

nlt LightSync

Northern Light Technologies



LightSync is a visual alert system designed to improve safety in mining environments. It provides visual notifications and illumination using colored lighting (RGBW) and programmable patterns in industrial settings. LightSync delivers immediate, highly visible alerts that help warn miners of potential hazards, guide evacuations and communicate important operational conditions.

System Overview

LightSync consists of a network of addressable lighting fixtures (“pucks”) installed throughout underground tunnels and connected via an Ethernet-based control infrastructure.

Pucks are managed by a PoE-powered lighting controller, while a central web application provides monitoring and control of lighting behavior across the network. This architecture enables coordinated visual alerts, zone-based illumination control, and programmable lighting patterns designed for safety-critical notifications in industrial environments.

LightSync can also integrate with existing mass notification and emergency systems, allowing predefined lighting patterns to be automatically triggered when alerts are generated by these external systems.



Key Benefits

- **Improves situational awareness** – Delivers bright, color-coded visual cues that support faster recognition of hazards, emergencies and changing site conditions in loud or low-visibility environments.
- **Networked and scalable** – Supports controller-based deployment with centralized software, making it possible to manage local zones or wider facility responses from one interface.
- **Flexible alert behavior** – Supports RGBW output and multiple programmable lighting effects, including steady illumination, flashing sequences and dynamic chase patterns that can align with site-specific protocols.
- **Built for harsh conditions** – Fixtures use rugged IP67-rated construction suited for underground and industrial use, and daisy-chain installation helps simplify field deployment.

*See next page
for Component
Specifications*

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LightSync Controller

- A lighting controller that transmits lighting signals to the Pucks
- Each controller operates one Puck string
- Supports PoE standards 802.3af, 802.3at & 802.3bt.
- Polycarbonate IP67 Compact Enclosure
- IP67 M Series Connectors



LightSync Puck

- High-brightness RGBW LED Lighting Fixture
- Lumen Output: 184 lumen
- Addressable using DMX512 control protocol
- Rugged IP67 Aluminum Body
- Wide voltage range: DC24V-DC58V
- Power Consumption 4W
- Storage Temperature -40C to +70C
- IP67 M Series Connectors
- Dimensions (L x W x H) 98 x 73 x 50 mm (3.86 x 2.87 x 1.97 in)
- One-meter factory-terminated cables on both ends for easy daisy-chain connection
- Certification: CE/ETL

LightSync Host

- A lightweight appliance that hosts the LightSync control application
- Can be deployed on a compact Mini PC (Minimum 8 GB RAM recommended) or as a virtual machine within existing IT infrastructure
- Compatible with both Windows and Linux



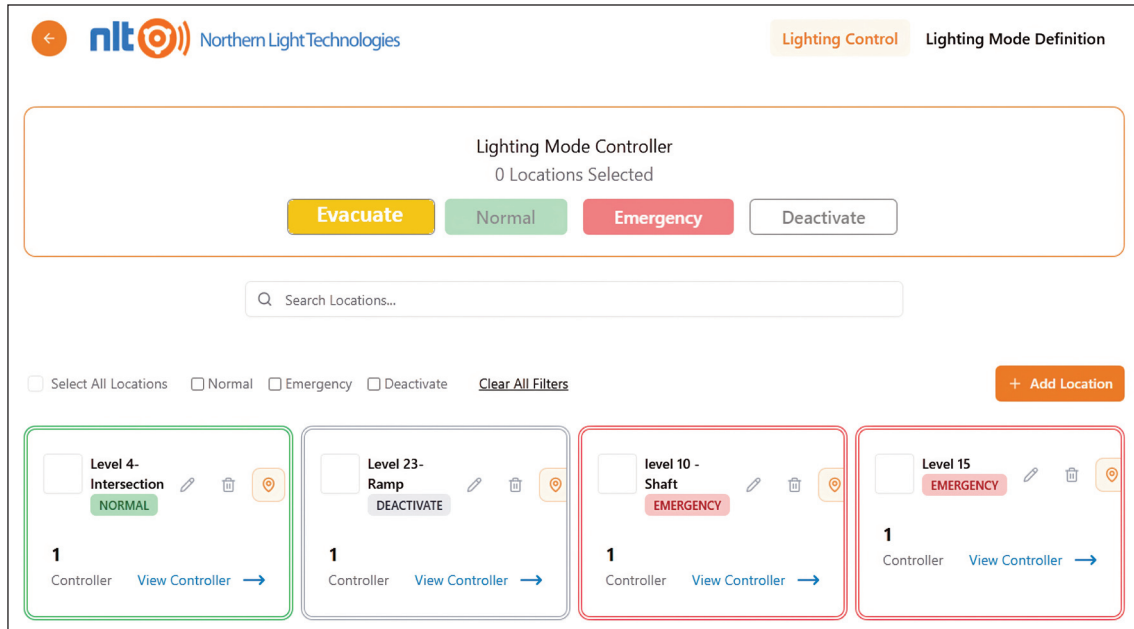
Extension Cables

- Used to extend Puck strings
- Equipped with IP67-rated M-Series connectors
- Available in 5 m, 10 m & 25 m lengths

See next page for Software Dashboard and Installation Diagram



Control Software



- Web-based software platform with a user-friendly dashboard for monitoring and controlling lighting zones and alerts
- Accessible from a PC, tablet, or smart phone through a standard web browser

Installation Diagram

