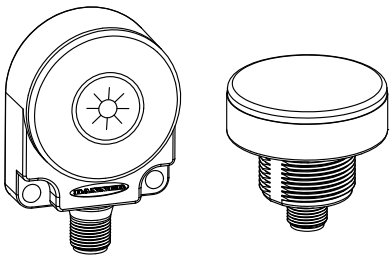
WL50-3 LED Work Light

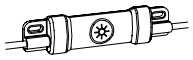
Datasheet

General Purpose LED Work Lights



Shown are flat-mount model with touch-button and 30 mm base-mount model without the touch-button

- Designed for desk, work station, enclosure, and small area lighting
- Optimized for use with flex arm mount for adjustable, industrial task lighting [1]
- Excellent, even distribution for close range lighting applications
- Standard or touch models available
- Touch models can be actuated with bare hands or gloves via the integrated capacitive switch on the face of the model
- Flat-mount or 30 mm base-mount models available
- Cabled, quick-disconnect, and terminal connection models available
- Rugged, sealed polycarbonate housing rated to IEC IP65, IEC IP67, and IP69K
- Low-profile design with several mounting options
- 12 V DC to 30 V DC operation
- High lumen output and low power consumption at less than 3 watts
- Touch models are dimmable via the touch interface, and all models are dimmable via PWM [2] input on the control wire



For PWM dimming, use with the LC15T-127AP1RBGQP dimmer module. For more information, refer to the LC15T In-Line Touch Switch datasheet, p/n 217460.

Models

Flat mount models include a 48 mm (1.9 in) circular velcro mounting kit for easy mounting with no additional hardware.

Housing	Mounting	Generation	Function	Color	Connection
WL50	F	-3	T	W	Q
	F = Flat Mount Blank = M30 Threaded Base	3rd generation	T = Touch Blank = Non-Touch	W = Daylight White (5000K)	Q = Integral M12 QP = 150 mm M12 QD Blank = 2 m (6.5') Cable W/30 = 9 m (30') Cable T = Screw Terminal (base mount option only)

Device Configuration

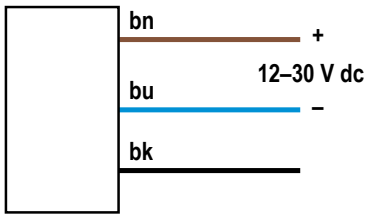
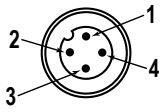
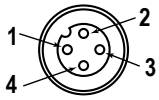
Device Interface	Function
 Single Touch	**ON/OFF** A single touch in the off-state turns the device on. A single touch in the on-state turns the device off.
 Touch and Hold	**Lumen Control** Touch and hold to increase the Lumen Output from 10% to 100%. Continue to touch and hold to decrease the Lumen Output from 100% to 10%.
 Double Touch	**100% ON** Double touch to return to 100% Lumen Output.

Note: The unit flashes at the maximum and the minimum state to notify user that the limit has been reached.

[1] Flex Arm Lights are available pre-assembled with integrated WL50 light for plug and play operation with available power supplies. Refer to the Flex Arm Light literature, p/n 222095, and PSW-24-1 Power Supply literature, p/n 214507.

[2] Pulse width modulation is a digital way to represent an analog value by varying the width of pulses at a constant frequency. The duty cycle (on-time versus off-time) is measured in percent from 1-100.

Wiring

Diagram	Wire	Connection	Pinout (Male)	Pinout (Female)
	1 - Brown	12 V DC to 30 V DC		
	2 - White	Not used		
	3 - Blue	DC common		
	4 - Black	Pulse width modulation (PWM) input. For maximum intensity, leave the black wire floating or connected to common. Connecting to 12 V DC to 30 V DC causes LEDs to shut off.	1 = Brown 2 = White 3 = Blue 4 = Black	1 = Brown 2 = White 3 = Blue 4 = Black

Specifications

Supply Voltage
12 V DC to 30 V DC
Use only with a suitable Class 2 power supply (UL) or SELV power supply (CE)

Supply Current

Model	Max. Current Draw (A) at 12 V DC	Typical Current Draw (A)		
		12 V DC	24 V DC	30 V DC
WL50-3	0.250	0.220	0.100	0.085

Power-Up Response Time
1 ms maximum for touch models

Dimming and Control
Non-touch models: PWM frequency 100-600 Hz
Touch models: On/off, 10% to 100% dimming, and PWM input
See Device Configuration on p. 1 for detailed function

Pulse Width Modulation (PWM)
Frequency: Up to 600 Hz
Voltage: 12 V DC to 30 V DC
Current: 3 mA maximum
Duty Cycle Range:
Off - 0%
On - 100%

Supply Protection Circuitry
Protected against reverse polarity and transient voltages

Construction
Housing: Polycarbonate
Connector: Nickel-plated quick-disconnect or PVC-jacketed cable

Mounting
Base mount: M30 × 1.5 threaded base, maximum torque 4.5 N·m (40 in·lbf)
Flat: Included 48 mm (1.9 in) circular velcro mounting kit

Connections
Integral 4-pin M12 male quick disconnect, 150 mm (6 in) PVC cable with an M12 quick disconnect, or 2 m (6.5 ft) integral PVC cable, depending on model
Terminal model: 3 color-coded screw terminals for up to 16 AWG wire, screw terminal maximum torque 0.11 N·m (1.0 lbf·in)

Environmental Rating
Rated IEC IP65, IEC IP67, and IP69K per DIN 40050-9
Cabled models meet IP69K per DIN 40050-9 if the cable is protected from high-pressure spray
The illuminated side of the terminal models meet IEC IP65, IEC IP67, and IP69K per DIN 40050-9 when installed in an enclosure
Terminal connection points meet IEC IP00

LED Lifetime
Lumen maintenance - L_{70}
When operating within specifications, output will decrease less than 30% after 50,000 hours.

Operating Temperature
–40 °C to +50 °C (–40 °F to +122 °F)

Storage Temperature
–40 °C to +70 °C (–40 °F to +158 °F)

Vibration and Mechanical Shock
Vibration: 10 Hz to 55 Hz, 1.0 mm peak-to-peak amplitude per IEC 60068-2-6
Shock: 15G 11 ms duration, half sine wave per IEC 60068-2-27
Impact: IK06 (IEC EN 60068-2-75)

Third Wire Functionality
Touch models: PWM input overrides touch control
Standard models: PWM input full on-off, with 10%-100% dimming

Light Characteristics
Daylight White Efficacy: up to 125 lumens/watt typical at 24 V DC at 25 °C (77 °F)
CRI: 82, typical

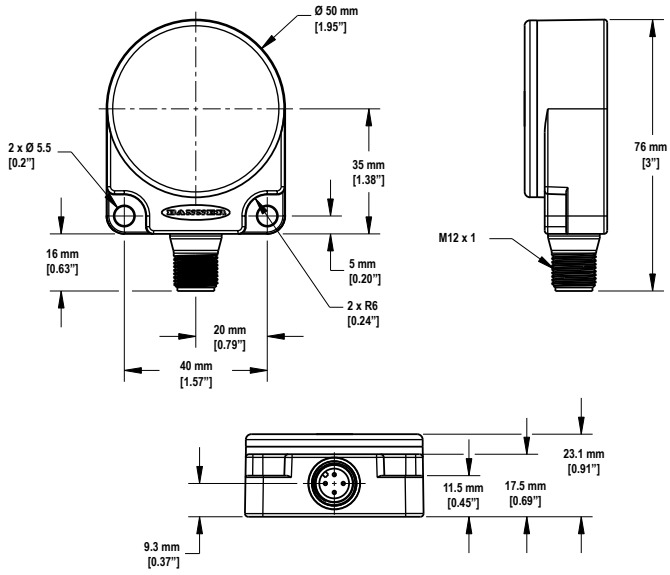
Model	Color	Color Temperature (CCT)	Lumens (Typical at 25 °C)	Watts at 24 V DC	Luminous Efficacy (lm/w)
WL50-3	Daylight White	5000 K (±300 K)	300	2.4	125

Certifications and Approvals

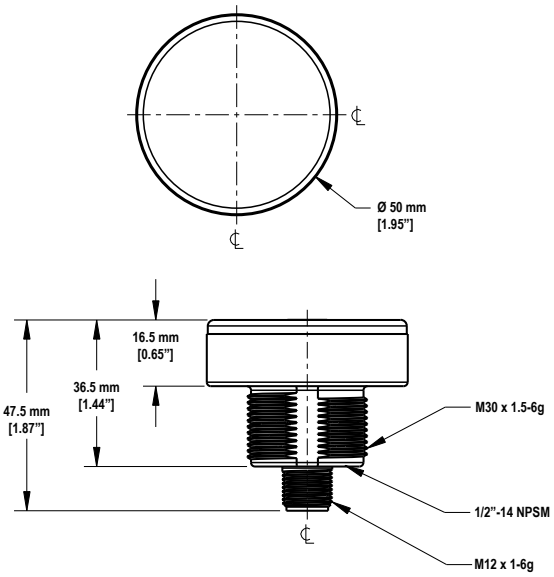
Dimensions

All measurements are listed in millimeters [inches], unless noted otherwise.

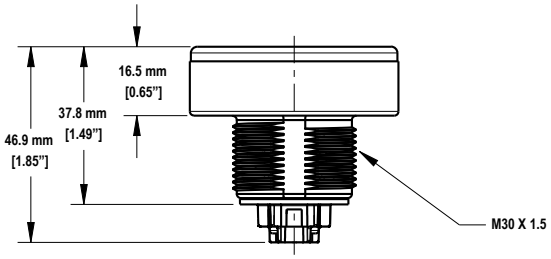
Flat Mount



30 mm Base Mount

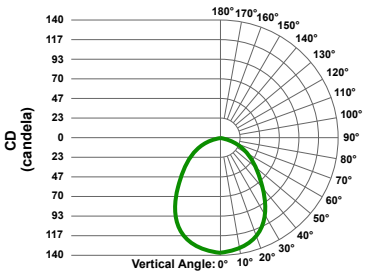


Terminal Base Mount

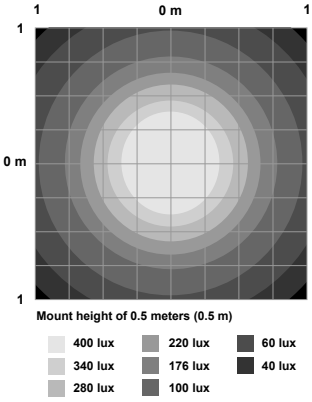


Photometric Data

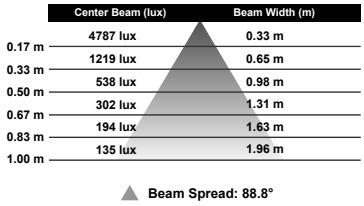
Polar Candela Distribution



Isolux Pattern

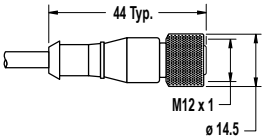
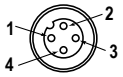
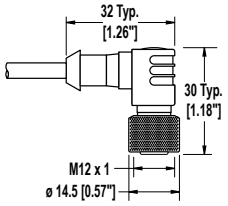


Illuminance at a Distance



Accessories

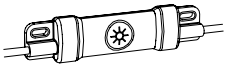
Cordsets

4-Pin Threaded M12 Cordsets—Single Ended				
Model	**Length**	**Style**	**Dimensions**	**Pinout (Female)**
MQDC-406	2 m (6.56 ft)	Straight		 1 = Brown 2 = White 3 = Blue 4 = Black
MQDC-415	5 m (16.4 ft)			
MQDC-430	9 m (29.5 ft)			
MQDC-450	15 m (49.2 ft)			
MQDC-406RA	2 m (6.56 ft)	Right-Angle		
MQDC-415RA	5 m (16.4 ft)			
MQDC-430RA	9 m (29.5 ft)			
MQDC-450RA	15 m (49.2 ft)			

Dimmers

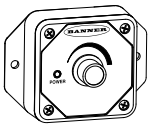
LC15T-127AP1RBGQP

- In-line capacitive touch switch with M12 connectors
- On/Off or PWM control with illuminated indication
- Rated for up to 30 V DC and 4 A maximum output current
- Rugged and waterproof IEC IP67 housing



LC65P1T

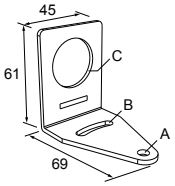
- Potentiometer with terminal and M12 connector options
- PWM control
- Rated for up to 30 V DC and 4 A maximum output current
- Unsealed IEC IP20 housing



Brackets

SMB30A

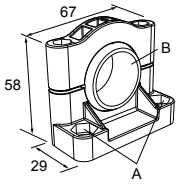
- Right-angle bracket with curved slot for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor
- 12-ga. stainless steel



Hole center spacing: A to B=40
Hole size: A=ø 6.3, B= 27.1 x 6.3, C=ø 30.5

SMB30SC

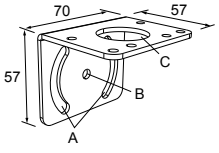
- Swivel bracket with 30 mm mounting hole for sensor
- Black reinforced thermoplastic polyester
- Stainless steel mounting and swivel locking hardware included



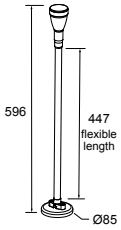
Hole center spacing: A=ø 50.8
Hole size: A=ø 7.0, B=ø 30.0

SMB30MM

- 12-ga. stainless steel bracket with curved mounting slots for versatile orientation
- Clearance for M6 (¼ in) hardware
- Mounting hole for 30 mm sensor



Hole center spacing: A = 51, A to B = 25.4
Hole size: A = 42.6 x 7, B = ø 6.4, C = ø 30.1

Flex Arm Light

- Fully assembled plug and play
- 457 mm (18 in) long
- See Flex Arm Light literature, p/n 222095