +176 °F)
Environmental Rating	IEC IP67, IEC IP69
Certifications	CE cULus

Accessories

SMBQCM50DT
(rod not included)

SMBQCM50FAL

SMBQCM50FA

M12 Euro-Style
Straight connector models listed; for right-angle, add **RA** to the end of the model number (example, **MQDEC2-406RA**)

4-Pin	5-Pin	8-Pin*
MQDEC2-406 2 m (6.5') **MQDEC2-415** 5 m (15') **MQDEC2-430** 9 m (30')	**MQDEC2-506** 2 m (6.5') **MQDEC2-515** 5 m (15') **MQDEC2-530** 9 m (30') **MQDEC2-550** 15 m (50')	**MQ-QCM50-806** 2 m (6.5') **MQ-QCM50-815** 5 m (15')

* No right-angle available

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