



## GL-R96H

Main Unit, Hand-protection Type, 96 Optical Axes



\*Please note that accessories depicted in the image are for illustrative purposes only and may not be included with the product.

## Specifications

Model		GL-R96H	
Detection capability		ø0.98" ø25 mm	
Total length		75.59" 1920mm	
No. of beam		96	
Detection height		74.80" 1900mm	
Protection height		76.57" 1945mm	
Beam axis spacing/Lens diameter		20 mm / ø5 0.79" / ø0.20"	
Detecting distance		0.66 to 49.21' 0.2 to 15 m*1	
Effective aperture angle		Max. ±2.5° (When operating distance is 9.84' 3 m or more)	
Light source		Infrared LED (870 nm)	
Response time (OSSD) (ms)	Wire synchronization, One-line or Optical synchronization system (Channel 0)	ON→OFF	14.8
		OFF→ON	61*2
		All blocked→ON	96*3
	Optical synchronization system (Channel A or B)	ON→OFF	22
		OFF→ON	71.8*2
		All blocked→ON	124.8*3
Detection mode		Turns on when no interruptions are present in the detection zone	
Synchronization between the transmitter and receiver		Optical synchronization or Wire synchronization (Determined by wiring)	
Light interference prevention function		Prevents mutual interference in up to two GL-R systems. Optical synchronization: prevented by Channel A and B with setting switch Wire synchronization: prevented automatically	
Control output (OSSD output)	Output		2 transistor outputs. (PNP or NPN is determined by the cable type)
	Max. load current		500 mA*4
	Residual voltage (during ON)		Max. 2.5 V (with a cable length of 16.40' 5 m)
	OFF state voltage		Max. 2.0 V (with a cable length of 16.40' 5 m)
	Leakage current		Max. 200 µA
	Load wiring resistance		Max. 2.5 Ω
Supplemental output (Non-safety-related output)	AUX		transistor outputs. (PNP or NPN is determined by the cable type)
	Error output		Load current: Max. 50 mA, Residual voltage: Max. 2.5 V (with a cable length of 16.40' 5 m)
	Muting lamp output		Incandescent lamp (24 VDC, 1 to 5.5 W) LED lamp (load current: 10 to 230 mA) can be connected.
External input	When using a PNP output cable	EDM input Wait input Reset input Muting input 1, 2	ON voltage: 10 to 30 V OFF voltage: Open or 0 to 3 V Short circuit current: Approx. 2.5 mA (Approx. 10 mA with EDM input only)

	When using an NPN output cable	Override input	ON voltage: 0 to 3 V OFF voltage: Open or 10 V or more Up to the power voltage Short circuit current: Approx. 2.5 mA (Approx. 10 mA with EDM input only)
Power supply	Power voltage		24 VDC $\pm$ 20%, ripple (P-P) 10% or less, Class 2
	Current consumption (Max.) (mA)	Transmitter	81
Receiver		91	
Protection circuit			Reverse current protection, short-circuit protection for each output, surge protection for each output
Approved standards	EMC	EMS	IEC61496-1, EN61496-1, UL61496-1
		EMI	EN55011 ClassA, FCC Part15B ClassA, ICES-003 ClassA
	Safety		IEC61496-1, EN61496-1, UL61496-1 (Type 4 ESPE) IEC61496-2, EN61496-2, UL61496-2 (Type 4 AOPD) IEC61508, EN61508 (SIL3), IEC62061, EN62061 (SIL CL3) EN ISO13849-1:2015 (Category 4, PLe) UL508 UL1998
Environmental resistance	Enclosure rating		IP65/IP67 (IEC60529)
	Overvoltage category		II
	Ambient light		Incandescent lamp: 3,000 lux or less., Sunlight: 20,000 lux or less
	Operating ambient temperature		-10 to +55 °C <b>14 to 131 °F</b> (No freezing)
	Operating relative humidity		15 to 85 % RH (No condensation)
	Storage temperature		-25 to +60 °C <b>-13 to 140 °F</b> (No freezing)
	Storage relative humidity		15 to 95 % RH
	Vibration resistance		10 to 55 Hz, Double amplitude 0.7 mm <b>0.03"</b> , 20 sweeps in each of the X, Y, and Z directions
Material	Shock resistance		100 m/s <sup>2</sup> (Approx. 10 G), 16 ms pulse, 1,000 times in each of the X, Y, and Z directions
	Main unit case		Aluminum
	Upper case/lower case		Nylon (GF 30%)
Weight	Front cover		Polycarbonate, SUS304
	Transmitter		2680 g
	Receiver		2690 g

\*1 When the option front protection cover is installed on the one of transmitter or receiver, the Operating distance is shortened by **1.64'** 0.5 m. When the front covers are installed on both of the transmitter and receiver, the Operating distance is shortened by **3.28'** 1.0 m.

\*2 If the interruption is present in the detection zone for less than 80 ms, the response time (OFF to ON) will be 80 ms or more to ensure that the OSSD maintains the OFF state for more than 80 ms.

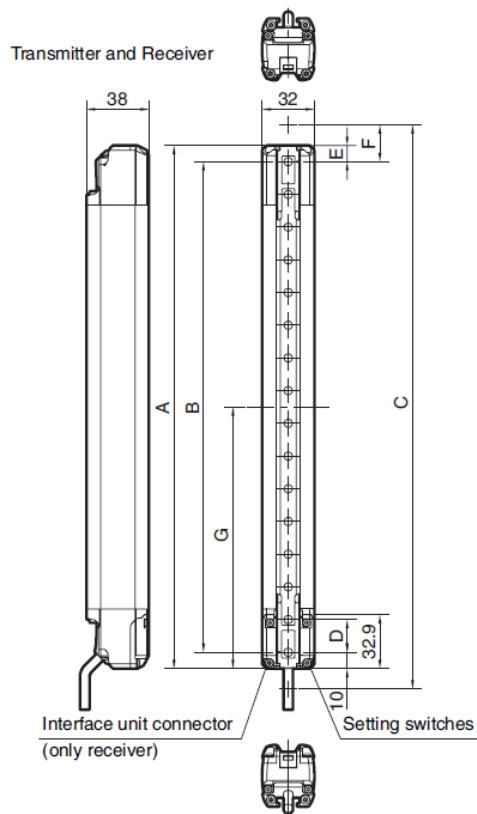
\*3 "All blocked" means the situation where the GL-R operates in optical synchronization system and the transmitter and receiver is not synchronized (top and bottom beam axes are both blocked). In this situation, the response time is longer because the GL-R synchronizes the transmitter and receiver first and then determines the clear or blocked.

\*4 When the GL-R is used under surrounding air temperatures between 50 to 55°C **122°F to 131°F**, the Maximum load current should not exceed 350 mA.

# Dimensions

\* Download CAD file or product manual for larger image/text and more detail.

## ■ GL-RH



Units: mm

Model	Beam axes	A: Length	B: Detection height	C: Protection height	D: Beam axis pitch	E	F	G
GL-R08H	8	160	140	185	20	10	22.5	80
GL-R12H	12	240	220	265				120
GL-R16H	16	320	300	345				160
GL-R20H	20	400	380	425				200
GL-R24H	24	480	460	505				240
GL-R28H	28	560	540	585				280
GL-R32H	32	640	620	665				320
GL-R36H	36	720	700	745				360
GL-R40H	40	800	780	825				400
GL-R44H	44	880	860	905				440
GL-R48H	48	960	940	985				480
GL-R52H	52	1040	1020	1065				520
GL-R56H	56	1120	1100	1145				560
GL-R60H	60	1200	1180	1225				600
GL-R64H	64	1280	1260	1305				640
GL-R72H	72	1440	1420	1465				720
GL-R80H	80	1600	1580	1625				800
GL-R88H	88	1760	1740	1785				880
GL-R96H	96	1920	1900	1945				960