

GX Series Photoelectric Sensors

M18 (18mm) rectangular plastic - DC



GX3-AP-2E

- Diffuse with background suppression, polarized reflective, and through-beam models
- Fixed sensing ranges, no adjustment required
- 18 mm diameter threaded lens with mounting hex nut included
- NPN or PNP, Light-on, Dark-on output models
- Visible red LED emission
- M12 quick-disconnect; purchase cable separately
- IP67 rated



GX Series Photoelectric Sensors Selection Chart

Part Number	Price	Sensing Range	Output State	Logic	Connection	Wiring	Characteristic Curves
Diffuse with background suppression							
GX3-AN-1E	\$59.00	Up to 100mm [3.93 in]	N.O.	NPN	M12 [12mm] connector	Diagram 1	N/A
GX3-AP-1E	\$59.00			PNP		Diagram 2	
GX3-AN-2E	\$59.00	Up to 150mm [5.90 in]		NPN		Diagram 1	
GX3-AP-2E	\$59.00			PNP		Diagram 2	
Polarized reflective *							
GXP-AN-1E	\$47.50	Up to 4m [13.12 ft] with RL110 reflector	N.C.	NPN	M12 [12mm] connector	Diagram 1	Chart 1
GXP-AP-1E	\$47.50			PNP		Diagram 2	
GXP-CN-1E	\$47.50		N.O.	NPN		Diagram 1	
GXP-CP-1E	\$47.50			PNP		Diagram 2	
Through-beam							
GXR-AP-1E	Receiver	Up to 20m [65.62 ft]	N.C.	PNP	M12 [12mm] connector	Diagram 2	Chart 2
GXR-CN-1E	- must be used with Emitter		N.O.	NPN		Diagram 1	
GXR-CP-1E				PNP		Diagram 2	
GXE-00-1E	Emitter		Receiver dependent	Receiver dependent		Diagram 3	

*Note: Purchase reflectors separately.

Wiring Diagrams

Diagram 1
NPN Output

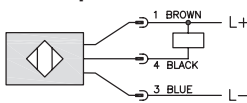


Diagram 2
PNP Output

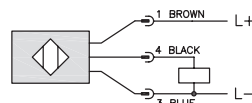
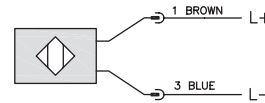
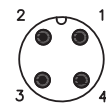


Diagram 3
Emitter

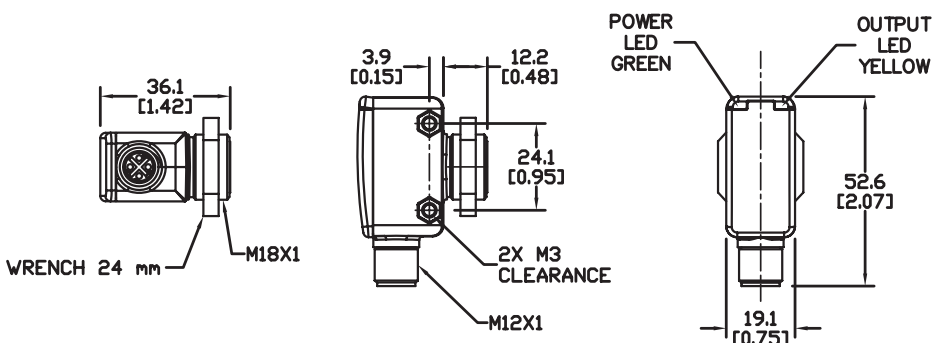


Connector
M12 connector



Dimensions

mm [inches]



Note: Class 2 power source required

Switching Element Function

	Through-Beam and Reflective Models	Diffuse Models
Light-on	N.C.	N.O.
Dark-on	N.O.	N.C.

GX Series Photoelectric Sensors

GX Series Photoelectric Series			
Specifications	Diffuse Models with Background Suppression	Reflective Models	Through-Beam Models
Type	Diffuse reflection	Polarized reflection	Through-beam ³
Sensing Distance	GX3-AN-1E, GX3-AP-1E: up to 100 mm ¹ GX3-AN-2E, GX3-AP-2E: up to 150 mm ¹	4m with RL110 ²	20m
Light Spot Diameter	GX3-AN-1E, GX3-AP-1E: 7mm at maximum range GX3-AN-2E, GX3-AP-2E: 11mm at maximum range	160mm at maximum range	GXE-00-1E: 800mm at maximum range
Emission	Red LED (visible)		
Sensitivity	Fixed		
Output Type	NPN or PNP - Light-on or Dark-on		
Operating Voltage	10 to 30 VDC		
No Load Supply Current	30mA	25mA	20mA
Operating (Load) Current	< 200mA		
Off-state (Leakage) Current	N/A		
Voltage Drop	< 2.5 V		
Switching Frequency	1kHz		
Ripple	-		
Time Delay Before Availability (tv)	Minimal		
Short-Circuit Protection	Yes (non-latching)		
Operating Temperature	-25 to 60°C [-13 to 140°F]		
Protection Degree (DIN 40050)	IEC IP67		
LED Indicators - Switching Status	Yellow (output energized)		
LED Indicators - Power	Green		
Housing Material	LCP (Liquid Crystal Polymer); PEI (Polyether imide)		
Lens Material	Polymethyl methacrylate (PMMA)		
Shock/Vibration	See terminology section		
Tightening Torque	2.25 N·m [1.66 lb-ft]		
Weight (cable/connector)	45.36 g [1.6 oz]		
Connectors	M12 connector		
Accessories	1 mounting hex nut included		
Agency Approvals	cULus listed UL file E328811, CE		

¹ With 200x200mm white matte paper, 90% remission

² With standard diameter 84mm RL110 reflector. Purchase reflector separately.

³ An emitter and receiver pair must be ordered for a complete sensor set.

To obtain the most current agency approval information, see the Agency Approval Checklist section on the specific part number's web page.

Characteristic Curves

Chart 1 - GXP

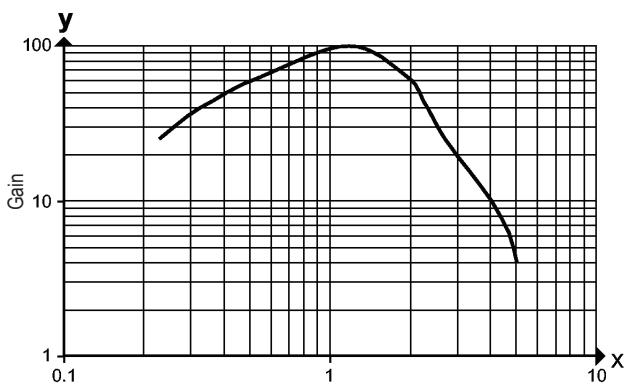
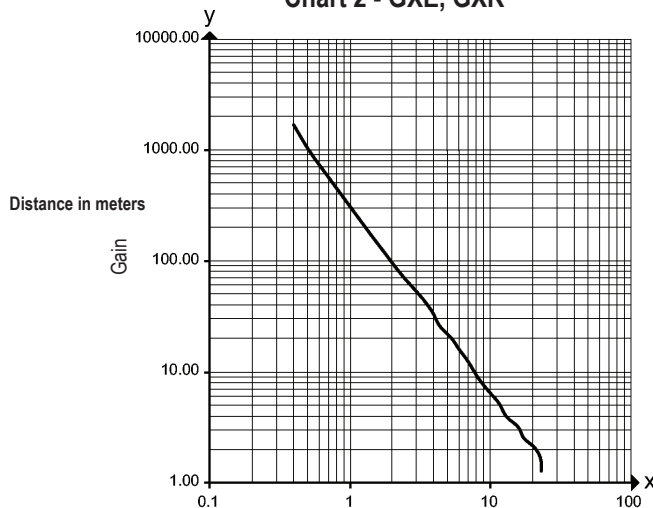


Chart 2 - GXE, GXR



Warning: These products are not safety sensors and are not suitable for use in personal safety applications.

Accessories for 18mm Sensors

Right-angle Mounting Brackets

Mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors. Available with or without fixed insertion stop.

Accessories for 18mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
OPT2104	\$10.50	Wenglor mounting bracket, right-angle, fixed insertion stop adjustment, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]
OPT2105	\$10.50	Wenglor mounting bracket, right-angle, plastic. For use with 18mm sensors.	PDF	0.06 [27.2]



[OPT2104](#), [OPT2105](#)

Right-angle Swivel Mounting Systems

Mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 12mm rod mount. For use with 18mm sensors. Available in all 304 stainless steel or with an aluminum head and a stainless steel mounting plate.

Accessories for 18mm Sensors						
Part Number	Price	Description	Mounting Head	Mounting Plate	Drawing Link	Weight lb [g]
OPT2116	\$11.50	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, aluminum, 12mm rod mount. For use with 18mm sensors.	Aluminum	304 Stainless steel	PDF	0.15 [68.0]
OPT2117	\$21.00	Wenglor mounting bracket, right-angle swivel, 360 degree vertical and horizontal adjustment, 304 stainless steel, 12mm rod mount. For use with 18mm sensors.	304 Stainless steel	304 Stainless steel	PDF	0.28 [127.0]



[OPT2116](#), [OPT2117](#)

Note: 304 Stainless steel mounting rods sold separately: [OPT2109](#) (200mm [7.87 in] length), [OPT2110](#) (300mm [11.81 in] length), and [OPT2111](#) (500mm [19.69 in] length).

Mounting Rods and Brackets

Mounting Rods

304 Stainless steel rods for mounting swivel brackets [OPT2112](#) - [OPT2127](#). Available in three lengths: 200mm, 300mm, and 500mm. 12mm diameter.

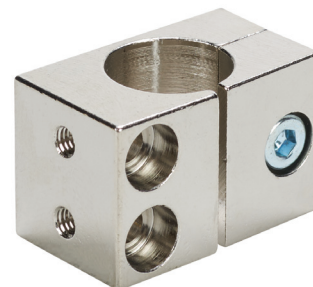
Mounting Rods for OPT2112-2127 Swivel Mounting Brackets				
Part Number	Price	Description	Drawing Link	Weight lb (g)
OPT2109	\$13.00	Wenglor mounting rod, 12mm diameter, 200mm length, 304 stainless steel.	PDF	0.41 [185.97]
OPT2110	\$16.00	Wenglor mounting rod, 12mm diameter, 300mm length, 304 stainless steel.	PDF	0.60 [272.16]
OPT2111	\$21.00	Wenglor mounting rod, 12mm diameter, 500mm length, 304 stainless steel.	PDF	0.98 [444.52]



Right-angle Mounting Bracket

Mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods [OPT2109](#), [OPT2110](#) & [OPT2111](#).

Right-angle Mounting Brackets for 12mm Sensors				
Part Number	Price	Description	Drawing Link	Weight lb [g]
OPT2108	\$16.00	Wenglor mounting bracket, right-angle, nickel-plated brass. For use with 12mm mounting rods OPT2109, OPT2110 & OPT2111.	PDF	0.07 [31.8]



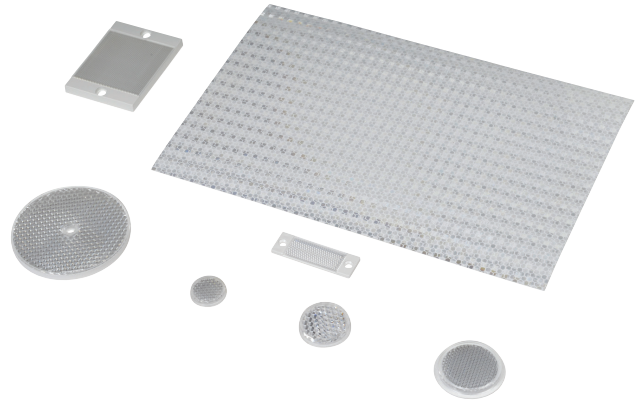
Reflectors

RL Series Reflectors for Polarized Reflective Photoelectric Sensors (All Models)

- Suitable for use with polarized light photoelectric sensors
- Shapes and sizes for most applications
- Miniature types for close mounting in multiple sensor installations
- Single hole, dual hole and self-adhesive mounting types available
- Single and 10-packs available

Installation Notes

- Keep the reflector surface clean to ensure peak detection performance. This is especially true when the maximum sensing range is being used. Clean using a damp cloth.
- When selecting a reflector, it is important to consider the ambient conditions it will be exposed to. Dusty or high humidity conditions may reduce the sensing range as much as 90%.
- Reflectors should be positioned at a 90° angle to the optical axis with a tolerance of $\pm 15^\circ$.



Reflector Specifications								
Part number	Price	Drawing Link	Quantity	Dimensions mm [in]	Degree of Protection	Mounting	Materials	
RL102	\$38.00	PDF	10	25	IEC IP67	Customer-supplied adhesive or other mounting method required	Reflective face: PMMA Polymethylmethacrylate (acrylic) Base material: ABS (Acrylonitrile-butadiene-styren)	
RL102-1	\$4.25		1	[0.98]				
RL103	\$42.50	PDF	10	34.5				
RL103-1	\$4.75		1	[1.36]				
RL104	\$42.50	PDF	10	46				
RL104-1	\$4.75		1	[1.81]				
RL105G	\$38.00	PDF	10	95 x 38		Two 4.3 mm holes		
RL105G-1	\$4.25		1	[3.74 x 1.50]				
RL106G	\$42.50	PDF	10	182 x 42		Two 6mm holes		
RL106G-1	\$4.75		1	[7.17 x 1.65]				
RL110	\$19.00	PDF	10	84		One 5mm hole		
RL110-1	\$2.00		1	[3.31]				
RL116	\$19.00	PDF	10	41 x 60		Two 3mm holes		
RL116-1	\$2.00		1	[3.54 x 2.36]				
RL100DA4	\$38.50	NA	1	200 x 300		Self-adhesive		Paper (Acrylic tape with micro prism)
RL100DC4	\$12.00	NA	1	50 x 300				
RL100DQ1	\$8.75	NA	1	100 x 100				
RL111G	\$60.00	PDF	10	22.5 x 47	Two 3mm slots	Reflective face: PMMA Polymethylmethacrylate (acrylic) Base material: ABS (Acrylonitrile-butadiene-styren)		
RL111G-1	\$7.25		1	[0.89 x 1.85]				
RL112G	\$44.00	PDF	10	19 x 73				
RL112G-1	\$4.75		1	[0.75 x 2.87]				
RL113G	\$53.00	PDF	10	51.4 x 60.3	Two 4mm slots			
RL113G-1	\$6.00		1	[2.02 x 2.37]				

Not recommended for applications involving moist air environments or water immersion.

Reflectors

RL Series Reflectors for Polarized Reflective Laser Photoelectric Sensors (FALN series)

- Suitable for use with polarized light laser photoelectric sensors
- Sizes for most applications
- Miniature types for close mounting in multiple sensor installations
- Single and 5-packs available

Specifications						
Part Number	<i>RL201</i>	<i>RL201-1</i>	<i>RL203</i>	<i>RL203-1</i>	<i>RL204</i>	<i>RL204-1</i>
Price	\$38.00	\$8.25	\$35.50	\$7.75	\$30.00	\$6.75
Quantity	5	1	5	1	5	1
Drawing Link	PDF		PDF		PDF	
Dimensions	60 x 82 mm 2.36 x 3.23 in		19 x 6mm 0.75 x 2.36 in		20mm x 32mm 0.80 in x 1.26 in	
Degree of Protection ¹	IEC IP67					
Mounting	Two 0.4 mm holes		Two 0.4 mm holes		Two 0.3 mm holes	
Materials	Acrylic/polycarbonate					

¹ Not recommended for applications involving moist air environments or water immersion.