



Sensors for the detection of transparent objects

Solutions for a world of clear materials

Living in a clear material world





Reliably detect transparent objects

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The world of transparent materials. Detection with perspective. Automation with vision

Clear plastic packaging, bottles made of glass or PET, vials and dropper, flat, tube and hollow glass, plastic wrap for securing loads on pallets – automation specialists have to find their way in the world of transparent materials in many manufacturing processes.



Pharma & Cosmetics

The task:

- Reliable detection, positioning of small transparent vials and flasks

The challenge:

- Precise, responsive and repeatable
- Hygienic design required
- Sometimes small space requirements

The solution:

- WL4G in hygienic design
- WLL180



Food industry

The task:

- Count, detect and position packaged foods

The challenge:

- Reliable detection of different packaging shapes and surfaces
- Sometimes very small object sizes
- Precision positioning of products

The solution:

- WL12G-3



Dairies

The task:

- Reliable detection, positioning and monitoring of e.g., bottles or beakers

The challenge:

- Aggressive cleaning processes
- Wetness, humidity
- Aggressive chemical environments

The solution:

- WL12G-3
- WL4G-3 Inox



Packaging technology

The task:

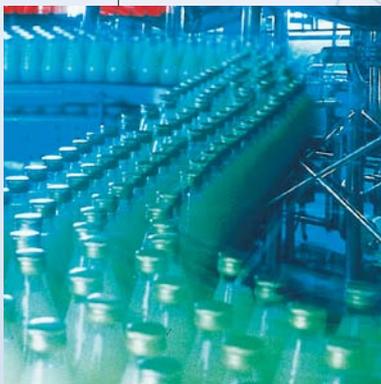
- Reliably detect, position and count containers with transparent wrap
- Monitor the presence of products

The challenge:

- Reliable response to fast production processes
- Containers vary greatly in shape and surface
- Transparency of plastic wrap varies greatly

The solution:

- WL27 MultiPac
- WL12G-3P;S12



Beverage industry

The task:

- Detect, count, select bottles of all kinds

The challenge:

- Harsh application conditions
- Aggressive cleaning processes
- Simple commissioning required

The solution:

- WL12G-3
- WL4G-3





			
	Fiber-optic sensors and fibers	Photoelectric proximity sensors	
Ideal for very limited available space	High precision, suitable for „precise positioning“ tasks	High precision, suitable for „precise positioning“ tasks	
Ideal for applications with Ex protection specification	Reliably detects very small objects and narrow gaps	Reliably detects very small objects and narrow gaps	
Ideal for applications with TU > 70° C	Quick response times: High-speed product runs are reliably detected	Quick response times: High-speed product runs are reliably detected	
Ideal for applications in dynamic environments (robots)	Easy to position, highly visible light spot	Easy to position, highly visible light spot	
Large range of product types for fibers	Large range of product types	Large range of product types	
Evaluation electronics physically isolated from detection zone	Cost-effective WT solutions available for basic applications	Cost-effective WL solutions available for basic applications	
No interference by EMC		Detection results regardless of surface gloss or object contour	
Quick response times: High-speed product runs are reliably detected		Universal use and application possibilities	
Additional functionality: Continuous threshold Apaptation of switching threshold to increase sensor reliability		Switching distance up to 5000 mm possible	
WLL in one-way operation range up to 20 m possible, simple commissioning		Additional functions, such as automatic continuous threshold adaptation for optimal adjustment to the application conditions	
Sensing range limited in proximity mode	Switching distance limited to 1000 mm	Reflector necessary	
Detection result highly dependent on fiber selection, amplifier is susceptible to mechanical damage	Detection result highly dependent on surface gloss or object contour	Detection quality highly dependent on the reflector selection	
Solution very application-specific, often difficult to use universally	Detection result highly dependent on dirt or high-pressure cleaning		
Price	WT solution very application-specific, often difficult to use universally		

Conclusion:
Photoelectric retro-reflective sensors provide maximum system benefits:

- Maximum application versatility
- Maximum object detection
- Maximum precision and response rate
- Maximum user-friendliness
- Maximum results

Reliable detection of transparent objects - retro-reflective photoelectric sensors of SICK

The Photoelectric retro-reflective sensors from SICK is perhaps the most comprehensive on the market – it covers nearly all expectations, requirements and tasks in the world of automation.

It offers:

- Rapid response times
- Fast, simple commissioning
- User-friendly designs
- Latest ASIC technology and IO-Link capability
- Automatic continuous threshold adaption
- Rugged device versions



WL12G: Transparent wrap detection



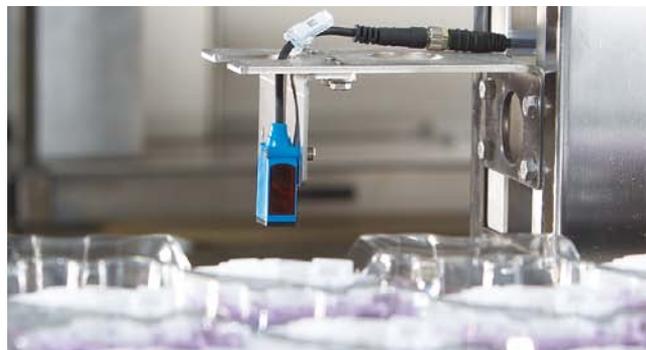
WLL180: Fill level monitoring



WL12G-3: PET bottle detection



VL180: Tray detection



WL4-3 / WL4G-3: Tray, transparent beaker detection



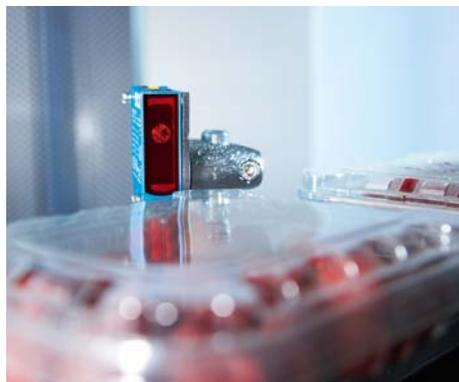
WL11-2P2432: Bottle detection



WL12G-3: Foil monitoring



WL4: Inox, bottle detection in aggressive environments



WLG4S-3: Transparent packaging material detection

The benefits:

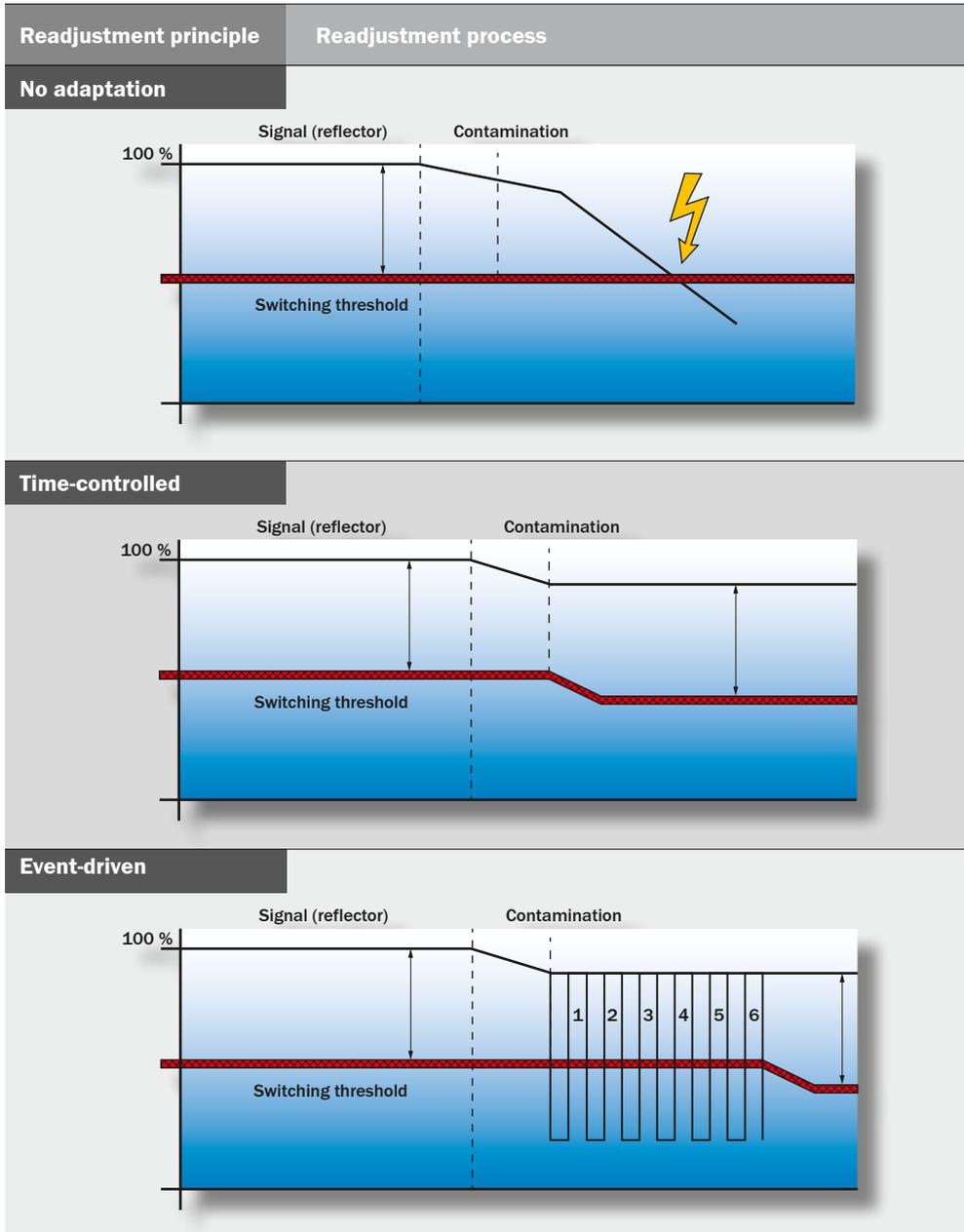
- Opens up a broad range of applications
- Makes universal integration options possible
- High reliability and reliable object detection under extreme, changing application conditions
- Increases the added value of the system

CTA, continuous threshold adaptation

In the automated world, the aim is to minimize machine downtime. Thanks to innovative continuous threshold adaptation, cleaning intervals are extended, thus increasing sensor availability, overall system availability and productivity.

Continuous threshold adaptation

- In the event of contamination, the sensor adapts to the new conditions
- Sensor maintenance only when heavily contaminated
- Automatic adjustment of the original thresholds after cleaning
- Two teach options are possible



Signal attenuation by an object in the light path

- Transparent objects weaken the light beam
- Signal attenuation depends on the transparency of the detected object

- With the help of continuous threshold adaptation or the autocollimation principle, highly transparent objects such as films and PET bottles are reliably detected



	Implemented in	Minimum contamination	Readjustment period	Strengths	Limitations
	WL12G-3 WL11G-2 WL11-2P2432 WL8G GL6G GRL18SG	> 1% to max. 8%	not applicable	More reliable functionality in applications with very demanding conditions, which can mimic contamination: <ul style="list-style-type: none"> • Foil monitoring, foil tear, tear strip inspection • Cleaning processes during production (e.g., at breweries) • Dynamic visibility to reflector, e.g., rotating rollers with unbalance mass 	Sensor located more quickly in the performance reserve area. No automatic response to visibility in the application: <ul style="list-style-type: none"> • More frequent cleaning intervals • More frequent interruptions in production • Reduced productivity • No maximum utilization of the system
	WL4G-3 WL9G-3 WL27 Reflex Array WLL180	Min. 1% deviation from current reference value	Approx. 5 ms	<ul style="list-style-type: none"> • Readjustment in parallel with the current operation possible • Readjustment independent of the presence of product • Flexible application possibilities 	Static operation or partial covering of the reflector e.g., bottle in the visible area; this is evaluated as contamination and readjustment is activated unnecessarily: <ul style="list-style-type: none"> • Readjustment has an effect on the switching frequency, sensor becomes slower • Readjustment has an effect on response time, sensor reacts more slowly
	WL12G-3	Min. 1% deviation from current reference value	6 x switching cycles	Ideal readjustment procedure for: <ul style="list-style-type: none"> • Dynamic product sequences, e.g., flow of bottles • Partial covering of reflector, e.g., bottle in visible area • Slower product infeed into the visible area, e.g., tray positioning 	Readjustment time dependent on production run speed and product intervals – without intervals no readjustment e.g., foil tear monitoring: <ul style="list-style-type: none"> • Readjustment has an effect on switching frequency and response time; sensor becomes slower and reacts sluggishly

Examples of the signal attenuation of various materials

Approx. 10% signal attenuation	Clean PET bottles, clear glass, thin and clear films (e.g. cellophane), household plastic film, plastic wrapping
Approx. 18% signal attenuation	Clean clear glass bottles, thick films, film and wrapping folded multiple times
Approx. 40% signal attenuation	Green and brown glass, colored glass bottles

Retro-reflective photoelectric sensors - reliable under all application conditions



Ideal for everyday industrial use:

- Rugged sensor designs
- Reliable object detection
- Easy to align
- Communication capabilities and enhanced functionality



IO-Link

IO-Link opens up the possibility of sensor communication with higher-level automation systems. Photoelectric retro-reflective sensors can generate additional sensor information at vulnerable points in the manufacturing and realize new maintenance and diagnostic concepts. Applications are seen through the eyes of the sensor.



Approvals:

- Proof of industrial ruggedness
- Internationally recognized test methods
- Global sensor deployment possible



Housing materials

The application conditions are often rough and vary greatly.

With different housing materials, we respond specifically to these conditions and make available sensors optimally equipped for reliable use in industrial environments.



ABS housing

- Rugged plastic (e.g., used in food processors)
- Thermally and chemically very durable



Vistal housing

- Housing made of high-strength, glass-fiber reinforced plastic
- Material hardness factor similar to metal
- Extremely resistant to mechanical stress



Transmission sources

Photoelectric retro-reflective sensors use various transmission sources to achieve optimum optical performance, to ensure universal object detection and for simple and fast commissioning.

PinPoint

- Easily visible red light
- Easily and quickly aligned
- Reliable detection of small objects
- Universally deployable, demanding applications



Laser

- Very small light spot
- Very easy to position
- Reliable detection of small targets
- Ideal for demanding applications

Infrared light, IR

- Ideal for very demanding applications that require excess gain
- Ideal for liquid detection in bottles



Zinc die-cast housing

- Ideal protection in harsh environments, tough
- Increase in chemical resistance due to PTFE coating



Stainless steel / Inox or hygienic design housing

- Housing with smooth surface, dirt and grime have no chance
- Maximum chemical resistance to almost all detergents and disinfectants



User-friendliness

User-friendliness plays a key role in sensors. Simple and fast commissioning without extensive training or specialized staff. 360-degree, highly visible status LEDs make sensor diagnostics quick and effective.



Many paths, one goal: The right selection of sensors.



The range of sensors available from SICK are designed to meet the needs of different applications and to ensure solutions that will meet the demands of tomorrow. The application and its constraints determine which sensor solution will yield maximum detection results.

- Task?
- What experience do operators have in relation to commissioning and operating opto-electronic sensor?
- Which housing design and size are preferred?
- What mechanical, thermal and chemical conditions are known?
- Should the sensor have additional functionality, e.g., monitoring of the received signal?
- What knowledge do operators have in relation to operating opto-electronic sensor?

It is crystal clear, the SICK portfolio is always the right choice in packaging technology, the beverage industry and the glass industry			
Series		WL12G	WL11G
For detection of	Thin-walled PET bottles	●	●
	Thin-walled glass bottles	●	●
	Transp. liquid in bottles	●	
	Transp. packaging materials	●	●
	Plastic film	●	●
With continuous threshold adaptation	CTA	●/without	●
Readjustment principle	Time-controlled		
	Event-driven	●	
Switching threshold level	10 %	●	●
	20 %	●	
	40 %	●	
Temperature compensation		●	
Light source	Red PinPoint LED	●	●
	Red light laser, laser class 2		
	Infrared light	●	
Light spot size		Ø 25 mm at 1.5 m	Ø 25 mm at 1.5 m
Optics	Autocollimation	●	●
	Standard		●
Sensing range		0...4 m	0...5 m
Sensitivity adjustment		Teach-In / Poti	Poti
Switching frequency		1500 / s	1500 / s
Ambient temperature range		-40°C...+60°C	-40°C...+60°C
Housing design	Cubic	●	●
	Cylindrical		
Housing material	Plastic		●
	VISTAL		
	Metal	●	
	Stainless steel		
Communication capability	I/O-Link	●	



									
WL190T	WL9G-3	WL4S	WL4S INOX	WL8G	GL6G	WLL180 T	WL27 Reflex Array	GRL18SG	MHL15
	•	•	•			•	•		
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						•			
Ø 25 mm at 1.0 m	Ø 45 mm at 1.5 m	Ø 45 mm at 1.5 m	Ø 45 mm at 1.5 m	Ø 70 mm at 2.0 m	Ø 25 mm at 1.0 m	LL type dependent	50 x 10 mm at 2.0 m	Ø 25 mm at 1.0 m	Ø 25 mm at 1.0 m
•	•	•	•	•		Fiber-optic	•	•	•
0...8 m	0...5 m	0...5 m	0...5 m	0...3 m	0.07...6 m	LL type dependent	0...4.5 m ¹⁾	0.03...7.5 m	0.035...1.9 m
Teach-In	Teach-In	Teach-In	Teach-In	Poti	Poti	Teach-In	Teach-In	Poti	Poti
700/200/100/s	1000 / s	31,200 / s	200 / s	1000 / s	1000 / s				
-10°C...+40°C	-40°C...+60°C	-40°C...+60°C	-30°C...+60°C	-25°C...+55°C	-25°C...+55°C	LL type dependent	-30°C...+60°C	-25°C...+55°C	-25°C...+55°C
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¹⁾ min. distance between sensor and reflector 0.5 m.

Reflectors for industrial sensors.

- ▶ Reflectors are the indispensable counterpart for each photoelectric retro-reflective sensor. Together they form a reliable functional unit. Reliable detection of objects can only be guaranteed, including under critical application conditions, if both components are optimally coordinated with one another.
- ▶ The scanning range and detection accuracy of a photoelectric retro-reflective sensor are impacted significantly by the quality and geometric size of the reflector used.
- ▶ The larger the reflectors, the greater the performance reserve and the greater the sensor scanning range.



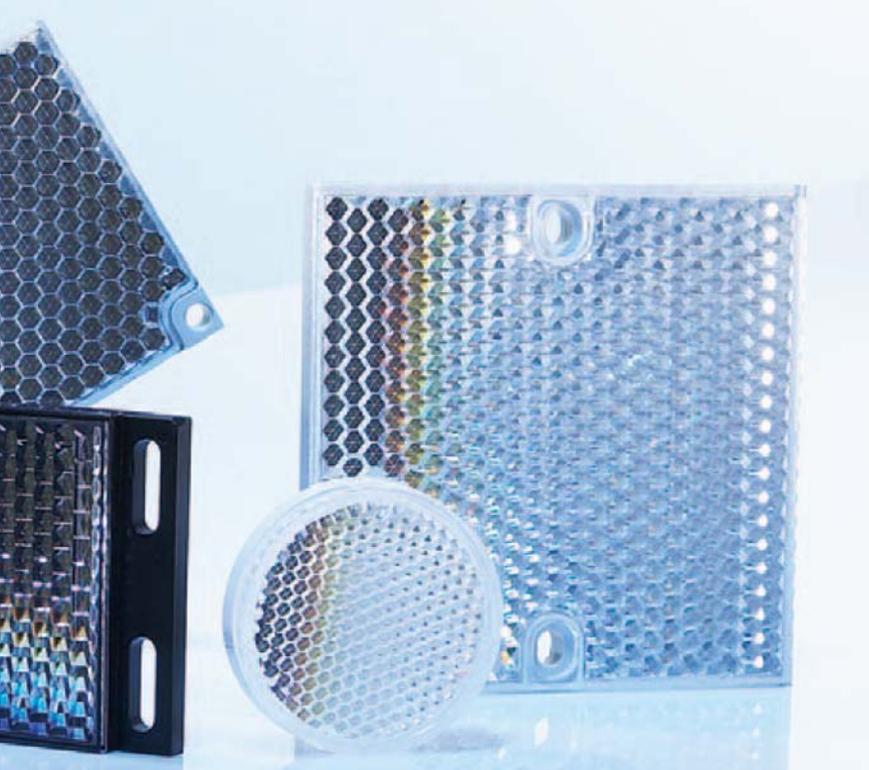
Standard reflectors (round and square)

The standard reflectors from SICK differ in size, geometry and mounting options. The large selection of reflectors in different sizes guarantees optimal sensor operation at all times and perfect integration into systems.



Fine triple reflectors

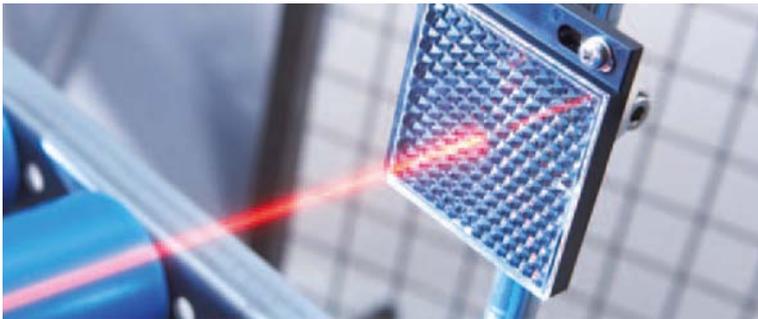
Fine triple reflectors are specially developed for use with laser photoelectric retro-reflective sensors. Their particularly small reflex triple structure enables the small light spot to be beamed across several triples simultaneously at all times. A stable reflection signal for the sensor is thereby guaranteed even when the light spot passes over the reflector. Due to their homogeneous light reflection properties, fine triple reflectors are also suitable for use with photoelectric sensors for detecting transparent materials.



The right reflector for virtually all applications

Standard plastic reflectors or reflective tapes can handle most applications in industrial environments. However, special applications also require special sensors and reflectors. For this reason, SICK offers a large number of special solutions:

- Chemically resistant reflectors
- Stainless-steel reflectors
- Heated reflectors (regulated and unregulated)
- Reflectors for high-temperature applications
- Anti-fog reflectors
- Single triple glass reflectors
- Dust-proof and air-purged reflector solutions
- Large, premounted reflector plates



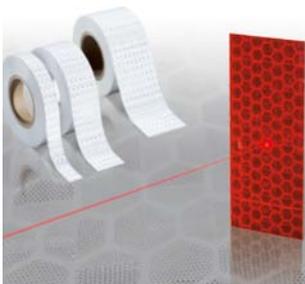
Special reflectors

Special application conditions require specially customized sensors – and suitable reflectors of course. For this reason, SICK offers a wide range of special reflectors that meet the most varied requirements. The range includes stainless-steel reflectors to chemically resistant reflectors and high-temperature reflectors to dust protection solutions – and much more.



Reflective tapes

Reflective tapes are always an alternative where the application does not allow the use of a standard reflector. However, it should be noted here that sensor scanning ranges are reduced when using standard reflective tape (e.g., REF-Plus, REF-DG). The high-performance REF-AC1000 reflective tape from SICK on the other hand enables virtually the same scanning ranges as a standard reflector of the same size. The REF-AC1000 is also particularly suited for use with laser photoelectric retro-reflective sensors.





At a glance

- Rugged die-cast zinc housing with optional Teflon® coating
- Reliable detection of transparent objects
- Precise autocollimation optics
- Robust sensors for industrial use
- Precise PinPoint LED technology with highly visible light spot
- Dovetail mounting – mounting holes and oblong holes
- Highly visible status LEDs

Your benefits

- Reliable detection of transparent objects - from PET bottles to transparent film - due to superior ASIC (application-specific integrated circuit) technology
- High immunity to ambient conditions reduces false readings
- Red PinPoint LED provides quick and easy alignment of sensor
- Precise switching characteristics, fast response times and high performance ensure superior reliability and productivity in nearly every application type
- Withstands mechanical, thermal, chemical and electromagnetic factors, providing increased industrial reliability
- Flexible mounting and installation due to rotatable connector and versatile mounting options
- IO-Link enables quick remote diagnostics and maintenance (optional)

→ www.mysick.com/en/W12G

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/W12G

- **Detection principle:** Autocollimation
- **Sensing range max.:** 0 m ... 4 m (PL80A.)

Housing material	Continuous threshold adaption	Switching output	Switching mode	Adjustment	Connection	Model name	Part no.
Metal		PNP	Light/dark-switching	Teach-in button	Connector M12, 5-pin	WL12G-3P2572	1053535
						WL12G-3P2582 ¹⁾	1053536
						WL12G-3V2572 ²⁾	1053537
	NPN	Light/dark-switching	Teach-in button	Connector M12, 5-pin	WL12G-3N2572	1053530	
						WL12G-3W2572 ²⁾	1053538
PTFE		PNP	Light/dark-switching	Potentiometer, 11-turn	Connector M12, 4-pin	WL12G-302431	1041457
		PNP, NPN	Light/dark-switching	Potentiometer, 11-turn	Connector M12, 5-pin	WL12G-3B2531	1041456
	-	PNP	Light/dark-switching	Teach-in button	Connector M12, 5-pin	WL12G-3P2572T01	1053546
		NPN	Light/dark-switching	Teach-in button	Connector M12, 5-pin	WL12G-3N2572T01	1053547
		PNP, NPN	Light/dark-switching	Potentiometer, 11-turn	Connector M12, 5-pin	WL12G-3B2531T01	1041458

¹⁾ Infrared.

²⁾ Plausibility output.



At a glance

- Retro-reflective for detection of clear material objects
- Rugged housing for industrial use
- PinPoint LED technology with a highly visible light spot
- Space-saving plastic housing in chemically, thermally or mechanically resistant designs
- Dovetail mounting – standard mounting holes and oblong holes
- Highly visible 360° status LEDs
- Simple sensitivity adjustment via potentiometer

Your benefits

- Superior ASIC ensures reliable detection of transparent objects
- PinPoint LED technology provides a bright, small and precise light spot that enables quick and easy sensor alignment
- Precise switching characteristics ensure high performance even in changing application conditions
- Highly visible 360° status LEDs provide fast and easy commissioning
- Rugged housing design withstands harsh environments, reducing downtime and maintenance effort
- Uniform housing, mounting and connection systems reduce mounting and installation time
- High immunity to optical interferences reduces false readings and downtime

→ www.mysick.com/en/W11G-2

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/W11G-2

- **Switching mode:** Light/dark-switching

Detection principle	Sensing range max.	Switching frequency	Switching output	Adjustment	Connection	Model name	Part no.
Standard optics	0.15 m ... 10 m ¹⁾	200 Hz	PNP	Adjustable, Teach	Connector M12, 4-pin	WL11-2P2432	1048542
Autocollimation	0 m ... 4 m ¹⁾	1,500 Hz	PNP, NPN	Adjustable, potentiometer, 11-turn	Connector M12, 5-pin	WL11G-2B2531	1041390

¹⁾ PL80A.



At a glance

- High-performance sensor in ultra-rugged VISTAL™ housing
- Best-in-class optical performance for transparent object detection
- Continuous threshold adaption
- PinPoint LED for highly visible and precise light spot
- Variable mounting with M3 or M4 hole pattern
- Wide range of connection options

Your benefits

- Tough VISTAL™ housing provides reliable installation and operation
- Best-in-class optical performance
- Wide variety of connection, mounting and optical possibilities to solve many different applications

→ www.mysick.com/en/W9-3_Glass

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/W9-3_Glass

- **Detection principle:** Autocollimation
- **Switching mode:** Light/dark-switching
- **Adjustment:** Teach

Sensing range max.	Mounting hole	Switching output	Connection	Model name	Part no.
0 m ... 5 m ¹⁾	M3	PNP	Cable with plug, M12, 4-pin	WL9G-3P3432	1049084
			Connector M8, 4-pin	WL9G-3P2232	1049082
			Cable, 4-wire	WL9G-3P1132	1049081
		Connector M12, 4-pin	WL9G-3P2432	1049083	
		NPN	Connector M12, 4-pin	WL9G-3N2432	1054152
			Cable, 4-wire	WL9G-3N1132	1049085
	M4	PNP	Connector M8, 4-pin	WL9M4G-3P2232	1051899
			Connector M12, 4-pin	WL9M4G-3P2432	1051900
			Cable, 4-wire	WL9M4G-3P1132	1051898
			Connector M12, 4-pin	WL9M4G-3P3432	1051910
NPN	Cable, 4-wire	WL9M4G-3N1132	1051897		

¹⁾ PL80A.



At a glance

- Configurable laser photoelectric sensor with display
- Continuous threshold adaption enables detection of transparent objects
- Precise autocollimation optics
- Programmable output: light/dark switching and switching delay

Your benefits

- Quick and easy alignment due to red light laser, class 2
- Fast configuration via display with menu navigation
- Easy-to-use setup options with a wide range of functions
- Simple sensing range adjustment via a teach-in pushbutton

→ www.mysick.com/en/W190_Laser_High_Grade_Glass

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/W190_Laser_High_Grade_Glass

- **Detection principle:** Autocollimation
- **Switching mode:** Light/dark-switching

Sensing range max.	Switching output	Connection	Model name	Part no.
0.01 m ... 5.5 m ¹⁾	PNP	Cable, 4-wire, 2 m	WLG190T-P122	6022827
		Connector M8, 4-pin	WLG190T-P420	6022830
	NPN	Cable, 4-wire, 2 m	WLG190T-N122	6022823
		Connector M8, 4-pin	WLG190T-N420	6022826
0.01 m ... 1.8 m ²⁾ 0.01 m ... 1.2 m ³⁾	PNP	Cable, 4-wire, 2 m	WLG190T-P112	6026537
		Connector M8, 4-pin	WLG190T-P410	6026538
	NPN	Cable, 4-wire, 2 m	WLG190T-N112	6026535
		Connector M8, 4-pin	WLG190T-N410	6026536

¹⁾ P250F.

²⁾ PL80A.

³⁾ P250.



At a glance

- Setting via teach-in pushbutton
- PinPoint LED technology for highly visible intense light spot
- Versions available with and without polarization filter
- Sensing range from 0.01 - 4 m
- Detection of glass with an attenuation of > 8% (version with polarization filter)
- Detection of PET bottles and films with an attenuation of > 8% (version without polarization filter)
- Sensitivity control via cable (optional)

Your benefits

- Reliable and quick setting via the push of a button
- Flat housing design eliminates alignment or mounting brackets, which saves time and money
- Low-cost machine integration due to small dimensions that enable mounting in areas with space restrictions
- Quick and easy setup due to highly visible intensive light spot
- The PinPoint LED's well-defined, intense light spot simplifies alignment
- Nearly all transparent objects can be reliably detected

→ www.mysick.com/en/W4-3_Glass

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/W4-3_Glass

- **Detection principle:** Autocollimation
- **Housing material:** Plastic
- **Switching output:** PNP

Housing design	Sensing range max.	Switching mode	Polarisation filter	Sensitivity adjustment	Connection	Model name	Part no.
Flat	0.01 m ... 1.6 m ¹⁾	Dark-switching	-	Teach	Cable with plug, M8, 3-pin, 100 mm, PVC	WLG4-3F3182	1028135
					Connector M8, 3-pin	WLG4-3F2182	1028134
				Teach, cable	Connector M8, 4-pin	WLG4-3F2284	1028137
	0.01 m ... 4 m ¹⁾	Dark-switching		Teach, cable	Cable with plug, M8, 4-pin, 100 mm, PVC	WLG4-3F3234	1028129
				Teach	Connector M8, 3-pin	WLG4-3F2132	1028127
				Teach, cable	Connector M8, 4-pin	WLG4-3F2234	1028130
	Light-switching		Teach	Connector M8, 3-pin	WLG4-3P2132	1029567	
Slim	0.01 m ... 5 m ¹⁾	Light/dark-switching		Teach	Connector M8, 4-pin	WLG4S-3P2232	1044186
				Teach, cable	Connector M8, 4-pin	WLG4S-3F2234	1042084
		Dark-switching		Teach, cable	Cable with plug, M8, 4-pin, 100 mm, PVC	WLG4S-3F3234	1043840
				Teach	Connector M8, 4-pin	WLG4S-3V2232	1042087
	Light-switching		Teach	Cable with plug, M8, 3-pin, 100 mm, PVC	WLG4S-3P3132	1043839	

¹⁾ PL80A.



At a glance

- IP 66, IP 67, IP 68 and IP 69K enclosure rating and Ecolab certified
- Tough stainless steel housing (316L/1.4404)
- Resistant to a variety of common cleaning and disinfection agents
- Modern electrical connection available – M12 connector with pin casting
- PinPoint LED technology provides a highly visible laser-like light spot
- Teach-in via stainless steel pushbutton with a metal membrane
- Continuous threshold adjustment technology reliably detects objects in changing conditions

Your benefits

- Long service life in harsh conditions ensures less downtime and fewer replacement costs
- Reliable detection of all materials, including transparent objects in the pharmaceutical, packaging, and food and beverage industries
- Easy adjustment via a stainless steel metal membrane teach-in pushbutton
- Quick and easy alignment due to highly visible PinPoint emitter LED
- Remote monitoring and quick diagnostics via IO-Link (optional)

→ www.mysick.com/en/W4S-3_Inox_Glass

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/W4S-3_Inox_Glass

- **Detection principle:** Autocollimation
- **Sensing range max.:** 0 m ... 5 m (PL80A.)

Housing design	Switching output	Switching mode	Adjustment	Connection	Model name	Part no.	
Washdown	PNP	Light/dark-switching	Teach	Connector M8, 4-pin	WLG4S-3P2232V	1046446	
				Cable with plug, M8, 4-pin, 150 mm, PVC	WLG4S-3P3232V	1046448	
				Cable with plug, M12, 4-pin, 150 mm, PVC	WLG4S-3P3432V	1046449	
		Dark-switching	Teach, cable	Cable	Connector M8, 4-pin	WLG4S-3F2235V	1045098
				Teach	Connector M8, 4-pin	WLG4S-3F2234V	1047653
					Cable with plug, M12, 4-pin, 150 mm, PVC	WLG4S-3F3434V	1048024
	NPN	Light/dark-switching	Teach	Teach	Connector M12, 4-pin, PVC	WLG4S-3N2432V	1054728
					Cable, 4-wire, 2 m, PVC	WLG4S-3N1132V	1046450
		Dark-switching	Teach, cable	Teach, cable	Cable, 4-wire, 2 m, PVC	WLG4S-3E1135V	1046438
					Cable, 4-wire, 2 m, PVC	WLG4S-3E1134V	1048027
Hygienic	PNP	Dark-switching	Teach, cable	Cable with plug, M8, 4-pin, 150 mm, PVC	WLG4S-3F3234H	1048121	



At a glance

- Autocollimation
- Standard miniature housing with M3 threaded mounting holes
- Light/dark-switching selectable via rotary switch
- Adjustable sensing range
- All necessary accessories (BEF-W100-A and P250) are included with delivery

Your benefits

- Reliable object detection of transparent objects even at the shortest distances (no blind spot) or through narrow gaps
- Highly visible light spot makes alignment quick and easy
- Reliable detection of all materials, including small and/or transparent objects, min. attenuation 15 %
- All necessary accessories (bracket and reflector) are included with delivery, reducing installation and procurement costs
- M3 mounting hole provides quick installation

→ www.mysick.com/en/W8G

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/W8G

- **Detection principle:** Autocollimation
- **Switching mode:** Light/dark-switching

Sensing range max.	Switching output	Connection	Model name	Part no.
0.01 m ... 3 m ¹⁾	PNP	Cable, 3-wire	WL8G-P1131	6033184
		Connector M8, 4-pin	WL8G-P2231	6033188
	NPN	Cable, 3-wire	WL8G-N1131	6033183
		Connector M8, 4-pin	WL8G-N2231	6033187

¹⁾ PL80A.



At a glance

- PinPoint LED for a bright, precise light spot
- Durable metal threaded inserts
- SICK ASIC technology - the result of decades of experience in photoelectric sensors
- Large, user-friendly potentiometer
- Large, bright indicator LEDs
- Adjustable receiver sensitivity via 270° turn potentiometer
- IP 67 enclosure rating

Your benefits

- Easy alignment and precise object detection due to a highly visible PinPoint LED
- Quick and easy mounting and high durability due to threaded metal inserts
- SICK ASIC technology provides high performance, excellent reliability and crosstalk immunity
- Easy to adjust due to large, user-friendly potentiometers
- Easy to monitor due to large, bright indicator LEDs
- Easy installation with SICK accessories
- Detection of transparent objects

→ www.mysick.com/en/GL6G

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/GL6G

- **Detection principle:** Standard optics
- **Sensing range max.:** ≤ 7.2 m (PL80A.)
- **Switching mode:** Light/dark-switching
- **Adjustment:** Potentiometer, 270°

Output function	Connection	Model name	Part no.
PNP	Cable, 3-wire	GL6G-P1211	1059924
		GL6G-P1212	1060812
	Connector M8, 4-pin	GL6G-P4211	1059632
		GL6G-P4212	1060810
NPN	Cable, 3-wire	GL6G-N1211	1059925
		GL6G-N1212	1060811
	Connector M8, 4-pin	GL6G-N4211	1059633
		GL6G-N4212	1060809



At a glance

- Minimum Detectable Object > 10 mm with a 40 mm detection area for the standard resolution variant
- Sensing range from 0 up to max. 3.5 m
- Minimum distance between sensor and reflector 0.5 m
- Intensive red light for easy alignment
- CTA automatically adjusts the switching threshold as contamination occurs over time

Your benefits

- Reliable detection regardless of target position within the array: detection height 50 mm (MDO: > 12 mm) or detection height 24 mm (MDO: > 5 mm)
- Less installation effort compared to light grids or multiple single-point photoelectric sensors
- PinPoint technology and optical alignment procedure enables simple and quick commissioning
- Continuous Threshold Adjustment (CTA) ensures less downtime

→ www.mysick.com/en/W27-3_Reflex_Array

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/W27-3_Reflex_Array

- **Switching output:** PNP
- **Switching mode:** Light/dark-switching
- **Adjustment:** Adjustable manual, via teach-in button

Sensor principle	Sensing range max.	Detection height	Min. object size	Connection	Type	Part no.
Reflex Array Sensor	0 m ... 4.5 m ¹⁾ 0 ... 2 m ²⁾	50 mm	12 mm	Cable with plug, M12, 4-pin	WL27-3P3402S13	1046538

¹⁾ PL80A.

²⁾ PL40A.



At a glance

- Low-cost cylindrical M18 sensor with extra short housing
- Potentiometer for adjustment of switching threshold
- Five different housing styles
- Variety of plastic and metal housing styles, with straight or right angle optics
- Bright and highly visible PinPoint LED
- Special flush type, one-piece metal housing
- Highly visible signal indicator LED
- IP 67 rating

Your benefits

- Space-saving solution due to short housing
- Flexible mounting options due to versatile housing styles
- Potentiometer for adjustment of switching threshold allows detection of transparent objects.
- Easy installation and precise detection due to PinPoint LED
- Reduced maintenance costs due to high tightening torque of single piece flush metal housing
- Rugged and reliable with proven SICK technology
- Highly visible signal indicator LED saves maintenance and commissioning time

→ www.mysick.com/en/GR18SG

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/GR18SG

- **Detection principle:** Standard optics
- **Sensing range max.:** 0.03 m ... 7.2 m (PL80A.)
- **Switching output:** PNP
- **Switching mode:** Dark-switching
- **Adjustment:** Potentiometer, 270°
- **Connection:** Connector M12, 3-pin

Housing material	Housing design	Model name	Part no.
Metal	Axial	GRL18SG-F2331	1059555
	Axial, fully flush	GRL18SG-F233Y	1059556
	Radial, fully flush	GRL18SG-F233W	1059557
Plastic	Axial	GRL18SG-F2336	1059553
	Radial	GRL18SG-F2338	1059554



At a glance

- Shortest M18 housing on the market
- Flush mounting due to innovative mounting accessories
- Straight or right-angle housings available
- Best-in-class background suppression and red PinPoint LED
- High immunity to ambient light
- IP 69K-tested housing offers a long service life that withstands harsh environments

Your benefits

- Shortest M18 body on the market, saving installation space
- Flush mounting via snap ring reduces setup time and prevents obstructions to material flow on conveyor systems
- Reliable detection due to Best-in-class background suppression that ignores stray background reflections, detects multi-colored/shiny objects and provides high immunity to ambient light
- Choice of straight or right-angle housing designs simplify machine integration
- IP 69K tested housing offers a long service life that withstands harsh environments, reducing maintenance time and costs
- Customer-specific options reduce material and labor costs
- MH15 is compatible with competitor sensors for easy replacement that saves installation time and costs

→ www.mysick.com/en/MH15

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/MH15

- **Detection principle:** Standard optics

	Switching output	Switching mode	Connection	Model name	Part no.
0.035 m ... 1.9 m ¹⁾	PNP	Light switching	Connector M12, 3-pin	MHL15-P3329S06	1042806
	NPN	Dark-switching	Connector M12, 3-pin	MHL15-N3229S05	1041308
			Cable, 3-wire	MHL15-N2229S04	1041175

¹⁾ P250.



At a glance

- Selectable response time up to 16 μ s
- Sensing range up to 20 m, sensing distance up to 1400 mm
- Bus-compatible with anti-interference
- 2 x 4-digit display
- Adjustable hysteresis
- Rotatable display screen
- High-resolution signal processing
- Programmable time delays

Your benefits

- Reliable, rapid process detection, even under the most difficult ambient conditions, such as dust, spray or mist
- Easy commissioning and product changeover due to external teach-in
- Cross-talk is eliminated when utilizing bus configuration option
- Quick, easy setup and adjustment due to an intuitive operating menu
- Flexible parameter adjustment due to high-resolution signal processing. Hysteresis and time delays can be adapted to suit the application, e.g., when detecting tiny or transparent objects
- Easy-to-read display, even under difficult installation conditions

→ www.mysick.com/en/WLL180T

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.mysick.com/en/WLL180T

- **Adjustment:** Teach-in button, cable, +/- increment button, manual

Device type	Type of light	Sensing range max.	Switching output	Connection	Model name	Part no.
Stand-alone	Infrared light	0 mm ... 1,000 mm, through-beam system ^{1) 2)}	PNP	Connector, M8, 4-pin	WLL180T-P474	6039618
			NPN	Connector, M8, 4-pin	WLL180T-N474	6039619
Base unit ³⁾	Visible red light	0 m ... 20 m, through-beam system ^{1) 4)}	PNP	Connector, M8, 3-pin	WLL180T-M333	6042428

¹⁾ Sensing range with 8 ms response time. Scanning range reduction with shorter response time (see tables LL3/WLL180T).

²⁾ LL3-TW01.

³⁾ Up to 15 expansion units can be connected.

⁴⁾ LL3-TX01.



At a glance

- Large range of reflectors of various sizes, shapes, and mounting methods
- Chemically resistant reflectors are unaffected by aggressive cleaning agents
- Reflectors with special antifog coating prevent water condensation
- Reflectors for use in high or low temperatures

Your benefits

- SICK has the right reflector for every application
- The CHEM reflectors suffer no damage from aggressive cleaning agents
- Can be used in damp or humid environments, or with rapid temperature fluctuations, without reflector fogging
- Customized reflector solutions are possible for specialized requirements

→ www.sick.com/reflectors

For more information, just enter the link or scan the QR code and get direct access to technical data, CAD design models, operating instructions, software, application examples and much more.



Ordering information

Other models available at www.sick.com/reflectors

Description	Mounting system type	Material	Dimensions	Model name	Part no.
Angular	Screw-on, 2 hole mounting	PMMA/ABS	56 mm x 28 mm	PL30A	1002314
			37 mm x 56 mm	PL40A	1012720
			47 mm x 47 mm	P250	5304812
			80 mm x 80 mm	PL80A	1003865
Fine triple reflectors	None / clampable	PMMA/ABS	45 mm x 17 mm	PL15F	5313849
	Self-adhesive		27 mm x 17 mm	PL18F	5319994
	Screw-on, 2 hole mounting		18 mm x 18 mm	PL10F	5311210
			38 mm x 16 mm	PL20F	5308844
			47 mm x 47 mm	P250F	5308843
	Special reflectors		Screw-on, 2 hole mounting	Plastic	18 mm x 18 mm
Plastic		38 mm x 15 mm		PL20 CHEM	5321089
		47 mm x 47 mm		P250 CHEM	5321097
PMMA/ABS		56 mm x 37 mm		PL40A Antifog	5322011
HOT Thermoplast		47 mm x 47 mm		P250H	5315124
PMMA/ABS	-	PL50HS	1009871		

SICK at a glance



Leading technologies

With a staff of more than 5,000 and over 50 subsidiaries and representations worldwide, SICK is one of the leading and most successful manufacturers of sensor technology. The power of innovation and solution competency have made SICK the global market leader. No matter what the project and industry may be, talking with an expert from SICK will provide you with an ideal basis for your plans – there is no need to settle for anything less than the best.



Unique product range

- Non-contact detecting, counting, classifying, positioning and measuring of any type of object or media
- Accident and operator protection with sensors, safety software and services
- Automatic identification with bar code and RFID readers
- Laser measurement technology for detecting the volume, position and contour of people and objects
- Complete system solutions for analysis and flow measurement of gases and liquids



Comprehensive services

- SICK LifeTime Services – for safety and productivity
- Application centers in Europe, Asia and North America for the development of system solutions under real-world conditions
- E-Business Partner Portal www.mysick.com – price and availability of products, requests for quotation and online orders

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