Introducing NanoView

The NanoView Series from Eaton combines true high performance photoelectric sensing and a robust, miniature form factor at a cost-competitive price point. These tiny but capable sensors are available in a variety of optical modes including: thru-beam, polarized reflex, diffuse reflective, fixed focus diffuse, and even specialized versions capable of detecting clear objects.

Class-leading sensing performance

NanoView sensors utilize either a visible red or infrared LED beam to achieve some of the best sensing ranges of their class…

- Thru-beam pair: 19.7 feet (6m)
- Polarized reflex: 8.2 feet (2.5m)
- Diffuse reflective: 13.8 inches (35 cm)

Problem-solving specialty versions

Beyond the standard thru-beam, reflex and diffuse reflective offerings, the NanoView family includes specialty sensors capable of solving tough application challenges.

A fixed-focus diffuse sensor offers very accurate sensing precisely at 3.9 inches (10 cm) from the sensor's face. This can provide some of the sensing capabilities of a background or foreground suppression sensor at a more cost-effective price point.

The clear object detector model is capable of sensing transparent objects, such as plastic bottles, molds, cartons, films and glass objects at up to 31.5 inches (80 cm) from the sensor face.

For thru-beam sensors, an optional narrow-beam source model features a reduced field of view. This allows for smaller targets to be detected with higher precision.

Small size, big solutions

The small size of NanoView sensors—1.46 inches tall, 0.78 inches wide and a mere 0.47 inches deep—make them the perfect solution for space restricted applications in packaging, material handling, food and beverage, and pharmaceutical industries. Virtually any end user or OEM looking to make their machines smaller and more cost-effective can benefit from specifying NanoView.

The quality, reliability and sensing performance you've come to expect from an Eaton sensor product can be found in NanoView. All models come with a three-year warranty; feature full UL®, cUL® and CE certification; and are backed by Eaton's world-class sensor application engineers, on call five days a week to provide assistance with specifying, installing, troubleshooting and servicing Eaton sensor products.

Simple, quick installation

NanoView sensors are easy to install and maintain. Every model comes with both light operate and dark operate sensing options, selectable by wiring alone. The sensor enclosure features two top-mounted, highly visible LED indicators to communicate sensor status. A sensitivity adjustment on the top of polarized reflex, diffuse reflective and clear object detector models make initial sensor installation a snap. The enclosure is made of ABS plastic with an acrylic lens rated for IP66 or IP67 (by models) and can withstand operating temperatures from -13 to 131°F (-25 to +55°C). Each model is available with either a 6-foot (2m) cable or a 4-pin M8 nano quick connector. Eaton provides a wide variety of compatible connector cables, mounting brackets and retroreflectors for use with NanoView sensors.

NanoView sensors in thru-beam configuration

Specialty clear object detector with adjustable sensitivity

Polarized reflex NanoView sensor

Powering Business Worldwide

Key features

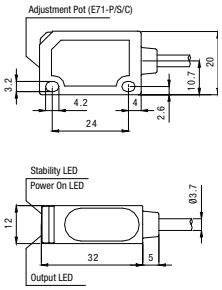
- A complete family of solutions—high performance polarized reflex, thru-beam, diffuse reflective, fixed focused diffuse, and clear object detector models to solve a wide array of applications
- Small form factor—at less than 1.5 inches long and half an inch deep, NanoView sensors can fit into the smallest of spaces
- Specialty models for solving tough sensing challenges
  - Fixed focus diffuse models, perfect for sensing very small targets at a fixed 4-inch focal point
  - Narrow beam thru-beam source models, for precise detection of small targets at long ranges
  - Clear object detection models, ideal for sensing plastic bottles, molds, cartons, films and glass objects
- UL, cUL listed and CE approved

Packaging and material handling focus applications

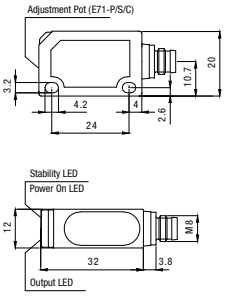
- Container and feeding machines
- Shrink wrapping machines
- Box or carton edge detection
- Hopper fill level control
- Palletizing machines
- Closing, capping or sealing machines
- Box or product spacing and sortation
- Conveyor jam prevention and detection
- Shiny or reflective product detection
- Counting and sortation
- Clear plastic or glass bottle detection
- Speed or registration

Dimensions

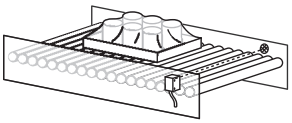
Cable models



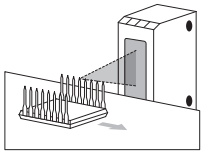
Nano connector models



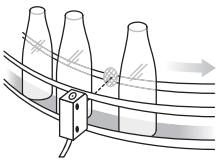
Application diagrams



Polarized reflex sensing: sensing shrink-wrapped products



Fixed focus diffuse sensing: detecting tiny parts



Clear object detector: sensing glass or plastic bottles

	For E71-T/N (thru-beam)	For E71-P (polarized reflex)	For E71-S (diffuse reflective)	For E71-F (fixed focus diffuse)	For E71-C (clear object detector)
Sensing range	19.7 ft (6m)	8.2 ft (2.5m)	13.8 in (35 cm)	3.9 in. (10 cm)	31.5 in (80 cm)
Input voltage	10 to 30 Vdc	10 to 30 Vdc	10 to 30 Vdc	10 to 30 Vdc	10 to 30 Vdc
Beam type	Infrared LED (880 nm)	Visible red LED (660 nm)	Infrared LED (880 nm)	Visible red LED (660 nm)	Visible red LED (660 nm)
Outputs	Light operate and dark operate (by wire); PNP or NPN (by model)	Light operate and dark operate (by wire); PNP or NPN (by model)	Light operate and dark operate (by wire); PNP or NPN (by model)	Light operate and dark operate (by wire); PNP or NPN (by model)	Light operate and dark operate (by wire); PNP or NPN (by model)
Output current	100 mA max.	100 mA max.	100 mA max.	100 mA max.	100 mA max.
Electrical protection	Short circuit and reverse polarity protection	Short circuit and reverse polarity protection	Short circuit and reverse polarity protection	Short circuit and reverse polarity protection	Short circuit and reverse polarity protection
Response time	1 ms max.	1 ms max.	1 ms max.	1 ms max.	1 ms max.
Switching frequency	500 Hz max.	500 Hz max.	500 Hz max.	500 Hz max.	500 Hz max.
Indicator LEDs	Output LED (yellow), Stability LED (green), Power LED (green)	Output LED (yellow), Stability LED (green), Power LED (green)	Output LED (yellow), Stability LED (green), Power LED (green)	Output LED (yellow), Stability LED (green), Power LED (green)	Output LED (yellow), Stability LED (green), Power LED (green)
Sensing adjustment	None	Adjustment potentiometer	Adjustment potentiometer	None	Adjustment potentiometer
Operating temperature	-25 to +55°C (-13 to +131°F)	-25 to +55°C (-13 to +131°F)	-25 to +55°C (-13 to +131°F)	-25 to +55°C (-13 to +131°F)	-25 to +55°C (-13 to +131°F)
Housing material	ABS UL 94V-0	ABS UL 94V-0	ABS UL 94V-0	ABS UL 94V-0	ABS UL 94V-0
Mechanical protection	IP67	IP66	IP66	IP67	IP66
Connections	M8 4-pin nano connector; 6-foot (2m) cable	M8 4-pin nano connector; 6-foot (2m) cable	M8 4-pin nano connector; 6-foot (2m) cable	M8 4-pin nano connector; 6-foot (2m) cable	M8 4-pin nano connector; 6-foot (2m) cable
Approvals	UL, cUL, CE	UL, cUL, CE	UL, cUL, CE	UL, cUL, CE	UL, cUL, CE

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