PUX6M

DATASHEET
SPECIFICATIONS

PIXEL PUCK SERIES | STANDARD MODULAR PUCK

The PUX 6M is a compact pixel dot designed for detailed media façades, feature lighting, and low-profile architectural effects. Its wide 150° viewing angle provides smooth, uniform output across both small and large installations.

With RGBW, Dynamic White, and Mono White, it supports a range of creative and functional lighting needs. An onboard SPI protocol with UCS8904 and integrated signal boosting ensures stable pixel control across long runs.

Rated IP67 and built from die-cast aluminium with interchangeable diffused or dome covers, PUX 6M offers durability, flexibility, and consistent optical performance in demanding environments.



At a glance

Emitters

RGBW
(W = 2400K, 2700K, 3000K, 3500K, 4000K, 5000K, 6000K)

OR

White
(2400K, 2700K, 3000K, 3500K, 4000K, 5000K, 6000K)

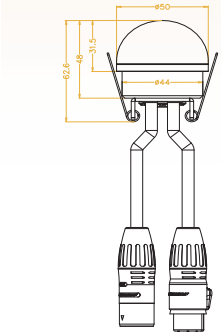
OR

Dynamic White
(2000K-5000K)

Cable Entries



Dimensions



Controls

Voltage

24V DC

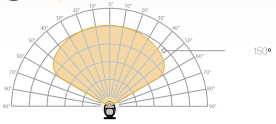
Protection

Ingress – IP67

Temperature

-20°C to 50°C
-4°F to 122°F

Optics



FIXTURE PRODUCT CONFIGURATOR

Prefix	Model	LED Colour	White CCT	Control	Beam Angle	Voltage	Lens Options	Housing Colour
PUX	6M	RGBW DW – Dynamic White (20K – 50K) W – White (24K – 60K)	24K – 2400K 27K – 2700K 30K – 3000K 35K – 3500K 40K – 4000K 50K – 5000K 60K – 6000K	P – PWM S – SPI X – X-Stream XB – X-Stream Booster XB Booster lives in the inside of the product. Refer to PXT/R page for differences between X and XB. PWM = Require external controller	150 – 150°	24 – 24V DC	05 – 5mm Flat 05C – 5mm Flat Clear 10 – 10mm Flat 10C – 10mm Flat Clear 15 – 15mm Flat 15C – 15mm Flat Clear DM – Dome Milky D – Dome BD – Big Dome BDC – Big Dome Clear C – Crystal N – None	A – Aluminium B – Brass B – Black W – White C – Custom RAL

EXAMPLE: PUX – 6M – RGBW – 50K – X – 150 – 24 – DM – A

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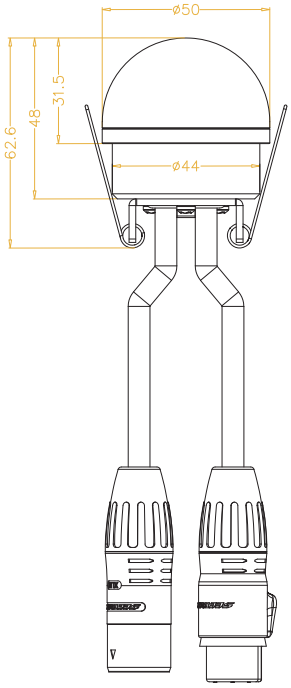
FIXTURE SPECIFICATIONS

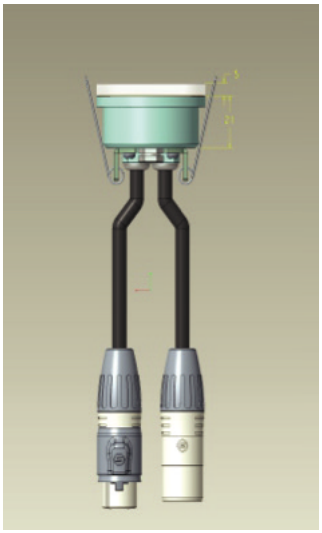
ELECTRICAL	POWER CONSUMPTION	2W max
	OPERATING VOLTAGE	24V DC
	OPERATING TEMPERATURE	-20°C TO 50°C (-4°F TO 122°F)
	STORAGE TEMPERATURE	-20°C TO 70°C (-4°F TO 158°F)
PHYSICAL	DIMENSIONS	Ø: 50MM – 48MM (H)
	HOUSING MATERIAL	DIE-CAST ALUMINIUM
	HOUSING COLOUR	ANODISED ALUMINIUM, BLACK, WHITE, BRASS, CUSTOM RAL
	COVER	PMMA COVER
	IP RATING	IP67
	SOURCE LIFE	50,000 – 70,000 HOURS / L70 AT 25°C
	LENS OPTIONS	5MM, 10MM, 15MM FLAT AND CLEAR FLAT, DOME, DOME MILKY, BIG DOME BIG DOME CLEAR, CRYSTAL
	CONNECTION	4-CORE SEETRONICS XLR IP CONNECTORS FOR INPUT / OUTPUT
	ACCESSORIES	SPRING CLIPS FOR CEILING INSTALLATION
OPTICAL	BEAM ANGLE	150° VIEW ANGLE
	COLOUR RANGE	WHITE (2400K, 2700K, 3000K, 3500K, 4000K, 5000K, 6000K), DYNAMIC WHITE (2000K – 5000K)
	ACCURATE COLOUR CONTROL	RGBW CONFIGURATIONS WITH SELECTABLE CCT
	LUMEN OUTPUT	54LM @ RGBW FULL ON WITH CLEAR FLAT COVER
DIMMING & CONTROL	CONTROL PROTOCOLS	X-STREAM PROTOCOL WITH DATA REDUNDANCY AND SPI, PWM
	DIMMING RESOLUTION	8 BIT RESOLUTION DOING 65536 STEP WITH BUILT-IN GAMMA 2.2, 12-BIT, 14-BIT, 16-BIT.
FIXTURE RATING & CERTIFICATIONS	CE / IP67	
LIMITED WARRANTY	5 YEARS *Extendable warranty available	

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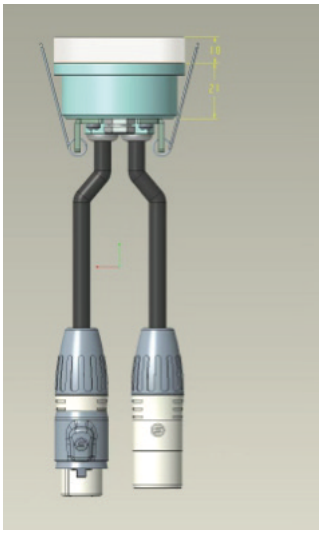
FIXTURE DIMENSIONS

CLIP MOUNT DIMENSIONS

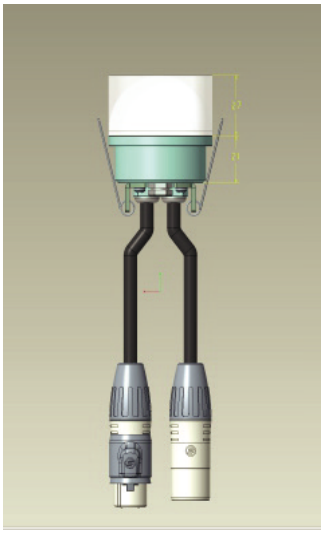




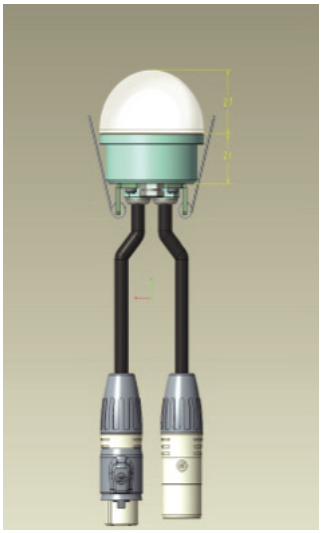
5mm flat diffused cover_changeable



10mm flat diffused cover _ changeable



15mm flast diffused cover _ changeable

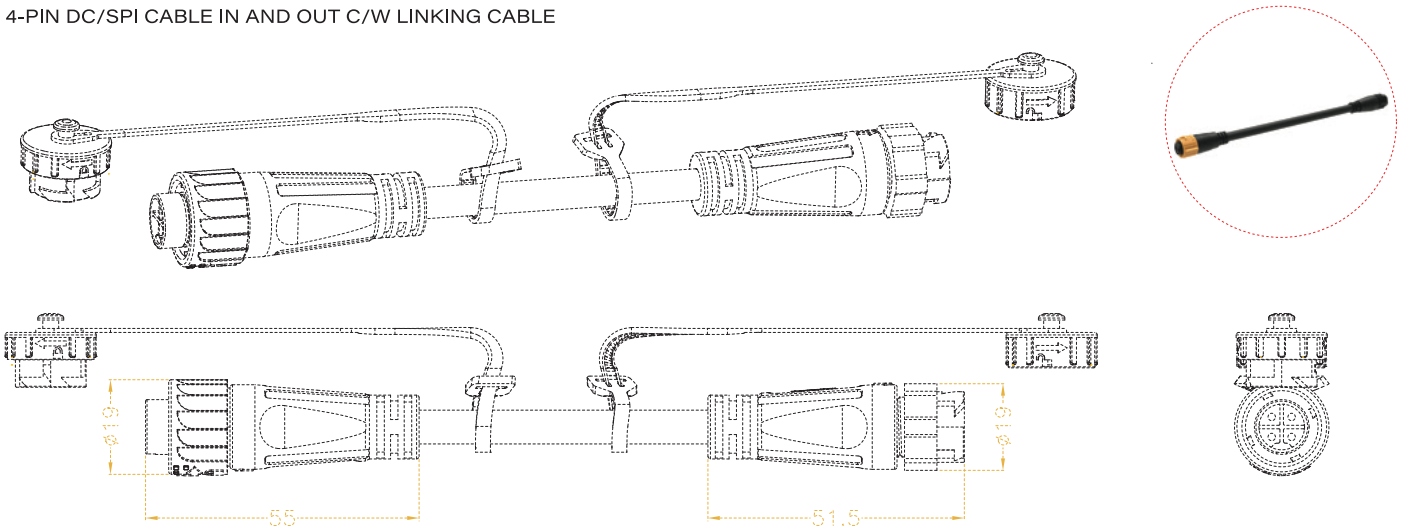


Dome diffused cover _ changeable

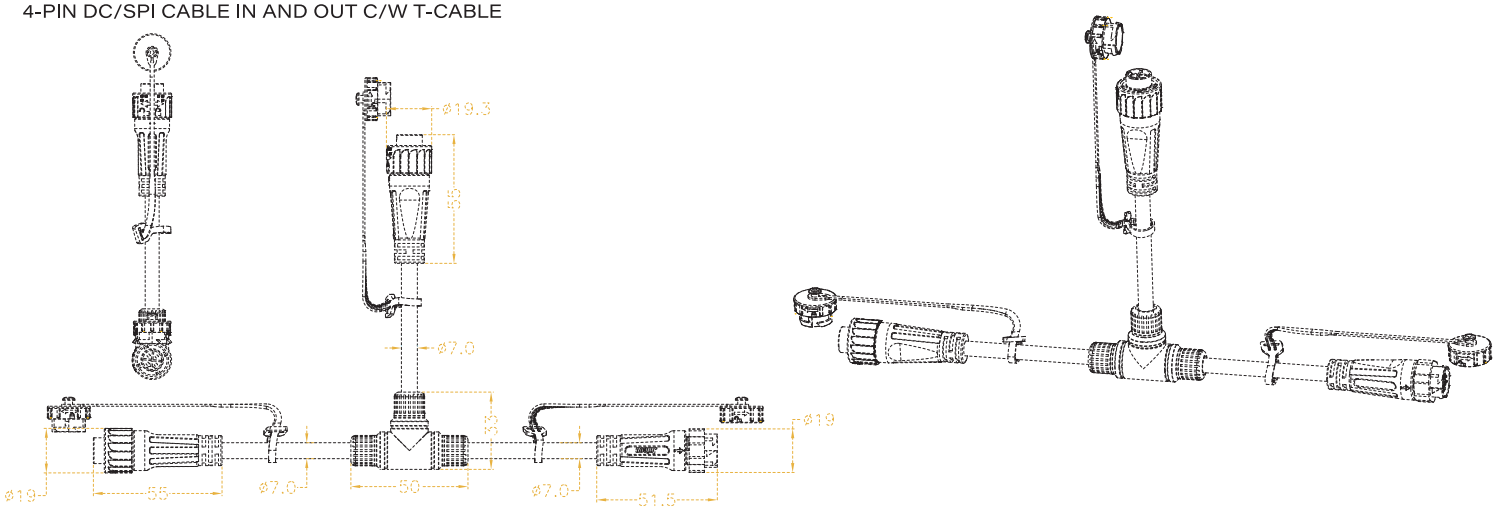
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CABLES AND CONNECTORS

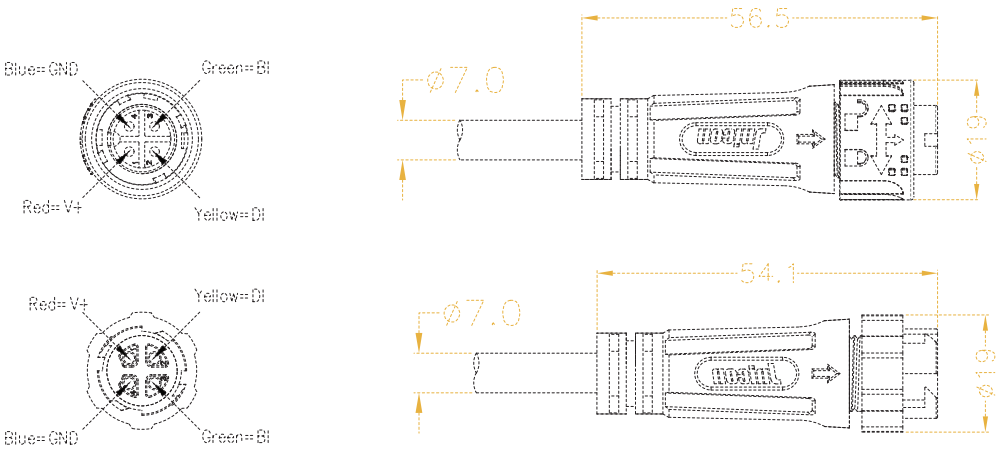
4-PIN DC/SPI CABLE IN AND OUT C/W LINKING CABLE



4-PIN DC/SPI CABLE IN AND OUT C/W T-CABLE



4-PIN DC/SPI CABLE IN AND OUT C/W IP CONNECTOR



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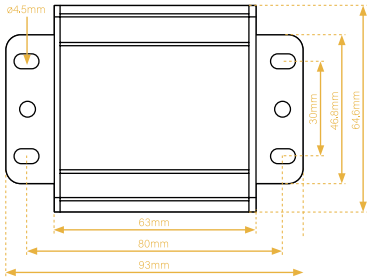
PXT/R BOOSTER

The PXT and PXR work together as a transmitter/receiver pair to allow you to extend SPI signals up to 100 metres. The units convert the standard SPI signal to/from a differential pair to allow the signal to travel this distance while minimising interference

Wide input voltage range allows support for many LED products, and the compact size makes it easy to accommodate in installations.

D1 and B1 inputs support standard data (D1) and backup data (B1) for pixel protocols supporting data redundancy.





PXT TRANSMITTER	INPUT VOLTAGE	12V – 48V DC
	AMP	6A MAX
	INPUT	SPI OR X-STREAM FROM CONTROLLER OR LEDS
	OUTPUT	X-STREAM DIFFERENTIAL SIGNAL
	IP RATING	IP20
PXT RECEIVER	INPUT VOLTAGE	12V – 48V DC
	AMP	6A MAX
	INPUT	X-STREAM DIFFERENTIAL SIGNAL
	OUTPUT	SPI OR X-STREAM TO LEDS
	IP RATING	IP20

X-STREAM COMMUNICATION OPTIONS

X-Stream technology is LED CTRL's premium communication platform, delivering high-speed data transmission, intelligent redundancy, and exceptional signal integrity across large-scale lighting installations. It is available in two configurations to suit different installation requirements.

X – X-Stream (EXTERNAL)
In the standard X-Stream configuration, all communication hardware sits outside the fixture. A PXT (Transmitter) and PXR (Receiver) pair is mounted externally, converting the standard SPI signal to a differential pair for long-distance, interference-resistant data transmission.
- Communication distance up to 100 metres between fixtures.
- D1 and B1 inputs support standard and backup data for full signal redundancy.
- Wide input voltage range for compatibility across the LED CTRL product ecosystem.
- For longer runs, additional PXT/PXR pairs can be added at intervals to maintain signal integrity.
- Best suited for installations where external access to communication hardware is preferred, or where fixtures do not support internal integration.

XB – X-Stream Boosted (INTEGRATED)
X-Stream Boosted moves the signal repeating capability inside the fixture run, eliminating external hardware and simplifying installation. An external PXT transmits the signal to a PXR housed inside the product, which receives, processes, and re-transmits via a built-in PXT to the next fixture – effectively turning each boosted point into a signal relay
- Eliminates external junction boxes and separately mounted communication hardware.
- Each boosted point fully regenerates the signal, preventing degradation over distance.
- Supports extended runs without compromising data quality
- Cleaner installation with fewer visible components.

Integration depends on the product:
- Factory-integrated (e.g. LXB): The PXT/PXR hardware is built directly into the fixture, no additional components required.
- Dedicated boost housing (e.g. PUX): A purpose-built fixture shell, identical in form but without LEDs, houses the PXT/PXR pair. Placed at the beginning of each run and at intervals along longer runs, it integrates seamlessly without disrupting the visual continuity of the installation.

Both configurations share the same underlying X-Stream platform, ensuring identical signal quality, redundancy, and compatibility with LED CTRL controllers and fixtures.

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X-STREAM TECHNOLOGY

X-Stream Technology is LEDCTRL's premium communication and power delivery platform, built on the advanced UCS7604 driver IC. It is designed to deliver high speed data transmission, exceptional reliability, and superior visual performance across large-scale and demanding lighting installations.

At its core, the system integrates intelligent signal processing, high-precision constant current control, and advanced error-detection mechanisms to ensure stable operation and consistent output, even in complex or long-distance configurations.

KEY FEATURES

Built-in Redundancy

X-Stream incorporates dual-channel signal transmission with intelligent fault detection. In the event of a pixel or signal failure, the system automatically bypasses the faulty node and continues data transmission without interruption.

- Dual signal channels with real-time monitoring
- Automatic switching between channels in case of failure
- Fault identification accuracy greater than 99%
- No visible disruption during signal switching

This ensures continuous operation and eliminates single-point failures across the installation.

Auto-Addressing

Fixtures require no manual addressing or pre-configuration. Each unit automatically interprets incoming data, allowing for flexible installation and simplified maintenance.

- Plug-and-play installation
- No addressing sequence required
- Fixtures can be installed in any order

This significantly reduces installation time and minimises the risk of configuration errors.

High-Speed Communication

X-Stream supports high-speed PWM data transmission, enabling smooth and dynamic lighting effects across long runs.

- Transmission speeds: 800 Kbps and 1.6 Mbps
- Supports high frame rates and fast data refresh
- Capable of filming environments up to 533 FPS without flicker
- Stable performance regardless of frame frequency

This ensures high-quality visual output suitable for media façades, dynamic content, and camera-facing applications.

Advanced Dimming Performance

The system supports multiple dimming resolutions, delivering precise brightness control and smooth transitions across the full output range.

- 8 / 12 / 14 / 16-bit dimming options
- Up to 65,536 levels of greyscale
- Built-in gamma correction (8-bit to 16-bit equivalent)
- Seamless dimming from 0% to 100%

High refresh rates (up to 16 kHz) further ensure stable, flicker-free performance and accurate colour rendering.

Signal Integrity & Reliability

X-Stream integrates advanced anti-interference and signal enhancement technologies to maintain reliable communication in challenging environments

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- S-AI anti-interference technology reduces radiation and conduction interference
- Enhanced signal receiving and transmission stability
- Consistent performance across varying environmental conditions
- Extended standard spacing between fixtures (>15 m)

These features ensure robust operation in large-scale and electrically complex installations.

Data Booster Technology

To support extended installation distances, X-Stream incorporates data boosting capabilities both within fixtures and via external booster units.

- Extends communication distance up to 100 m between fixtures
- Maintains signal integrity over long data runs
- Supports large-scale linear and distributed installations

This allows for greater design flexibility without compromising system performance.

Long-Distance Power Distribution

X-Stream systems are designed to support extended power runs through intelligent power management and integrated hardware.

- AC fixtures with built-in, replaceable power supplies
- High power factor for efficient energy distribution
- Managed startup and inrush current control
- Smart load regulation for stable operation
- Supports continuous runs of up to 96 m of linear product

This ensures reliable power delivery across extended fixture runs while maintaining system safety and efficiency.

System Overview

By combining high-speed communication, intelligent redundancy, and advanced signal processing, X-Stream Technology enables the creation of large-scale, high-performance lighting systems with minimal installation complexity and maximum operational reliability.

Its integration of the UCS7604 chipset ensures that each fixture operates with precision, consistency, and resilience, making it suitable for demanding architectural, façade, and media lighting applications.

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