

When red light sensors reach their limitations

BOS 6K PHOTOELECTRIC SENSORS WITH BLUE LIGHT TECHNOLOGY

The BOS 6K optoelectronic sensor family consists of cubical midi sensors that cover all relevant detection principles and use different light sources for this purpose. The latest generation convinces with proven, but also completely new functional principles and technologies.

What all sensors in the family have in common is their housing shape, their operating concept and the IO-Link communication standard. This uniformity considerably simplifies the parameterization and integration of the sensors. In combination with the intelligent PNP/NPN output, this also reduces the number of variants required.

A highlight of the new generation is the availability of sensors with blue light technology for background suppression, which makes them ideal for reliably detecting transparent and similarly tricky objects.

Easy detection of hard-to-see objects

The use of sensors with blue light is particularly recommended in applications where red light reaches its physical limits.

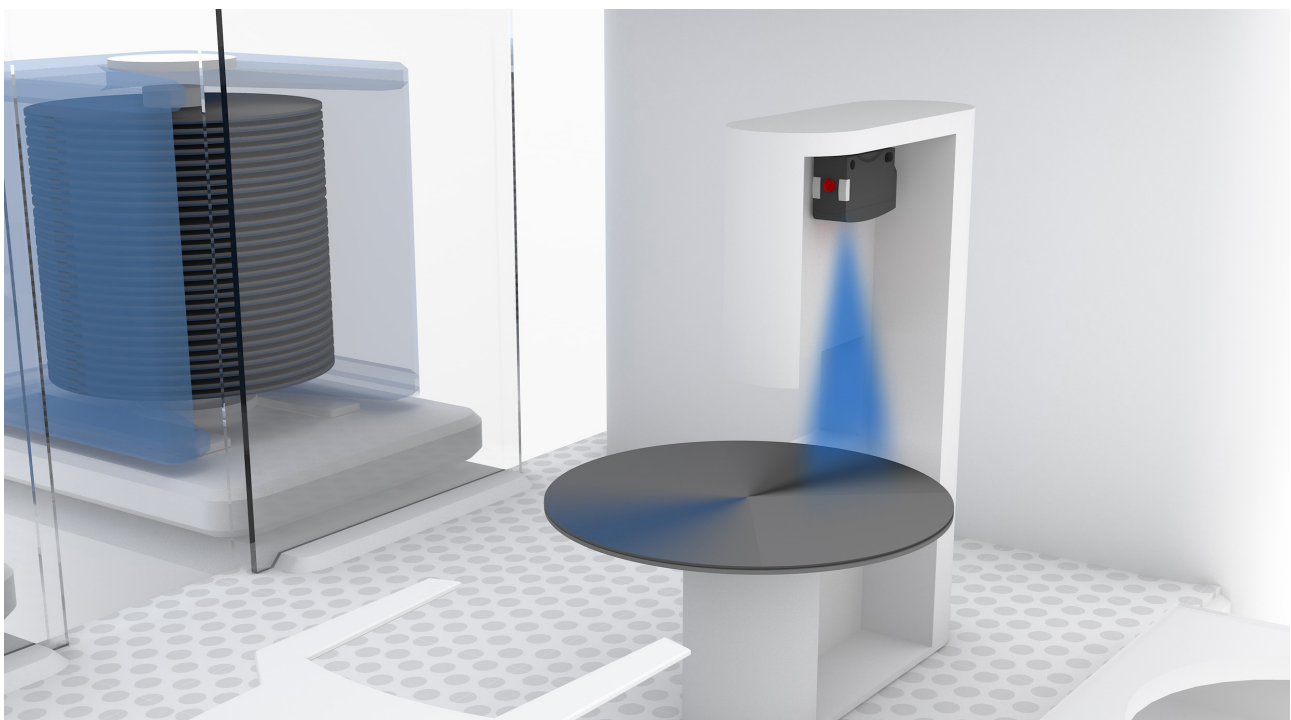
Since blue light has a shorter wavelength than other colors of visible light, it scatters less and the light beam is better focused. The lower scattering means that blue light sensors can detect finer details and, depending on the application, work even more reliably than their red light counterparts.

In addition, blue light penetrates less deeply into materials compared to other light wavelengths. This minimizes interference with other objects and surfaces and makes object detection even more precise. Even difficult materials or surface textures, for example in the case of transparent or dark and shiny objects, are detected more reliably than would be possible with red light.

Finally, the sensors are impressively robust. The dust- and waterproof IP69 protection class of the blue light sensors, like all of the BOS 6K sensors, prepares them for use in harsh, industrial environments.

Features

- Uniform space-saving housing shape for all variants
- Uniform operating concept and simple integration thanks to IO-Link
- Reliable object detection even in difficult conditions
- Detects a wide range of materials and surface structures
- Robust, dust- and waterproof for industrial environments



Reliable detection of dark shiny objects

BOS 6K SENSORS
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	BOS02FU	BOS02FW	BOS02FY	BOS02FZ
Series	BOS 6K	BOS 6K	BOS 6K	BOS 6K
Special optical feature	FixFocus	FixFocus	FixFocus	FixFocus
Range	0...80 mm	0...80 mm	0...80 mm	0...80 mm
Light type	Blue light	Blue light	Blue light	Blue light
Beam characteristic	Focused at 60 mm	Focused at 60 mm	Focused at 60 mm	Focused at 60 mm
Light spot size	Ø 2 mm at 60 mm	Ø 2 mm at 60 mm	Ø 2 mm at 60 mm	Ø 2 mm at 60 mm
Interface	Pin 4: PNP NO/NC selectable	Pin 4: NPN NO/NC selectable	Pin 4: PNP NO/NC selectable	Pin 4: NPN NO/NC selectable
	Pin 2: Teach	Pin 2: Teach	White: Teach	White: Teach
Switching hysteresis	~ 1 %	~ 1 %	~ 1 %	~ 1 %
Switching frequency	≤ 1000 Hz	≤ 1000 Hz	≤ 1000 Hz	≤ 1000 Hz
Connection	Connector, M8 male, 4-pin	Connector, M8 male, 4-pin	Cable, 4 wires, 2 m	Cable, 4 wires, 2 m
Operating voltage U _B	10...30 V DC	10...30 V DC	10...30 V DC	10...30 V DC
Dimensions	34 × 20 × 12 mm	34 × 20 × 12 mm	34 × 20 × 12 mm	34 × 20 × 12 mm
Housing material	ABS	ABS	ABS	ABS
Material sensing surface	PMMA	PMMA	PMMA	PMMA
Approval/conformity	CE, UL, UKCA	CE, UL, UKCA	CE, UL, UKCA	CE, UL, UKCA

BOS 6K SENSORS
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	BOS02F8	BOS02F9	BOS02FA
Series	BOS 6K	BOS 6K	BOS 6K
Special optical feature	Background suppression	Background suppression	Background suppression
Range	0...200 mm	0...200 mm	0...200 mm
Gray value shift (20%/90%)	≤ 5 %	≤ 5 %	≤ 5 %
Light type	Blue light	Blue light	Blue light
Beam characteristic	Divergent	Divergent	Divergent
Light spot size approx.	10 × 10 mm at 150 mm	10 × 10 mm at 150 mm	10 × 10 mm at 150 mm
Interface	IO-Link 1.1, COM 2	IO-Link 1.1, COM 2	—
Output function	Pin 4: AutoDetect (PNP/NPN) NO/NC selectable	Black: AutoDetect (PNP/NPN) NO/NC selectable	Pin 4: AutoDetect (PNP/NPN) NO/NC selectable
	Pin 2: Teach	White: Teach	Pin 2: Teach
Switching hysteresis	≤ 5 %	≤ 5 %	≤ 5 %
Switching frequency	≤ 700 Hz	≤ 700 Hz	≤ 700 Hz
Connection	Connector, M8 male, 4-pin	Cable, 4 wires, 2 m	Connector, M8 male, 3-pin
Operating voltage U _B	10...30 V DC	10...30 V DC	10...30 V DC
Dimensions	34 × 20 × 12 mm	34 × 20 × 12 mm	34 × 20 × 12 mm
Housing material	ABS	ABS	ABS
Material sensing surface	PMMA	PMMA	PMMA
Approval/conformity	CE, UL, UKCA	CE, UL, UKCA	CE, UL, UKCA