

SMART PXL60 DOT (48V) - Datasheet

55.5mm diameter RGB/RGBW LED pixel dot in 48V with high resolution dimming.



Lightweight, robust, and high-resolution, ENTTEC's Smart PXL60 Dots are individually addressable and proudly designed and manufactured to withstand demanding environments.

Engineered for flexibility, Smart PXL60 Dots can be easily configured into virtually any shape, enabling stunning, precise lighting effects that double as a bold design feature.

Engineered to suit architectural, commercial and entertainment applications, the SMART PXL range has been created by lighting professionals for lighting professionals.

Contact ENTTEC to explore black or white options, with customisable pitch, connector types, and a variety of lens shapes to suit architectural or creative requirements.

FEATURES

- 55.5mm diameter dot in black and white.
- Available in 48V RGB and RGBW.
- Auto-addressing LED pixels for fast commissioning.
- Customisable cable configuration.
- Premium IP-rated automotive style connectors with integrated latching system.
- Flat or dome shape lens options made from clear or diffuse optical grade polycarbonate.
- 16-bit control for ultra-smooth dimming.
- Control protocol SPXL 16-bit. Explore ENTTEC's full range of pixel controllers at enttec.com.
- Reverse polarity protection.
- Voltage transient protection.
- IK10 & 3G vibration resistant (IEC60068-2-6).
- UV resistant & IP67.
- This product requires an external DC power supply and data source for operation. (not included).

SPECIFICATION

Electrical

Body Material	Injection moulded PVC			
Lens Material	Optical Grade Polycarbonate			
Weight	Approx. 70g/dot (excl lead in & out)			
IK & IP rating	IK10 & IP67			
UV Resistance	-Black- UV stabilized for outdoor application			
	-White- Suited for indoor or shaded installation			
Operating Ambient Temperature	-20°C to 50°C			
Input Voltage	48V			
Maximum Power per Dot	RGB: 2.2W			
	RGBW: 2.7W			
Maximum Current Draw per Dot	RGB: 45mA			
	RGBW: 55mA			
Current Throughput Capacity	10A			
Cable Resistance	0.0132 Ohm/m			
Cable Thickness	16AWG			
48V Connector Pinout	Pin 1	Pin 2	Pin 3	Pin 4
	0V	Data	+48V	N/C
Warranty	3 Year return to base manufacturer warranty.			

LED Control

LED source	RGB	12 pcs RGB SMD3535
	RGBW	12 pcs RGBW 3000K SMD5050
Control protocol	ENTTEC SPXL-16	
SPXL-16 channel footprint (16-bit - RGB)	6 DMX slots/dot	
	Coarse Fine Coarse Fine Coarse Fine	
SPXL-16 channel footprint (16-bit - RGBW)	8 DMX slots/dot	
	Coarse Fine Coarse Fine Coarse Fine Coarse Fine	
Colour resolution (16-bit RGB)	$65536^3 = 281.4$ trillion	
Colour resolution (16-bit RGBW)	$65536^4 = 18.4$ quintillion	
Dots controllable per DMX universe	SPXL-16 RGB:	85 dots
	SPXL-16 RGBW:	64 dots
LED lifetime	50,000 hours (L70)	
Compatible protocol	RGB	UCS8903B (16-bit only)
	RGBW	UCS8904B (16-bit only)

Installation

Before handling or specifying this product, always refer to its installation guide and familiarize yourself with the safety notes. If ever unsure consult ENTTEC.

Lumen Output

RGB					
Lumen (lm)	Voltage	48V			
	Lens Type	Dome Diffuse	Dome Clear	Flat Diffuse	Flat Clear
	Red	12.3	15.8	13.3	17.1
	Green	27.4	35.6	29.5	38.3
	Blue	5.9	7.6	6.4	8.2
	White (RGB)	45.7	58.9	49.2	63.5
Efficacy (lm/watt)	White (RGB)	20.8	26.8	22.4	28.9

RGBW					
Lumen (lm)	Voltage	48V			
	Lens Type	Dome Diffuse	Dome Clear	Flat Diffuse	Flat Clear
	Red	11.6	14.8	11.8	15
	Green	25.5	33.3	25.7	33.5
	Blue	6.2	8.0	6.4	8.2
	White	33.4	43.1	36.3	44.7
	White (RGB)	43.3	56.1	42.1	56.7
	Max White (RGBW)	76.7	99.2	78.4	101.4
Efficacy (lm/watt)	Max White (RGBW)	28.4	36.7	29.0	37.6

Data Direction

The pixel data in the SMART PXL60 Dot must travel in a specific direction for it to function. This direction can be identified through the direction of the arrow printed on the centre of PCB.



In the event surface of PCB is inaccessible, data direction always flows as illustrated with respect to ENTTEC logo on the bottom of housing.



Controlling Smart PXL Dots

Use any ENTTEC pixel controller compatible with the Smart PXL60 Dot. For the latest information visit: [LED pixel control technology | ENTTEC](#).

Certification

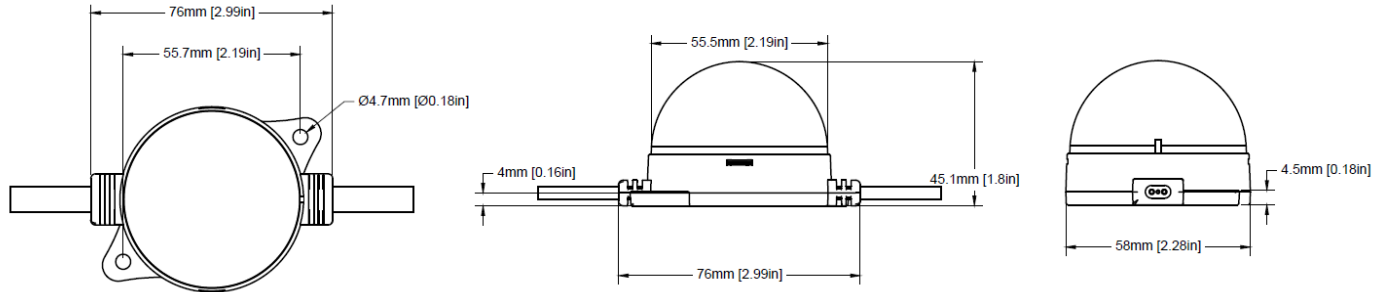


- Black: UV stabilized for outdoor application; White: suited for indoor or shaded installations.
- Salt corrosion test (e.g. ASTM B117) is not applicable due to non-metallic, inherently salt resistant body and lens material. All internal metallic components are fully sealed by encapsulation.
- Note: UL certification applies to the 24V variant only. Refer to the Smart PXL60 24V datasheet for UL-certified specifications.

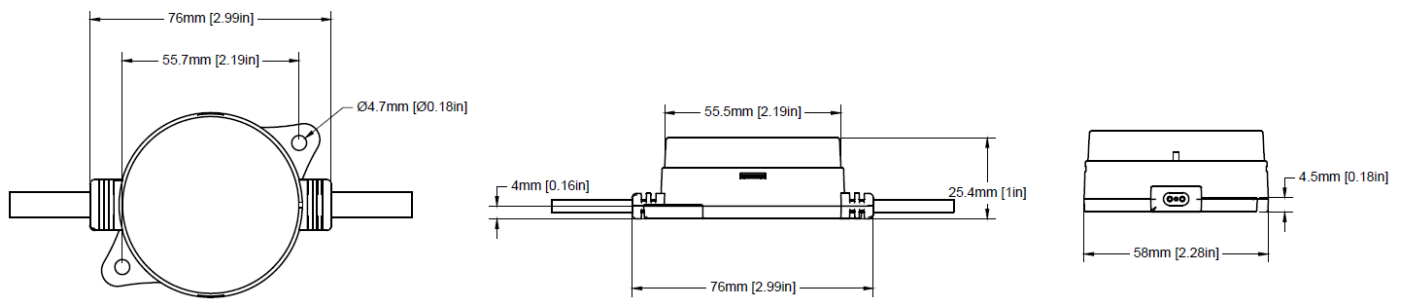
PHYSICAL DIMENSIONS

Note: Lenses are non-removable & recommended in the absence of protective measure against external impact in installation. One small slit on the bottom edge of Diffuser for pressure relief.

Smart PXL60 Dot - Dome Lens

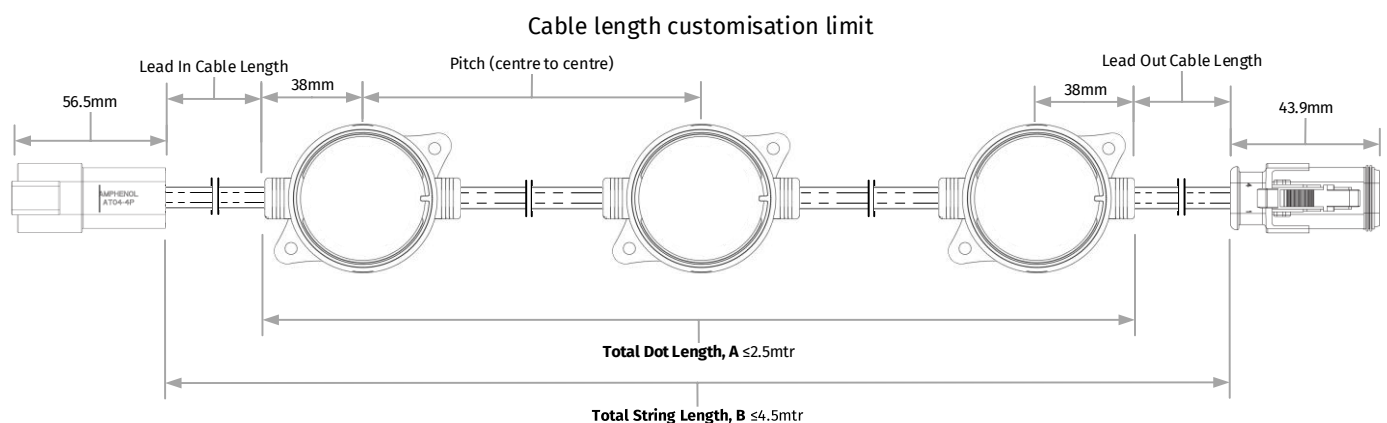


Smart PXL60 Dot - Flat Lens



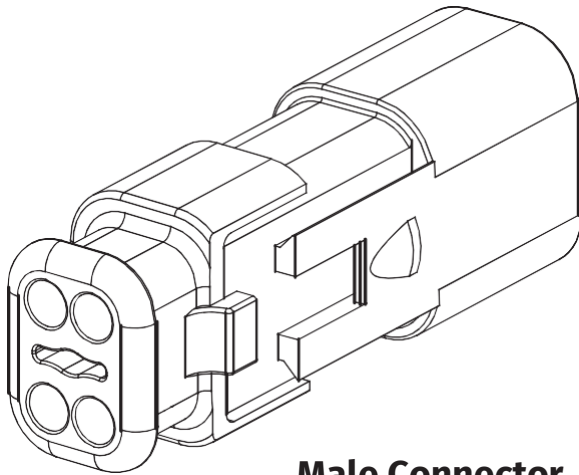
Cable Customisation

ENTTEC supports cable length customisation. Refer to the illustration below for length limits. Refer to order code section and reach out to ENTTEC or your ENTTEC dealer to discuss your project needs.



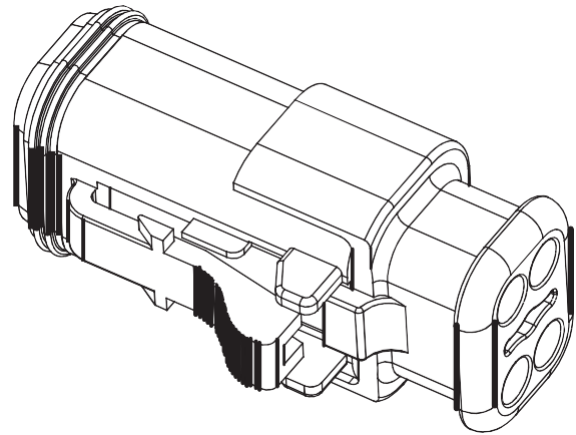
PREMIUM CONNECTORS

For enhanced reliability, ENTTEC offers IP-rated automotive style connectors with integrated latching system.



Male Connector

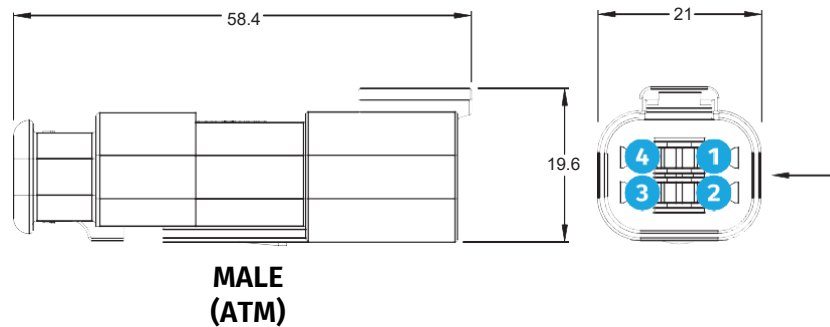
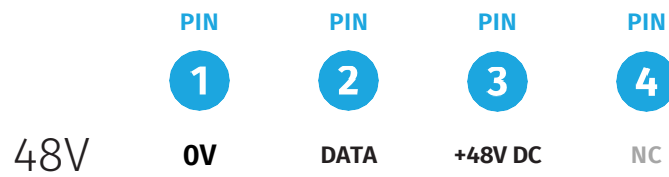
4-way receptacle, MALE connector with strain relief, reduced diameter seal.



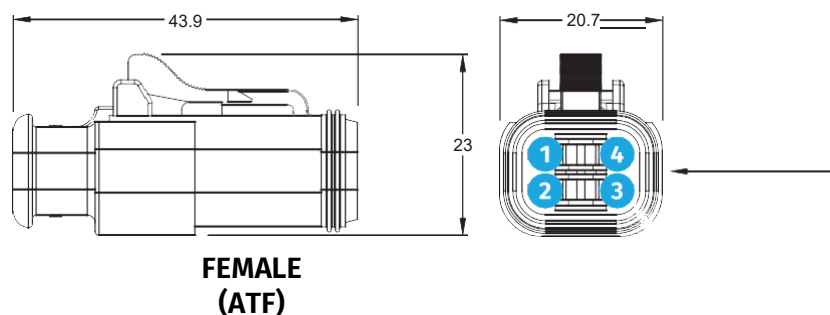
Female Connector

4-way plug, FEMALE connector with reduced diameter seal, endcap and strain relief.

Pin output configurations



CONNECT



ORDERING INFORMATION

Smart PXL60 Dots

Visit ENTTEC's [website](https://www.enttec.com) to shop for SMART PXL60 Dots.

To discuss customisation options, pricing and lead times contact our sales team at sales@enttec.com.
Refer to Order Codes section for customisation and limitation.

Flat Clear

Flat Diffuse

Dome Clear

Dome Diffuse



Order Codes

Order codes are created using the table below:

Product Code	Lens Type	Dots Per String ¹	Pixel Pitch ² (mm)	Lead In Length ² (mm)	Lead Out Length ² (mm)	LED Type	Lead In Connector Type	Lead Out Connector Type ³	Voltage	Dot string colour
73050 (Smart PXL60 Dot)	FC (Flat Clear)	Min: 1 Max: 17	Min: 150	Min: 150	Min: 150	RGB	ATM (Automotive style Male connector - Wired per diagram)	ATF (Automotive style Female connector - wired per diagram)	48V	(Default: Black)
	FD (Flat Diffuse)		Max: 2000	Max: 2000	Max: 2000					
	DC (Dome Clear)		Increment: 25	Increment: 25	Increment: 25	RGBW	BET (Custom - Bare End Tinned)	BET (Custom - Bare End Tinned)		W (White)
	DD (Dome Diffuse)									

¹ Multiple strings can be connected in a single chain – refer to installation guide for system design guidance

² Length tolerance: ±5%

³ ENTTEC Termination End Cap [73015] only compatible with ENTTEC Female automotive style connector.

Example Order Codes

The codes below reflect options shown within the table above.

Product Specification	Order Code
Smart PXL60 DOT / Dome Diffuse Lens / 10 dots per string / 150mm pitch / 500mm lead in cable / 500mm lead out cable / RGB / Automotive style male input / Automotive style female output / 48 volts (default black dot string)	73050-DD-10-150-500-500-RGB-ATM-ATF-48
Smart PXL60 DOT / Dome Diffuse Lens / 10 dots per string / 150mm pitch / 500mm lead in cable / 500mm lead out cable / RGB / Automotive style male input / Automotive style female output / 48 volts/ white dot string	73050-DD-10-150-500-500-RGB-ATM-ATF-48-W

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Due to constant innovation, information within this document is subject to change.