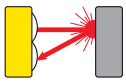
LT3 Series

Time-of-Flight Laser Distance-Gauging Sensors

- The LT3 uses advanced "time-of-flight" technology for precise, long-distance gauging.
- Reliably detects targets regardless of angles
- Visible red laser spot for easy alignment
- Offers push-button programming for other output response times or remote programming for added security and convenience

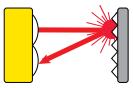
Diffuse LT3, Class 2 Laser

Visible Red Laser

Sensing Mode	Range	Connection	Analog Output	Models NPN	Models PNP
 DIFFUSE LASER	0.3 to 5 m*	2 m 8-pin Euro QD	None	**LT3BD** (Dual NPN or PNP selectable) **LT3BDQ** (Dual NPN or PNP selectable)	
	0.3 to 5 m*	2 m 8-pin Euro QD	0 to 10 V dc	**LT3NU** **LT3NUQ**	**LT3PU** **LT3PUQ**
	0.3 to 5 m*	2 m 8-pin Euro QD	4 to 20 mA	**LT3NI** **LT3NIQ**	**LT3PI** **LT3PIQ**

Retro LT3, Class 1 Laser

Visible Red Laser

Sensing Mode	Range	Connection	Analog Output	Models NPN	Models PNP
 LASER RETRO	0.5 to 50 m†	2 m 8-pin Euro QD	None	**LT3BDLV** (Dual NPN or PNP selectable) **LT3BDLVQ** (Dual NPN or PNP selectable)	
	0.5 to 50 m†	2 m 8-pin Euro QD	0 to 10 V dc	**LT3NULV** **LT3NULVQ**	**LT3PULV** **LT3PULVQ**
	0.5 to 50 m†	2 m 8-pin Euro QD	4 to 20 mA	**LT3NULVQ** **LT3NILVQ**	**LT3PILV** **LT3PILVQ**

Connection options: A model with a QD requires a mating cordset.

For 9 m cable, add suffix **W/30** to the 2 m model number (example, **LT3BD W/30**).

* Based on a 90% reflectivity white card

† Retroreflective range is specified using a **BRT-TVHG-8X10P** high-grade target.

Actual sensing range may differ, depending on the efficiency and reflective area of the retroreflector used. See Accessories for more information.

Euro QD (w/ Shield)
Straight connector models only

8-Pin
MQDC-806
2 m (6')
MQDC-815
5 m (15')
MQDC-830
9 m (30')

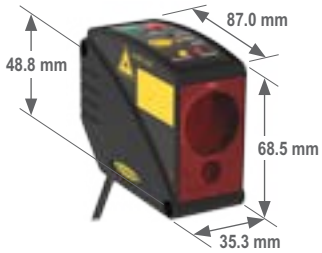
Additional cordset information is available
See page 758

SMBLT31

SMBLT32

SMBLT3IP

Additional bracket information is available
See page 724



Reflectors

Additional information is available
See page 790

L-GAGE® LT3 Specifications

Sensing Beam	**Typical beam diameter:** 6 mm @ 3 m **Typical laser lifetime:** 75,000 hours **Diffuse:** 658 nm visible red IEC and CDRH Class 2 laser; 0.5 mW max. radiant output power **Retroreflective:** 658 nm visible red IEC and CDRH Class 1 laser, 0.15 mW max. radiant output power	
Sensing Range	**Diffuse:** **90% white card:** 0.3 to 5 m **18% gray card:** 0.3 to 3 m **6% black card:** 0.3 to 2 m	**Retroreflective:** 0.5 to 50 m (using supplied target)
Supply Voltage and Current	12 to 24 V dc (10% max. ripple); 108 mA max. @ 24 V dc or [2600/V dc] mA	
Supply Protection Circuitry	Protected against reverse polarity and transient voltages	
Delay at Power-up	1 second; outputs do not conduct during this time	
Output Rating	**Discrete (switched) output:** 100 mA max. **OFF-state leakage current:** less than 5 µA **Output saturation NPN:** less than 200 mV @ 10 mA; less than 600 mV @ 100 mA **Output saturation PNP:** less than 1.2 V at 10 mA; less than 1.6 V at 100 mA **Analog voltage output:** 2.5 kΩ min. load impedance (voltage sourcing) **Analog current output:** 1 kΩ max. @ 24V; max. load resistance = [Vcc-4.5/0.02 Ω] (current sourcing)	
Output Protection	Protected against short circuit conditions	
Output Response Time	**Discrete output** **Fast:** 1 millisecond ON/OFF **Medium:** 10 milliseconds ON/OFF **Slow:** 100 milliseconds ON/OFF **Diffuse Analog Voltage output (-3 dB)** **Fast:** 450 Hz (1 ms average/1 ms update rate) **Medium:** 45 Hz (10 ms average/2 ms update rate) **Slow:** 4.5 Hz (100 ms average/4 ms update rate) **Retroreflective Analog Voltage output (-3 dB)** **Fast:** 114 Hz (6 ms average/ 1 ms update rate) **Medium:** 10 Hz (48 ms average/ 1 ms update rate) **Slow:** 2.5 Hz (192 ms average/ 1 ms update rate)	
Color Sensitivity (typical)	**Diffuse:** 90% white to 18% gray: less than 10 mm; 90% white to 6% black: less than 20 mm.	
Analog Linearity	**Retroreflective:** ± 60 mm from 0.5 to 50 m (0.12% of full scale) (Specified @ 24 V dc, 22° C using supplied BRT-TVHG-8X10P retroreflector)	**Diffuse:** ± 30 mm from 0.3 to 1.5 m; ± 20 mm from 1.5 to 5 m (Specified @ 24 V dc, 22° C using a 90% reflectance white card)
Discrete Output Hysteresis	**Diffuse** **Fast:** 10 mm **Medium:** 5 mm **Slow:** 3 mm	**Retroreflective** **Fast:** 20 mm **Medium:** 10 mm **Slow:** 6 mm
Temperature Effect	**Diffuse:** less than 2 mm/ ° C	**Retroreflective:** less than 3 mm/° C
Minimum Window Size	**Diffuse:** 20 mm	**Retroreflective:** 40 mm
Remote TEACH Input	18 kΩ min. (65 kΩ at 5 V dc)	
Remote TEACH	**To teach:** Connect yellow wire to +5 to 24 V dc **To disable:** Connect yellow wire to 0 to +2 V dc (or open connection)	
Construction	**Housing:** ABS/polycarbonate blend **Window:** Acrylic **Quick-disconnect:** ABS/polycarbonate blend	
Environmental Rating	IP67; NEMA 6	
Operating Conditions	**Temperature:** 0 to +50 °C **Relative humidity:** 90% at 50 °C (non-condensing)	
Certifications	CE cULus	