

Q3XTBLD150 Models

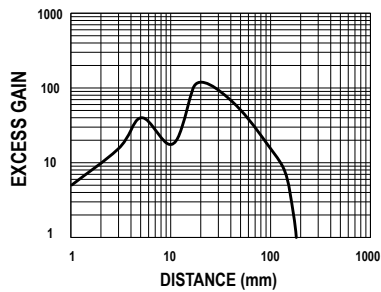


Figure 9. Excess Gain for Standard Sensitivity

For 150 mm models, the sensing cut-off distance for a 6% reflective black card will be 65% of the sensing cut-off distance of a 90% reflective white card.

Q3XTBLD200 Models

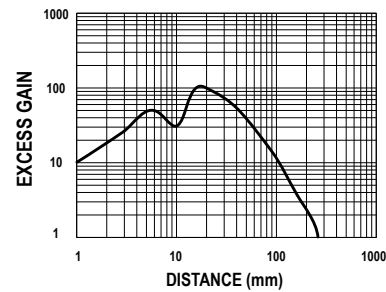


Figure 10. Excess Gain for Standard Sensitivity

For 200 mm models, the sensing cut-off distance for a 6% reflective black card will be 50% of the sensing cut-off distance of a 90% reflective white card.

Specifications

Sensing Beam

Visible red Class 2 laser, 655 nm

Supply Voltage (Vcc)

10 to 30 V dc

Power and Current, exclusive of load

Supply Power: < 675 mW

Current **consumption**: < 28 mA at 24 V dc

Supply Protection Circuitry

Protected against reverse polarity and transient overvoltages

Repeatability

60 μ s

Delay at Power Up

1 s

Maximum Torque

Side **mounting**: 1 N·m (9 in·lbs)

Nose **mounting**: 10 N·m (88 in·lbs)

Connector

5-pin M12 Euro-Style Integral Connector

Sensing Range

Table 1: Sensing Range

Model	Contrast Sensing Range	Background Suppression Distance
Q3XTBLD-Q8	0 to 300 mm (11.81 in)	Not Applicable
Q3XTBLD50-Q8	0 to 50 mm (1.97 in)	60 mm (2.36 in)
Q3XTBLD100-Q8	0 to 100 mm (3.94 in)	120 mm (4.72 in)
Q3XTBLD150-Q8	0 to 150 mm (5.91 in)	190 mm (7.48 in)
Q3XTBLD200-Q8	0 to 200 mm (7.87 in)	280 mm (11.02 in)

Construction

Housing: Nickel-plated zinc die-cast

Side cover: Nickel-plated aluminum

Lens cover: Scratch-resistant PMMA acrylic

Lightpipes and display window: Polysulfone

Adjustment **buttons**: 316 stainless steel

Input Wire

Allowable Input Voltage Range: 0 to Vcc

Active Low (internal weak pullup—sinking current): Low State < 2.0 V at 1 mA max.

Output Configuration

Bipolar (1 PNP & 1 NPN) output

Output Rating

Discrete Output: 100 mA maximum (protected against continuous overload and short circuit)

Off-state Leakage Current: < 10 µA

NPN On-state saturation voltage: < 200 mV at 10 mA and < 1.0 V at 100 mA

PNP On-state saturation voltage: < 1 V at 10 mA and < 2.0 V at 100 mA

Ambient Light Immunity

> 5000 lux

Response Speed

User selectable:

- **250** —250 microseconds
- **175** —1 millisecond
- **575** —5 milliseconds

Beam Spot Size

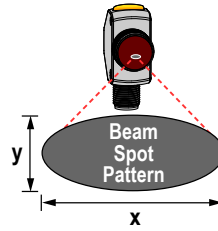


Table 2: Models LD, LD100, LD150, LD200

	Distance					
	20 mm	50 mm	100 mm	150 mm	200 mm	300 mm
X	5.9 mm	5.6 mm	5.1 mm	4.6 mm	4.1 mm	3.0 mm
Y	2.3 mm	2.1 mm	1.9 mm	1.6 mm	1.5 mm	1.2 mm

Table 3: Model LD50

	Distance	
	20 mm	50 mm
X	4.8 mm	3.4 mm
Y	2.0 mm	1.4 mm

Operating Conditions

Temperature: -10 °C to +50 °C (+14 °F to +122 °F)

Humidity: 35% to 95% relative humidity

Environmental Rating

IEC IP67 per IEC60529

IEC IP68 per IEC60529

IEC IP69K per DIN40050-9

Vibration

MIL-STD-202G, Method 201A (10 Hz to 60 Hz, 0.06 inch (1.52 mm) double amplitude, 2 hours each along X, Y and Z axes), with sensor operating

Shock

MIL-STD-202G, Method 213B, Condition I (100G 6x along X, Y and Z axes, 18 total shocks), with sensor operating

Storage Temperature

-25 °C to +75 °C (-13 °F to +167 °F)

Required Overcurrent Protection



WARNING: Electrical connections must be made by qualified personnel in accordance with local and national electrical codes and regulations.

Overcurrent protection is required to be provided by end product application per the supplied table.

Overcurrent protection may be provided with external fusing or via Current Limiting, Class 2 Power Supply.

Supply wiring leads < 24 AWG shall not be spliced.

For additional product support, go to www.bannerengineering.com.

Supply Wiring (AWG)	Required Overcurrent Protection (Amps)
20	5.0
22	3.0
24	2.0
26	1.0
28	0.8
30	0.5

Certifications



Sensor Menu Map

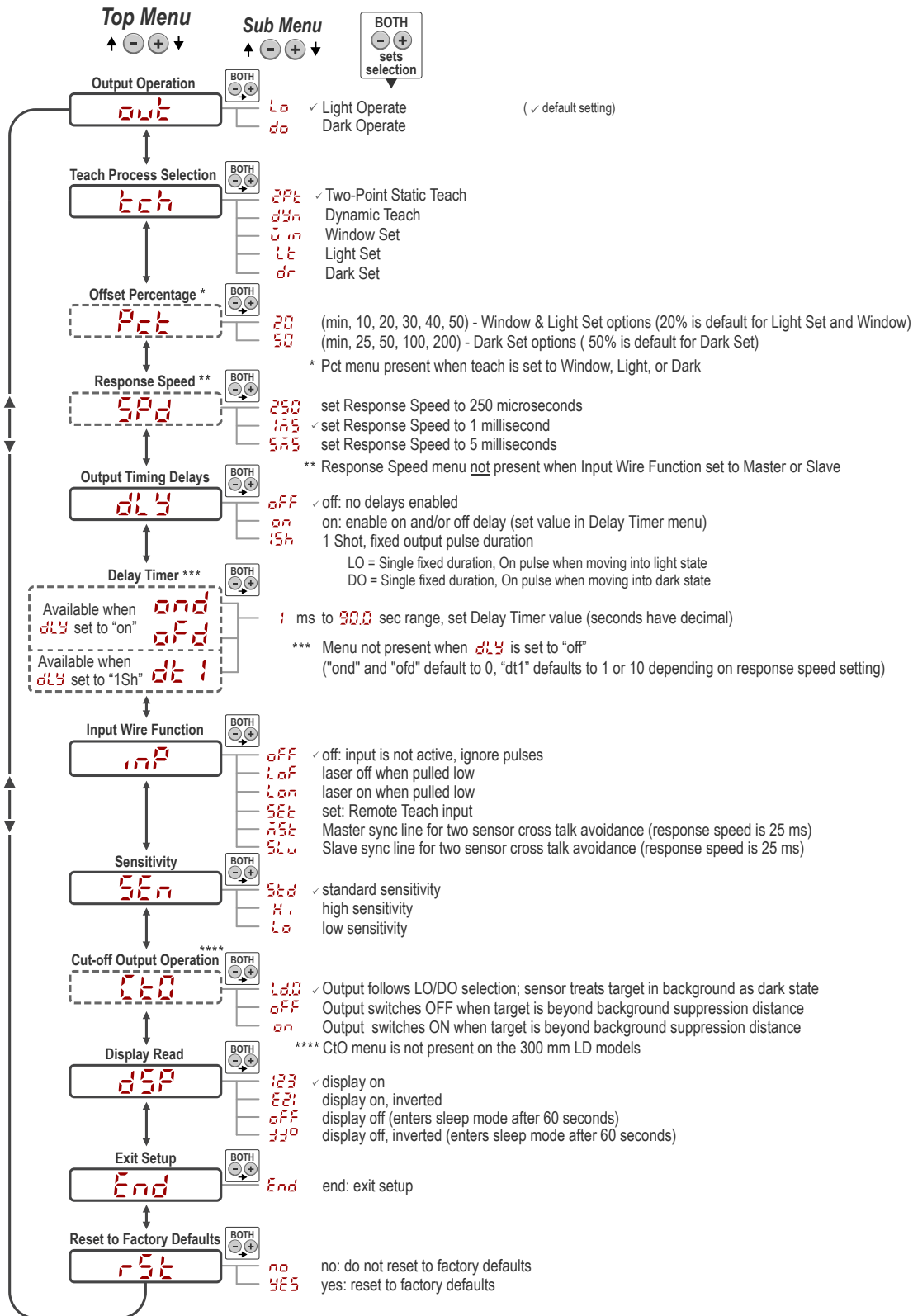


Figure 11. Setup Mode Menu Map