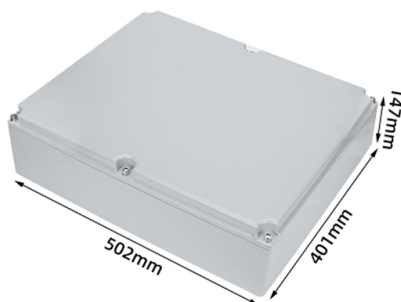


Working Principle of Corridor Light Splitter



Overview

Notional corridors apply to larger, open spaces and are likely to be tied into a centralised lighting control strategy, using mainly lighting control modules (LCMs).

Key Takeaways

A corridor light splitter distributes control signals from sensors or control units to multiple luminaires, enabling energy-efficient, occupancy-based lighting in corridors.

Principle

The corridor light splitter operates on the principle of centralized control of multiple lights using a single input from motion or presence sensors. When a sensor detects occupancy, the splitter relays the signal to all connected luminaires, triggering them to switch on or adjust brightness. Conversely, when no movement is detected, the splitter can dim the lights to a preset level or switch them off entirely, maintaining safety while reducing energy consumption.

This principle allows simultaneous control of multiple fixtures without requiring individual sensors for each luminaire.

Function



Signal Distribution: The splitter receives input from motion detectors, push buttons, or control systems and distributes it to multiple lights, ensuring synchronized operation. **Energy Efficiency:** By dimming or switching off lights when corridors are unoccupied, the system reduces energy usage by up to 60% compared to always-on lighting. **Safety and Comfort:** Even when dimmed, a low-level background light remains on, preventing dark areas and ensuring safe passage in stairwells, corridors, and underground areas.

Integration with Sensors: The splitter works with PIR, microwave, or high-frequency sensors, which detect motion and ambient light levels, allowing automatic adjustment of luminance based on occupancy and daylight. **Flexible Control Profiles:** Depending on the configuration, the splitter can maintain lights at a dimmed level ("never off" profile) or switch them off after a delay ("switch off" profile), providing customizable lighting strategies for different building types. **Scalability:** Corridor light splitters can handle multiple luminaires and communicate with local lighting control modules, making them suitable for large installations in commercial, residential, or industrial buildings.

Applications

Stairwells and apartment corridors: Lights brighten when residents enter and dim when empty. **Care homes and hospitals:** Provides safe, low-level lighting for night-time checks without disturbing occupants. **Underground car parks and pedestrian underpasses:** Ensures visibility while minimizing energy costs.

Office and commercial corridors: Integrates with daylight sensors to optimize lighting based on natural light availability. In summary, a corridor light splitter is a key component in intelligent lighting systems, enabling centralized, sensor-driven control of multiple luminaires to enhance safety, comfort, and energy efficiency in corridors and similar spaces.

Article Content

Corridor C

Notional corridors apply to larger, open spaces and are likely to be tied into a centralised lighting control strategy, using mainly lighting control modules (LCMs).

Tutorial Passive Fiber Optics, Part 8: Fiber Couplers and Splitters

The most common operating principle of a directional fiber coupler is evanescent wave coupling in a configuration where two fiber cores come close to each other.

(PDF) Automated Corridor Lighting Control System

Abstract The Paper is aims to design a corridor lighting control system to make the system autonomous and energy saving. Automatic switching on/off of lights is working as per the presence of people in

Automated Corridor Lighting Control System

Instead of having the staircase and corridors permanently light, the lighting is reduced to a pre-defined amount of time after one of the push-buttons connected to the timer is pressed. Energy efficient

Beam splitter

A beam splitter or beamsplitter is an optical device that splits a beam of light into a transmitted and a reflected beam. It is a crucial part of many optical experimental

Automated Corridor Lighting Control | PDF | Programmable Logic

The system uses a programmable logic controller (PLC) to autonomously switch lights on and off based on the presence of people, as detected by push buttons at the entry and exit points of corridors.

Flur 17m LiveLink mit externem Sensor_en

When movement is detected in the corridor and light levels are below the nominal value, lighting is switched back on. As depicted on the general plan, the sensor must be centrally placed between the

PROJECT-TVISHA An Automatic Corridor Light Control System

The corridor is not always occupied by people, hence there is no need for light to be always turned ON. The presence of people in the corridor makes the corridor light be turned ON/OFF automatically. This

Optical Splitters Demystified: The Silent Heroes Powering Your FTTH ...

The working principle is based on the fundamental physics of light. Light, traveling through the core of a fiber optic cable, can be split by precisely fusing and tapering fibers together.

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This document discusses the design of a smart corridor lighting system for Jimma Institute of Technology to save energy. Currently, the lighting is manually controlled and often left on when not

All You Need to Know About Beam Splitters

Dichroic Beam Splitter: Dichroic beam splitters separate light according to wavelengths and are typically utilized in use cases that involve fluorescence, tailored laser beam combining, and

How does a Cube Beamsplitter Split Light Beams?

The hypotenuse face where the prisms meet is coated with a dielectric coating that determines the splitting behavior of the beamsplitter. # Principles of Operation The primary function

Optical Beam Splitter Guide: Cube, Plate & Polarizing Types

Compare cube, plate, polarizing, and dichroic beam splitters for laser, imaging, spectroscopy, and photonics applications.

How Does a PLC Splitter Work? An In-Depth Technical Guide

Operating Principle: How Do PLC Splitters Work? The working of PLC splitters relies on strategically designed optical waveguides fabricated on a silica substrate using photolithography

How Do Optical Beam Splitters Work & Applications

Conclusion Current optical technology heavily utilized optical beam splitters because they deliver exact light control in multiple applications. Engineers and scientists can select appropriate

How Does A Polarizing Beam Splitter Work?

– Polarizing beam splitters may exhibit some sensitivity to incident light angle and polarization, which should be considered during system design to ensure optimal performance. For

Cube Beamsplitters

Cube beamsplitters are optical devices that allow light to be split into two or more separate beams. In this blog post, we will discuss the different types of cube beamsplitters and their

Beam Splitter | Precision, Applications & Design Principles

Understanding Beam Splitters: Precision, Applications, and Design Principles Beam splitters are integral optical components that divide a beam of

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