

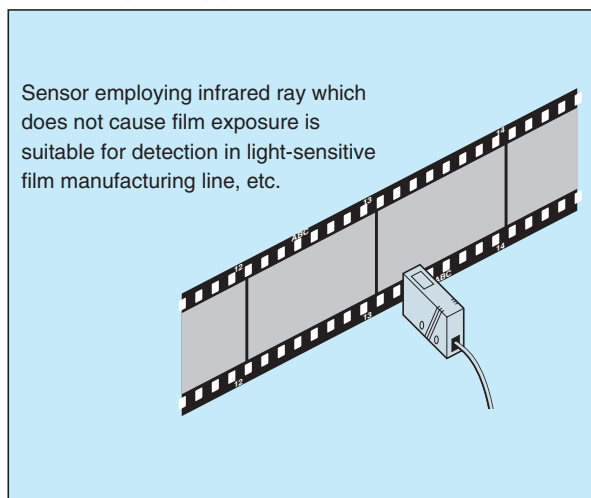


- Ideal for detection of photographic film, light-sensitive paper, etc.
  - Available as light source of sensor used in dark room (product with long wavelength 1,450 nm also available)
- Built-in amplifier for easy handling
- Various models for different applications

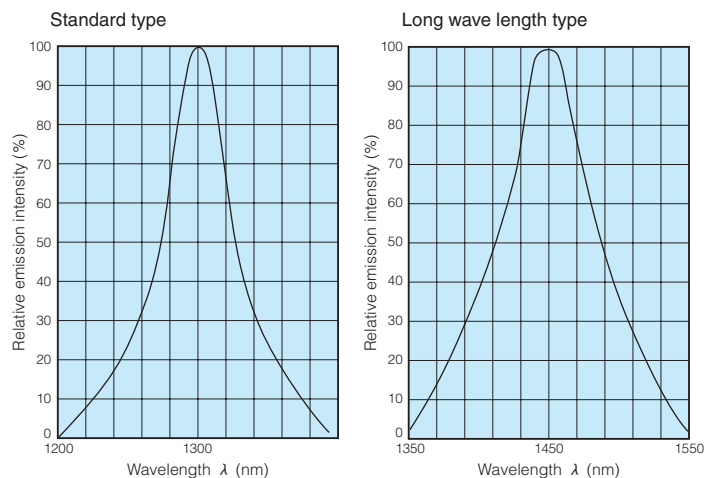
### Type

Detection method	Detecting distance	Model		Operation mode	Output mode	Remarks
		Side-on type	Head-on type			
Through-beam type	2m max.	<b>GT2S-DR</b>	<b>GT2S-DR</b>	Light-ON/ Dark-ON selectable (with switch)	NPN open collector	Generic type
Reflector type	0.2-1m	—	<b>GR2M-DR</b>			
Diffuse-reflective type	100mm max.	<b>GR02S-DR</b>	<b>GR02-DR</b>			
Through-beam type	1.7m max.	<b>GT2S-DR14</b>	<b>GT2-DR14</b>	Light-ON/ Dark-ON selectable (with switch)	NPN open collector	Long wavelength type
Reflector type	0.2-0.8m	—	<b>GR2M-DR14</b>			
Diffuse-reflective type	70mm max.	<b>GR02S-DR14</b>	<b>GR02-DR14</b>			

### Sample Application



### Emission Spectrum Characteristics (Typical Example)



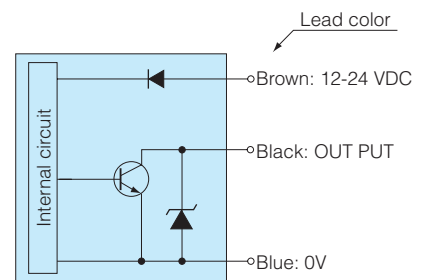
**Rating/Performance/Specification (Generic type)**

Model	GT2-DR	GT2S-DR	GR2M-DR	GR02-DR	GR02S-DR
Detection method	Through-beam type	Side-on through-beam type	Reflector type	Diffuse-reflective type	Side-on diffuse-reflective type
Detecting distance	2m max.		0.2-1m *1	100m max.	
Detection object	Opaque object of ø20 mm or larger		—	Standard detection object: 100 x 100 white drawing paper	
Power supply	12-24V DC ±10% / Ripple 10% max.				
Current consumption	Transmitter: 25 mA max.; Receiver: 10 mA max.		34mA max.	38mA max.	
Output mode	NPN open collector Rating: sink current 100 mA (30 VDC max.)				
Operation mode	Light-ON/Dark-ON selectable (with switch)				
Response time	5ms max		1ms max	5ms max	
Operating angle	10° (at receiver)		10° (at reflector)	—	
Hysteresis	—		10% max		
Light source	Infrared LED (Light wavelength: 1300nm)				
Volume	Sensitivity adjustment				
Switch	Light-ON/Dark-ON selector switch				
Short circuit protection	Provided				
Material	Case/lens: polycarbonate				
Connection	Permanently attached cord (Outer dimension: dia. 4.2) Transmitter: 0.3 mm <sup>2</sup> x 2 cores 3m, gray Receiver: 0.3 mm <sup>2</sup> x 3 cores 3m, black		Permanently attached cord (Outer dimension: dia. 4.2) 0.3 mm <sup>2</sup> x 3 cores 3m, black		
Mass	About 100 g max. (transmitter/receiver)		100g max.		
Notes	Pinhole plate optionally available		*1 With K-7 reflector (accessory)		

**Environmental Specification (generic/long-wavelength type)**

Ambient light	5000 lx max.
Ambient temperature	-25 - +50 °C (non-freezing)
Ambient humidity	35-85%RH (non-condensing)
Protective structure	IP67
Vibration	10-55 Hz / 1.5 mm amplitude / 2 hours each in 3 directions
Shock	500 m/s <sup>2</sup> / 3 times each in 3 directions
Dielectric withstanding	1,000 VAC for 1 minute
Insulation resistance	500 VDC, 20 MΩ or higher

**Input/Output Circuit and Connection (generic/long-wavelength type)**

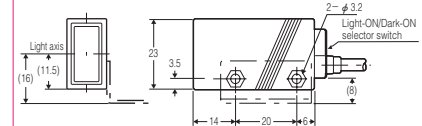
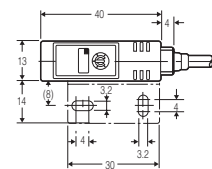


**Dimensions (in mm)**

(generic/long-wavelength type)

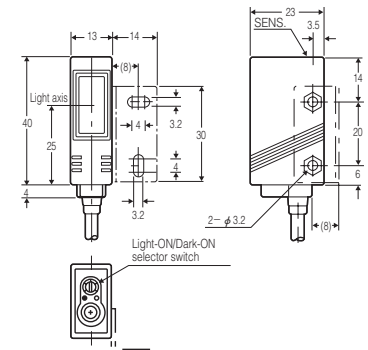
**head-on type**

GT2-DR  
GT2-DR14  
GR2M-DR  
GR2M-DR14  
GR02-DR  
GR02-DR14



**side-on type**

GT2S-DR  
GT2S-DR14  
GR02S-DR  
GR02S-DR14



(No indicator provided)

**Further enhanced performance!** product with wavelength of 1,450 nm available

The DR Series sensors are ideal for detection of photographic film and light-sensitive paper and can be used as the light source of a sensor used in a dark room. (1,450 nm wavelength does not cause exposure in film detection.)

**Rating/Performance/Specification (Long wavelength type)**

Model	GT2-DR14	GT2S-DR14	GR2M-DR14	GR02-DR14	GR02S-14DR
Detection method	Through-beam type	Side-on through-beam type	Reflector type	Diffuse-reflective type	Side-on diffuse-reflective type
Detecting distance	1.7m max.		0.2-0.8m	70m max.	
Detection object	Opaque object of ø20 mm or larger		—	Standard detection object: 100 x 100 white drawing paper	
Power supply	12-24V DC ±10% / Ripple 10% max.				
Current consumption	Transmitter: 25 mA max.; Receiver: 10 mA max.		34 mA max.	38 mA max.	
Output mode	NPN open collector Rating: sink current 100 mA (30 VDC max.)				
Operation mode	Light-ON/Dark-ON selectable (with switch)				
Response time	1ms max				
Operating angle	10° (at receiver)		10° (at reflector)	—	
Hysteresis	—		10% max		
Light source/wavelength	Infrared LED (Light wavelength: 1450nm)				