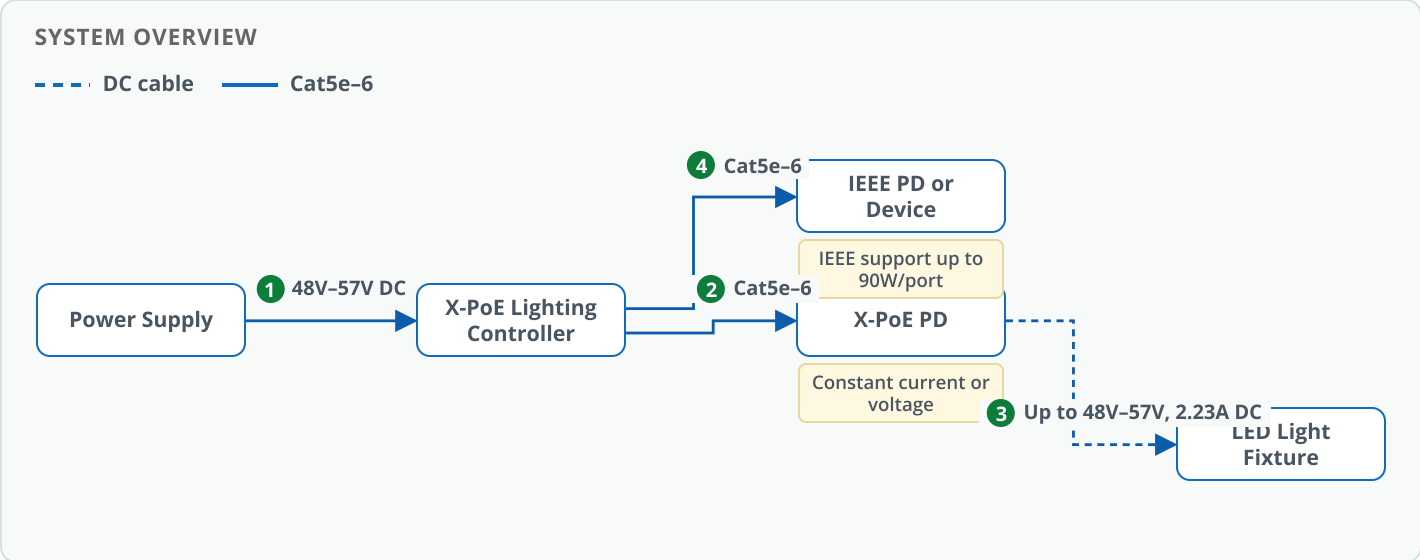
X-PoE - APPLICATION GUIDE

ABOUT THIS GUIDE

Welcome to the application guide for the XS-100 Series X-PoE lighting controller! X-PoE lighting controllers are an innovative solution that allow you to control your lighting systems through the use of Ethernet cables, eliminating the need for LED drivers at the lighting fixtures. In this guide, we will cover everything you need to know about using an X-PoE lighting controller. Whether you are a building manager, a lighting designer, or an electrical contractor, this guide will provide you with the knowledge you need to successfully implement an X-PoE lighting controller in your project.

SYSTEM OVERVIEW



Power Supply

The power supply in an X-PoE lighting system converts the standard AC (alternating current) power from the electrical grid into DC (direct current) power that can be used by the X-PoE lighting controller. The size of the power supply should be tailored to accommodate the specific requirements of the lighting system, including the number of lighting controllers required and the associated loads connected to them. For more information, see Design Guidelines D1 - Input And Output Power.

X-PoE Lighting Controller

The X-PoE lighting controller serves as a pivotal component within the X-PoE lighting system, offering power distribution to a range of X-PoE PDs (Powered Devices) that, in turn, provide power to light fixtures. Additionally, the controller facilitates power delivery and data connectivity to conventional PoE PDs and devices. Functioning as a centralized hub, the lighting controller assumes control over the

lighting infrastructure, managing the lights themselves and establishing connections between the PDs and the network through standard Ethernet cables. For considerations when specifying, see Design Guidelines D2 - X-PoE Lighting Controllers.

X-PoE PD (Powered Device)

The X-PoE powered device serves as an intermediary between the X-PoE port and the connected LED lights or other devices, enabling power transmission and providing support for high power outputs. The PD takes the RJ45 connection from an X-PoE port and converts it to one or two separate channels, each with a pair of positive (+) and negative (-) conductors. These channels are used for powering LEDs or other compatible devices. The PD is capable of providing a total power output of up to 130W[1], and can be daisy-chained to extend the power delivery to additional fixtures or devices. For more information, see Design Guidelines D4 - PDs (Powered Devices).

LED Light Fixtures

The X-PoE lighting controller offers comprehensive support for both constant current and constant voltage LED dimming, ensuring compatibility with a wide range of LED fixtures. By incorporating X-PoE PDs into the system, most LED fixtures can be easily adapted or constructed to seamlessly integrate with the X-PoE lighting infrastructure. This versatility enables efficient deployment of the X-PoE lighting system, providing flexibility in configuring and controlling LED lighting to meet various illumination requirements and achieve desired lighting effects. For more information, see Design Guidelines D5 - LED Light Fixtures.

IEEE PDs (Powered Devices)

An IEEE PD or device is a PoE-enabled device that adheres to the IEEE 802.3 standards for PoE. These standards define the specifications for delivering power over Ethernet cables, ensuring interoperability and compatibility between different PoE devices. The X-PoE lighting controller is compatible with any device that complies with these standards. These devices may include lights, sensors, wall switches, motorized window treatments, cameras, and more. It is important to note that most IEEE devices that require communication will need to be on network enabled ports.

EXAMPLES

Below are links to some example X-PoE lighting systems. Please also refer to the Design Guidelines when specifying an X-PoE lighting system.

Warehouse Example

Office Example

Maximum 130W per port with a 57V input, see D1.2 - Output Power Range.

RELATED INFORMATION

Technical Support

Questions about planning an X-PoE lighting system can be sent to support@luum.io.

Document Feedback

While we have taken great care to ensure the accuracy and completeness of this document, we welcome your feedback and suggestions. If you notice any errors or omissions, or feel a topic could benefit from further explanation, please email your feedback to support@luum.io.

Revision History

Date	Revision	Notes
11/3/2026	A	Converted to the current guide format.

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