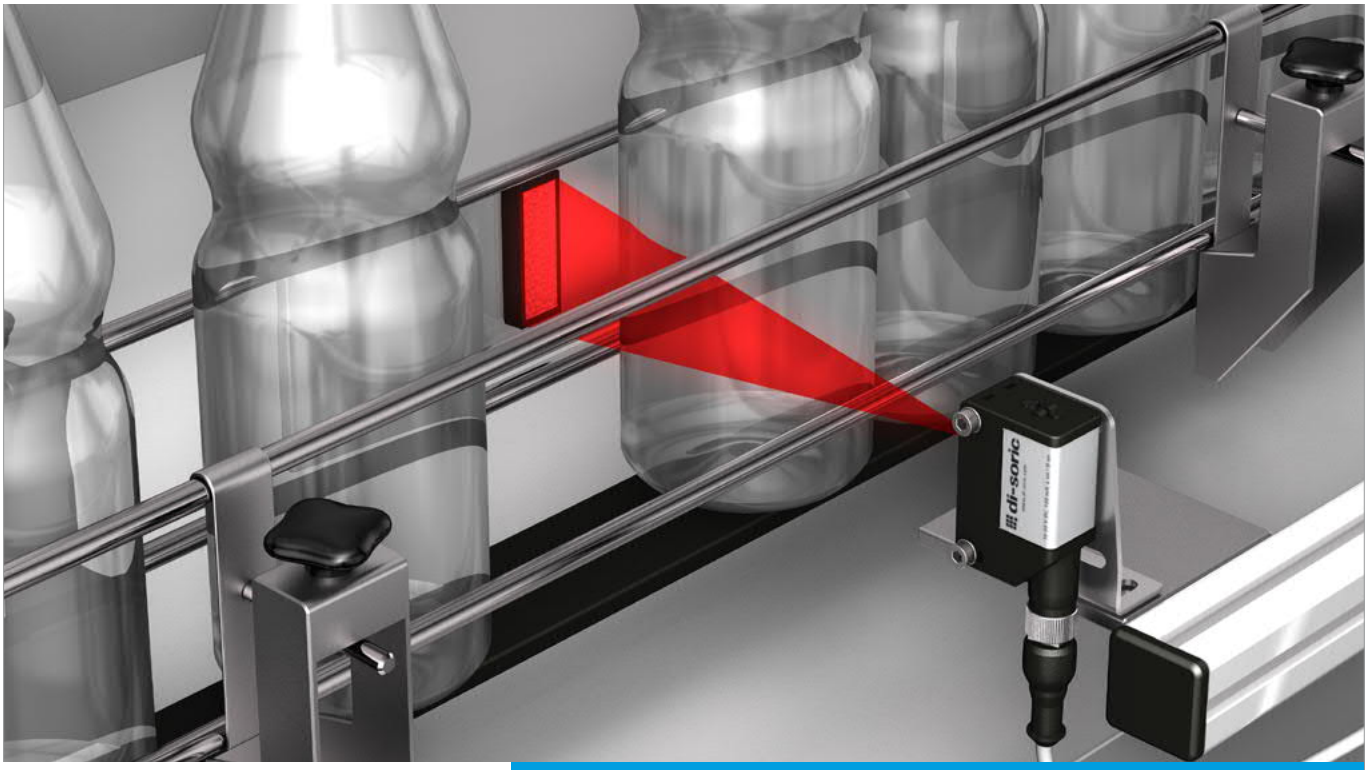
Light barriers and diffuse sensors



The light barriers and light sensors from di-soric have been developed in several models and functional principles for many task areas in automation technology. The products are suited for fast, secure object detection and are distinguished by the highest functional safety. Various operating principles, sensors, reflection or through-beam sensors are available.

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O-20 MINIATURE

The very small, powerful light barriers and sensors in the O-20 series can be easily integrated. The devices, which are available as sensors, reflective or through-beam sensors, detect the smallest parts in the entire active zone.

Technical data (typ.)	+20 °C, 24 V DC
For more information, visit	www.di-soric.com

CE

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-20 Miniature Reflection energetic light sensors													
	20 to 50	22 x 13 x 8.5	Potenti-ometer	–	Laser, red	1	pnp, 50 mA NO/NC	-10 to +55	1,000	Plastic	2.0 m	–	LT 21 K 50 P3
											M8	TK ... /4	LT 21 K 50 P3-K-T4
	20 to 70	22 x 13 x 8.5	Potenti-ometer	–	Laser, red	1	pnp, 50 mA NO/NC	-10 to +55	1,000	Plastic	2.0 m	–	LLT 21 K 70 P3
											M8	TK ... /4	LLT 21 K 70 P3-K-T4
	45 to 300	22 x 13 x 8.5	Potenti-ometer	–	Laser, red	1	pnp, 50 mA NO/NC	-10 to +55	1,000	Plastic	2.0 m	–	LT 21 K 300 P3
											M8	TK ... /4	LT 21 K 300 P3-K-T4
O-20 Miniature Reflection light barriers													
	0 to 4,000	22 x 13 x 8.5	Potenti-ometer	–	Laser, red	1	pnp, 50 mA NO/NC	-10 to +55	1,000	Plastic	2.0 m	–	LT 21 K 4000 P3
											M8	TK ... /4	LT 21 K 4000 P3-K-T4
O-20 Miniature through-beam barriers													
	0 to 1,000	19 x 12 x 8.5	–	T/R	Laser, red	1	pnp, 50 mA NO/NC	-10 to +55	1,000	Plastic	2.0 m	–	LES 21 K 1000 P3
											M8	TK ... /4	LES 21 K 1000 P3-K-T4

O-21 MINIATURE

The very small and efficient light barriers and sensors in the O-21 miniature series with IO-Link can be easily integrated. The reflection sensors with background suppression are suited for detecting small and flat objects. The reflection sensors feature a high functional reserve.

Technical data (typ.)	+20 °C, 24 VDC
For more information, visit	www.di-soric.com

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-21 Miniature Reflection energetic light sensors													
	0 to 180	28.1 x 8.1 x 14.4	IO-Link	–	Red		pnp, 100 mA NO	-25 to +60	1,000	Plastic	PVC, 2.0 m	–	OT21-PS-2C
			–				npn, 100 mA, NO						OT21-NS-2C
	0 to 180	28.1 x 8.1 x 14.4	IO-Link	–	Red		pnp, 100 mA NO	-25 to +60	1,000	Plastic	–	–	OT21-PS-0.3T3
			–				npn, 100 mA, NO						OT21-NS-0.3T3
O-21 Miniature Reflection light sensors background suppression													
	15 (10 to 80)	28.1 x 8.1 x 14.4	IO-Link	–	Red		pnp, 100 mA NO/NC	-25 to +60	1,000	Plastic	PVC, 2.0 m	–	OH21-15PS-2C
	15		–				npn, 100 mA, NO						OH21-15NS-2C
	15 (10 to 80)	28.1 x 8.1 x 14.4	IO-Link	–	Red		pnp, 100 mA NO/NC	-25 to +60	1,000	Plastic	–	–	OH21-15PS-0.3-T3
	15		–				npn, 100 mA, NO						OH21-15NS-0.3T3
	50 (10 to 80)	28.1 x 8.1 x 14.4	IO-Link	–	Red		pnp, 100 mA NO/NC	-25 to +60	1,000	Plastic	PVC, 2.0 m	–	OH21-50PS-2C
	50		–				npn, 100 mA, NO						OH21-50NS-2C
	50 (10 to 80)	28.1 x 8.1 x 14.4	IO-Link	–	Red		pnp, 100 mA NO/NC	-25 to +60	1,000	Plastic	–	–	OH21-50PS-0.3T3
	50		–				npn, 100 mA, NO						OH21-50NS-0.3T3
	80 (10 to 80)	28.1 x 8.1 x 14.4	IO-Link	–	Red		pnp, 100 mA NO/NC	-25 to +60	1,000	Plastic	PVC, 2.0 m	–	OH21-80PS-2C
	80		–				npn, 100 mA, NO						OH21-80NS-2C
	80 (10 to 80)	28.1 x 8.1 x 14.4	IO-Link	–	Red		pnp, 100 mA NO/NC	-25 to +60	1,000	Plastic	–	–	OH21-80PS-0.3T3
	80		–				npn, 100 mA, NO						OH21-80NS-0.3T3

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-21 Miniature Reflection light barriers													
	20 to 1,800	28.1 x 8.1 x 14.4	IO-Link	–	Red		pnp, 100 mA NO	-25 to +60	1,000	Plastic	PVC, 2.0 m	–	OR21-PS-2C
			–				npn, 100 mA, NO						OR21-NS-2C
	20 to 1,800	28.1 x 8.1 x 14.4	IO-Link	–	Red		pnp, 100 mA NO	-25 to +60	1,000	Plastic	–	–	OR21-PS-0.3T3
			–				npn, 100 mA, NO						OR21-NS-0.3T3
O-21 Miniature through-beam barriers													
	0 to 3,000	28.1 x 8.1 x 14.4	IO-Link	S	Red		pnp, 100 mA NO	-25 to +60	1,000	Plastic	PVC. 2.0	–	OS21-2C
			–				npn, 100 mA, NO				–		OS21-0.3T3
	0 to 3,000	28.1 x 8.1 x 14.4	IO-Link	E	Red		pnp, 100 mA NO	-25 to +60	1,000	Plastic	PVC, 2.0 m	–	OE21-PS-2C
			–				npn, 100 mA, NO						OE21-NS-2C
	0 to 3,000	28.1 x 8.1 x 14.4	IO-Link	E	Red		pnp, 100 mA NO	-25 to +60	1,000	Plastic	–	–	OE21-PS-0.3T3
			–				npn, 100 mA, NO						OE21-NS-0.3T3

O-30 UNIVERSAL

The efficient light barriers and sensors in the O-30 Universal series are versatile. With their compact design and mounting hole spacing of 25.4 mm, the sensors can be integrated quickly and easily. The user-friendly and robust devices with short response times and good functional reserves are suited for many applications in packaging technology and assembly and handling technology.

Technical data (typ.)	+20 °C, 24 VDC
For more information, visit	www.di-soric.com

CE

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-30 Miniature Reflection energetic light sensors													
	10 to 100	31 x 21 x 13	Potenti-ometer	–	Red		pnp, 100 mA NO/NC	-25 to +70	1,000	Plastic	M8	TK … /4	OT 31 K 100 P3-T4
											0.2 m / M8	TK …	OT 31 K 100 P3-K-T3
											2.0 m	–	OT 31 K 100 P3-3
	10 to 100	31 x 21 x 13	Potenti-ometer	–	Red		npn, 100 mA NO/NC	-25 to +70	1,000	Plastic	M8	TK … /4	OT 31 K 100 N3-T4
											0.2 m / M8	TK …	OT 31 K 100 N3-K-T3
											2.0 m	–	OT 31 K 100 N3-3
	0 to 400	31 x 21 x 13	Potenti-ometer	–	Red		pnp, 100 mA NO/NC	-25 to +70	2,000	Plastic	M8	TK … /4	OT 31 K 400 P3-T4
											0.2 m / M8	TK …	OT 31 K 400 P3-K-T3
											2.0 m	–	OT 31 K 400 P3-3
	0 to 400	31 x 21 x 13	Potenti-ometer	–	Red		npn, 100 mA NO/NC	-25 to +70	2,000	Plastic	M8	TK … /4	OT 31 K 400 N3-T4
											0.2 m / M8	TK …	OT 31 K 400 N3-K-T3
											2.0 m	–	OT 31 K 400 N3-3
	0 to 1,000	31 x 21 x 13	Potenti-ometer	–	Red		pnp, 100 mA NO/NC	-25 to +70	1,000	Plastic	M8	TK … /4	OT 31 K 1000 P3-T4
											0.2 m / M8	TK …	OT 31 K 1000 P3-K-T3
											2.0 m	–	OT 31 K 1000 P3-3
	0 to 1,000	31 x 21 x 13	Potenti-ometer	–	Red		npn, 100 mA NO/NC	-25 to +70	1,000	Plastic	M8	TK … /4	OT 31 K 1000 N3-T4
											0.2 m / M8	TK …	OT 31 K 1000 N3-K-T3
											2.0 m	–	OT 31 K 1000 N3-3
O-30 Miniature Reflection light sensors background suppression													
	30 to 200	31 x 21 x 13	Potenti-ometer	–	Red		pnp, 100 mA NO/NC	-25 to +70	1,000	Plastic	M8	TK … /4	OH 31 K 200 P3-T4
											0.2 m / M8	TK …	OH 31 K 200 P3-K-T3
											2.0 m	–	OH 31 K 200 P3-3
	30 to 200	31 x 21 x 13	Potenti-ometer	–	Red		npn, 100 mA NO/NC	-25 to +70	1,000	Plastic	M8	TK … /4	OH 31 K 200 N3-T4
											0.2 m / M8	TK …	OH 31 K 200 N3-K-T3
											2.0 m	–	OH 31 K 200 N3-3
	30 to 400	31 x 21 x 13	Potenti-ometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +70	1,000	Plastic	M8	TK … /4	OH 30 K 400 P3-T4
											0.2 m / M8	TK …	OH 30 K 400 P3-K-T3
											2.0 m	–	OH 30 K 400 P3-3
	30 to 400	31 x 21 x 13	Potenti-ometer	–	Infrared		npn, 100 mA NO/NC	-25 to +70	1,000	Plastic	M8	TK … /4	OH 30 K 400 N3-T4
											0.2 m / M8	TK …	OH 30 K 400 N3-K-T3
											2.0 m	–	OH 30 K 400 N3-3

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-30 Miniature Reflection light barriers													
	50 to 1,500	31 x 21 x 13	Potenti-ometer	–	Red		pnp, 100 mA NO/NC	-25 to +70	2,000	Plastic	M8	TK ... /4	OR 31 K 1500 P3-T4
											0.2 m/M8	TK ...	OR 31 K 1500 P3-K-T3
											2.0 m	–	OR 31 K 1500 P3-3
	50 to 1,500	31 x 21 x 13	Potenti-ometer	–	Red		npn, 100 mA NO/NC	-25 to +70	2,000	Plastic	M8	TK ... /4	OR 31 K 1500 N3-T4
											0.2 m/M8	TK ...	OR 31 K 1500 N3-K-T3
											2.0 m	–	OR 31 K 1500 N3-3
	400 to 4,000	31 x 21 x 13	Potenti-ometer	–	Red		pnp, 100 mA NO/NC	-25 to +70	2,000	Plastic	M8	TK ... /4	OR 31 K 4000 P3-T4
											0.2 m/M8	TK ...	OR 31 K 4000 P3-K-T3
											2.0 m	–	OR 31 K 4000 P3-3
	400 to 4,000	31 x 21 x 13	Potenti-ometer	–	Red		npn, 100 mA NO/NC	-25 to +70	2,000	Plastic	M8	TK ... /4	OR 31 K 4000 N3-T4
											0.2 m/M8	TK ...	OR 31 K 4000 N3-K-T3
											2.0 m	–	OR 31 K 4000 N3-3
	20 to 5,000	31 x 21 x 13	Potenti-ometer	–	Red		pnp, 100 mA NO/NC	-25 to +70	2,000	Plastic	M8	TK ... /4	OR 31 K 5000 P3-T4
											0.2 m/M8	TK ...	OR 31 K 5000 P3-K-T3
											2.0 m	–	OR 31 K 5000 P3-3
	20 to 5,000	31 x 21 x 13	Potenti-ometer	–	Red		npn, 100 mA NO/NC	-25 to +70	2,000	Plastic	M8	TK ... /4	OR 31 K 5000 N3-T4
											0.2 m/M8	TK ...	OR 31 K 5000 N3-K-T3
											2 m	–	OR 31 K 5000 N3-3
O-30 Universal Reflection light barriers													
	0 to 20,000	31 x 21 x 13	Potenti-ometer	–	Red		pnp, 100 mA NO/NC	-25 to +70	2,000	Plastic	M8	TK ... /4	OES 31 K 20000 P3-T4
											0.2 m/M8	TK ...	OES 31 K 20000 P3-K-T3
											2.0 m	–	OES 31 K 20000 P3-3
	0 to 20,000	31 x 21 x 13	Potenti-ometer	–	Red		npn, 100 mA NO/NC	-25 to +70	2,000	Plastic	M8	TK ... /4	OES 31 K 20000 N3-T4
											0.2 m/M8	TK ...	OES 31 K 20000 N3-K-T3
											2.0 m	–	OES 31 K 20000 N3-3

O-40 STANDARD

The compact light barriers and sensors in the O-40 Standard series are suited for medium ranges in a broad field of application. The sensors are reliable, economic and cost-efficient. The universal slotted-hole fastening makes flexible mounting possible.

Technical data (typ.)	+20 °C, 24 VDC
For more information, visit	www.di-soric.com

CE

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-40 Standard Reflection energetic light sensors													
	10 to 600	38 x 27 x 15	Potenti-ometer	–	Red		pnp, 100 mA NO pnp, 100 mA NC	-25 to +60	500	Plastic	M8	TK …	OT 6-41 K 0.6 P1-T3 OT 6-41 K 0.6 P2-T3
	100 to 1,000	41 x 31.5 x 16	Teach	–	Red		Push-pull, 200 mA NO/NC	-25 to +60	1,000	Metal	M8	TK …	OTT 41 M 1 G3-T3
O-40 Standard Reflection light barriers													
	400 to 4,000	38 x 27 x 15	Potenti-ometer	–	Red		pnp, 100 mA NC pnp, 100 mA NO	-25 to +60	500	Plastic	M8	TK …	OR 6-41 K 4 P1-T3 OR 6-41 K 4 P2-T3

O-40E EXTENDED

The devices in the O-40E Extended series for medium ranges have a robust metallic housing with a metallic plug and are used in the detection of standard or small parts. These light barriers detect with LED or with laser variants (laser class 1) that are safe for the eye.

Technical data (typ.)	+20 °C, 24 VDC
For more information, visit	www.di-soric.com

CE

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-40E Extended Reflection light sensors background suppression													
	30 to 350	40 x 30 x 15	Potenti-ometer	–	Laser, red	1	Push-pull, 200 mA NO/NC antivalent	-10 to +50	1,000	Metal	M8	TK ... /4	LH 41 M 350 G4L-T4

O-50 METAL

The robust and highly efficient light barriers in the O-50 Metal series work with visible red light LEDs or with laser light that is safe for the eye (laser class 1). They are robust and have a metallic housing and metallic plug. The sensors have maximum functional reserve and are used for long ranges.

Technical data (typ.)	+20 °C, 24 V DC
For more information, visit	www.di-soric.com

CE

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-50 Metal Reflection energetic light sensors													
	15 to 150	50 x 40 x 15	Potenti-ometer	–	Red		pnp, 200 mA NO/NC	-10 to +60	1,000	Metal	M12	VK …	OTV 51 M 150 P3K-IBS
	100 to 500												OTV 51 M 500 P3K-IBS
	100 to 600	50 x 40 x 15	Potenti-ometer	–	Infrared		pnp, 200 mA NO/NC	-10 to +60	1,000	Metal	M12	VK …	OTV 50 M 600 P3K-IBS
	50 to 1,200												OTV 50 M 1200 P3K-IBS
	75 to 200	50 x 40 x 15	Potenti-ometer	–	Laser, red	1	pnp, 200 mA NO/NC	-10 to +50	2,000	Metal	M12	VK ...	LTV 51 M 200 P3K-IBS
	100 to 600								500				LTV 51 M 600 P3K-IBS
O-50 Metal Reflection light sensors background suppression													
	50 to 200	50 x 40 x 15	Potenti-ometer	–	Laser, red	1	Push-pull, 200 mA NO/NC	-10 to +50	500	Metal	M12	VK ...	LHT 51 M 200 G3-B4 1)
	50 to 200	50 x 40 x 15	Potenti-ometer	–	Laser, red	1	Push-pull, 200 mA NO/NC	-10 to +50	500	Metal	M12	VK ...	LLH 51 M 200 G3-B4
O-50 Metal Reflection light barriers													
	40 to 2,000	50 x 40 x 15	Potenti-ometer	–	Red		pnp, 200 mA NO/NC	-10 to +60	1,000	Metal	M12	VK …	ORV 51 M 2000 P3K-IBS
	300 to 5,000	50 x 40 x 15	Potenti-ometer	–	Red		pnp, 200 mA NO/NC	-10 to +60	1,000	Metal	M12	VK …	ORV 51 M 5000 P3K-IBS
	100 to 1,000	50 x 40 x 15	Potenti-ometer	–	Laser, red	1	pnp, 200 mA NO/NC	0 to +50	2,000	Metal	M12	VK ...	LRV 51 M 1000 P3K-IBS
	200 to 2,000												LRV 51 M 2000 P3K-IBS
	1,000 to 10,000												LRV 51 M 10000 P3K-IBS
	50 to 500	50 x 40 x 15	Potenti-ometer	–	Laser, red	1	pnp, 200 mA NO/NC	5 to +50	750	Metal	M12	VK ...	LLRV 51 M 500 P3K-IBS
O-50 Metal Reflection light barriers													
	0 to 10,000	50 x 40 x 15	Potenti-ometer	T	Red		–	-25 to +60		Metal	M12	VK …	OSV 51 M 10000-IBS
				E	Red		pnp, 200 mA NO/NC	-25 to +60	100/200	Metal	M12	VK …	OEV 51 M 10000-P3K-IBS

O-81 LASER

The laser light sensors in the O-81 Laser series are used for precise detection of objects using red light lasers. The sensors can be adjusted precisely and distinguished by their high resolution and functional reserve. The robust devices with a metallic housing and metallic plug can be operated intuitively by way of potentiometers and NO-NC switches.

Technical data (typ.)	+20 °C, 24 VDC
For more information, visit	www.di-soric.com

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-81 Metal Reflection light sensors background suppression													
	40 to 400	76 x 30 x 18	Potenti-ometer	–	Laser, red	1	Antivalent, 200 mA NO/NC	-10 to +60	1,000	Metal	M12	VK ... /4	LHT 81 M 300 G4L-IBS
							200 mA, NO switching output NC alarm output						LHT 81 M 300 G6L-IBS
	40 to 400	76 x 30 x 18	Potenti-ometer	–	Laser, red	1	Antivalent, 200 mA NO/NC	-20 to +60	1,000	Metal	M12	VK ... /4	LHT 81 M 400 G4L-IBS
							200 mA, NO switching output NC alarm output						LHT 81 M 400 G6L-IBS

O-Q10 MINIATURE

The devices in O-Q10 Miniature series are the first choice for applications that require compact laser through-beam barriers for small parts detection. The robust devices with a metallic housing and metallic plug consistently satisfy the safe laser protection class 1.

Technical data (typ.)	+20 °C, 24 VDC
For more information, visit	www.di-soric.com

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-Q10 Miniature through-beam barriers													
	0 to 500	10 x 10 x 60	–	T	Laser, red	1	–	0 to +50	2,000	Metal	M8	TK ...	OLSQ 10 M 500-TSSL
				E			pnp, 200 mA NC						OLEQ 10 M 500 P1K-TSSL
				E			pnp, 200 mA NO						OLEQ 10 M 500 P2K-TSSL
	0 to 2,000	10 x 10 x 60	–	T	Laser, red	1	–	0 to +50	2,000	Metal	M8	TK ...	OLSQ 10 M 2000-TSSL
				E			pnp, 200 mA NC						OLEQ 10 M 2000 P1K-TSSL
				E			pnp, 200 mA NO						OLEQ 10 M 2000 P2K-TSSL

O-M5

The devices in the O-M5 series are the smallest diffuse sensors from di-soric in a threaded model. The sensors are distinguished by their precise detection of objects and are ideal for mounting in confined space conditions.

Technical data (typ.)	+20 °C, 24 V DC
For more information, visit	www.di-soric.com

CE

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-M5 Reflection energetic light sensors													
	... 10	M5	–	–	Red light		pnp, 100 mA NO	-25 to +65	1000	Stainless steel V2A	2.0 m	–	OTM05-10PS-2R
											M8	TK ...	OTM05-10PS-T3
	... 20	M5	–	–	Red light		pnp, 100 mA NO	-25 to +65	1000	Stainless steel V2A	2.0 m	–	OTM05-20PS-2R
											M8	TK ...	OTM05-20PS-T3
	... 50	M5	–	–	Red light		pnp, 100 mA NO	-25 to +65	1000	Stainless steel V2A	2.0 m	–	OTM05-50PS-2R
											M8	TK ...	OTM05-50PS-T3

O-M8

The compact laser light sensors are used for the detection of small parts and are designed for the safe laser class 1. This avoids injuries to the human eye.

Technical data (typ.)	+20 °C, 24 V DC
For more information, visit	www.di-soric.com

CE

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-M8 Through-beam sensors													
	0 to 2,000	M8 x 70	–	T	Laser, red	1	–	0 to +50	2,000	Stainless steel	M8	TK ...	OLS 08 V 2000-TSSL
				E			pnp, 200 mA NO						OLE 08 V 2000 P2K-TSSL

O-M18 STANDARD

The light barriers and light sensors in the O-M18 Standard series are ideal devices for economical and cost-efficient applications. The sensors are alternatively available in a straight model or with 90° angled optics. The plastic or metallic housing is distinguished by its short construction.

Technical data (typ.)	+20 °C, 24 VDC
For more information, visit	www.di-soric.com

CE

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-M18 Standard Diffuse reflective sensors													
	320	M18 x 68	Potentiometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic	M12	VK... /4	OT 18 FKR 320 P3-B4
										Metal			OT 18 FMR 320 P3-B4
	320	M18 x 68	Potentiometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic	M12	VK... /4	OT 18 FKR 320 N3-B4
										Metal			OT 18 FMR 320 N3-B4
	320	M18 x 58	Potentiometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic	PVC, 2.0 m	–	OT 18 FKR 320 P3
										Metal			OT 18 FMR 320 P3
	320	M18 x 58	Potentiometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic	PVC, 2.0 m	–	OT 18 FKR 320 N3
										Metal			OT 18 FMR 320 N3
	400	M18 x 55	Potentiometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic	M12	VK... /4	OT 18 FK 400 P3-B4
										Metal			OT 18 FM 400 P3-B4
	400	M18 x 55	Potentiometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic	M12	VK... /4	OT 18 FK 400 N3-B4
										Metal			OT 18 FM 400 N3-B4
	400	M18 x 45	Potentiometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic	PVC, 2.0 m	–	OT 18 FK 400 P3
										Metal			OT 18 FM 400 P3
	400	M18 x 45	Potentiometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic	PVC, 2.0 m	–	OT 18 FK 400 N3
										Metal			OT 18 FM 400 N3
O-M18 Standard Retroreflective sensors													
	3,000	M18 x 83	Potentiometer	–	Red		pnp, 100 mA NO/NC npn, 100 mA NO/NC	-25 to +70	250	Metal	M12	VK... /4	OR 18-1 M 3000 P4-B4 OR 18-1 M 3000 N4-B4
	3,600	M18 x 68	Potentiometer	–	Red		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic	M12	VK... /4	OR 18-1 FKR 3600 P3-B4
										Metal			OR 18-1 FMR 3600 P3-B4
	3,600	M18 x 68	Potentiometer	–	Red		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic	M12	VK... /4	OR 18-1 FKR 3600 N3-B4
										Metal			OR 18-1 FMR 3600 N3-B4
	3,600	M18 x 58	Potentiometer	–	Red		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic	PVC, 2.0 m	–	OR 18-1 FKR 3600 P3
										Metal			OR 18-1 FMR 3600 P3
	3,600	M18 x 58	Potentiometer	–	Red		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic	PVC, 2.0 m	–	OR 18-1 FKR 3600 N3
										Metal			OR 18-1 FMR 3600 N3
	5,700	M18 x 55	Potentiometer	–	Red		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic	M12	VK... /4	OR 18-1 FK 5700 P3-B4
										Metal			OR 18-1 FM 5700 P3-B4
	5,700	M18 x 55	Potentiometer	–	Red		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic	M12	VK... /4	OR 18-1 FK 5700 N3-B4
										Metal			OR 18-1 FM 5700 N3-B4

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-M18 Standard Retroreflective sensors													
	5,700	M18 x 45	Potenti-ometer	–	Red		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	PVC, 2.0 m	–	OR 18-1 FK 5700 P3 OR 18-1 FM 5700 P3
	5,700	M18 x 45	Potenti-ometer	–	Red		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	PVC, 2.0 m	–	OR 18-1 FK 5700 N3 OR 18-1 FM 5700 N3
O-M18 Standard Diffuse reflective sensors													
	600	M18 x 68	Potenti-ometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	M12	VK... /4	OT 18 FKR 600 P3-B4 OT 18 FMR 600 P3-B4
	600	M18 x 68	Potenti-ometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	M12	VK... /4	OT 18 FKR 600 N3-B4 OT 18 FMR 600 N3-B4
	600	M18 x 58	Potenti-ometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	PVC, 2.0 m	–	OT 18 FKR 600 P3 OT 18 FMR 600 P3
	600	M18 x 58	Potenti-ometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	PVC, 2.0 m	–	OT 18 FKR 600 N3 OT 18 FMR 600 N3
	800	M18 x 55	Potenti-ometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	M12	VK... /4	OT 18 FK 800 P3-B4 OT 18 FM 800 P3-B4
	800	M18 x 55	Potenti-ometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	M12	VK... /4	OT 18 FK 800 N3-B4 OT 18 FM 800 N3-B4
	800	M18 x 45	Potenti-ometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	PVC, 2.0 m	–	OT 18 FK 800 P3 OT 18 FM 800 P3
	800	M18 x 45	Potenti-ometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	PVC, 2.0 m	–	OT 18 FK 800 N3 OT 18 FM 800 N3
O-M18 Miniature Through-beam sensors													
	8,000	M18 x 68	Potenti-ometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	M12	VK... /4	OES 18 FKR 8000 P3-B4 OES 18 FMR 8000 P3-B4
	8,000	M18 x 68	Potenti-ometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	M12	VK... /4	OES 18 FKR 8000 N3-B4 OES 18 FMR 8000 N3-B4
	8,000	M18 x 58	Potenti-ometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	PVC, 2.0 m	–	OES 18 FKR 8000 P3 OES 18 FMR 8000 P3
	8,000	M18 x 58	Potenti-ometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	1,000	Plastic Metal	PVC, 2.0 m	–	OES 18 FKR 8000 N3 OES 18 FMR 8000 N3
	10,000	M18 x 55	Potenti-ometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	333	Plastic Metal	M12	VK... /4	OES 18 FK 10000 P3-B4 OES 18 FM 10000 P3-B4
	10,000	M18 x 55	Potenti-ometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	333	Plastic Metal	M12	VK... /4	OES 18 FK 10000 N3-B4 OES 18 FM 10000 N3-B4
	10,000	M18 x 45	Potenti-ometer	–	Infrared		pnp, 100 mA NO/NC	-25 to +55	333	Plastic Metal	PVC, 2.0 m	–	OES 18 FK 10000 P3 OES 18 FM 10000 P3
	10,000	M18 x 45	Potenti-ometer	–	Infrared		npn, 100 mA NO/NC	-25 to +55	333	Plastic Metal	PVC, 2.0 m	–	OES 18 FK 10000 N3 OES 18 FM 10000 N3

O-M18E EXTENDED

The light sensors in the O-M18E Extended series can be used universally and are the first choice in challenging applications. The devices have a robust metallic housing and score points with their high functional reserve and efficient background suppression.

Technical data (typ.)	+20 °C, 24 VDC
For more information, visit	www.di-soric.com

CE

	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-M18E Extended Reflection light sensors background suppression													
	30 to 130	M18 x 80	Potenti-ometer	–	Red		pnp, 100 mA NO/NC	-25 to +70	1,000	Metal	M12	VK … /4	OH 18-1 M 130 P4-B4
							npn, 100 mA NO/NC						OH 18-1 M 130 N4-B4

O-D4

The devices in the O-D4 series are the smallest light sensors that di-soric offers in a cylindrical model. They guarantee the precise detection of objects and are ideal for mounting anywhere space is scarce.

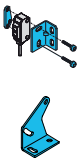
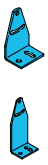
Technical data (typ.)	+20 °C, 24 VDC
For more information, visit	www.di-soric.com

CE

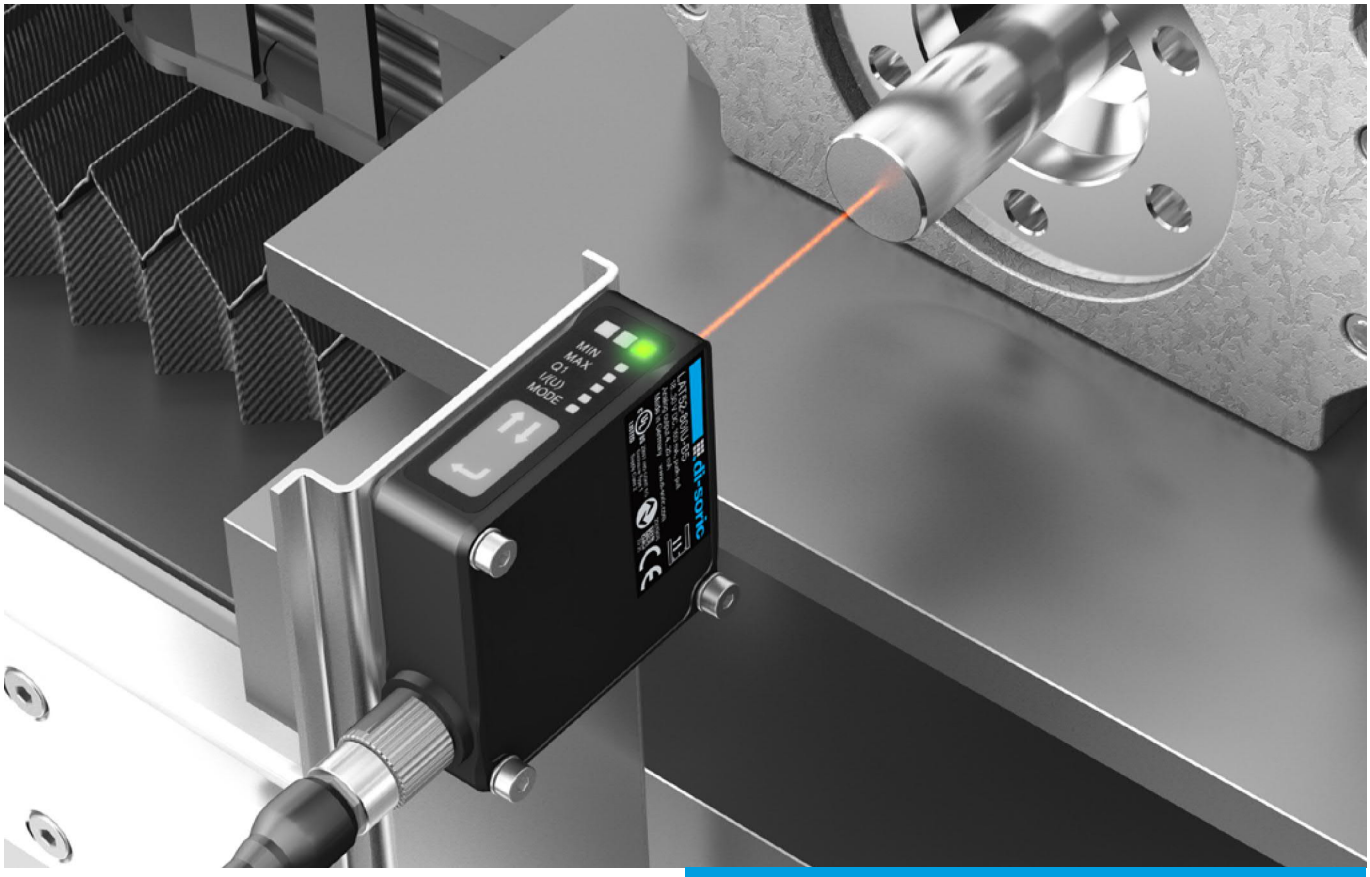
	Scan width / range, setting range (mm)	Housing design Size (mm)	Sensitivity setting by means of	Transmitter (T) / Receiver (R)	Transmission light (clocked)	Laser class	Switching output	Ambient temperature (°C)	Switching frequency (Hz)	Housing material	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
O-D4 Reflection energetic light sensors													
	... 10	Ø 4.0	–	–	Red light		pnp, 100 mA NO	-25 to +65	1000	Stainless steel V2A	2.0 m	–	OTD04-10PS-2R
											M8	TK …	OTD04-10PS-T3
	... 20	Ø 4.0	–	–	Red light		pnp, 100 mA NO	-25 to +65	1000	Stainless steel V2A	2.0 m	–	OTD04-20PS-2R
											M8	TK …	OTD04-20PS-T3
	... 50	Ø 4.0	–	–	Red light		pnp, 100 mA NO	-25 to +65	1000	Stainless steel V2A	2.0 m	–	OTD04-50PS-2R
											M8	TK …	OTD04-50PS-T3

O-Z-M MECHANICAL ACCESSORIES FOR LIGHT BARRIERS AND LIGHT SENSORS

Specific fastening angles, sensor brackets and wobble plates make adjustment and assembly of optical sensors easy.

	To be used for	Product description
Fastening angles for light barriers and light sensors		
	O-20 Miniature	BW 22/22 BW 30
	O-30 Universal	BW 31-36 BW 31-39 BW 31-41 BW 31-56
	O-40E Extended	BW 41 BW 41-80
	O-50 Metal	BW 50
	O-81 Laser	BW LHT 81 SHB-LHT-81
Sensor brackets for light barriers and light sensors		
	O-20 Miniature	SH-S20
	O-40	SH-S41-SN
Wobble plates for light barriers and light sensors		
	O-Q10 O-Q15	TP-Q
	O-Q10 O-Q15	TP-Q90

Optical distance sensors



The optical distance sensors measure distances quickly and precisely with red light laser. Thanks to the metallic housing, all sensors are very robust. They offer a wide bandwidth of measuring ranges and ranges of up to 10 m, and resolutions into the micrometer range.

LAT-45 Long range	67
LAT-52 Compact	68
LVHT-52 Compact	69
LAT-61 Precise	70
LAT-Z Accessories for optical distance sensors	71

LAT-45 LONG RANGE

The LAT-45 features a long range of up to 10 m. The sensor is equally well suited for measuring and switching applications. The LAT-45 is operated alternatively via keypad or IO-Link, its easily legible display is used to display measured values. A good color and surface independence makes distance measurement possible on many surfaces.

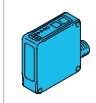
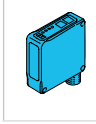
Technical data (typ.)	+20 °C, 24 V DC
Emitted light	Red-light laser, 650nm
Switching output 1	pnp, 200 mA, NO/NC switchable
Switching output 2	pnp or analog output
Switching output 3	–
Analog output	4 to 20 mA
	0 to 10 V
Measuring frequency	1 to 33 Hz
No-load current	< 150 mA
Interface	IO-Link V1.1, COM2
Ambient temperature	-10 to +60 °C
Protection type	IP 67
Housing material	Die-cast zinc, black varnished

	Laser distance sensors	Laser diffuse sensors with background suppression	Analog output (4 to 20 mA)	Analog output (0 to 10 V)	Detection range (mm)	Housing design Size (mm)	Digital display	Service voltage (VDC)	Resolution (mm)	Measuring frequency (Hz)	Switching frequency (Hz)	Laser class	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
LAT-45 Long range															
	■		■	■	300 to 6,000	59 x 42 x 52	■	18 to 30	1 mm	1 to 33		1	M12	VK…/5	LHT 45-6 M IU-B5
	■		■	■	20 to 10,000					1 to 33		2			LHT 45-10 M IU-B5
	■	■			200 to 10,000						5	2			LHT 45-10 M P3-B5

LAT-52 COMPACT

The LAT-52 with IO-Link is suited for distances up to 500 mm, is used in applications in the mm and sub-mm range and is available for three different measuring ranges. The small laser light spot enables the detection of small changes in distance.

Technical data (typ.)	+20 °C, 24 V DC
Emitted light	Red-light laser, 650 nm
Switching output 1	Push-pull, 100 mA, short-circuit proof
Analog output	4 to 20 mA
	0 to 10 V
Service voltage	18 to 30 V DC
No-load current	60 mA
Ambient temperature	0 to +50 °C
Protection type	IP 67
Protection class	III, operation on protective low voltage
Housing material	Die-cast zinc, black powder-coated

	Laser distance sensors	Laser class	Analog output (4 to 20 mA)	Analog output (0 to 10 V)	Detection range (mm)	Housing design Size (mm)	Resolution (mm) Measuring range 1 / measuring range 2	Measuring frequency (Hz)	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
LAT-52 Compact											
	■	1	■	■	30 to 80	51 x 51 x 17	0.01	100 to 1200	M12	VK…/5	LAT52-80IU-B5
	■	1	■	■	50 to 200	51 x 51 x 17	0.02 / 0.05	100 to 1200	M12	VK…/5	LAT52-200IU-B5
	■	1	■	■	50 to 500	51 x 51 x 17	0.3 / 0.5	100 to 1200	M12	VK…/5	LAT52-500IU-B5
	■	1	■	■	30 to 80	51 x 51 x 17	0.01	1000	M12	VK…/5	LAT52-80IU-RB5
	■	1	■	■	50 to 200	51 x 51 x 17	0.02 / 0.05	750	M12	VK…/5	LAT52-200IU-RB5
	■	1	■	■	50 to 500	51 x 51 x 17	0.3 / 0.5	500	M12	VK…/5	LAT52-500IU-RB5

LVHT-52 COMPACT

The LVHT-52 is suited for applications that are meant to have a high degree of precision in switching but not measuring. With a detection range of 50 to 500 mm and a precisely adjustable window mode, it is a very efficient solution.

Technical data (typ.)	+20 °C, 24 V DC
Emitted light	Red-light laser, 650 nm
Switching output 1	Push-pull, 100 mA, short-circuit proof
Service voltage	18 to 30 V DC
No-load current	60 mA
Ambient temperature	0 to +50 °C
Protection type	IP 67
Protection class	III, operation on protective low voltage
Housing material	Die-cast zinc, black powder-coated

IO-Link

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	Laser distance sensors	Laser class	Analog output (4 to 20 mA)	Analog output (0 to 10 V)	Detection range (mm)	Housing design Size (mm)	Resolution (mm) Measuring range 1 / measuring range 2	Switching frequency (Hz)	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
LVHT-52 Compact											
	■	1			50 to 500	51 x 51 x 17	0.3 / 0.5	20 to 600	M12	VK .../4	LVHT52-500G3-B4
	■	1			50 to 500	51 x 51 x 17	0.3 / 0.5	100	M12	VK .../5	LVHT52-500G3-RB4

LAT-61 PRECISE

Highly precise, quick distance measurements in a range up to 180 mm are the area of application for the LAT-61 optical distance sensor. Its small and precise laser spot makes it possible to determine distances with a resolution into the micrometer range. The integrated display serves to display measured values and to configure the sensor.

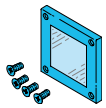
CE

Technical data (typ.)	+20 °C, 24 V DC
Emitted light	Red-light laser, 665 nm
Switching output 1	pnp/npn, 50 mA
Switching output 2	pnp/npn, 50 mA
Switching output 3	pnp/npn, 50 mA
Analog output	4 to 20 mA
	0 to 10 V
No-load current	< 100 mA
Ambient temperature	-10 to +45 °C
Protection type	IP 67
Protection class	III, operation on protective low voltage
Housing material	Plastic (PBT)

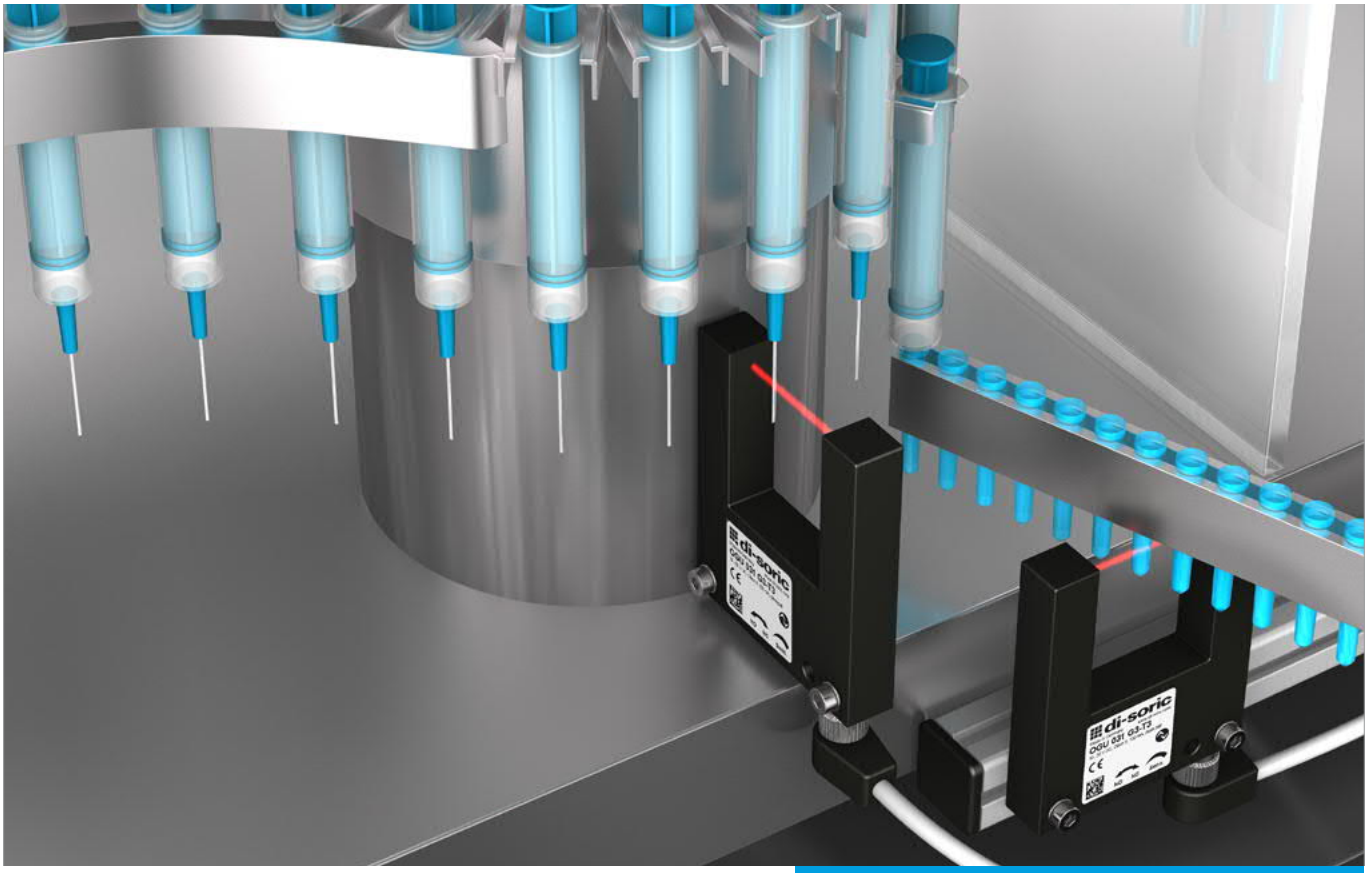
	Laser distance sensors	Laser class	Analog output (4 to 20 mA)	Analog output (0 to 10 V)	Detection range (mm)	Housing design Size (mm)	Digital display	Service voltage (VDC)	Resolution (mm)	Measuring frequency (Hz)	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
LAT-61 Precise													
	■	2	■	■	30 ± 4	60 x 57 x 20	■	21.6 to 26.4	0.5 µm	500 to 5000	5.0 m	–	LAT 61 K 30/8 IUPN
					50 ± 10				1.5 µm	500 to 5000			LAT 61 K 50/20 IUPN
					85 ± 20				2.5 µm	500 to 5000			LAT 61 K 85/40 IUPN
					120 ± 60				8.0 µm	500 to 5000			LAT 61 K 120/120 IUPN

LAT-Z ACCESSORIES FOR OPTICAL DISTANCE SENSORS

This scratch-resistant glass disk protects the front panel of the LAT-45 from damage in harsh ambient conditions.

Protective frame with glass insert for LAT 45 …		
		LHT9-45-SRG

Fork light barriers



di-soric fork light barriers operate based on the operating principle of through-beam sensors. They are delivered ready to install and do not have to be adjusted afterward. Fork light barriers are used wherever small objects or object positions, regardless of what type of surface they have, must be detected quickly and precisely.

OGU	73
OGUP Dirt-resistant	75
OGUL Laser	76
OGU Stainless steel	77
LLGT Measuring	78
OGUZ Special Designs	79
OG-Z Accessories for fork light barriers	79

OGU

The OGU series with an LED light source is the standard among fork light barriers. The largest range of fork light barriers on the market includes devices with fork openings from 5 mm to 250 mm. OGU fork light barriers offer high resolution and reproducibility with formidable speed. They are operated intuitively using potentiometers, auto-teach or IO-Link. Four preset operation modes provide the option for ideal adaptation to the application. At the same time, IO-Link offers important advantages in configuration and diagnosis.

Technical data (typ.)	+20 °C, 24 V DC
Service voltage	10 to 30 V DC
No-load current	40 mA
Switching output	Push-pull (pnp/npn can be adjusted by IO-Link)
	100 mA, NO/NC (can be switched by potentiometer)
Sensitivity adjustment	Adjustable (potentiometer)
Ambient temperature	-25 to 60 °C
Degree of protection	IP 67
Operation modes	**Standard** (general applications)
	High Resolution (for detecting very small objects)
	Power (increased function reserve)
	Speed (reliable detection of fast-moving parts)
Plug connector	M8, 3-pin
Connection cable	TK… (optionally available)

Operation modes

Standard – General applications
- 5 kHz
- Reproducibility: 0.02 mm

Power – Increased function reserve
- Increased transmitting power,

High Resolution – For detecting very small objects
- Resolution improved by 30%

Speed – Reliable detection of fast-moving parts
- 30% higher switching frequency

	Fork width (mm)	Housing design Size (mm)	Red light, 660 nm, clocked	Infrared light, 880 nm	Resolution, smallest detectable part (mm)	Standard factory settings	Adjustable switching frequency (Hz)	IO-Link interface	Reproducibility (mm)	Die-cast zinc, powder-coated	Aluminum, black varnished/anodized	Product description
OGU												
	05	25 x 45 x 10		■	Ø0.2 (min. Ø0.1)	■	10,000 (max. 14,000)	■	0.02		■	OGU 005 G3-T3
	10	25 x 45 x 10		■	Ø0.3 (min. Ø0.2)	■	10,000 (max. 14,000)	■	0.02	■		OGU 010 G3-T3
	20	40 x 50 x 10		■	Ø0.3 (min. Ø0.2)	■	5,000 (max. 8,000)	■	0.02	■		OGU 020 G3-T3
			■									OGU 021 G3-T3
	30	50 x 60 x 10		■	Ø0.3 (min. Ø0.2)	■	5,000 (max. 8,000)	■	0.02	■		OGU 030 G3-T3
			■									OGU 031 G3-T3
	40	60 x 70 x 10	■		Ø0.3 (min. Ø0.2)	■	5,000 (max. 8,000)	■	0.02	■		OGU 041 G3-T3
	50	70 x 80 x 10		■	Ø0.3 (min. Ø0.2)	■	5,000 (max. 8,000)	■	0.02	■		OGU 050 G3-T3
			■									OGU 051 G3-T3
	60	80 x 80 x 10	■		Ø0.3 (min. Ø0.2)	■	5,000 (max. 8,000)	■	0.02		■	OGU 061 G3-T3

	Fork width (mm)	Housing design Size (mm)	Red light, 660 nm, clocked	Infrared light, 880 nm	Resolution, smallest detectable part (mm)	Standard factory settings	Adjustable switching frequency (Hz)	IO-Link interface	Reproducibility (mm)	Die-cast zinc, powder-coated	Aluminum, black varnished/anodized	Product description
OGU												
	70	90 x 80 x 10	■		Ø0.3 (min. Ø0.2)	■	5,000 (max. 8,000)	■	0.02		■	OGU 071 G3-T3
	80	100 x 80 x 10	■	■	Ø0.3 (min. Ø0.2)	■	5,000 (max. 8,000)	■	0.02	■		OGU 080 G3-T3
												OGU 081 G3-T3
	90	110 x 80 x 10	■		Ø0.3 (min. Ø0.2)	■	5,000 (max. 8,000)	■	0.02		■	OGU 91 G3-T3
	100	120 x 80 x 10	■		Ø0.3 (min. Ø0.2)	■	5,000 (max. 8,000)	■	0.02	■		OGU 101 G3-T3
	120	144 x 155 x 12	■	■	Ø0.5 (min. Ø0.3)	■	5,000 (max. 8,000)	■	0.02	■		OGU 120 G3-T3
												OGU 121 G3-T3
	170	194 x 140 x 12	■		Ø0.5 (min. Ø0.4)	■	5,000 (max. 8,000)	■	0.03	■		OGU 171 G3-T3
	220	244 x 140 x 12	■		Ø1.0 (min. Ø0.8)	■	5,000 (max. 6,500)	■	0.03	■		OGU 221 G3-T3
	250	274 x 140 x 12	■		Ø1.0 (min. Ø0.8)	■	5,000 (max. 6,500)	■	0.03		■	OGU 251 G3-T3

OGUP DIRT-RESISTANT

These high-performance fork light barriers have an increased functional reserve, which means that cleaning cycles are reduced to a minimum. They are operated intuitively using potentiometers or IO-Link. Four preset operating modes make ideal adaptation to the application possible, while IO-Link offers important advantages in configuration and diagnosis.

Technical data (typ.)	+20 °C, 24 V DC
Service voltage	10 to 30 V DC (Supply class 2)
Switching output	Push-pull (pnp/npn can be adjusted by IO-Link)
	100 mA, NO/NC (can be switched by potentiometer)
Sensitivity adjustment	Adjustable (potentiometer)
Ambient temperature	-25 to 60 °C
Degree of protection	IP 67
Operation modes	**Power** (increased function reserve) Factory settings
	Standard (general applications)
	High Resolution (for detecting very small objects)
	Speed (reliable detection of fast-moving parts)
Plug connector	M8, 3-pin
Connection cable	TK… (optionally available)

Operation modes

Standard – General applications
- 5 kHz
- Reproducibility: 0.02 mm

Power – Increased function reserve
- Increased transmitting power,

High Resolution – For detecting very small objects
- Resolution improved by 30%

Speed – Reliable detection of fast-moving parts
- 30% higher switching frequency

	Fork width (mm)	Housing design Size (mm)	Infrared light, 860 nm	No-load current (mA)	Resolution, smallest detectable part (mm)	Power factory settings	Switching frequency (Hz)		Reproducibility (mm)	Die-cast zinc, black, powder-coated	Product description
OGUP Dirt-resistant											
	20	40 x 50 x 10	■	30	Ø2.0 (min. Ø0,2)	■	200 (max 8,000)		0.03	■	OGUP 020 G3-T3
	30	50 x 60 x 10							0.03		OGUP 030 G3-T3
	50	70 x 80 x 10							0.03		OGUP 050 G3-T3
	80	100 x 80 x 10							0.03		OGUP 080 G3-T3

OGUL LASER

The OGUL series is particularly suited for detecting small parts down to 0.05 mm. Using collimated laser red light achieves a high degree of precision of the switching point between transmitter and receiver across the entire fork width. The devices work with a clocked red light laser in the eye-safe laser class 1. The easily visible, small laser point makes quick adjustment to the object possible even with a large amount of ambient light.

Technical data (typ.)	+20 °C, 24 V DC
Emitted light	Red-light laser, 655 nm, clocked
Service voltage	10 to 30 V DC (Supply class 2)
Switching output	Push-pull (pnp/npn can be adjusted by IO-Link)
	100 mA, NO/NC (can be switched by potentiometer)
Sensitivity adjustment	Adjustable (potentiometer)
Ambient temperature	-25 to 60 °C
Degree of protection	IP 67
Operation modes	**Standard** (general applications)
	High Resolution (for detecting very small objects)
	Power (increased function reserve)
	Speed (reliable detection of fast-moving parts)
Plug connector	M8, 3-pin
Connection cable	TK… (optionally available)

Operation modes

Standard – General applications
- 5 kHz
- Reproducibility: 0.01 mm

Power – Increased function reserve
- Increased transmitting power,

High Resolution – For detecting very small objects
- Resolution improved by 30%

Speed – Reliable detection of fast-moving parts
- 100% higher switching frequency

	Fork width (mm)	Housing design Size (mm)	Transmission light (clocked)	No-load current (mA)	Resolution, smallest detectable part (mm)	Standard factory settings	Switching frequency (Hz)	Reproducibility (mm)	Die-cast zinc, black, powder-coated	Stainless steel V4A (1.4404 / 1.4571)	Product description
OGUL Laser											
	30	50 x 60 x 10	Laser, red	<30	Ø0.05 (min. Ø0,03)	■	5000 (max 10,000)	0.001	■		OGUL 031 G3-T3
	50	70 x 80 x 10			Ø0.05 (min. Ø0,03)						OGUL 051 G3-T3
	80	100 x 80 x 10			Ø0.05 (min. Ø0,04)						OGUL 081 G3-T3
	120	144 x 90 x 12			Ø0.10 (min. Ø0,05)						OGUL 121 G3-T3
	30	50 x 60 x 10	Laser, red	<30	Ø0.05 (min. Ø0,03)	■	5000 (max 10,000)	0.001		■	OGUL 031 G3-T3/V4A
	50	70 x 80 x 10			Ø0.05 (min. Ø0,03)						OGUL 051 G3-T3/V4A
	80	100 x 80 x 10			Ø0.05 (min. Ø0,04)						OGUL 081 G3-T3/V4A
	120	144 x 90 x 12			Ø0.10 (min. Ø0,05)						OGUL 121 G3-T3/V4a

OGU STAINLESS STEEL

The OGU fork light barriers with V4A stainless steel housing are mechanically and electrically compatible with standard fork light barriers. These devices are used particularly in the pharmaceuticals, beverage and food industries, because they satisfy the particular requirements for easy and reliable cleaning using aggressive media.

Technical data (typ.)	+20 °C, 24 V DC
Service voltage	10 to 30 V DC (Supply class 2)
Switching output	Push-pull (pnp/npn can be adjusted by IO-Link)
	100 mA, NO/NC (can be switched by potentiometer)
Sensitivity adjustment	Adjustable (potentiometer)
Ambient temperature	-25 to 60 °C
Degree of protection	IP 67
Operation modes	**Standard** (general applications)
	High Resolution (for detecting very small objects)
	Power (increased function reserve)
	Speed (reliable detection of fast-moving parts)
Plug connector	M8, 3-pin
Connection cable	TK… (optionally available)

Operation modes

Standard – General applications
- 5 kHz OGU 03x – 12x
- Reproducibility: 0.02 mm

Power – Increased function reserve
- Increased transmitting power,

High Resolution – For detecting very small objects
- Resolution improved by 30%

Speed – Reliable detection of fast-moving parts
- 30% higher switching frequency

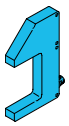
	Fork width (mm)	Housing design Size (mm)	Red light, 660 nm, clocked	No-load current (mA)	Resolution, smallest detectable part (mm)	Standard factory settings	Switching frequency (Hz)		Reproducibility (mm)	Stainless steel V4A (1.4404 / 1.4571)	Product description
OGU Stainless steel											
	10	25 x 45 x 10	■	30	Ø0.2 (min. Ø0.1)	■	5,000 (10,000)		0.02	■	OGU 010 G3-T3/V4A
	30	50 x 60 x 10	■	30	Ø0.3 (min. Ø0.2)	■	5,000 (10,000)		0.02	■	OGU 031 G3-T3/V4A
	50	70 x 80 x 10	■	30	Ø0.3 (min. Ø0.2)	■	5,000 (10,000)		0.02	■	OGU 051 G3-T3/V4A
	80	100 x 80 x 10	■	30	Ø0.3 (min. Ø0.2)	■	5,000 (10,000)		0.02	■	OGU 081 G3-T3/V4A
	120	144 x 90 x 12	■	45	Ø0.5 (min. Ø0.2)	■	5,000 (10,000)		0.02	■	OGU 121 G3-T3/V4A

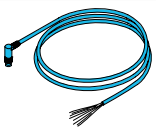
LLGT MEASURING

The LLGT line laser fork light barrier with analog output is used for precise edge measurement and for determining diameters. This measuring, high-resolution fork light barrier can be used to reliably capture and analyze even the smallest differences in dimensions.

Technical data (typ.)	+20 °C, 24 V DC
Service voltage	18 to 30 V DC
Resolution	> 20 µm (analog output)
Measuring range	25 mm
Switching output	Push-pull, 150 mA (2x)
Switching hysteresis	0.1 mm
Analog output	4 to 20 mA / 0 to 10 V switchable
Analog output linearity	± 0.3%
Admissible impedance	≤ 500 ohm / ≥ 1 kohm
Frequency of measuring sequence	200 Hz
Characteristics	Trigger input
Display	LED green (operation)
	LED yellow (switching outputs)
Ambient temperature	+5 to 45 °C
Ambient light immunity	5 kLx
Insulation voltage endurance	500 V
Protection type	IP 67
Protection optics	PMMA
Plug connector	M12 connector, 8-pin

CE

	Fork width (mm)	Housing design Size (mm)	Red-light laser line, 650 nm	Laser class (EN60825-1)	No-load current (mA/24 V DC)	Resolution, smallest detectable part (mm)	Switching frequency (Hz)	Aluminum, black anodized	Product description
LLGT Measuring									
	80	150 x 90 x 18	■	1	70	Ø 0.5		■	LLGT 081 M 25 IUG8-B8



Accessories for LLGT 081

see "Connection technology," page 198

OGUZ SPECIAL DESIGNS

Fork light barriers in specific designs complete the extensive range that di-soric offers. Differential fork light barriers detect even minimal remission differences (diffuse reflection) for the detection of films that are very thin and as clear as glass. Fork light barriers for flow monitoring provide a continuous switching signal in case of the flow of a preset minimum quantity.

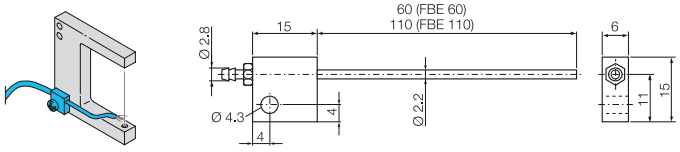
Technical data (typ.)	+20 °C, 24 V DC
Service voltage	10 to 35 V DC
Switching output	pnp, 200 mA, NO/NC switchable
Sensitivity adjustment	4-turn potentiometer
Ambient temperature	-10 to 60 °C
Protection type	IP 67
Plug connector	M8, 3-pin
Connection cable	TK… (optionally available)

CE

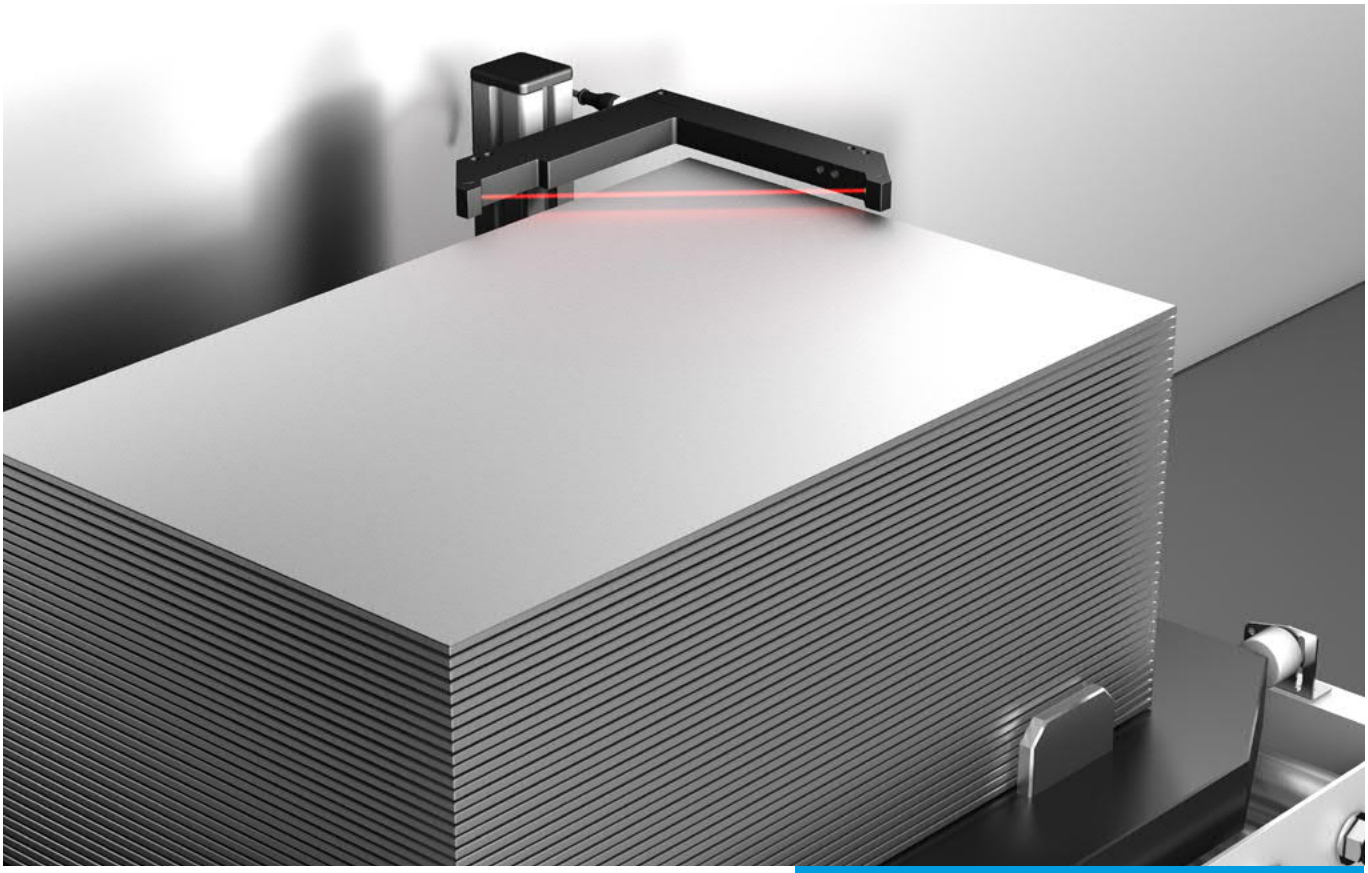
	Fork width (mm)	Housing design Size (mm)	Infrared light, 880 nm	No-load current (mA)	Resolution, smallest detectable part (mm)		Switching frequency (Hz)	Reproducibility (mm)	Aluminum, black anodized	Product description
Differential fork light barriers										
	30	50 x 70 x 10	■	35	Ø 0.07		5,000	0.01	■	ODG 30 P3K-TSSL
	50	70 x 90 x 10			Ø 0.1					ODG 50 P3K-TSSL
	90	110 x 115 x 10			Ø 0.25					ODG 90 P3K-TSSL

OG-Z ACCESSORIES FOR FORK LIGHT BARRIERS

These air blast devices are used to purge dirt and deposits from the front panel. Assembly is done on the assembly bore of the angled / fork light barrier.

Air nozzles (FBE)			
			
	Flexible	Length 60 mm	FBE 60
	Flexible	Length 110 mm	FBE 110

Angled light barriers



Angled light barriers from di-soric work according to the through-beam principle. They are used, preferably in tight spaces, for fast, surface-independent detection of objects. Since transmitter, receiver and the electronics are located in one housing, they can be mounted quickly. Costly brackets and time-consuming adjustments can be avoided.

OGL	81
OGLP Dirt-resistant	82
OGLL Laser	83

OGL

The OGL angled light barrier offers unsurpassed performance and can be operated with a potentiometer. The OGL offers high resolution and reproducibility with outstanding speed. It is operated intuitively using potentiometers or IO-Link. Four preset operation modes provide the option for ideal adaptation to the application. At the same time, IO-Link offers important advantages in configuration and diagnosis.

Technical data (typ.)	+20 °C, 24 V DC
Service voltage	10 to 30 V DC (Supply Class 2)
Switching output	Push-pull (pnp/npn can be adjusted by IO-Link)
	100 mA, NO/NC (can be switched by potentiometer)
Sensitivity adjustment	Adjustable (potentiometer)
Ambient temperature	-25 to +60 °C
Protection type	IP 67
Operation modes	**Standard** (general applications)
	High Resolution (for detecting very small objects)
	Power (increased function reserve)
	Speed (reliable detection of fast-moving parts)
Plug connector	M8, 3-pin
Connection cable	TK … (optionally available)

IO-Link

c UL us LISTED

CE

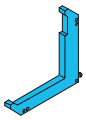
Operation modes

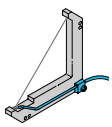
Standard – General applications
- 5 kHz
- Reproducibility: 0.02 mm

Power – Increased function reserve
- Increased transmitting power,

High Resolution – For detecting very small objects
- Resolution improved by 30%

Speed – Reliable detection of fast-moving parts
- 30% higher switching frequency

	Length of the optical axis (mm)	Housing design Size (mm)	Red light, 660 nm	Infrared light, 880 nm	No-load current (mA)	Resolution (mm)	Standard factory settings	Switching frequency (Hz)	Reproducibility (mm)		Die-cast zinc, black powder-coated	Product description
OGL												
	50	75 x 75 x 10	■		< 30	Ø0.3 (min. Ø0.2)	■	5,000 (max. 10,000)	0.02		■	OGL 050 G3-T3 [1]
				■								OGL 051 G3-T3 [1]
	80	105 x 105 x 10	■		< 30	Ø0.3 (min. Ø0.2)	■	5,000 (max. 10,000)	0.02		■	OGL 080 G3-T3 [1]
				■								OGL 081 G3-T3 [1]
	120	150 x 150 x 12	■		< 30	Ø0.5 (min. Ø0.4)	■	5,000 (max. 10,000)	0.02		■	OGL 120 G3-T3 [1]
				■								OGL 121 G3-T3 [1]



Air nozzle devices FBE for OGLP xx G3-T3

see "OG-Z Accessories for fork light barriers," page 79

OGLP DIRT-RESISTANT

The high-performance angled light barriers from di-soric have an increased functional reserve. In the devices with contamination indicator, the cleaning cycles are reduced to a minimum.

Technical data (typ.) +20 °C, 24 V DC	OGLP xx G3-T3	OGL xx/xx P6L-IBS
Service voltage	10 to 30 V DC (Supply Class 2)	10 to 35 V DC
Switching output	Push-pull (pnp/npn can be adjusted by IO-Link)	pnp, 200 mA, NO
	100 mA, NO/NC (can be switched by potentiometer)	
Sensitivity adjustment	Adjustable (potentiometer)	
Ambient temperature	-25 to +60 °C	-10 to +60 °C
Protection type	IP 67	IP 67
Operation modes	**Standard** (general applications)	
	High Resolution (for detecting very small objects)	
	Power (increased function reserve)	
	Speed (reliable detection of fast-moving parts)	
Plug connector	M8, 3-pin	M12, 4-pin
Connection cable	TK … (optionally available)	VK …/4 (optionally available)

IO-Link

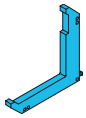
Operation modes OGLP xx G3-T3

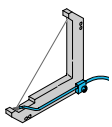
Standard – General applications
- 5 kHz
- Reproducibility: 0.02 mm

Power – Increased function reserve
- Increased transmitting power,

High Resolution – For detecting very small objects
- Resolution improved by 30%

Speed – Reliable detection of fast-moving parts
- 30% higher switching frequency

	Length of the optical axis (mm)	Housing design Size (mm)	Infrared light, 860 nm	Red light, 660 nm	No-load current (mA)	Resolution (mm)	Power factory settings	Switching frequency (Hz)	Reproducibility (mm)	Contamination indicator / output	IO-Link	Die-cast zinc, black powder-coated	Die-cast zinc, natural	Product description
OGLP Dirt-resistant														
	50	75 x 75 x 10	■		< 30	Ø0.3 (min. Ø0.2)	■	5,000 (max. 8,000)	0.02	–	■	■	–	OGLP 050 G3-T3
	80	105 x 105 x 10	■		< 30	Ø0.3 (min. Ø0.2)	■	5,000 (max. 8,000)	0.02	–	■	■	–	OGLP 080 G3-T3
	120	150 x 150 x 12	■		< 30	Ø0.5 (min. Ø0.4)	■	5,000 (max. 8,000)	0.03	–	■	■	–	OGLP 120 G3-T3
	40	60 x 83 x 10		■	45	–	■	200	–	■	–	–	■	OGL 50/31 P6L-IBS
	60	65 x 106 x 10		■	45	–	■	200	–	■	–	–	■	OGL 55/54 P6L-IBS



Air nozzle devices FBE for OGLP xx G3-T3

see "OG-Z Accessories for fork light barriers," page 79

OGLL LASER

The OGLL laser angled light barrier is particularly suited for detecting small parts down to 0.05 mm. Using collimated laser red light achieves a high degree of precision of the switching point between transmitter and receiver across the entire fork width. The devices work with a clocked red light laser in the eye-safe laser class 1. The easily visible, small laser point makes quick adjustment to the object possible even with a large amount of ambient light.

Technical data (typ.)	+20 °C, 24 V DC
Service voltage	10 to 30 V DC (Supply Class 2)
Switching output	Push-pull (pnp/npn can be adjusted by IO-Link)
	100 mA, NO/NC (can be switched by potentiometer)
Sensitivity adjustment	Adjustable (potentiometer)
Ambient temperature	-25 to +60 °C
Protection type	IP 67
Operation modes	**Standard** (general applications)
	High Resolution (for detecting very small objects)
	Power (increased function reserve)
	Speed (reliable detection of fast-moving parts)
Plug connector	M8, 3-pin
Connection cable	TK … (optionally available)

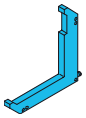
Operation modes

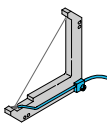
Standard – General applications
- 5 kHz
- Reproducibility: 0.01 mm

Power – Increased function reserve
- Increased transmitting power,

High Resolution – For detecting very small objects
- Resolution improved by 30%

Speed – Reliable detection of fast-moving parts
- 100% higher switching frequency

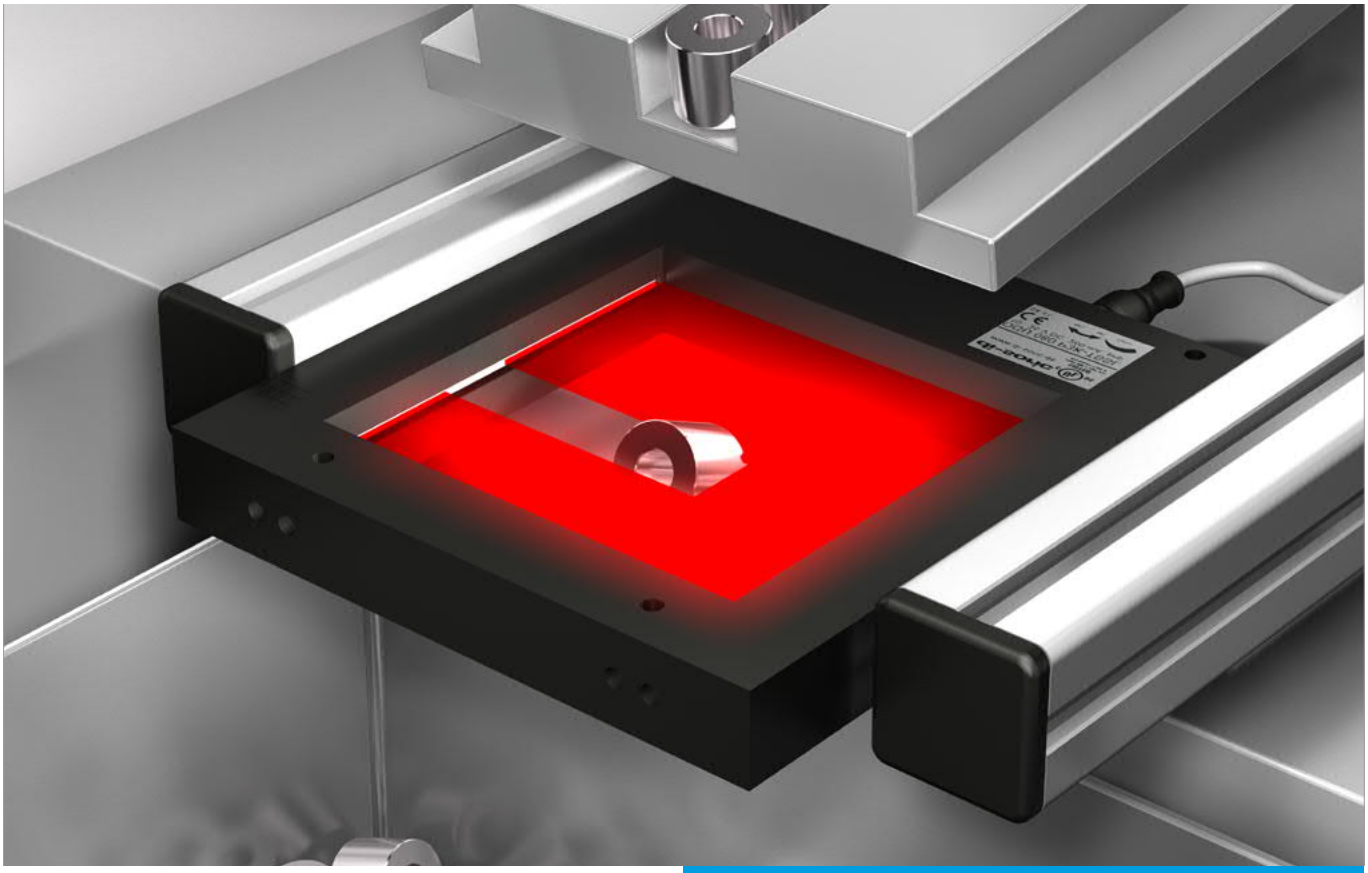
	Length of the optical axis (mm)	Housing design Size (mm)	Transmission light (clocked)	Red-light laser, 670 nm	No-load current (mA)	Resolution (mm)	Standard factory settings	Switching frequency (Hz)	Reproducibility (mm)	Die-cast zinc, black powder-coated	Product description
OGLL Laser											
	50	75 x 75 x 10	Laser, red	■	< 30	Ø 0.05 (min. Ø 0.03)	■	5000 (10,000)	0.01	■	OGLL 051 G3-T3
	80	105 x 105 x 10		■	< 30	Ø 0.05 (min. Ø 0.04)	■	5000 (10,000)	0.01	■	OGLL 081 G3-T3
	120	150 x 150 x 12		■	< 30	Ø 0.10 (min. Ø 0.05)	■	5000 (10,000)	0.01	■	OGLL 121 G3-T3

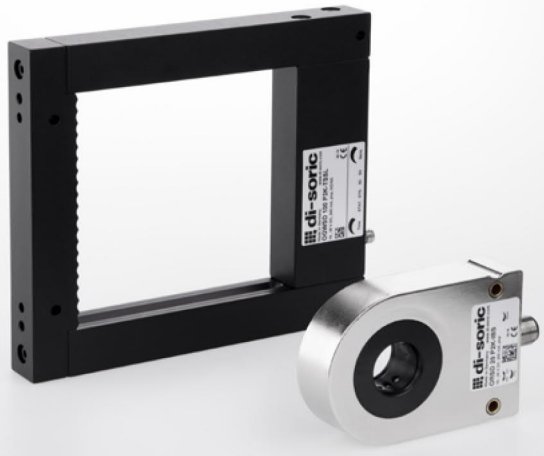


Air nozzles (FBE)

see "OG-Z Accessories for fork light barriers," page 79

Frame and ring light barriers





Our frame and ring light barriers detect mostly small objects in a small to medium-sized detection field. They are used wherever metallic or non-metallic objects are to be detected not only periodically, but across a range, quickly and independent of surface.

OGSWD Frame design 85

ORSD Ring design 86

ORR-Z Accessories for frame & ringlight barriers 86

OGSWD FRAME DESIGN

The OGWSD frame light sensors detect fast-moving and static objects in an established rectangular range of up to 300 x 397 mm. The devices have a robust metallic housing with collision protection and can be easily operated with a potentiometer.

Technical data (typ.)	+20 °C, 24 V DC
Emitted light	Infrared light, 880 nm
Activation time	0.1 ms
Release time	0.1 to 150 ms
Pulse stretching	0.1 to 150 ms
Ambient temperature	0 to 60 °C
Protection type	IP 67
Insulation voltage endurance	500 V
Housing material	Aluminum, anodized

	Active zone / ring diameter (mm)	Housing design Size (mm)	Functional principle S = static / D = dynamic	Switching output		No-load current (mA)	Resolution, dynamic operation (mm)	Resolution, static operation (mm)	Ambient light immunity (kLx)	Service voltage (VDC)	Plug connector	Connection cable (optionally available)	Product description
OGSWD Frame design													
	25 x 23	60 x 60 x 15	S/D	pnp	200 mA NO/NC	25	Ø0.7	Ø1.0	30	10 to 35	M8	TK …	OGWSD 25 P3K-TSSL
				npn									OGWSD 25 N3K-TSSL
	40 x 49	80 x 125 x 20		pnp		30	Ø0.7	Ø1.0	20	18 to 35			OGWSD 4055 P3K-TSSL
				npn									OGWSD 4055 N3K-TSSL
	70 x 62	110 x 123 x 20		pnp		30	Ø1.5	Ø2.0	20	18 to 35			OGWSD 70 P3K-TSSL
				npn									OGWSD 70 N3K-TSSL
	100 x 92	140 x 153 x 20		pnp		35	Ø2.5	Ø3.0	20	18 to 35			OGWSD 100 P3K-TSSL
				npn									OGWSD 100 N3K-TSSL
	150 x 142	190 x 203 x 20		pnp		45	Ø3.0	Ø5.0	20	18 to 35			OGWSD 150 P3K-TSSL
				npn									OGWSD 150 N3K-TSSL
	250 x 242	290 x 303 x 20		pnp		45	Ø5.0	Ø8.0	10	22 to 26			OGWSD 250 P3K-TSSL
				npn									OGWSD 250 N3K-TSSL
	300 x 397.5	340 x 458.5 x 20		pnp		50	Ø5.0	Ø 10.0	8	22 to 26			OGWSD 300 P3K-TSSL
				npn									OGWSD 300 N3K-TSSL

ORSD RING DESIGN

The ORSD ring light barriers are used in feed control and for counting small parts. They reliably detect fast-moving and static objects in a round detection area and in tubes with a diameter of 20 mm or smaller. The devices have a metallic housing and can be easily operated with a potentiometer.

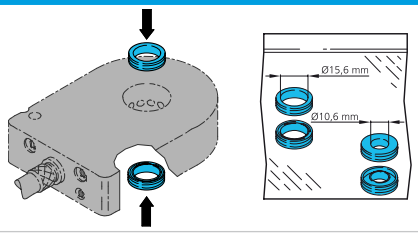
Technical data (typ.)	+20 °C, 24 V DC
Emitted light	Infrared light, 880 nm
Activation time	0.1 ms
Release time	
Pulse stretching	1 to 150 ms
Ambient temperature	0 to 60 °C
Protection type	IP 67
Insulation voltage endurance	500 V
Housing material	Plastic PA

	Active zone / ring diameter (mm)	Housing design Size (mm)	Functional principle S = static / D = dynamic	Switching output	No-load current (mA)	Resolution, dynamic operation (mm)	Resolution, static operation (mm)	Ambient light immunity (kLx)	Service voltage (VDC)	Plug connector	Connection cable (optionally available)	Product description
ORSD Ring design												
	Ø 20.6	60 x 85 x 20	S/D	pnp	200 mA NO	30	Ø 1.5	Ø 1.5	5	10 to 35	M12	VK ...	ORSD 20 P2K-IBS

ORR-Z ACCESSORIES FOR FRAME & RINGLIGHT BARRIERS

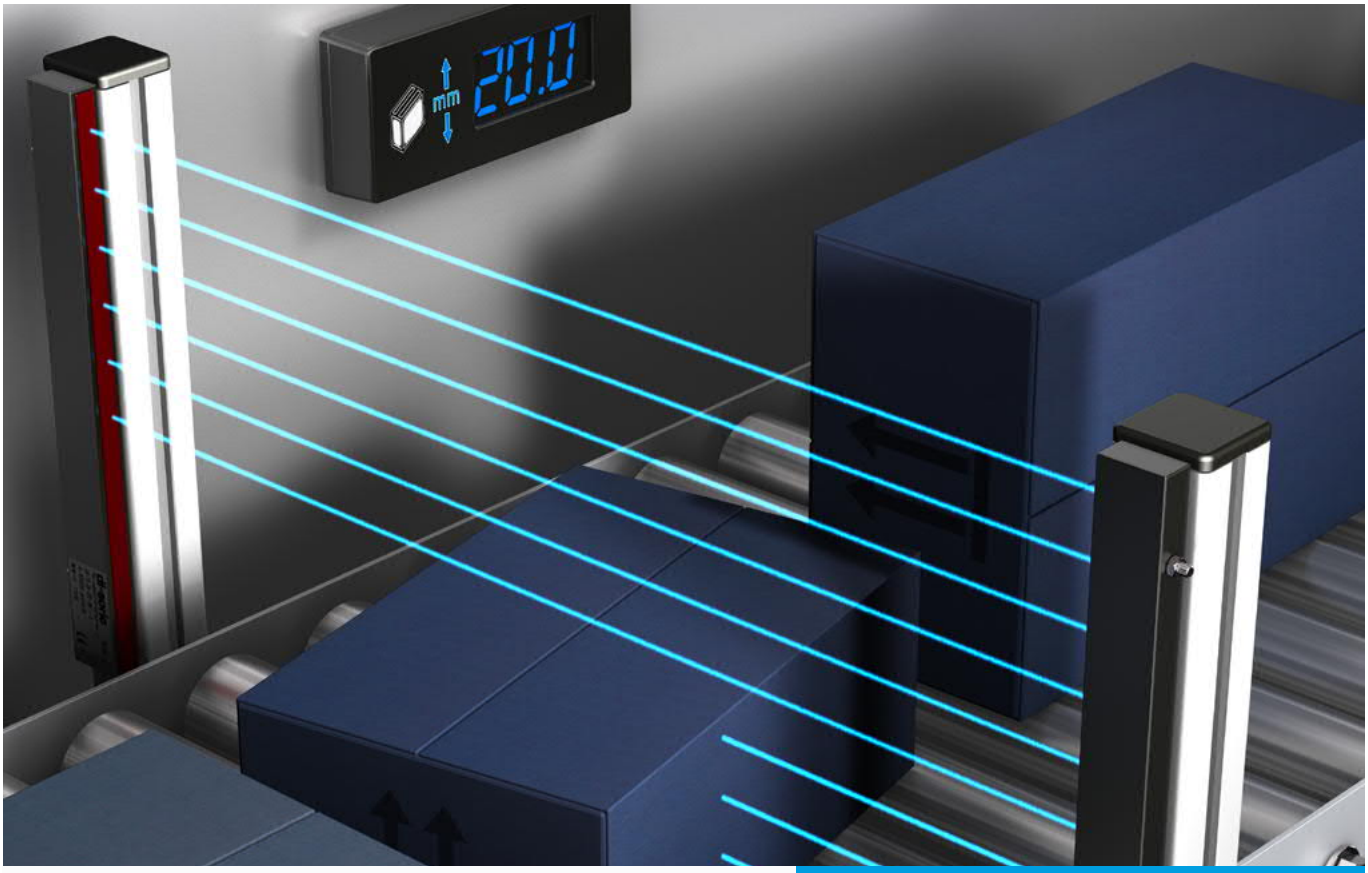
The adapter rings enable adaptation of the ringlight barrier to supply tubes with a diameter of 10 or 15 mm.

Adapter set for ORSD 20 P2K-IBS ring light barrier



Adapter ring Ø 10 mm (2x) Adapter ring Ø 15 mm (2x)	ORSD-AR-10/15

Light curtains



Our light curtains detect and measure objects in a large detection or measuring field. The light curtain systems operate on the principle of multiple through-beam sensors whose output signals are either interlinked (switching light curtains) or evaluated individually (measuring light curtains). Through different resolutions and elevations, they can be used in many applications.

LA Switching	89
LI Measuring	92
Evaluation electronics for LI series	95

LA SWITCHING

The area of application of the LA switching light curtains is object detection. The devices were designed in a cost-optimized manner for simple applications. Slim construction, integrated switching outputs and quick commissioning are their distinguishing features.

Technical data (typ.)	+20 °C, 24 V DC
Operating distance	0.7 to 4.0 m / set to 4.0 m at the factory
Number of beams	8 to 112
Beam separation	12.5 / 25 / 50 / 112 mm
Monitoring height	88 to 2571 mm
Emitted light	Infrared light, 880 nm, clocked
Service voltage	20.4 to 28.8 V DC
Outputs	Transistor pnp (switching output and alarm output)
Current-carrying capacity	200 mA, short-circuit proof
Ambient temperature	-10 to +45 °C
Degree of protection	IP 54, optionally IP 65
EMC directives	EN 61000-6-3:2001/EN 61000-6-1:2001
Housing material	Aluminum bar profile

CE

Beam separation (mm)	Number of beams	Monitoring height H (mm)	Profile length L ca. (mm)	Design	Number of threaded bolts	Dimension A (mm)	Dimension B (mm)	Dimension X (mm)	Dimension Y (mm)	Light switching	Dark switching	Product description	Product description
LA Switching												Horizontal beam evaluation	Diagonal beam evaluation
12.5	8	88	260	I	2	30	200	13.5	153.5	■		LA 8-12.5-88-260 I-H	LA-D 8-12.5-88-260 I-H
											■	LA 8-12.5-88-260 I-D	LA-D 8-12.5-88-260 I-D
	16	188	360		2	30	300			■		LA 16-12.5-188-360 I-H	LA-D 16-12.5-188-360 I-H
											■	LA 16-12.5-188-360 I-D	LA-D 16-12.5-188-360 I-D
	24	288	460		2	80	300			■		LA 24-12.5-288-460 I-H	LA-D 24-12.5-288-460 I-H
											■	LA 24-12.5-288-460 I-D	LA-D 24-12.5-288-460 I-D
	32	388	560		2	80	400			■		LA 32-12.5-388-560 I-H	LA-D 32-12.5-388-560 I-H
											■	LA 32-12.5-388-560 I-D	LA-D 32-12.5-388-560 I-D
	40	488	660		2	80	500			■		LA 40-12.5-488-660 I-H	LA-D 40-12.5-488-660 I-H
											■	LA 40-12.5-488-660 I-D	LA-D 40-12.5-488-660 I-D
	48	588	760		2	30	700			■		LA 48-12.5-588-760 I-H	LA-D 48-12.5-588-760 I-H
											■	LA 48-12.5-588-760 I-D	LA-D 48-12.5-588-760 I-D
	56	688	860		2	80	700			■		LA 56-12.5-688-860 I-H	LA-D 56-12.5-688-860 I-H
											■	LA 56-12.5-688-860 I-D	LA-D 56-12.5-688-860 I-D
	64	788	960		3	80	400			■		LA 64-12.5-788-960 I-H	LA-D 64-12.5-788-960 I-H
											■	LA 64-12.5-788-960 I-D	LA-D 64-12.5-788-960 I-D
	72	888	1,060		3	130	400			■		LA 72-12.5-888-1060 I-H	
											■	LA 72-12.5-888-1060 I-D	
	80	988	1,160		3	80	500			■		LA 80-12.5-988-1160 I-H	
											■	LA 80-12.5-988-1160 I-D	
	88	1,088	1,260		3	30	600			■		LA 88-12.5-1088-1260 I-H	
											■	LA 88-12.5-1088-1260 I-D	

Beam separation (mm)	Number of beams	Monitoring height H (mm)	Profile length L ca. (mm)	Design	Number of threaded bolts	Dimension **A** (mm)	Dimension **B** (mm)	Dimension **X** (mm)	Dimension **Y** (mm)	Light switching	Dark switching	Product description	Product description
LA Switching												**Horizontal beam evaluation**	**Diagonal beam evaluation**
12.5	96	1,188	1,360	I	3	80	600	13.5	13.5	■		LA 96-12.5-1188-1360 I-H	
											■	LA 96-12.5-1188-1360 I-D	
	104	1,288	1,460		3	130	400			■		LA 104-12.5-1288-1460 I-H	
											■	LA 104-12.5-1288-1460 I-D	
	112	1,388	1,560		4	30	500			■		LA 112-12.5-1388-1560 I-H	
											■	LA 112-12.5-1388-1560 I-D	
25	8	175	360	I	2	30	300	20	160	■		LA 8-25-175-360 I-H	LA-D 8-25-175-360 I-H
											■	LA 8-25-175-360 I-D	LA-D 8-25-175-360 I-D
	16	375	560		2	80	400			■		LA 16-25-375-560 I-H	LA-D 16-25-375-560 I-H
											■	LA 16-25-375-560 I-D	LA-D 16-25-375-560 I-D
	24	575	760		2	30	700			■		LA 24-25-575-760 I-H	LA-D 24-25-575-760 I-H
											■	LA 24-25-575-760 I-D	LA-D 24-25-575-760 I-D
	32	775	960		3	80	400			■		LA 32-25-775-960 I-H	LA-D 32-25-775-960 I-H
											■	LA 32-25-775-960 I-D	LA-D 32-25-775-960 I-D
	40	975	1,160		3	80	500			■		LA 40-25-975-1160 I-H	LA-D 40-25-975-1160 I-H
											■	LA 40-25-975-1160 I-D	LA-D 40-25-975-1160 I-D
	48	1,175	1,360		3	80	600			■		LA 48-25-1175-1360 I-H	LA-D 48-25-1175-1360 I-H
											■	LA 48-25-1175-1360 I-D	LA-D 48-25-1175-1360 I-D
	56	1,375	1,560		4	80	500			■		LA 56-25-1375-1560 I-H	LA-D 56-25-1375-1560 I-H
											■	LA 56-25-1375-1560 I-D	LA-D 56-25-1375-1560 I-D
	64	1,575	1,760		4	130	500			■		LA 64-25-1575-1760 I-H	LA-D 64-25-1575-1760 I-H
											■	LA 64-25-1575-1760 I-D	LA-D 64-25-1575-1760 I-D
	72	1,775	1,960		4	80	600			■		LA 72-25-1775-1960 I-H	
											■	LA 72-25-1775-1960 I-D	
	80	1,975	2,160		5	80	500			■		LA 80-25-1975-2160 I-H	
											■	LA 80-25-1975-2160 I-D	
	88	2,175	2,360		5	140	520			■		LA 88-25-2175-2360 I-H	
											■	LA 88-25-2175-2360 I-D	

Beam separation (mm)	Number of beams	Monitoring height H (mm)	Profile length L ca. (mm)	Design	Number of threaded bolts	Dimension **A** (mm)	Dimension **B** (mm)	Dimension **X** (mm)	Dimension **Y** (mm)	Light switching	Dark switching	Product description	Product description
LA Switching												**Horizontal beam evaluation**	**Diagonal beam evaluation**
50	8	350	560	I	2	80	400	20	185	■		LA 8-50-350-560 I-H	LA-D 8-50-350-560 I-H
											■	LA 8-50-350-560 I-D	LA-D 8-50-350-560 I-D
	16	750	960		3	80	400			■		LA 16-50-750-960 I-H	LA-D 16-50-750-960 I-H
											■	LA 16-50-750-960 I-D	LA-D 16-50-750-960 I-D
	24	1,150	1,360		3	80	600			■		LA 24-50-1150-1360 I-H	LA-D 24-50-1150-1360 I-H
											■	LA 24-50-1150-1360 I-D	LA-D 24-50-1150-1360 I-D
	32	1,550	1,760		4	130	500			■		LA 32-50-1550-1760 I-H	LA-D 32-50-1550-1760 I-H
											■	LA 32-50-1550-1760 I-D	LA-D 32-50-1550-1760 I-D
	40	1,950	2,160		5	130	500			■		LA 40-50-1950-2160 I-H	LA-D 40-50-1950-2160 I-H
											■	LA 40-50-1950-2160 I-D	LA-D 40-50-1950-2160 I-D
	48	2,350	2,560		5	80	600			■		LA 48-50-2350-2560 I-H	LA-D 48-50-2350-2560 I-H
											■	LA 48-50-2350-2560 I-D	LA-D 48-50-2350-2560 I-D
112	8	783	1,050	I	3	125	400	20	245	■		LA 8-112-783-1050 I-H	LA-D 8-112-783-1050 I-H
											■	LA 8-112-783-1050 I-D	LA-D 8-112-783-1050 I-D
	16	1,677	1,950		4	75	600			■		LA 16-112-1677-1950 I-H	LA-D 16-112-1677-1950 I-H
											■	LA 16-112-1677-1950 I-D	LA-D 16-112-1677-1950 I-D

10x27mm

LA…Q

Light curtains in housing design LA…Q are optionally available upon request

LI MEASURING

The LI measuring light curtains are used in object measurement and for challenging measuring and detection tasks. The most important features are high resolution and a short response time, as well as their slim construction for simple integration. An additional evaluation unit is required to use them.

CE

Technical data (typ.)	+20 °C, 24 V DC
Operating distance	0.25 to 6.0 m can be adjusted using the evaluation electronics
Number of beams	8 to 344
Beam separation	5/10/12.5/25/50/112 mm
Monitoring height	35 to 2375 mm
Emitted light	Infrared light, 880 nm
	200 mA, short-circuit proof
Ambient temperature	-10 to +45 °C
Degree of protection	IP 54, optionally IP 65 (EN 61000-6-3:2001/EN 61000-6-1:2001)
Housing material	Aluminum bar profile

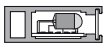
	Beam separation (mm)	Number of beams	Monitoring height H (mm)	Profile length L ca. (mm)	Design	Dimension X (mm)	Dimension Y (mm)	Product description
LI Measuring								**Horizontal or diagonal beam evaluation**
	5	8	35	70	T	17.5	17.5	LI 8-5-35-70 T
		16	75	110				LI 16-5-75-110 T
		24	115	150				LI 24-5-115-150 T
		32	155	190				LI 32-5-155-190 T
		40	195	230				LI 40-5-195-230 T
		48	235	270				LI 48-5-235-270 T
		56	275	310				LI 56-5-275-310 T
		64	315	350				LI 64-5-315-350 T
		72	355	390				LI 72-5-355-390 T
		80	395	430				LI 80-5-395-430 T
		88	435	470				LI 88-5-435-470 T
		96	475	510				LI 96-5-475-510 T
		104	515	550				LI 104-5-515-550 T
		112	555	590				LI 112-5-555-590 T
		120	595	630				LI 120-5-595-630 T
		128	635	670				LI 128-5-635-670 T
		136	675	710				LI 136-5-675-710 T
		144	715	750				LI 144-5-715-750 T
		152	755	790				LI 152-5-755-790 T
		160	795	830				LI 160-5-795-830 T
		168	835	870				LI 168-5-835-870 T
		176	875	910				LI 176-5-875-910 T
		184	915	950				LI 184-5-915-950 T
		192	955	990				LI 192-5-955-990 T
		200	995	1,030				LI 200-5-995-1030 T
		208	1,035	1,070				LI 208-5-1035-1070 T
		216	1,075	1,110				LI 216-5-1075-1110 T
		224	1,115	1,150				LI 224-5-1115-1150 T
		232	1,155	1,190				LI 232-5-1155-1190 T
		240	1,195	1,230				LI 240-5-1195-1230 T
		248	1,235	1,270				LI 248-5-1235-1270 T
		256	1,275	1,310				LI 256-5-1275-1310 T
		264	1,315	1,350				LI 264-5-1315-1350 T
		272	1,355	1,390				LI 272-5-1355-1390 T
		280	1,395	1,430				LI 280-5-1395-1430 T
		288	1,435	1,470				LI 288-5-1435-1470 T
		296	1,475	1,510				LI 296-5-1475-1510 T
		344	1,715	1,750				LI 344-5-1715-1750 T

Beam separation (mm)	Number of beams	Monitoring height H (mm)	Profile length L ca. (mm)	Design	Number of threaded bolts	Dimension A (mm)	Dimension B (mm)	Dimension X (mm)	Dimension Y (mm)	Product description
LI Measuring										**Horizontal or diagonal beam evaluation**
10	8	70	130	I	2	20	90	13.5	38.5	LI 8-10-70-130 I
	16	150	210		2	55	100			LI 16-10-150-210 I
	24	230	290		2	45	200			LI 24-10-230-290 I
	32	310	370		2	35	300			LI 32-10-310-370 I
	40	390	450		2	75	300			LI 40-10-390-450 I
	48	470	530		2	65	400			LI 48-10-470-530 I
	56	550	610		2	105	400			LI 56-10-550-610 I
	64	630	690		2	45	600			LI 64-10-630-690 I
	72	710	770		2	35	700			LI 72-10-710-770 I
	80	790	850		2	75	700			LI 80-10-790-850 I
	88	870	930		2	65	800			LI 88-10-870-930 I
	96	950	1,010		3	105	400			LI 96-10-950-1010 I
	104	1,030	1,090		3	145	400			LI 104-10-1030-1090 I
	112	1,110	1,170		3	85	500			LI 112–10-1110-1170 I
	120	1,190	1,250		3	125	500			LI 120-10-1190-1250 I
	128	1,270	1,330		3	65	600			LI 128-10-1270-1330 I
	136	1,350	1,410		3	105	600			LI 136-10-1350-1410 I
	144	1,430	1,490		4	145	400			LI 144-10-1430-1490 I
	152	1,510	1,570		4	35	500			LI 152-10-1510-1570 I
	160	1,590	1,650		4	75	500			LI 160-10-1590-1650 I
12.5	8	88	140	I	2	25	90	13.5	38.5	LI 8-12.5-88-140 I
	16	188	240		2	70	100			LI 16 – 12.5-188-240 I
	24	288	340		2	70	200			LI 24-12.5-288-340 I
	32	388	440		2	70	300			LI 32-12.5-388-440 I
	40	488	540		2	70	400			LI 40-12.5-488-540 I
	48	588	640		2	70	500			LI 48-12.5-588-640 I
	56	688	740		2	70	600			LI 56-12.5-688-740 I
	64	788	840		2	70	700			LI 64-12.5-788-840 I
	72	888	940		2	70	800			LI 72-12.5-888-940 I
	80	988	1,040		3	120	400			LI 80-12.5-988-1040 I
	88	1,088	1,140		3	70	500			LI 88-12.5-1088-1140 I
	96	1,188	1,240		3	120	500			LI 96-12.5-1188-1240 I
	104	1,288	1,340		3	70	600			LI 104-12.5-1288-1340 I
	112	1,388	1,440		3	120	600			LI 112-12.5-1388-1440 I
	120	1,488	1,540		4	170	400			LI 120-12.5-1488-1540 I
	128	1,588	1,640		4	70	500			LI 128-12.5-1588-1640 I
	136	1,688	1,740		4	120	500			LI 136-12.5-1688-1740 I
	144	1,788	1,840		4	170	500			LI 144-12.5-1788-1840 I

Light curtains with greater monitoring height H (max. 196 beams)

Available on request!

LI Measuring	Beam separation (mm)	Number of beams	Monitoring height H (mm)	Profile length L ca. (mm)	Design	Number of threaded bolts	Dimension A (mm)	Dimension B (mm)	Dimension X (mm)	Dimension Y (mm)	Product description
											Horizontal or diagonal beam evaluation
	25	8	175	240	I	2	70	100	20	45	LI 8-25-175-240 I
		16	375	440		2	70	300			LI 16-25-375-440 I
		24	575	640		2	70	500			LI 24-25-575-640 I
		32	775	840		2	70	700			LI 32-25-775-840 I
		40	975	1,040		3	120	400			LI 40-25-975-1040 I
		48	1,175	1,240		3	125	500			LI 48-25-1175-1240 I
		56	1,375	1,440		3	120	600			LI 56-25-1375-1440 I
		64	1,575	1,640		4	70	500			LI 64-25-1575-1640 I
		72	1,775	1,840		4	170	500			LI 72-25-1775-1840 I
		80	1,975	2,040		4	120	600			LI 80-25-1975-2040 I
		88	2,175	2,240		5	120	500			LI 88-25-2175-2240 I
		96	2,375	2,440		5	165	520			LI 96-25-2375-2440 I
	50	8	350	440	I	2	70	300	20	70	LI 8-50-350-440 I
		16	750	840		2	70	700			LI 16-50-750-840 I
		24	1,150	1,240		3	120	500			LI 24-50-1150-1240 I
		32	1,550	1,640		4	70	500			LI 32-50-1550-1640 I
		40	1,950	2,040		4	120	600			LI 40-50-1950-2040 I
		48	2,350	2,440		5	180	520			LI 48-50-2350-2440 I
	112	4	336	490	I	2	95	300	20	130	LI 4-112-336-490 I
		8	783	940		2	70	800			LI 8-112-783-940 I
		12	1,230	1,380		3	90	600			LI 12-112-1230-1380 I
		16	1,677	1,830		4	165	500			LI 16-112-1677-1830 I
		20	2,124	2,280		5	175	500			LI 20-112-2124-2280 I



10x27 mm

LI...Q

Light curtains in housing design LI ... Q are optionally available upon request

EVALUATION ELECTRONICS FOR LI SERIES

Technical data (typ.)	at +20 °C, 24 V DC		
Operating distance	0.4 to 6.0 m, autocalibration	LED display	Status indicator/ error indicator
Number of beams	See Light curtains LL…	Ambient temperature	0 to +40 °C
Switching frequency	10 Hz	Protection type	IP 54
Switching capacity	250 V DC, 250 W 400 V AC, 2000 VA	Protection class	III, operation on protective low voltage
Output function	Light switching	EMC directives	EN 61000-6-1: 2001
beam evaluation	Multiplexing		EN 61000-6-3: 2001
Cycle time per light beam	down to 0.08 ms/beam	Housing material	ABS gray
	(Depending on range)		

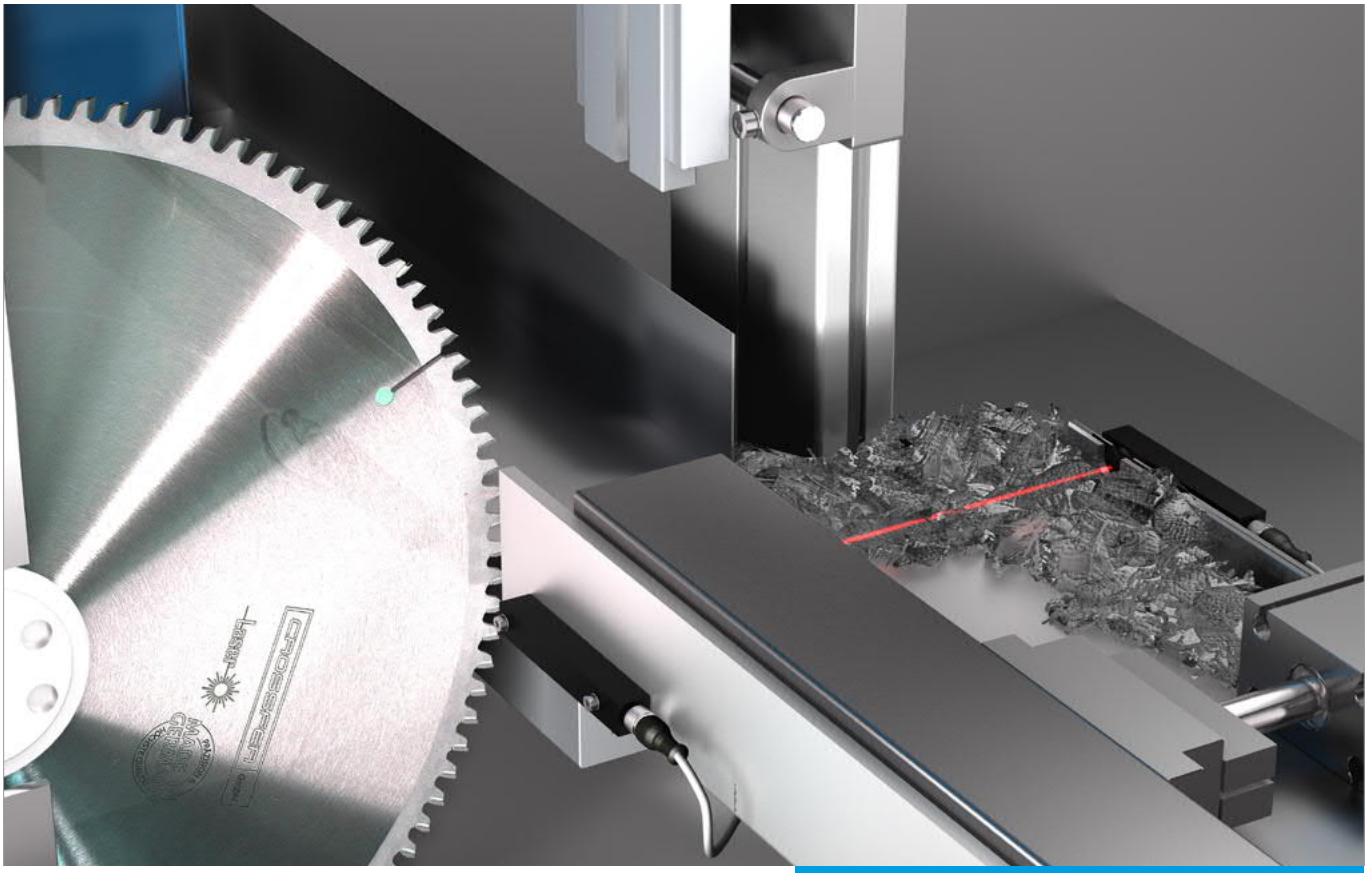
	Number of light curtains being operated	Switching output (relay 10 Hz)	Analog outputs	Service voltage (VDC)	Profibus interface D-Sub, 9-pin (address adjustable)	Ethernet / IP	Profinet	Dimensions L x W x H (mm)	Product description
Evaluation electronics LVB…, switching									
	1	1		19 to 30				57.5 x 120 x 200	LVB-24VDC
	1	1		230 (+5/-10%)				57.5 x 120 x 200	LVB-230VAC

Technical data (typ.)	at +20 °C, 24 V DC		
Operating distance	0.25 to 6.0 m, adjustable	LED display	Error indicator
Number of beams	max. 500	Ambient temperature	0 to +40 °C
Service voltage	20 to 26 V DC	Protection type	IP 00
Outputs	See the graphic above		IP 65 with optional outer housing
Switching capacity	250 mA	Protection class	III, operation on protective low voltage
Output function	Configurable	EMC directives	EN 61000-6-1: 2001
beam evaluation	Parameters can be configured horizontally / diagonally		EN 61000-6-3: 2001
Cycle time per light beam	0.05 ms (depends on configuration	Housing material	Plastic
	and range of light curtain)		

	Number of light curtains being operated	Configurable inputs (24 VDC, 12 mA, 3,000 Hz)	Outputs (24 VDC, 0.25 A, PNP)	Analog outputs (0 to 10 V)	3 combined IOs	RS 232	Configuration by means of DIP series	CANopen interface	Profibus interface D-Sub, 9-pin (address adjustable)	Ethernet / IP	Profinet	Dimensions L x W x H (mm)	Product description
Evaluation electronics LVE…/ LVX…, measuring													
1	1	1										88 x 126 x 60	LVE [1]
		1							■			163 x 126 x 60	LVE-PBI [1]
		1								■		130 x 126 x 60	LVE-ENI [1]
		1		■	■	■					■	163 x 126 x 60	LVE-PNI [1]
		1	2									124 x 126 x 60	LVE-ALX [1]
		17										147 x 126 x 60	LVE-016 [1]
2	1	3										125 x 126 x 60	LVX [1]
		3							■			200 x 126 x 60	LVX-PBI [1]
		3		■	■	■	■				■	200 x 126 x 60	LVX-PNI [1]
		3	2									161 x 126 x 60	LVX-ALX [1]
		19										184 x 126 x 60	LVX-016 [1]

[1] The evaluation electronics are configured at the factory using the customer's application.

High performance light barriers



Our high-performance light barriers are available as threaded and rectangular models, which can be combined with one another. These products penetrate even heavy contamination, such as dust, oil and dirty water. They are optimized for the highest functionality and have a range of up to 50 m.

OP-M12	97
OP-Q12	98
OP-50	99

OP-M12

The threaded M12 model consists of a transmitter and receiver in a compact construction and simple threaded mounting. Thanks to the robust stainless steel housing, the systems are resistant to vibrations and shaking and therefore do not have to be continually readjusted.

Technical data (typ.)	+20 °C, 24 V DC
Emitted light	Infrared light, clocked
Service voltage	10 to 35 V DC
Ambient temperature	-20 to +60 °C

CE

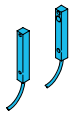
	Range (opening angle 15°) when operating with OSP 12 VLF … / OSPQ 12 MLFL … (m)	Operating distance (opening angle 6°) When operating with OSP 12 VHF … / OSPQ 12 MHFL … (m)	Housing design Size (mm)	Transmitter (T) / Receiver (R)	Dispersion angle / opening angle	Switching output	NC (pnp) / NO (npn)	NO (pnp) / NC (npn)	NO/NC	Switching frequency (Hz)	Protection type	Housing material	integrated heating function	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
OP-M12 Through-beam sensors																
	–	–	M12 x 60	T	15° 6°	–				–	IP 67, IP 68, IP 69K	Stainless steel V2A		PVC, 5 m		OSP 12 VLFL-5M OSP 12 VHFL-5M
	1	5	M12 x 60	E		Push-pull 200 mA	■			500	IP 67, IP 68, IP 69K	Stainless steel V2A		PVC, 5 m		OEP 12 V 5000 G1L-5M
								■								OEP 12 V 5000 G2L-5M
	6	20					■			150						OEP 12 V 20000 G1L-5M
								■								OEP 12 V 20000 G2L-5M
	20	50					■			20						OEP 12 V 50000 G1L-5M
								■								OEP 12 V 50000 G2L-5M
	–	–	M12 x 75	T	15° 6°	–				–	IP 67, IP 68, IP 69K	Stainless steel V2A		M12	VK …	OSP 12 VLF-IBSL OSP 12 VHF-IBSL
	1	5	M12 x 75	E		Push-pull 200 mA	■			500	IP 67, IP 68, IP 69K	Stainless steel V2A		M12	VK …	OEP 12 V 5000 G1-IBSL
								■								OEP 12 V 5000 G2-IBSL
	6	20					■			150						OEP 12 V 20000 G1-IBSL
								■								OEP 12 V 20000 G2-IBSL
	20	50					■			20						OEP 12 V 50000 G1-IBSL
								■								OEP 12 V 50000 G2-IBSL

OP-Q12

The rectangular 12 x12 model consists of a transmitter and receiver in a compact design with a low installation depth. Thanks to the robust metal housing, the systems are resistant to vibrations and shaking and therefore do not have to be continually readjusted.

Technical data (typ.)	+20 °C, 24 V DC
Emitted light	Infrared light, clocked
Service voltage	10 to 35 V DC
Ambient temperature	-20 to +60 °C

CE

	Range (opening angle 15°) when operating with OSP 12 VLF … / OSPQ 12 MLFL … (m)	Operating distance (opening angle 6°) When operating with OSP 12 VHF … / OSPQ 12 MHFL … (m)	Housing design Size (mm)	Transmitter (T) / Receiver (R)	Dispersion angle / opening angle	Switching output	NC (pnp) / NO (npn)	NO (pnp) / NC (npn)	NO/NC	Switching frequency (Hz)	Protection type	Housing material	integrated heating function	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
OP-Q12 Through-beam sensors																
	–	–	12 x 12 x 82	T	15 ° 6 °	–				–	IP 67	Aluminum, anodized		PVC, 5 m		OSPQ 12 MLFL-5M OSPQ 12 MHFL-5M
	1	5	12 x 12 x 82	E		Push-pull 200 mA	■			500	IP 67	Aluminum, anodized		PVC, 5 m		OEPQ 12 M 5000 G1L-5M
								■								OEPQ 12 M 5000 G2L-5M
	6	20					■			150						OEPQ 12 M 20000 G1-5M
								■								OEPQ 12 M 20000 G2L-5M
	20	50					■			20						OEPQ 12 M 50000 G1L-5M
								■								OEPQ 12 M 50000 G2L-5M
	–	–	12 x 12 x 82	T	15 ° 6 °	–				–	IP 67	Aluminum, anodized		M8	TK …	OSPQ 12 MLF-TSSL OSPQ 12 MHF-TSSL
	1	5	12 x 12 x 82	E		Push-pull 200 mA	■			500	IP 67	Aluminum, anodized		M8	TK …	OEPQ 12 M 5000 G1-TSSL
								■								OEPQ 12 M 5000 G2-TSSL
	6	20					■			150						OEPQ 12 M 20000 G1-TSSL
								■								OEPQ 12 M 20000 G2-TSSL
	20	50					■			20						OEPQ 12 M 50000 G1-TSSL
								■								OEPQ 12 M 50000 G2-TSSL

OP-50

The high-performance light barriers in the OP-50 series have a robust metallic housing. The systems in rectangular design have special functions such as a switchable reflected beam angle, adjustable transmitting power and variants with a heating function.

Technical data (typ.)	+20 °C, 24 V DC
Emitted light	Infrared light, clocked
Service voltage	10 to 35 V DC
Ambient temperature	-10 to +60 °C
	–40 to +50 °C (…/H)

CE

	Range (opening angle 15°) when operating with OSP 12 VLF … / OSPQ 12 MLFL … (m)	Operating distance (opening angle 6°) When operating with OSP 12 VHF … / OSPQ 12 MHFL … (m)	Housing design Size (mm)	Transmitter (T) / Receiver (R)	Dispersion angle / opening angle	Switching output	NC (pnp) / NO (npn)	NO (pnp) / NC (npn)	NO/NC	Switching frequency (Hz)	Protection type	Housing material	integrated heating function	Cable material/length, Plug connector	Connection cable (optionally available)	Product description
OP-50 Through-beam sensors																
	50	50	50 x 40 x 15	T		–				–	IP 67	Die-cast zinc		M12	VK …	OSP 50 M 50000-IBS
				E		Push-pull, 200 mA			■	20						OEVP 50 M 50000 G3LK-IBS
	50	50	50 x 40 x 15	T		–				–	IP 67	Die-cast zinc	■	M12	VK …	OSP 50 M 50000-IBS/H
				E		Push-pull 200 mA			■	20						OEVP 50 M 50000 G3LK-IBS/H

Plastic fiber-optic sensors

Our plastic fiber optic sensors are used wherever small objects must be detected and mounting space is limited. Through a range of modular fiber optics and accessories, they can be adapted to the respective application. For tophat rail mounting, the fiber-optic amplifiers can be arranged in series as desired.

OLV-K Amplifier 101

KL plastic fiber-optics 102

OLV-K AMPLIFIER

di-soric fiber optic amplifiers can be easily operated and simultaneously offer maximum control. The very high-performance and efficient amplifiers stand out for their very long ranges, time functions and simple operation. Alternatively, amplifiers with two digital LED displays or potentiometers are available.

Technical data (typ.)	+20 °C, 24 V DC	
	OLVK 61 …	**OLK 71 …**
Emitted light	Red light, clocked	Red light, clocked
Switching output	Transistor, 200 mA, NO/NC, switchable	100 mA, NO/NC, programmable
Ambient temperature	-25 to +55 °C	-10 to +55 °C
Protection type	IP 64	IP 54
Housing material	PBTP (Crastin)	ABS / PC

CE

	Housing design Size (mm)	Sensitivity adjustment by means of	Service voltage (V)	Activation time (ms)	Polarity	Digital LED display	Switching hysteresis (%)	Temperature drift (%/K)	No-load current (mA)	Plug connector	Connection cable (optionally available)	Product description
OLV-K amplifiers for glass fiber optic cables												
	60 x 31 x 10	Potenti-ometer	10 to 30	0.33	pnp		10	0.2	15	M8	TK …	OLVK 61 P3K-TSSL/3
					pnp		10	0.2			TK … /4	OLVK 61 P3FK-TSSL
	69 x 33 x 10.5	Teach	12 to 24	0.25 to 1.25	pnp	■			40	M8	TK … /4	OLK 71 P3-T4
					npn	■						OLK 71 N3-T4
	69 x 33 x 10.5	Teach	12 to 24	0.25 to 1.25	pnp	■			40		Cable 2.0 m	OLK 71 P3-3
					npn	■						OLK 71 N3-3

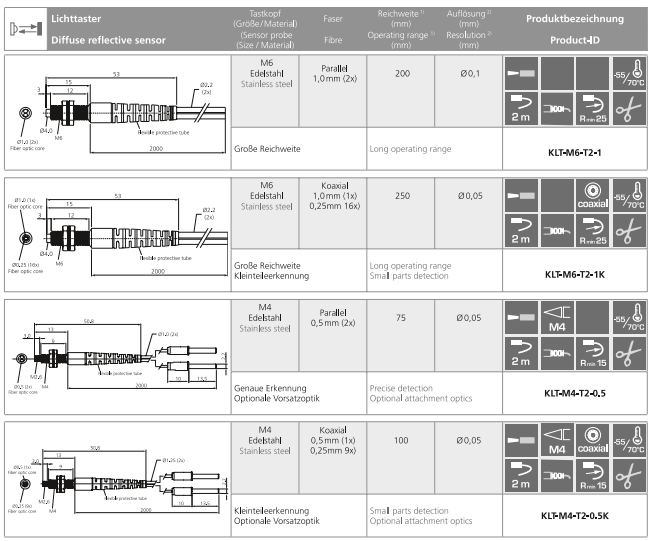
Operating distance specifications for plastic fiber-optic cables

The maximum operating distance specification for fiber-optic cables refers to measurements using the reference amplifier OLK 71 … with a light intensity of 200% and a standard target of 100 x 100 mm, white. When using another amplifier or a different amplifier setting, determine the expected range based on the calculation factor.

Fiber-optic amplifier	Calculation factor compared to the reference amplifier OLK 71 … [1] (typ.)
OLK 71 … [1]	**100 %**
OLVK 61 P3K-TSSL/3	100 %
OLVK 61 P3FK-TSSL	100 %

Light intensity	Range factor [1]	Activation time
200 %	100 %	1.25 ms
100 %	75 %	0.63 ms
50 %	70 %	0.42 ms
25 %	40 %	0.31 ms
12 %	25 %	0.25 ms

[1] OLK71 … with light intensity 12 to 200%



KL PLASTIC FIBER-OPTICS

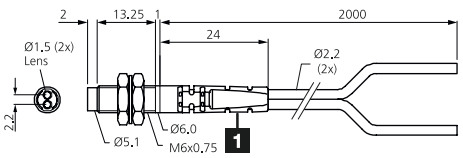
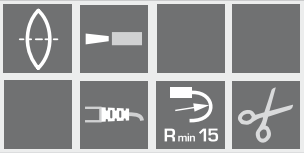
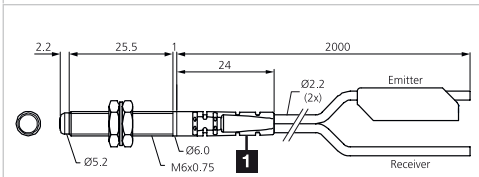
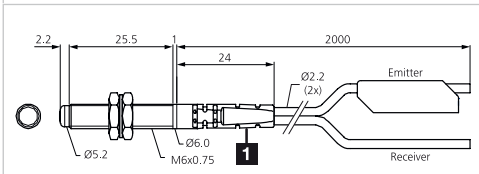
di-soric offers a wide range of fiber optic products with accessories. The portfolio includes, among others, sensor probes made of stainless steel with bend protection, sensor probes with light bands for range monitoring and fiber optics for detection of the smallest parts.

Technical data (typ.)	+20 °C, 24 V DC
For more information, visit	www.di-soric.com

CE

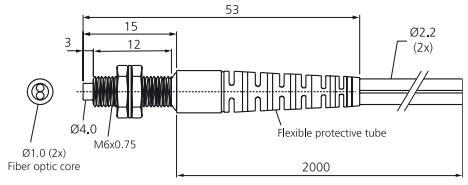
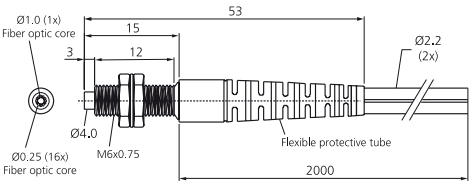
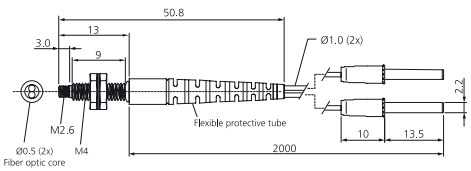
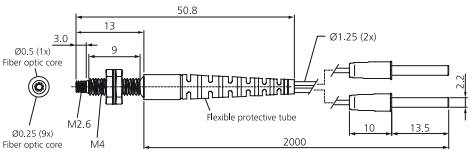
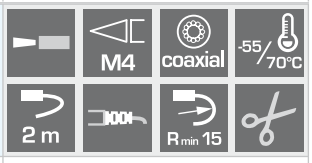
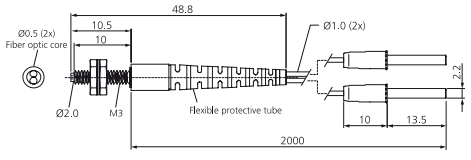
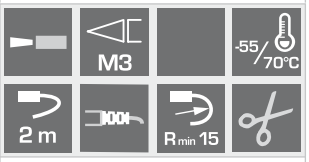
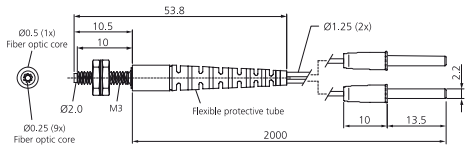
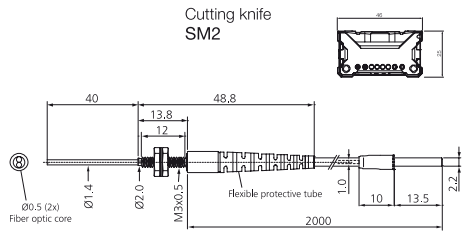
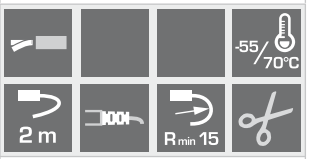
Order information

Axial light aperture	Optional attachment optics	Minimum permitted bending radius of the fiber-optic cable
Radial light aperture	Coaxial fiber arrangement	Fiber-optic cable can be cut to size, cutting knife included
Flexible sensor probe	Ambient temperature	Fiber-optic cable cannot be cut to size
Area detection	Length of the fiber-optic cable	Integrated optics
Fixed-focus detection	Cable grommet	

	Sensor probe (size / material)	Fiber	Operating distance (mm)	Resolution (mm)	Product description
KL plastic fiber-optic cable light sensor					
	M6 Stainless steel	Parallel 0.5 mm (2x)	400 [1]	Ø0,3 [2]	
Integrated optics for a narrow light beam Long range					**KLT-M6-T2-1.5NB**
	M6 Stainless steel	Parallel 0.5 mm (2x)	20 [1]	Ø0,05 [2]	
Integrated optics for focusing Small parts detection					**KLT-M6-T2-0.5-L20**
	M6 Stainless steel	Parallel 0.5 mm (2x)	35 [1]	Ø0,1 [2]	
Integrated optics for focusing Small parts detection					**KLT-M6-T2-0.5-L35**

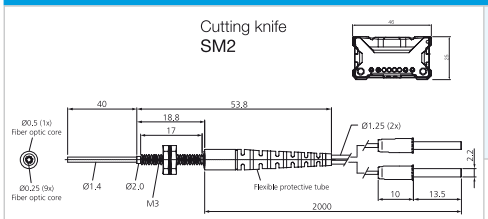
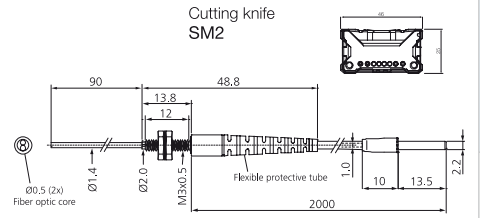
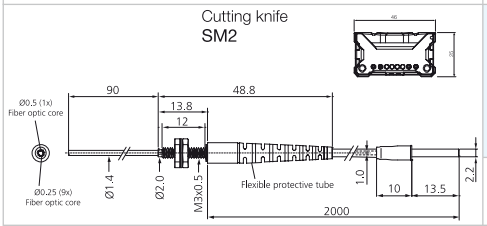
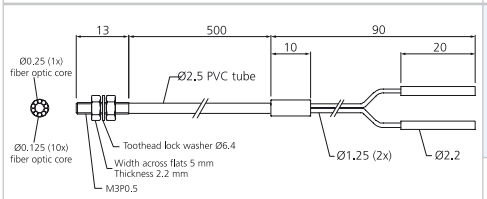
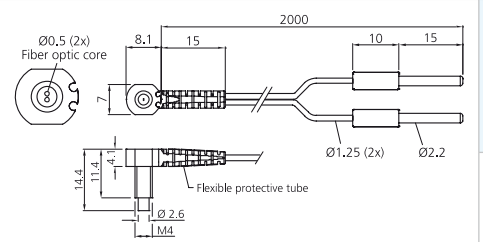
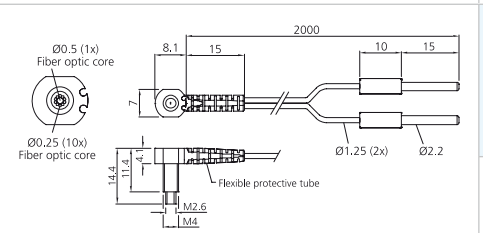
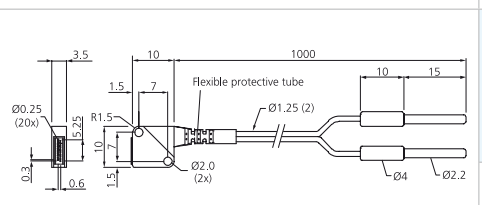
1 Cable protective casing

[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.
[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

	Sensor probe (size / material)	Fiber	Operating distance (mm)	Resolution (mm)	Product description
KL plastic fiber-optic cable light sensor					
	M6 Stainless steel	Parallel 1.0 mm (2x)	200 [1]	Ø0,1 [2]	
Large operating distance					**KLT-M6-T2-1**
	M6 Stainless steel	Coaxial 1.0 mm (1x) 0.25 mm (16x)	250 [1]	Ø0,05 [2]	
Large operating distance Small parts detection					**KLT-M6-T2-1K**
	M4 Stainless steel	Parallel 0.5 mm (2x)	75 [1]	Ø0,05 [2]	
Accurate detection Optional attachment optics					**KLT-M4-T2-0.5**
	M4 Stainless steel	Coaxial 0.5 mm (1x) 0.25 mm (9x)	100 [1]	Ø0,05 [2]	
Small parts detection Optional attachment optics					**KLT-M4-T2-0.5K**
	M3 Stainless steel	Parallel 0.5 mm (2x)	75 [1]	Ø0,05 [2]	
Accurate detection Optional attachment optics					**KLT-M3-T2-0.5**
	M3 Stainless steel	Coaxial 0.5 mm (1x) 0.25 mm (9x)	100 [1]	Ø0,05 [2]	
Small parts detection Optional attachment optics					**KLT-M3-T2-0.5K**
	M3 / Ø1.4 Stainless steel	Parallel 0.5 mm (2x)	75 [1]	Ø0,1 [2]	
Flexible sensor probe / R min. > 10 mm Accurate detection					**KLT-M3-B40-T2-0.5**

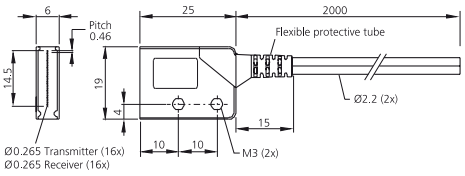
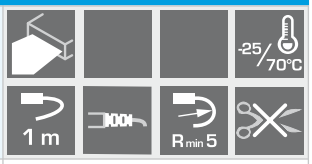
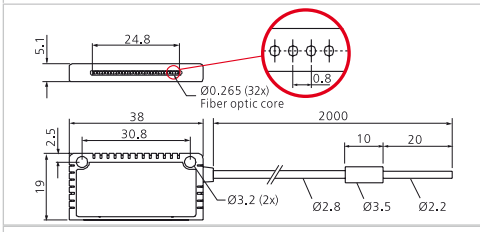
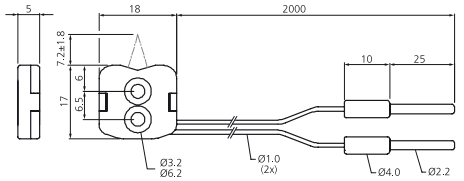
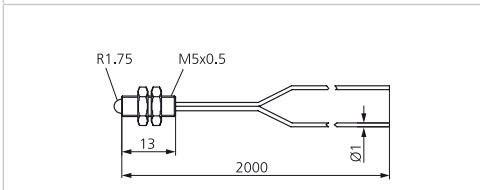
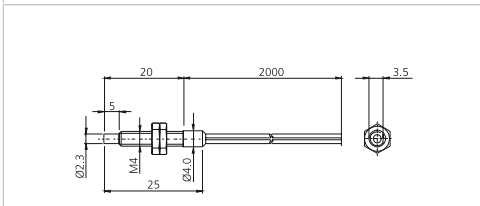
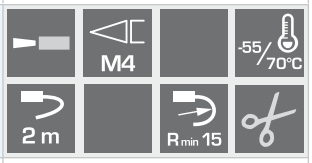
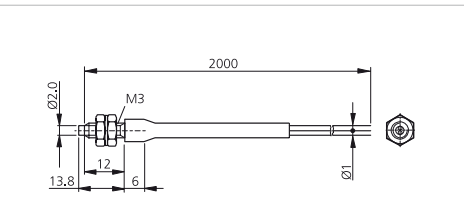
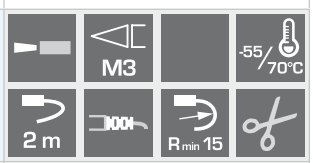
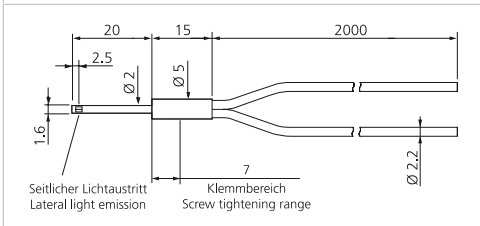
[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.

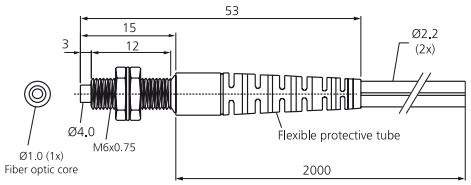
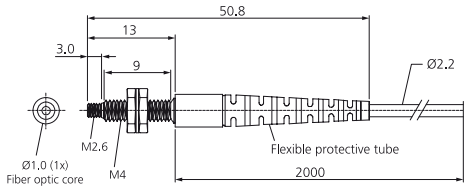
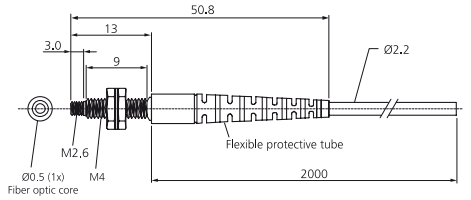
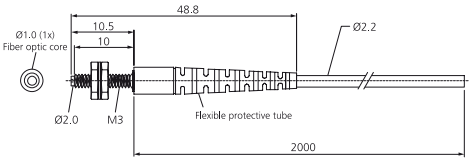
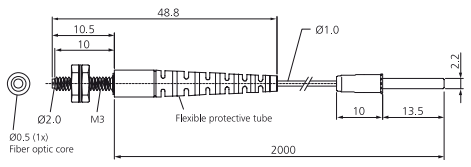
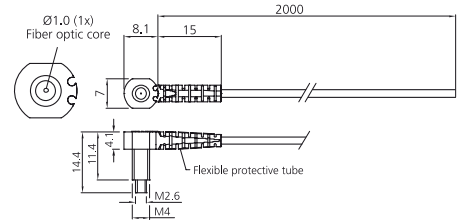
[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

	Sensor probe (size / material)	Fiber	Operating distance (mm)	Resolution (mm)	Product description
KL plastic fiber-optic cable light sensor					
	M3 / Ø1.4 Stainless steel	Coaxial 0.5 mm (1x) 0.25 mm (9x)	100 [1]	Ø0,05 [2]	coaxial, -55/70°C, 2 m, Rmin 15
Flexible sensor probe / R min. > 10 mm Small parts detection					**KLT-M3-B40-T2-0.5K**
	M3 / Ø1.4 Stainless steel	Parallel 0.5 mm (1x)	75 [1]	Ø0,1 [2]	-55/70°C, 2 m, Rmin 15
Flexible sensor probe / R min. > 10 mm Accurate detection					**KLT-M3-B90-T2-0.5**
	M3 / Ø1.4 Stainless steel	Coaxial 0.5 mm (1x) 0.25 mm (9x)	100 [1]	Ø0,05 [2]	coaxial, -55/70°C, 2 m, Rmin 15
Flexible sensor probe / R min. > 10 mm Small parts detection					**KLT-M3-B90-T2-0.5K**
	M3 Stainless steel	Coaxial Ø0.25 (1x) Ø0.125 (10x)	40 [1]	Ø0.02 [2]	M3, coaxial, -55/70°C, 0.5 m, Rmin 5
Highly accurate detection Optional attachment optics					**KLT-M3-S0.5-0.25K**
	M4 Stainless steel	Parallel 0.5 mm (2x)	60 [1]	Ø0,1 [2]	M4, -55/70°C, 2 m, Rmin 15
Low installation depth 90° deflection Accurate detection Optional attachment optics					**KLTR-M4-T2-0.5**
	M4 Stainless steel	Coaxial 0.5 mm (1x) 0.25 mm (10x)	90 [1]	Ø0,05 [2]	M4, coaxial, -55/70°C, 2 m, Rmin 15
Low installation depth 90° deflection Small parts detection Optional attachment optics					**KLTR-M4-T2-0.5K**
	10 x 10 x 3.5 mm Stainless steel	5.25 mm Transmitter 0.265 mm (16x) Receiver	100 [1]	Ø0,1 [2]	-55/70°C, 1 m, Rmin 25
Area detection without gaps Accurate detection					**KLTM-Q10-T1-5**

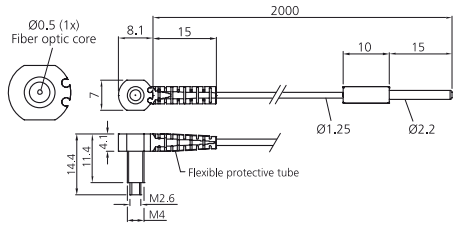
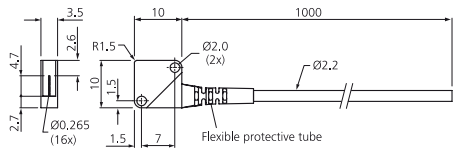
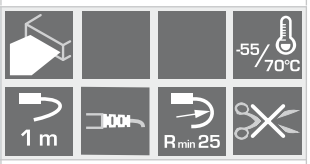
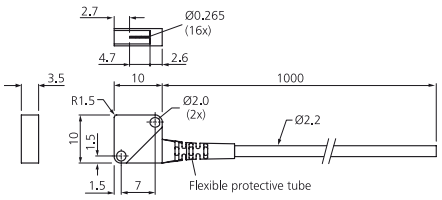
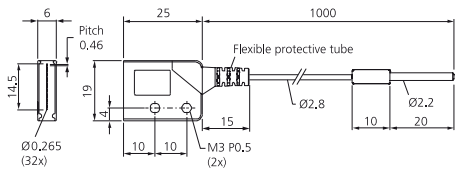
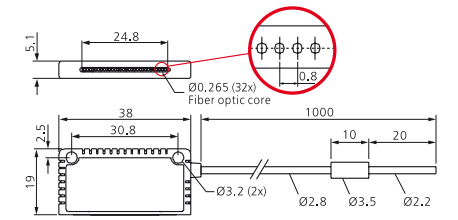
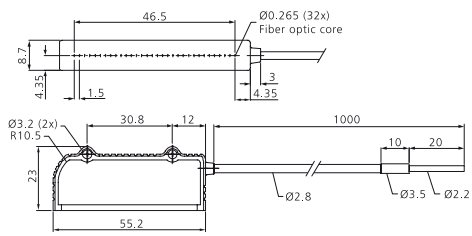
[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.

[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

	Sensor probe (size / material)	Fiber	Operating distance (mm)	Resolution (mm)	Product description
KL plastic fiber-optic cable light sensor					
	19 x 25 x 6 mm Plastic	14.5 mm Transmitter 0.265 mm (16x) Receiver 0.265 mm (16x)	240 [1]	Ø0,5 [2]	
	Area detection Large operating distance				**KLTM-Q25K-T1-14**
	38 x 19 x 5 mm Plastic	24,8 mm Transmitter 0.265 mm (32x) Receiver	200 [1]	Ø1,0 [2]	
	Area detection 90° deflection Large operating distance				**KLTMR-Q38K-1-24**
	18 x 17 x 5 mm Plastic	A: 7.2 mm parallel Ø0.5 (2x)	5 to 10 [1]	Ø0,1 [2]	
	Fixed-focus detection 90° deflection Low installation depth				**KLTVR-Q18-2-10**
	M5 Edelstahl	0.5 mm	200 [1]	Ø0,1 [2]	
	Ball-shaped optics for cylindrical beam Ø 8 mm				**WRBT 2000 K-M5-Z8**
	M4 Stainless steel	Parallel 0.5 mm (2x)	75 [1]	Ø0,05 [2]	
	Accurate detection Optional attachment optics				**WRBT 2000 K-M4-1.0**
	M3 Stainless steel	Parallel 0.5 mm (2x)	75 [1]	Ø0,05 [2]	
	Accurate detection Optional attachment optics				**WRBT 2000 K-M3-0.5**
	Ø5 Stainless steel	Ø 0.8 mm	100 [1]	Ø0,2 [2]	
	Low installation depth Small sensor probe				**WRBT 2000 KR-5.0-2.0**

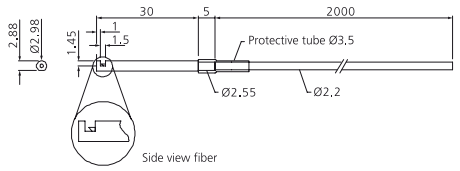
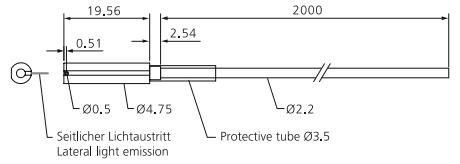
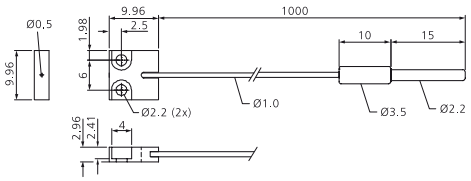
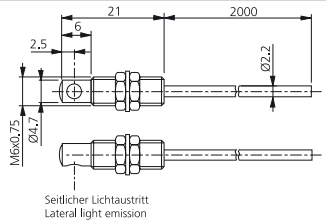
	Sensor probe (size / material)	Fiber	Operating distance (mm)	Resolution (mm)	Product description
KL plastic fiber-optic cable through-beam sensor					
	M6 Stainless steel	1.0 mm	1,000 [1]	Ø0,2 [2]	-55/70°C 2 m R min 25
	Large operating distance				**KLE-M6-T2-1**
	M6 Stainless steel	1.0 mm	1,000 [1]	Ø0,2 [2]	-55/70°C 2 m R min 25
	Large operating distance				**KLE-M4-T2-1**
	M4 Stainless steel	0.5 mm	250 [1]	Ø0,1 [2]	M2.6 -55/70°C 2 m R min 15
	Accurate detection Optional attachment optics				**KLE-M4-T2-0.5**
	M3 Stainless steel	1.0 mm	1,000 [1]	Ø0,2 [2]	-55/70°C 2 m R min 25
	Large operating distance				**KLE-M3-T2-1**
	M3 Stainless steel	0.5 mm	250 [1]	Ø0,1 [2]	-55/70°C 2 m R min 15
	Accurate detection				**KLE-M3-T2-0.5**
	M4 Stainless steel	1.0 mm	400 [1]	Ø0,2 [2]	M2.6 -55/70°C 2 m R min 25
	Low installation depth 90° deflection Large operating distance Optional attachment optics				**KLER-M4-T2-1**

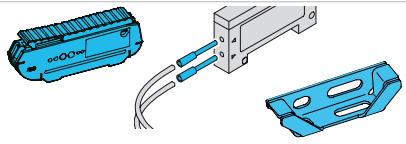
[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.
[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

	Sensor probe (size / material)	Fiber	Operating distance (mm)	Resolution (mm)	Product description
KL plastic fiber-optic cable through-beam sensor					
	M4 Stainless steel	0.5 mm	200 [1]	Ø0,1 [2]	
Low installation depth 90° deflection Accurate detection Optional attachment optics					**KLER-M4-T2-0.5**
	10 x 10 x 3.5 mm Stainless steel	4.24 mm 0.265 mm (16x)	200 [1]	Ø0,1 [2]	
Area detection without gaps Large operating distance Accurate detection					**KLEM-Q10-T1-4**
	10 x 10 x 3.5 mm Stainless steel	4.24 mm 0.265 mm (16x)	200 [1]	Ø0,1 [2]	
Area detection without gaps 90° deflection Large operating distance Accurate detection					**KLEMR-Q10-T1-4**
	19 x 25 x 6 mm Plastic	14.5 mm 0.265 (32x)	1,000 [1]	Ø0,5 [2]	
Area detection Large operating distance					**KLEM-Q25K-T1-14**
	38 x 19 x 5 mm Plastic	24.8 mm 0.265 (32x)	800 [1]	Ø1,0 [2]	
Area detection 90° deflection Large operating distance					**KLEMR-Q38K-1-24**
	55 x 23 x 9 mm Plastic	46.5 mm 0.265 (32x)	800 [1]	Ø2,0 [2]	
Area detection 90° deflection Large operating distance					**KLEMR-Q55K-1-46**

[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.

[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

	Sensor probe (size / material)	Fiber	Operating distance (mm)	Resolution (mm)	Product description
KL plastic fiber-optic cable through-beam sensor					
	Ø 2.98 mm Stainless steel	1.0 mm	600 [1]	Ø0,2 [2]	-55/70°C 2 m Rmin 25
	Low installation depth 90° deflection Large operating distance				**KLER-D3-30-S2-1**
	Ø 4.75 mm Stainless steel	Ø0.5 mm	200 [1]	Ø0,05 [2]	-55/70°C 2 m Rmin 1
	Low installation depth 90° deflection Highly accurate object detection				**KLER-D4.75-19-S2-0.5**
	10 x 10 x 3 mm Metal	Ø0.5 mm	200 [1]	Ø0,05 [2]	-40/70°C 1 m Rmin 1
	Accurate detection Flat design				**KLE-Q10M-1-0.5**
	M6 Brass	Ø 1.0 mm	1,200 [1]	Ø0,2 [2]	-25/70°C 2 m Rmin 25
	Low installation depth Large operating distance				**WRBE 2000 KR-M6-1.0**



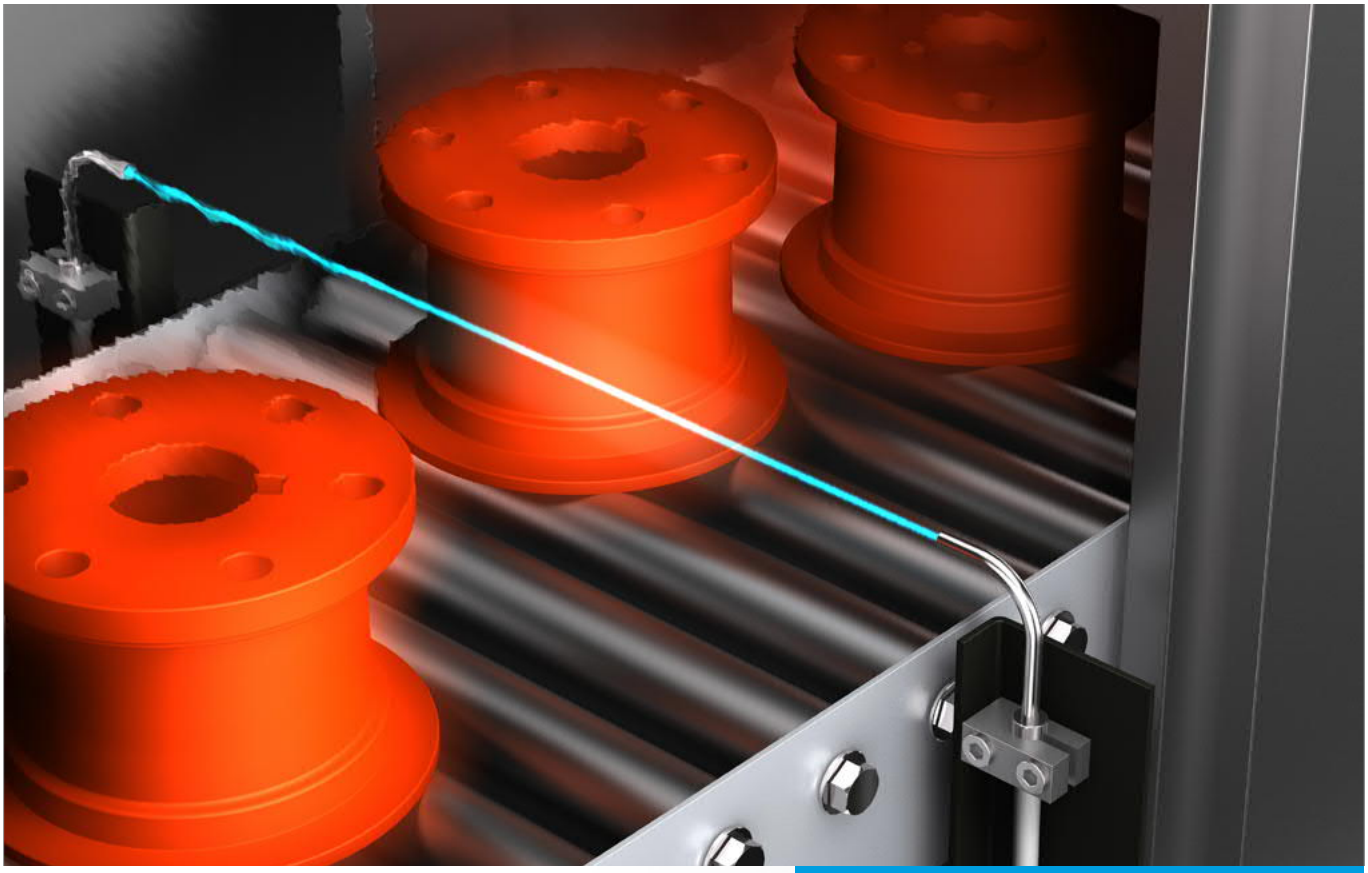
Accessories for plastic fiber-optic cables

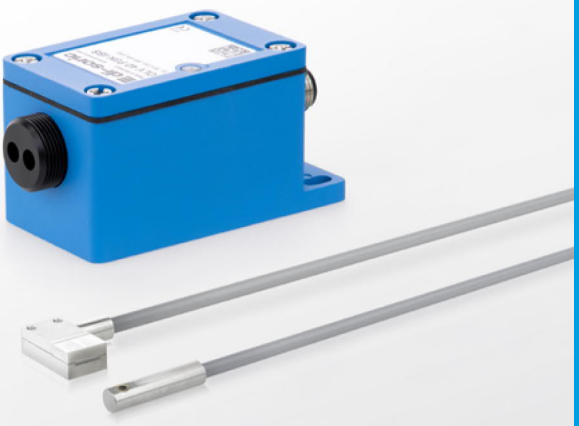
"KLS-Z Plastic fiber-optic sensor accessories" on page 230

[1] Maximum values (typ.) for a standard target 100 x 100 mm, white.

[2] Resolution (typ.) for optimal settings and measuring distances (sensor approx. 5 mm, one-way: approx. 100 mm).

Glass fiber-optic sensors





Challenging applications with little installation space are the area of application of the fiber optic sensors from di-soric. The robust devices stand the test with oil just as reliably as with high mechanical loads and at high temperatures. Their large range is another important advantage.

OLV-G Amplifier 111

WRB Glass fiber optics 111

OLV-G AMPLIFIER

Thanks to their stable metallic housing and the high protection class, the amplifiers in the OLV-G series are - ideal for handling challenging individual applications. The devices are operated through simple auto-teach.

CE

Technical data (typ.)	+20 °C, 24 V DC
Switching output	Transistor, pnp, 200 mA, NO/NC, switchable
Ambient temperature	-10 to +60 °C
Housing material	Die-cast zinc
Protection type	IP 65

	Housing design Size (mm)	Sensitivity adjustment by means of	Service voltage (V)	Switching frequency (kHz)	Infrared light, clocked	Red light, clocked	Green light, clocked	Switching hysteresis (%)	Temperature drift (%/K)	Ambient light immunity (kLx)	No-load current (mA)	Plug connector	Connection cable (optionally available)	Product description
OLV-G amplifiers for glass fiber optic cables														
	40 x 41 x 75	Potenti-ometer	12 to 35	1.5	■			10	0.3	20	55	M12	VK… /4	OLV 40 P3K-IBS
				1.5		■								OLV 41 P3K-IBS
				0.5			■							OLV 42 P3K-IBS
	40 x 41 x 75	Potenti-ometer	12 to 35	1.5	■			10	0.3	20	55	Clamps		OLV 40 P4K
						■								OLV 41 P4K
	40 x 41 x 75	Teach	10 to 35	1.5	■			12	0.1	50	45	M12	VK… /4	OLVTI 40 P3K-IBS
						■			0.25					OLVTI 41 P3K-IBS

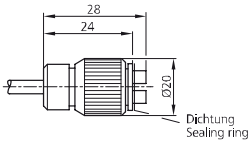
WRB GLASS FIBER OPTICS

Our product portfolio of fiber optics includes high-quality fibers for large ranges, a high mechanical load and high temperatures.

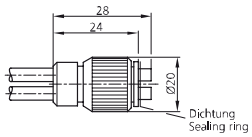
CE

Technical data (typ.)	+20 °C, 24 V DC
Housing material	V2A
	Aluminum (…SQ… / … MQ… / WRB 220 SW)
Single fiber	50 µm
Opening angle	67°
Temperature resistance	-40 to +180 °C, for short periods up to +250 °C (silicone-metal sleeve)
	-40 to +180 °C, for short periods up to +300 °C (metal sleeve)

Diffuse sensors



Through-beam sensors

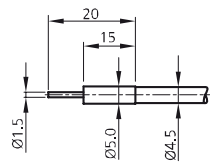
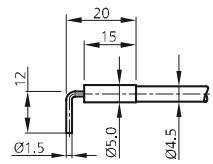
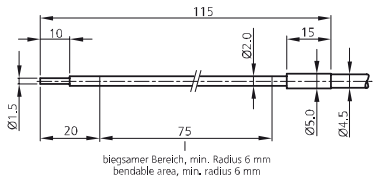
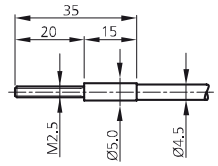
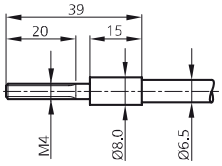
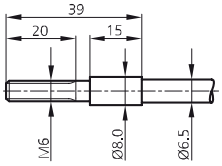
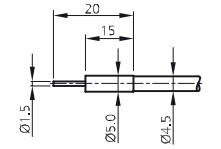
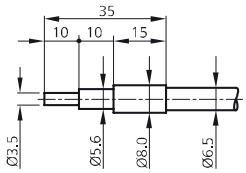


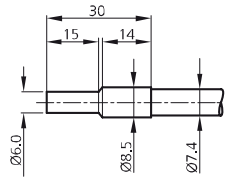
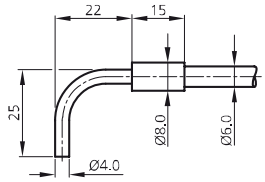
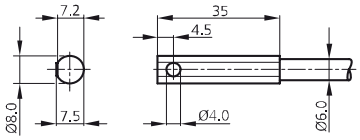
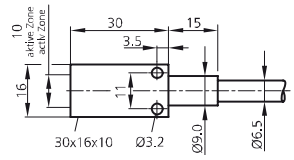
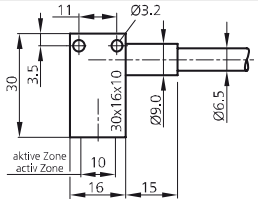
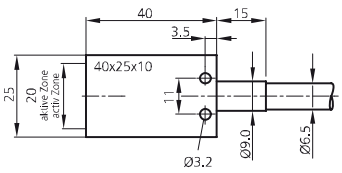
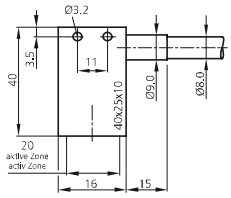
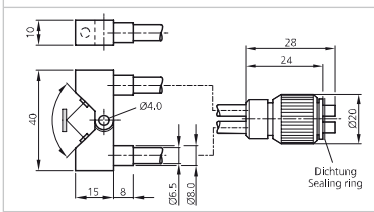
Installation instructions for glass fiber-optic cables

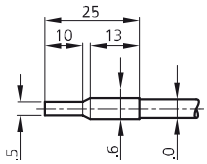
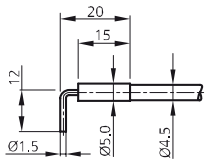
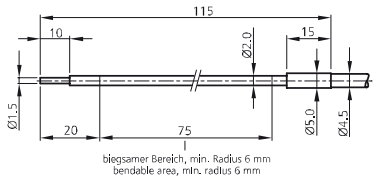
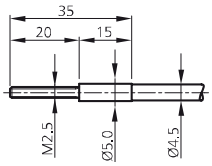
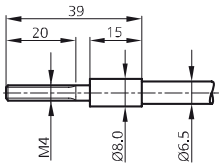
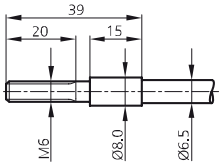
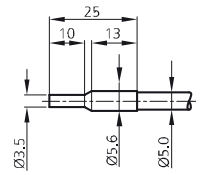
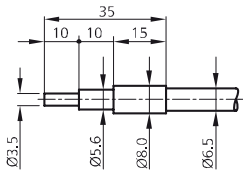
[1] For permanently installed fiber optic cables.

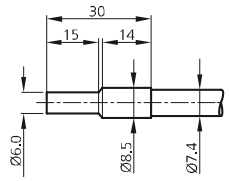
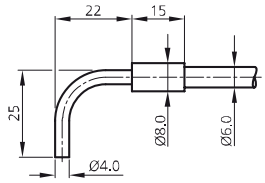
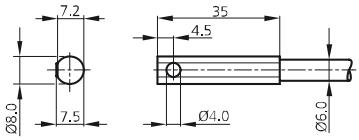
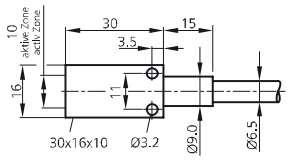
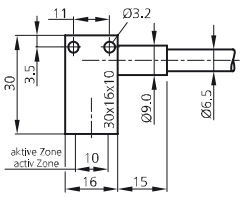
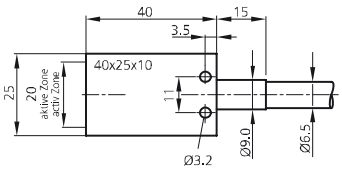
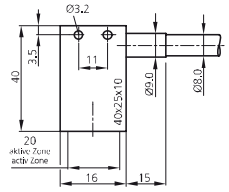
[2] All specified scan widths and ranges are average values associated with the fiber-optic amplifier in infrared light. If necessary, adjust the sensitivity range using the basic sensitivity potentiometer P2. The specified scan widths and ranges are reduced to about 80% in red light and to about 30% in green light. The values also depend on the fiber-optic cable and on the object being scanned (size, shape, surface, color, etc.).

[3] With attachment optics and axial light aperture.
Only possible for fiber-optic cables of corresponding length.

	Fiber bundle	Scan width* (mm)	Cable jacket	Cable length (mm)	Bending radius	Protection type	Product description
WRB glass fiber-optic cable light sensor							
	Ø1.0	up to 20	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 S-1.5-1.0
				600			WRB 120 S-1.5-1.0
				1,000			WRB 130 S-1.5-1.0
	Ø1.0	up to 20	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 M-1.5-1.0
				600			WRB 120 M-1.5-1.0
				1,000			WRB 130 M-1.5-1.0
	Ø1.0	up to 15	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 S-90-1.5-1.0
				600			WRB 120 S-90-1.5-1.0
				1,000			WRB 130 S-90-1.5-1.0
	Ø1.0	up to 15	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 M-90-1.5-1.0
				600			WRB 120 M-90-1.5-1.0
				1,000			WRB 130 M-90-1.5-1.0
	Ø1.0	up to 20	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 SB-2.0-1.0
				600			WRB 120 SB-2.0-1.0
				1,000			WRB 130 SB-2.0-1.0
	Ø1.0	up to 20	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 MB-2.0-1.0
				600			WRB 120 MB-2.0-1.0
				1,000			WRB 130 MB-2.0-1.0
	Ø1.5	up to 30	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 S-M2.5-1.5
				600			WRB 120 S-M2.5-1.5
				1,000			WRB 130 S-M2.5-1.5
	Ø1.5	up to 30	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 M-M2.5-1.5
				600			WRB 120 M-M2.5-1.5
				1,000			WRB 130 M-M2.5-1.5
	Ø2.5	up to 85	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 S-M4-2.5
				600			WRB 120 S-M4-2.5
				1,000			WRB 130 S-M4-2.5
	Ø2.5	up to 85	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 M-M4-2.5
				600			WRB 120 M-M4-2.5
				1,000			WRB 130 M-M4-2.5
	Ø2.5	up to 85	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 S-M6-2.5
				600			WRB 120 S-M6-2.5
				1,000			WRB 130 S-M6-2.5
	Ø2.5	up to 85	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 M-M6-2.5
				600			WRB 120 M-M6-2.5
				1,000			WRB 130 M-M6-2.5
	Ø2.5	up to 85	Polyurethane metal sleeve	300	>5x tube Ø	IP 67	WRB 110 P-5.6-2.5
				600			WRB 120 P-5.6-2.5
				1,000			WRB 130 P-5.6-2.5
	Ø2.5	up to 85	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 S-8.0-2.5
				600			WRB 120 S-8.0-2.5
				1,000			WRB 130 S-8.0-2.5
	Ø2.5	up to 85	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 M-8.0-2.5
				600			WRB 120 M-8.0-2.5
				1,000			WRB 130 M-8.0-2.5

	Fiber bundle	Scan width[2] (mm)	Cable jacket	Cable length (mm)	Bending radius	Protection type	Product description
WRB glass fiber-optic cable light sensor							
	Ø4.0	up to 150	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 S-8.5-4.0
				600			WRB 120 S-8.5-4.0
				1,000			WRB 130 S-8.5-4.0
	Ø4.0	up to 150	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 M-8.5-4.0
				600			WRB 120 M-8.5-4.0
				1,000			WRB 130 M-8.5-4.0
	Ø2.5	up to 80	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 S-90-4.0-2.5
				600			WRB 120 S-90-4.0-2.5
				1,000			WRB 130 S-90-4.0-2.5
	Ø2.5	up to 80	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 M-90-4.0-2.5
				600			WRB 120 M-90-4.0-2.5
				1,000			WRB 130 M-90-4.0-2.5
	Ø2.5	up to 70	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 SR-8.0-2.5
				600			WRB 120 SR-8.0-2.5
				1,000			WRB 130 SR-8.0-2.5
	Ø2.5	up to 70	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 MR-8.0-2.5
				600			WRB 120 MR-8.0-2.5
				1,000			WRB 130 MR-8.0-2.5
	Ø0.6 (10x) Ø0.3 (10x)	up to 90	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 SQ-10-0.6
				600			WRB 120 SQ-10-0.6
				1,000			WRB 130 SQ-10-0.6
	Ø0.6 (10x) Ø0.3 (10x)	up to 90	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 MQ-10-0.6
				600			WRB 120 MQ-10-0.6
				1,000			WRB 130 MQ-10-0.6
	Ø0.6 (10x) Ø0.3 (10x)	up to 85	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 SQ-90-10-0.6
				600			WRB 120 SQ-90-10-0.6
				1,000			WRB 130 SQ-90-10-0.6
	Ø0.6 (10x) Ø0.3 (10x)	up to 85	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 MQ-90-10-0.6
				600			WRB 120 MQ-90-10-0.6
				1,000			WRB 130 MQ-90-10-0.6
	Ø0.6 (20x) Ø0.3 (20x)	up to 210	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 SQ-20-0.6
				600			WRB 120 SQ-20-0.6
				1,000			WRB 130 SQ-20-0.6
	Ø0.6 (20x) Ø0.3 (20x)	up to 210	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 MQ-20-0.6
				600			WRB 120 MQ-20-0.6
				1,000			WRB 130 MQ-20-0.6
	Ø0.6 (20x) Ø0.3 (20x)	up to 200	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 110 SQ-90-20-0.6
				600			WRB 120 SQ-90-20-0.6
				1,000			WRB 130 SQ-90-20-0.6
	Ø0.6 (20x) Ø0.3 (20x)	up to 200	metal sleeve	300	>10x tube Ø	IP 60	WRB 110 MQ-90-20-0.6
				600			WRB 120 MQ-90-20-0.6
				1,000			WRB 130 MQ-90-20-0.6
	Ø2.5	10 - 100	Silicone metal sleeve	600	>3x tube Ø	IP 67	WRB 220 SW

	Fiber bundle	Scan width[2] (mm)	Cable jacket	Cable length (mm)	Bending radius	Protection type	Product description
WRB glass fiber-optic cable through-beam sensor							
	Ø1.0	up to 150	Silicone metal sleeve	300	>3x[1] tube Ø	IP 67	WRB 210 S-1.5-1.0
				600			WRB 220 S-1.5-1.0
				1,000			WRB 230 S-1.5-1.0
	Ø1.0	up to 150	metal sleeve	300	>10x[1] tube Ø	IP 60	WRB 210 M-1.5-1.0
				600			WRB 220 M-1.5-1.0
				1,000			WRB 230 M-1.5-1.0
	Ø1.0	up to 120	Silicone metal sleeve	300	>3x[1] tube Ø	IP 67	WRB 210 S-90-1.5-1.0
				600			WRB 220 S-90-1.5-1.0
				1,000			WRB 230 S-90-1.5-1.0
	Ø1.0	up to 120	metal sleeve	300	>10x[1] tube Ø	IP 60	WRB 210 M-90-1.5-1.0
				600			WRB 220 M-90-1.5-1.0
				1,000			WRB 230 M-90-1.5-1.0
	Ø1.0	up to 150	Silicone metal sleeve	300	>3x[1] tube Ø	IP 67	WRB 210 SB-2.0-1.0
				600			WRB 220 SB-2.0-1.0
				1,000			WRB 230 SB-2.0-1.0
	Ø1.0	up to 150	metal sleeve	300	>10x[1] tube Ø	IP 60	WRB 210 MB-2.0-1.0
				600			WRB 220 MB-2.0-1.0
				1,000			WRB 230 MB-2.0-1.0
	Ø1.5	up to 250 (500)[3]	Silicone metal sleeve	300	>3x[1] tube Ø	IP 67	WRB 210 S-M2.5-1.5
				600			WRB 220 S-M2.5-1.5
				1,000			WRB 230 S-M2.5-1.5
	Ø1.5	up to 250 (500)[3]	metal sleeve	300	>10x[1] tube Ø	IP 60	WRB 210 M-M2.5-1.5
				600			WRB 220 M-M2.5-1.5
				1,000			WRB 230 M-M2.5-1.5
	Ø2.5	up to 900 (1,800)[3]	Silicone metal sleeve	300	>3x[1] tube Ø	IP 67	WRB 210 S-M4-2.5
				600			WRB 220 S-M4-2.5
				1,000			WRB 230 S-M4-2.5
	Ø2.5	up to 900 (1,800)[3]	metal sleeve	300	>10x[1] tube Ø	IP 60	WRB 210 M-M4-2.5
				600			WRB 220 M-M4-2.5
				1,000			WRB 230 M-M4-2.5
	Ø2.5	up to 900	Silicone metal sleeve	300	>3x[1] tube Ø	IP 67	WRB 210 S-M6-2.5
				600			WRB 220 S-M6-2.5
				1,000			WRB 230 S-M6-2.5
	Ø2.5	up to 900	metal sleeve	300	>10x[1] tube Ø	IP 60	WRB 210 M-M6-2.5
				600			WRB 220 M-M6-2.5
				1,000			WRB 230 M-M6-2.5
	Ø2.5	up to 85	Polyurethane metal sleeve	300	>5x[1] tube Ø	IP 67	WRB 210 P-5.6-2.5
				600			WRB 220 P-5.6-2.5
				1,000			WRB 230 P-5.6-2.5
	Ø2.5	up to 85	Silicone metal sleeve	300	>3x[1] tube Ø	IP 67	WRB 210 S-8.0-2.5
				600			WRB 220 S-8.0-2.5
				1,000			WRB 230 S-8.0-2.5
	Ø2.5	up to 85	metal sleeve	300	>10x[1] tube Ø	IP 60	WRB 210 M-8.0-2.5
				600			WRB 220 M-8.0-2.5
				1,000			WRB 230 M-8.0-2.5

	Fiber bundle	Scan width* (mm)	Cable jacket	Cable length (mm)	Bending radius	Protection type	Product description
WRB glass fiber-optic cable through-beam sensor							
	Ø4.0	up to 150	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 210 S-8.5-4.0
				600			WRB 220 S-8.5-4.0
				1,000			WRB 230 S-8.5-4.0
	Ø4.0	up to 150	metal sleeve	300	>10x tube Ø	IP 60	WRB 210 M-8.5-4.0
				600			WRB 220 M-8.5-4.0
				1,000			WRB 230 M-8.5-4.0
	Ø2.5	up to 900	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 210 S-90-4.0-2.5
				600			WRB 220 S-90-4.0-2.5
				1,000			WRB 230 S-90-4.0-2.5
	Ø2.5	up to 900	metal sleeve	300	>10x tube Ø	IP 60	WRB 210 M-90-4.0-2.5
				600			WRB 220 M-90-4.0-2.5
				1,000			WRB 230 M-90-4.0-2.5
	Ø2.5	up to 800	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 210 SR-8.0-2.5
				600			WRB 220 SR-8.0-2.5
				1,000			WRB 230 SR-8.0-2.5
	Ø2.5	up to 800	metal sleeve	300	>10x tube Ø	IP 60	WRB 210 MR-8.0-2.5
				600			WRB 220 MR-8.0-2.5
				1,000			WRB 230 MR-8.0-2.5
	Ø0.6 (10x) Ø0.3 (10x)	up to 700	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 210 SQ-10-0.3
				600			WRB 220 SQ-10-0.3
				1,000			WRB 230 SQ-10-0.3
	Ø0.6 (10x) Ø0.3 (10x)	up to 700	metal sleeve	300	>10x tube Ø	IP 60	WRB 210 MQ-10-0.3
				600			WRB 220 MQ-10-0.3
				1,000			WRB 230 MQ-10-0.3
	Ø0.6 (10x) Ø0.3 (10x)	up to 650	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 210 SQ-90-10-0.3
				600			WRB 220 SQ-90-10-0.3
				1,000			WRB 230 SQ-90-10-0.3
	Ø0.6 (10x) Ø0.3 (10x)	up to 650	metal sleeve	300	>10x tube Ø	IP 60	WRB 210 MQ-90-10-0.3
				600			WRB 220 MQ-90-10-0.3
				1,000			WRB 230 MQ-90-10-0.3
	Ø0.6 (20x) Ø0.3 (20x)	up to 1,200	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 210 SQ-20-0.3
				600			WRB 220 SQ-20-0.3
				1,000			WRB 230 SQ-20-0.3
	Ø0.6 (20x) Ø0.3 (20x)	up to 1,200	metal sleeve	600	>10x tube Ø	IP 60	WRB 220 MQ-20-0.3
				1,000			WRB 230 MQ-20-0.3
	Ø0.6 (20x) Ø0.3 (20x)	up to 1,100	Silicone metal sleeve	300	>3x tube Ø	IP 67	WRB 210 SQ-90-20-0.3
				600			WRB 220 SQ-90-20-0.3
				1,000			WRB 230 SQ-90-20-0.3
	Ø0.6 (20x) Ø0.3 (20x)	up to 1,100	metal sleeve	300	>10x tube Ø	IP 60	WRB 210 MQ-90-20-0.3
				600			WRB 220 MQ-90-20-0.3
				1,000			WRB 230 MQ-90-20-0.3

Color sensors

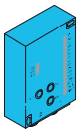
The di-soric color sensors detect colors and compare them to 100 saved reference color values. Through their perceptive functioning, which is similar to the human eye, small differences can be detected precisely. This makes the use of the devices in the area of quality testing possible - even under industrial ambient conditions.

FS-10 Compact	117
FS-50 Extended	117
FS-100 Advanced	117

FS-10 COMPACT, FS-50 EXTENDED, FS-100 ADVANCED

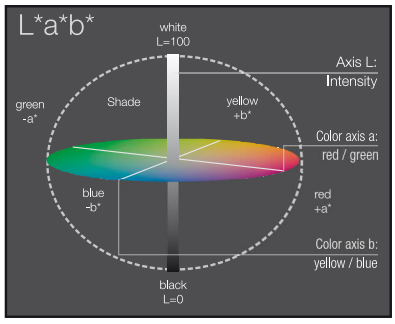
Technical data (typ.)	+20 °C, 24 V DC
Emitting light source	White-light LED, can be turned off
Color resolution	DE Lab < 1
Protection type	IP 54
	IP 67 (FSB 10…)

CE

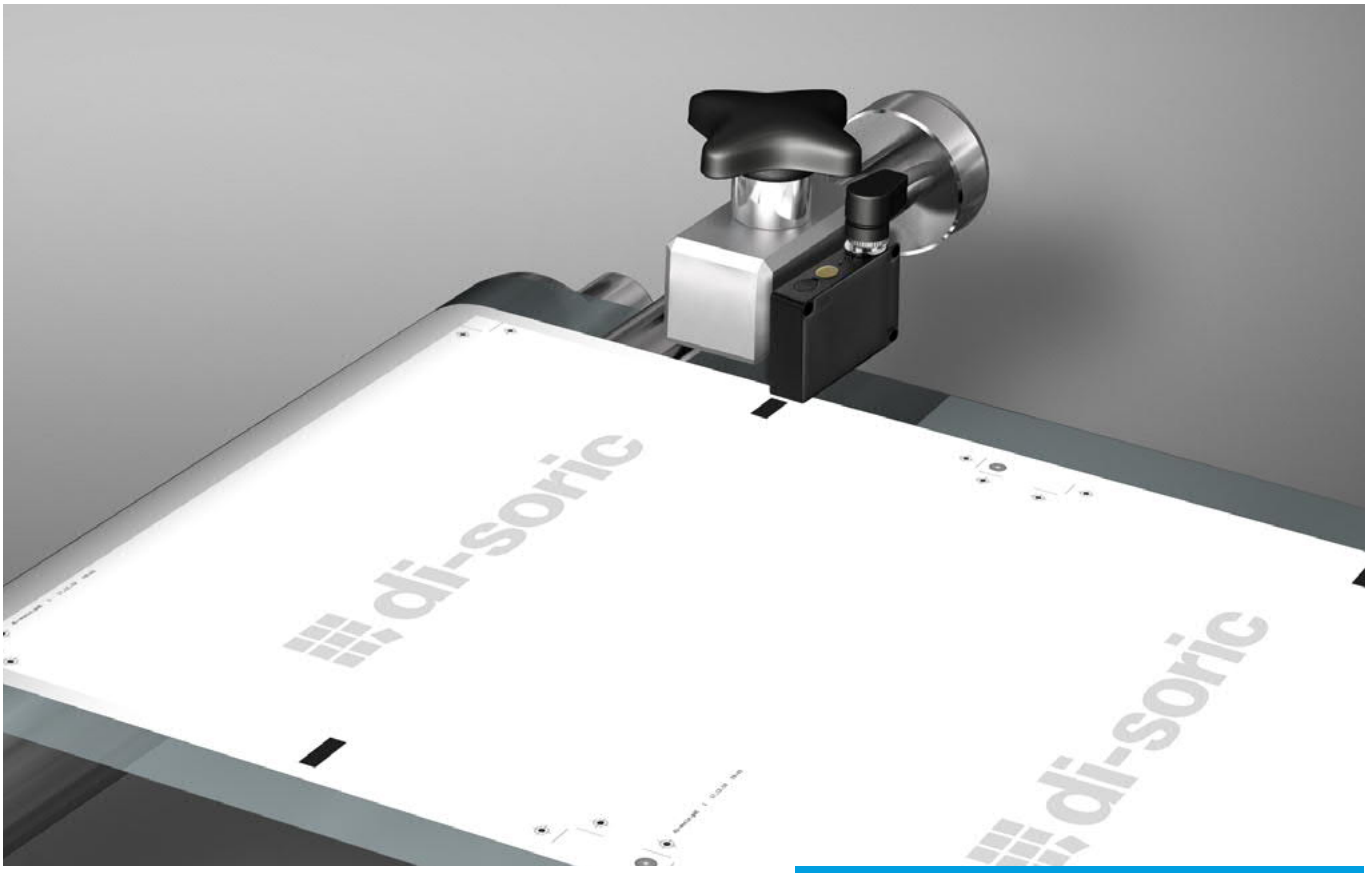
	Operating distance (mm)	Measuring channels (number)	Number of color channels (Teach-in via button)	Number of outputs npn + pnp (push-pull)	Service voltage (VDC)	Color memory internal	Operation using software	Operation using buttons	Color channels with binary coding (number)	Fiber-optic cable adapter	Fixed optics	Lighting with aging-compensating white-light LED	Profibus	Ethernet	Product description
FS-10 Compact															
	See fiber-optic cables	1	1	1	10 to 28	1		■		■		■			FSB 10 M G1-B8
FS-50 Extended															
	See fiber-optic cables	1	4	4	18 to 28	100	■	■	15	■		■			FS 12-50 M G3-B8
	30 to 60										■	■			FS 50 M 60 G3-B8
	See fiber-optic cables	1	4	4	18 to 28	4		■		■		■			FSB 50 M G3-B8
	30 to 60										■	■			FSB 50 M 60 G3-B8
FS-100 Advanced															
	See fiber-optic cables	1	12	12	18 to 28	100	■	■	100	■		■			FS 12-100-1 M G8-B8
										■				■	FS 12-100-1 M G8-B8-E
	See fiber-optic cables	2	12	12	18 to 28	100	■	■	100	■					FS 12-100-2 M G8-B8
										■		■	■		FS 12-100-2 M G8-B8-PB

Accessories for color sensors

see "FS-Z Color sensor accessories," page 226



Contrast sensors



Contrast sensors can detect and compare precise contrasts. The devices are used for reliable, precise detection of printed marks based on color and grayscale contrasts on an extremely wide range of carrier materials such as labels, films, banderoles, cartons or tubes. The devices are configured through intuitive teaching-in.

OK-50 119

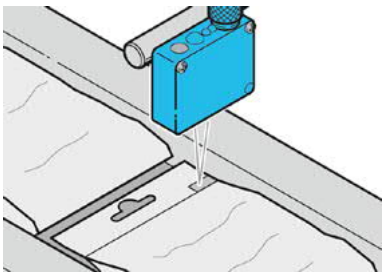
OK-50

These contract sensors have a robust metallic housing in rectangular design with a high protection class. The sensors work with white-light (LED) and detect even the finest of contrasts. Their sensitivity can be adjusted in an easy and user-friendly manner with an auto-teach button.

Technical data (typ.)	+20 °C, 24 V DC
Service voltage	10 to 35 V DC
Switching output	Push-pull, 200 mA, NO/NC switchable
Ambient temperature	-10 to +60 °C
Degree of protection	IP 67
Housing material	Die-cast zinc, varnished
Size	50 x 40 x 15 mm (housing dimensions)

	Scanning range (mm)	Min. teach range (mm)	Transmission light, white, clocked	Resolution (mm)	Sensitivity adjustment by means of	No-load current (mA)	Switching frequency (Hz)	Light spot size (mm)	Plug connector length	Connection cable (optionally available)	Product description
OK-50											
	27 to 33	50	■	Ø 0.7	Teach key, remote teach	< 40	3000	Ø 3	M12	VK …	OKTTI 55 M 30 FG3LK-IBS

Application example



- Contrast sensor with high resolution for detecting print marks
- Auto-teach key / remote teach option / lock function
- Auto-teach during a running process
- LED indicator for the teach procedure