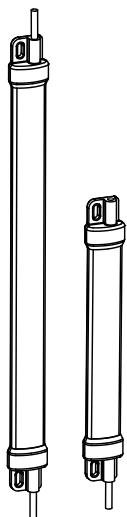


WLS15 LED Strip Light



Instruction Manual



Banner's WLS15 LED Strip Lights have sturdy aluminum inner frames, encased in shatter resistant, UV-stabilized, polycarbonate shells, making them ideal for indoor and outdoor applications.

- Low-profile, space-saving design
- Rugged, water-resistant design
- Available in six lengths from 220 mm to 1200 mm
- Daisy chain power to multiple lights
- Optional snap clips for easy installation and repositioning
- Capability to dim lights using PWM input
- Operates on 12 V dc or 24 V dc in one model
- Models are available with two colors in one device

These Work Light Strips are available as either stand-alone models, or as cascade models that can be "daisy-chained" together for longer lighting runs, with a minimum of wiring.

Stand-alone models have one end for power connection and no connections at opposite end. A stand-alone model may be used as the last in the cascade series.

Cascade models have one end for power connection, and a connection at the opposite end for connecting to other lights in the cascade. A double-ended accessory cordset may be used between each pair of lights in a cascade to extend the distance between lights.



For PWM dimming, use with the LC65P2T 2-wire dimmer module. For more information, refer to the LC65 LED Dimmer Module datasheet, p/n [177086](#). This module can only be used with the single color models.

Single Color Models

Family	Cascadable	Color	Length	Window	Construction	Connector*
WLS15	C	DW	0360	D	S	C2
	C = Cascadable X = Non-cascadable	DW = Daylight white WW = Warm white	0220 mm (6 in) 0360 mm (1 ft) 0500 mm (1.5 ft) 0640 mm (2 ft) 0920 mm (3 ft) 1200 mm (4 ft)	D = Diffuse	S = Sealed (IEC IP66, IEC IP67)	C2 = 2 m (6.5 ft) integral PVC cable QP = 150 mm (5.9 in) PVC cable with M12/Euro-style quick disconnect QS = 150 mm (5.9 in) PVC cable with Deutsch DTM connector

*Models with a quick disconnect or Deutsch DTM connector require a mating cordset

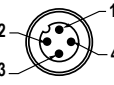
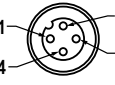
Dual Color Models



Family	Cascadable	Color 1	Color 2	Length	Window	Construction	Connector*
WLS15	C	W	R	0360	D	S	C2
	C = Cascadable X = Non-cascadable	W = Daylight white B = Blue G = Green R = Red Y = Yellow A = Amber		0220 mm (6 in) 0360 mm (1 ft) 0500 mm (1.5 ft) 0640 mm (2 ft) 0920 mm (3 ft) 1200 mm (4 ft)	D = Diffuse	S = Sealed (IEC IP66, IEC IP67)	C2 = 2 m (6.5 ft) integral PVC cable QP = 150 mm (5.9 in) PVC cable with M12/Euro-style quick disconnect

*Models with a quick disconnect require a mating cordset



Wiring Diagrams

QP Models					
Male	Female	Pin	Wire Color	Single Color Models	Dual Color Models
		1	brown	12 V dc or 24 V dc	Color 1: 12 V dc or 24 V dc
		3	blue	dc common	dc common
		4	black	Not used	Color 2: 12 V dc or 24 V dc (color 2 overrides color 1)
		2	white	Not used	Not used

QS Models: Single Color Models Only				
Male	Female	Pin	Wire Color	Connection
		1	brown	12 V dc or 24 V dc
		2	blue	dc common

Specifications

Supply Protection Circuitry

Protected against reverse polarity and transient voltages

Supply Voltage

12 V dc or 24 V dc nominal

Absolute operational limits of 10 V dc to 15 V dc and 20 V dc to 27 V dc

Use only with a suitable Class 2 power supply (UL) or a SELV power supply (CE)

Single Color Light Models can be PWM dimmed between 25% to 100% with a frequency up to 1000 Hz

Spacing Criterion

Vertical: 1.26

Horizontal: 1.26

Supply Current

Light Length	Typical Current (A) at 25°C ¹		Max. Current (A) at -40°C	
	12 V dc	24 V dc	12 V dc	24 V dc
0220 mm	0.19	0.10	0.24	0.12
0360 mm	0.38	0.20	0.48	0.24
0500 mm	0.57	0.30	0.72	0.36
0640 mm	0.76	0.40	0.96	0.48
0920 mm	1.14	0.60	1.44	0.72
1200 mm	1.52	0.80	1.92	0.96

Connections

2 m (6.5 ft) integral PVC cable, 150 mm (6 in) PVC cable with a 4-pin M12/ Euro-style quick disconnect, or 150 mm (5.9 in) 2-pin Deutsch DTM series sealed cable; models with a quick disconnect or Deutsch DTM connector require a mating cordset

Do not spray cable with high-pressure sprayer or cable damage will result.

Operating Temperature

-40 °C to +60 °C (-40 °F to +140 °F)

Storage Temperature

-40 °C to +70 °C (-40 °F to +158 °F)

Environmental Rating

Rated IEC IP66 and IEC IP67

Suitable for wet locations per UL 2108

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

Construction

Clear anodized aluminum housing; Polycarbonate outer housing, Polyamide end caps

Application Note

When connecting cascable lights in series, it is important not to exceed maximum current limitations:

- Maximum length of light at 12 V dc: 2.4 m (7.9 ft)
- Maximum length of light at 24 V dc: 6 m (19.7 ft)

Mounting

Integral mounting slots for M4 (#8) screws, tighten to 5 in-lbf max torque

Multiple bracket options available

Secure cables within 150 mm (5.9 inches) of the light

Certifications

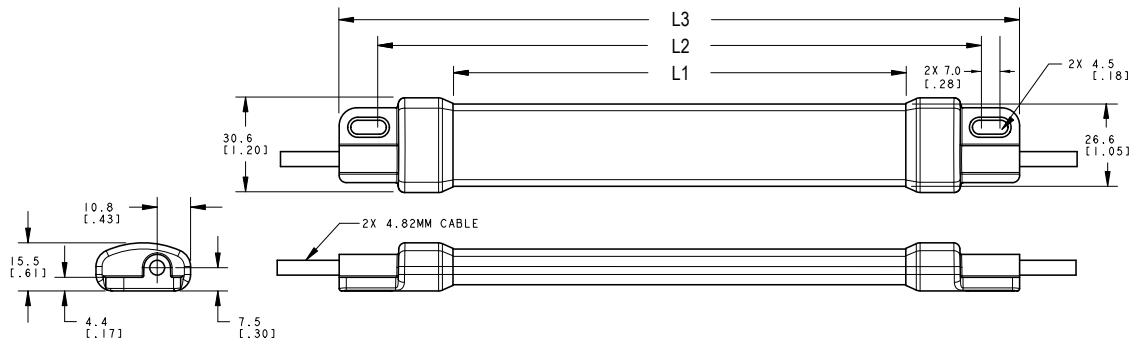


¹ Values shown at 25°C - current and lumen values decrease 0.4% per 1°C from ambient. For example, a 1200 mm unit will have a maximum current of 1.92 A at -40°C and 1.33 A at +60°C.

Light Characteristics

Color	Dominant Wavelength (nm) or Color Temperature	Lighted Length Lumens (Typical at 25°C) ¹					
		220 mm	360 mm	500 mm	640 mm	920 mm	1200 mm
Daylight White	5000K (±300K)	175	350	525	700	1050	1400
Warm White	3000K (±200K, -100K)	170	340	510	680	1020	1360
Green	525 nm	105	210	315	420	630	840
Red	625 nm	55	110	165	220	330	440
Yellow	580 nm	165	330	495	660	990	1320
Blue	470 nm	25	50	75	100	150	200
Amber	590 nm	55	110	165	220	330	440

Dimensions



Models	L1	L2	L3
WLS15..0220..	146.4 mm (5.76 inches)	194 mm (7.64 inches)	220 mm (8.66 inches)
WLS15..0360..	286.4 mm (11.28 inches)	334 mm (13.15 inches)	360 mm (14.17 inches)
WLS15..0500..	426.4 mm (16.79 inches)	474 mm (18.66 inches)	500 mm (19.69 inches)
WLS15..0640..	566.4 mm (22.3 inches)	614 mm (24.17 inches)	640 mm (25.2 inches)
WLS15..0920..	846.4 mm (33.32 inches)	894 mm (35.2 inches)	920 mm (36.22 inches)
WLS15..1200..	1126.4 mm (44.35 inches)	1174 mm (46.22 inches)	1200 mm (47.24 inches)

Performance Curves

Optical data shown below is for daylight white only. To get lux and candela values for warm white, green, red, yellow, blue, and amber, multiply the values shown on the charts by the following factors:

- Warm white: 0.971
- Green: 0.600
- Red: 0.314
- Yellow: 0.943
- Blue: 0.143
- Amber: 0.314

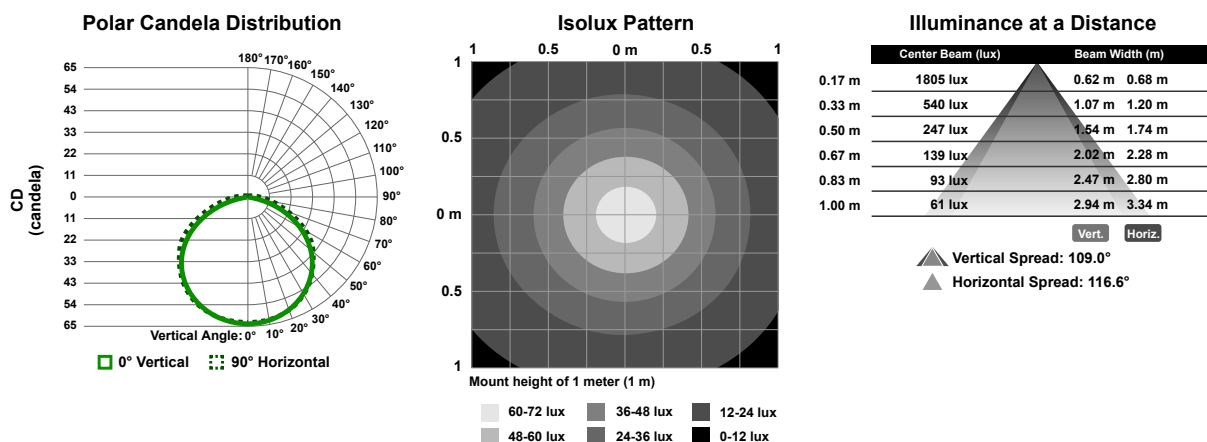


Figure 1. 220 mm Models

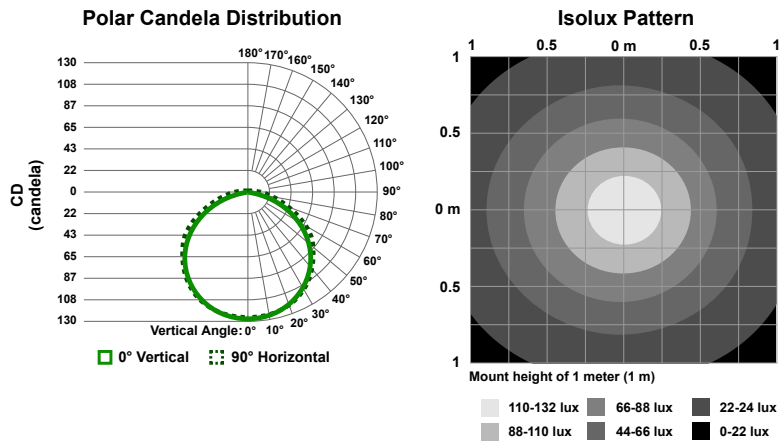


Figure 2. 360 mm Models

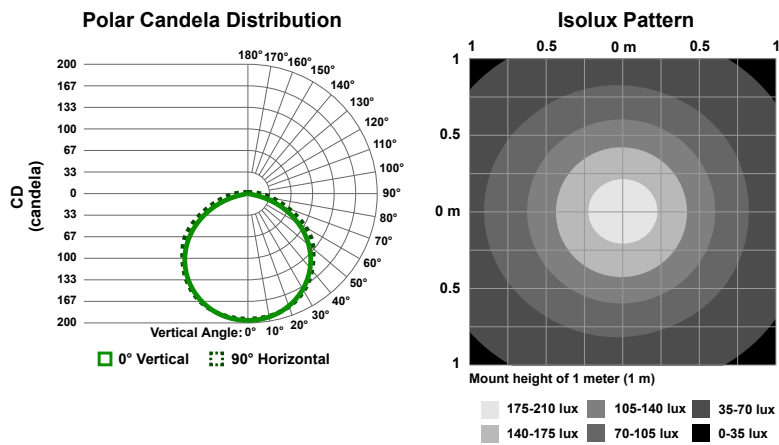


Figure 3. 500 mm Models

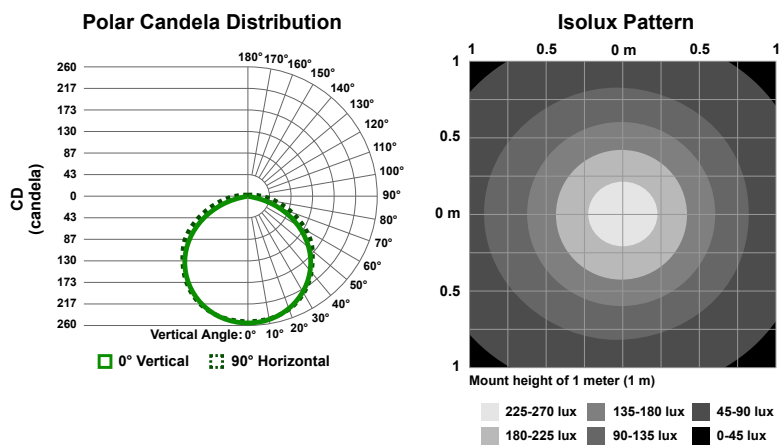


Figure 4. 640 mm Models

Illuminance at a Distance

	Center Beam (lux)	Beam Width (m)
0.17 m	2948 lux	0.76 m 0.82 m
0.33 m	1031 lux	1.21 m 1.34 m
0.50 m	491 lux	1.68 m 1.88 m
0.67 m	275 lux	2.16 m 2.42 m
0.83 m	186 lux	2.61 m 2.94 m
1.00 m	110 lux	3.08 m 3.48 m

Vertical Spread: 109.0°
Horizontal Spread: 116.6°

Illuminance at a Distance

	Center Beam (lux)	Beam Width (m)
0.17 m	3450 lux	0.90 m 0.96 m
0.33 m	1379 lux	1.35 m 1.48 m
0.50 m	679 lux	1.82 m 2.02 m
0.67 m	402 lux	2.30 m 2.56 m
0.83 m	270 lux	2.75 m 3.08 m
1.00 m	193 lux	3.22 m 3.62 m

Vertical Spread: 109.0°
Horizontal Spread: 116.6°

Illuminance at a Distance

	Center Beam (lux)	Beam Width (m)
0.17 m	3680 lux	1.04 m 1.10 m
0.33 m	1619 lux	1.49 m 1.62 m
0.50 m	843 lux	1.96 m 2.16 m
0.67 m	514 lux	2.44 m 2.70 m
0.83 m	351 lux	2.89 m 3.22 m
1.00 m	253 lux	3.36 m 3.76 m

Vertical Spread: 109.0°
Horizontal Spread: 116.6°

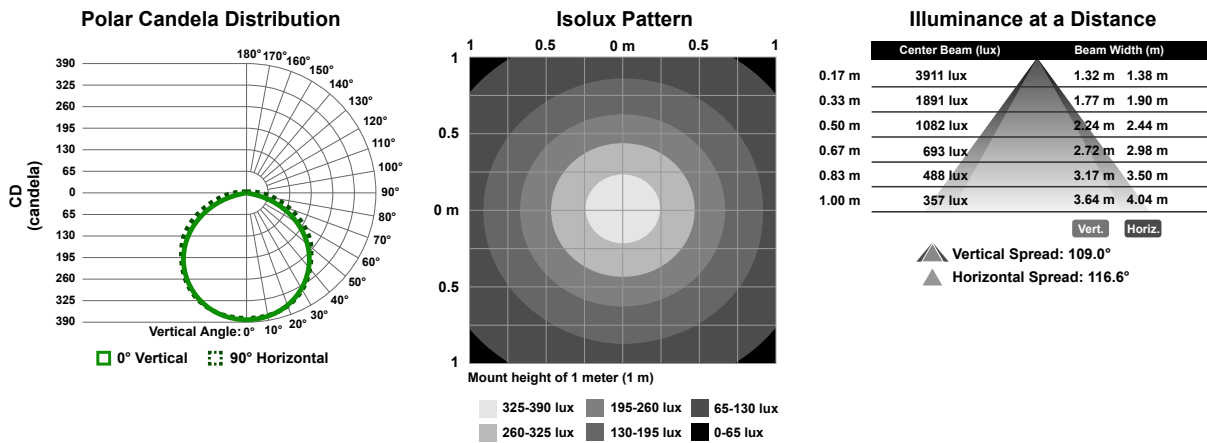


Figure 5. 920 mm Models

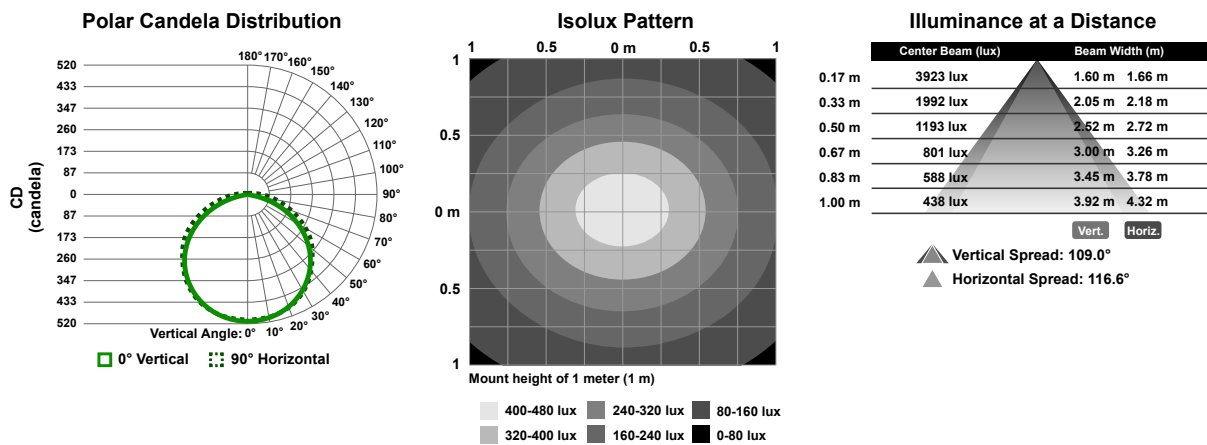
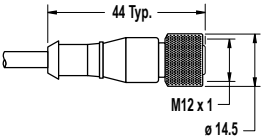
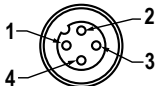
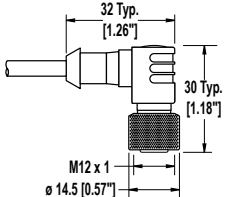


Figure 6. 1200 mm Models

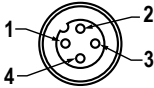
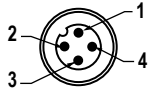
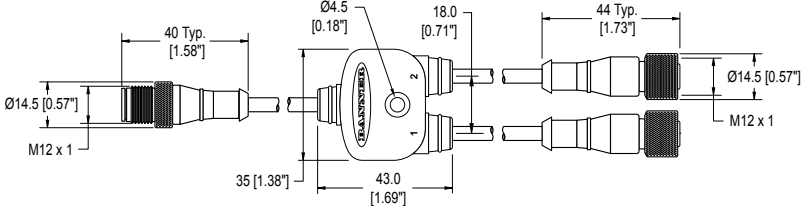
Accessories

Cordsets

Use single-ended cordsets between the power source and the QD connection of a stand-alone light or the first light in a cascade. Use double-ended cordsets between lights in a cascade.

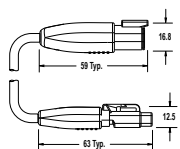
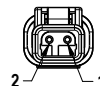
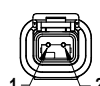
4-Pin Threaded M12/Euro-Style Cordsets—Single Ended				
Model	Length	Style	Dimensions	Pinout (Female)
MQDC-406	1.83 m (6 ft)	Straight		 1 = Brown 2 = White 3 = Blue 4 = Black
MQDC-415	4.57 m (15 ft)			
MQDC-430	9.14 m (30 ft)			
MQDC-450	15.2 m (50 ft)			
MQDC-406RA	1.83 m (6 ft)	Right-Angle		
MQDC-415RA	4.57 m (15 ft)			
MQDC-430RA	9.14 m (30 ft)			
MQDC-450RA	15.2 m (50 ft)			

4-Pin Threaded M12/Euro-Style Cordsets—Double Ended				
Model	Length	Style	Dimensions	Pinout
MQDEC-401SS	0.31 m (1 ft)	Male Straight/ Female Straight		Female
MQDEC-403SS	0.91 m (3 ft)			
MQDEC-406SS	1.83 m (6 ft)			Male
MQDEC-412SS	3.66 m (12 ft)			
MQDEC-420SS	6.10 m (20 ft)			<p>1 = Brown 2 = White 3 = Blue 4 = Black</p>
MQDEC-430SS	9.14 m (30 ft)			
MQDEC-450SS	15.2 m (50 ft)			

4-Pin Threaded M12/Euro-Style Splitter Cordsets—Flat Junction			
Model	Branches (Female)	Trunk (Male)	Pinout
CSB-M1240M1240	No branch	No trunk	<div>Female</div> <div></div> <div>Male</div> <div></div> <div>1 = Brown 2 = White 3 = Blue 4 = Black</div>
CSB-M1240M1241	2 x 0.30 m (1 ft)	No trunk	
CSB-M1241M1241		0.30 m (1 ft)	
CSB-M1248M1241		2.50 m (8 ft)	
CSB-M12415M1241		4.57 m (15 ft)	
CSB-M12425M1241		7.60 m (25 ft)	
CSB-UNT425M1241		7.60 m (25 ft) Unterminated	
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Single Color Only Cordsets

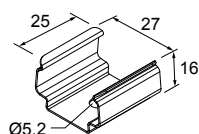
2-Pin Deutsch Cordset—Single Ended				
Model	Length	Style	Dimensions	Pinout
DTMC-206	1.83 m (6 ft)	Straight		Male
DTMC-215	4.57 m (15 ft)			
DTMC-230	9.14 m (30 ft)			Female
				<p>1 = Brown 2 = Blue</p>

2-Pin Deutsch Cordset—Double Ended				
Model	Length	Style	Dimensions	Pinout
DTMEC-2005	0.16 m (0.5 ft)	Straight		Male  Female  1 = Brown 2 = Blue
DTMEC-201	0.31 m (1. ft)			
DTMEC-203	0.91 m (3 ft)			
DTMEC-206	1.83 m (6 ft)			
DTMEC-212	3.66 m (12 ft)			
DTMEC-220	6.10 m (20 ft)			
DTMEC-230	9.14 m (30 ft)			

Mounting Accessories

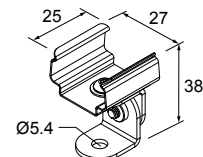
LMBWLS15

- Stainless steel clip bracket
- Includes 3 clip brackets and 2 plastic spacers
- Clearance hole for M5 hardware



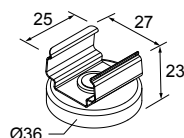
LMBWLS15-150S

- Set of 2 stainless steel swivel bracket, allows for 150° of movement
- Clearance hole for M5 button head screw



LMBWLS15MAG

- Set of 2 brackets
- Magnetic mounting bracket for attachment to steel and iron surfaces



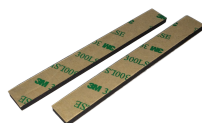
LMBWLS15TD

- Includes 4 100 mm (4 in) strips of 3M™ Dual Lock™ reclosable fasteners
- Recommended for mounting to metal and plastic surfaces
- Strong, pressure-sensitive adhesive bonds on contact



LMBWLS15TF

- Includes 2 100 mm (4 in) strips of double-sided foam urethane strips
- Acrylic adhesive provides high bond strength to most surfaces
- Bonds to low surface energy plastics such as polypropylene and powder coated paints



ACC-CAP Euro-10

- 10 Caps
- Seal and protect exposed, unterminated cascade quick disconnect connectors



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

Power Supplies

PSD-24-4

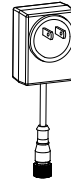
- 90 to 264 V ac 50/60 Hz input
- Includes a 1.8 m (6 ft) US style 5-15P input plug
- 24 V dc UL Listed Class 2 M12/Euro-style connector output
- 4 A total current



For use with cascades of lights that do not exceed a total maximum operating current of 4A (refer to maximum current specifications).

PSW-24-1

- 24 V dc, 1 A Class 2 UL Listed power supply
- 100 V ac to 240 V ac 50/60 Hz input
- 2 m (6.5 ft) PVC cable with M12/Euro-style quick disconnect
- Includes Type A (US, Canada, Japan, Puerto Rico, Taiwan), Type C (Germany, France, South Korea, Netherlands, Poland, Spain, Turkey), Type G (United Kingdom, Ireland, Singapore, Vietnam), and Type I (China, Australia, New Zealand) ac detachable input plugs



For use with all non-cascaded lights or cascades of lights that do not exceed a total maximum operating current of 1A (refer to maximum current specifications).

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