

clear-vu
lighting



MTLx

THE MOST ADVANCED TUNNEL LIGHTING SYSTEM IN THE WORLD

- ✓ **BEST-IN-CLASS EFFICIENCY**
- ✓ **ULTRA-RUGGED DESIGN**
- ✓ **WIRELESS MONITORING & CONTROL**
- ✓ **OPTIONAL INTEGRAL BATTERY PACK (NFPA 130)**



MTLx

For Transit, Harsh Environment, and Other Demanding Tunnel Lighting Applications

The MTLx is the first light fixture designed to specifically address all modes of required tunnel illumination in a single form factor. Individual light level modes are controlled through the clearNET™ wireless mesh network, which also performs health/diagnostic monitoring on the electronic sub-components including light engine, driver, and optional battery.

3-Function Lighting

Only 6-watts are required to comply with NFPA 130 emergency egress light levels at 3:1 uniformity to improve safety. Levels can be preset higher depending on agency requirement (e.g. 1 or 2 fc minimum). For maintenance and construction work periods, output can be changed to 50-watts to comply with OSHA 1926. The included 10-watt uplight component illuminates leaks and other potential damage/issues on the ceiling.

clearNET™ Wireless Mesh Network Integration

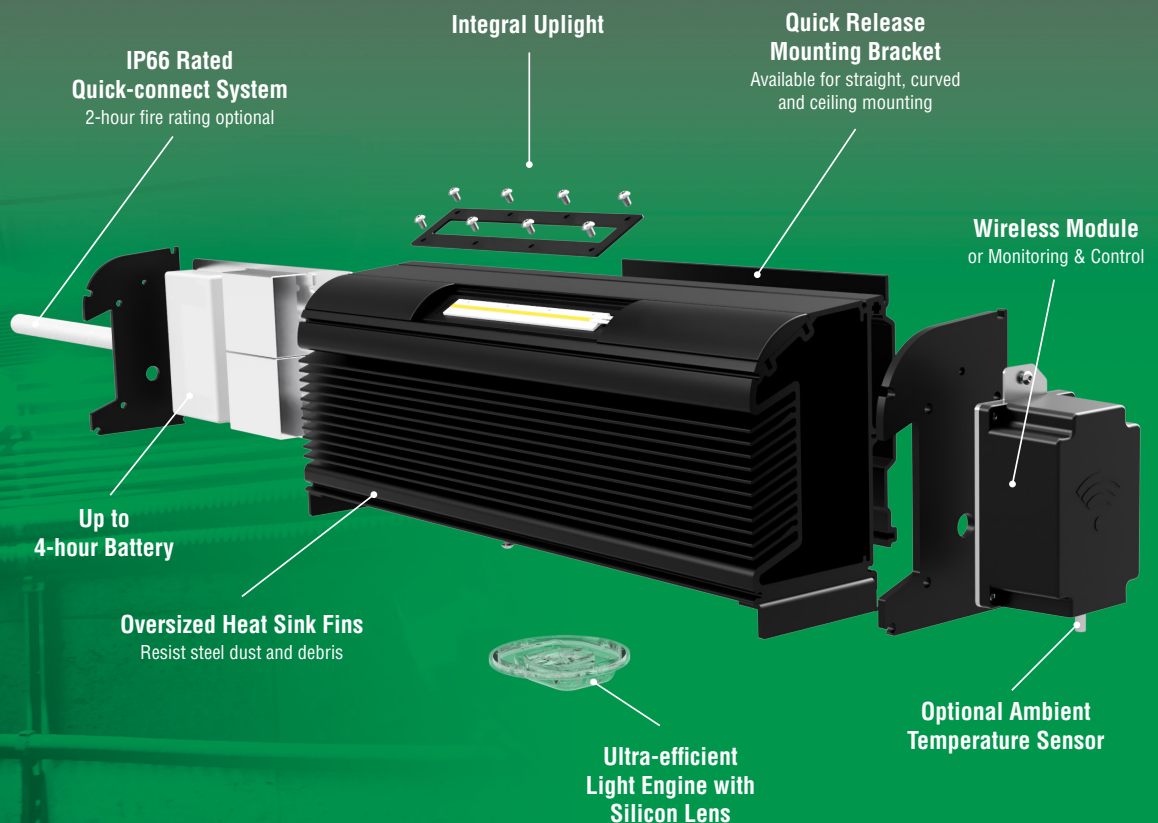
clearNET monitors the health of the lighting system through a 900Mhz wireless mesh network to provide effective and efficient maintenance and asset management and is capable of integration with existing EAM software platforms. clearNET also provides the capability to control the level of illumination specific to activities in a tunnel. Additionally, clearNET serves as a platform to provide a power and data connection for non-lighting system sensors including ambient temperature, moisture, gas, and/or hazardous materials.

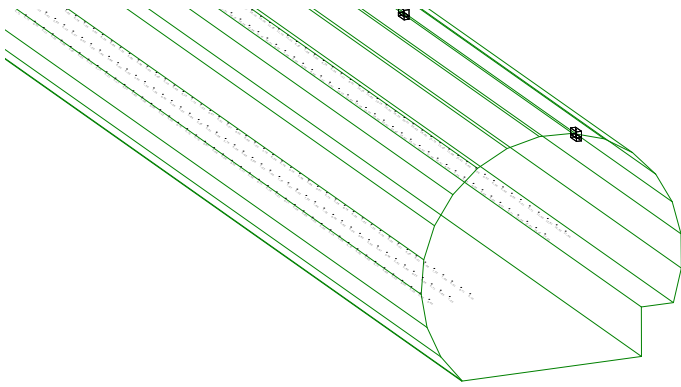
NFPA 130 Compliance

The optional integral battery back, which provides 1-4 hours of emergency lighting depending on requirement, meets the intent of NFPA 130 and eliminates the need for costly upgrades to two-hour fire rated emergency power circuits, associated junction boxes, and backup generators/inverters. System safety and performance is improved through redundancy at the fixture level with remote diagnostic health monitoring. Clear-Vu's NiMH battery technology is world class and has a 10-year design life to diffuse any fears of battery maintenance.

Impervious to Physical & Environmental Abuse

Heavy gauge extruded aluminum construction, high impact-resistant lensing and tamperproof fasteners combined with an IP66-rated housing results in a lighting fixture that withstand extreme physical and environmental abuse.





TUNNEL LIGHT LEVEL MODEL VIEW

MTLx provides high levels of uniform lighting for visual comfort and safety. Even at 25' spacings the lighting system exceeds required lighting levels for emergency egress lighting, maintenance/construction task lighting and ceiling inspection lighting.

Scene	Mounting Height	Spacing	Reflectance	Max (Fc)	Min (Fc)	Avg (Fc)	Max/Min	Power Required
NFPA 130 Emergency Mode Downlight Only	10ft	25ft	10%	0.76	0.25	0.45	3.04	6W
Custom Egress Mode* Downlight Only	10ft	25ft	10%	6	2	3.6	2	12W
OSHA Work Mode Uplight & Downlight	10ft	25ft	10%	21.06	6.34	11.96	3.32	60W

Illumination calculated using AGI32 v19.4. Typical tunnel profile: 16'-8" radius; 14'-4" height from track to highest point; 2x3' walkway. 10% reflectance on tunnel walls and 0.70 Light Loss Factor. Illumination measured on center of walkway at 0'-0" elevation. Lights mounted 10' high from track (7' high from walkway).

*Clear-Vu Lighting can provide additional simulations based on specific customer light level requirements.



The MTLx is IP66 rated to ensure that the lighting fixture is dust-tight and water-tight.

IP66 is the highest-level particulate and water protection without entering the categories for submersible lighting fixtures.



The required 5 foot candles for working in OSHA 1926.56 can be efficiently met or exceeded with minimal power input.

Typical max/min ratios below 4:1 ensure uniform light that is conducive to safe and effective working.



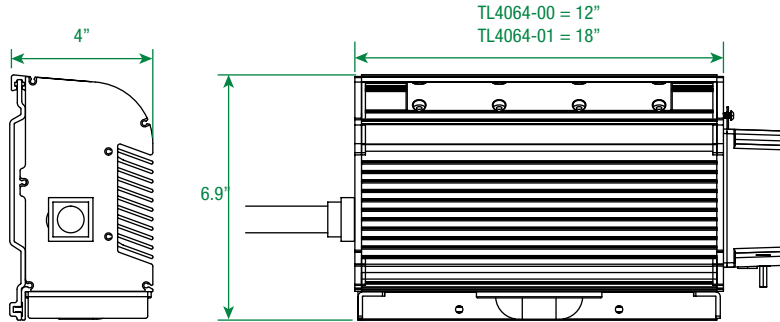
NFPA 130 sets the standard of 1 foot candle for fixed guideway transit and passenger rail systems.

This illuminance can be met at very low power input or with the optional battery.

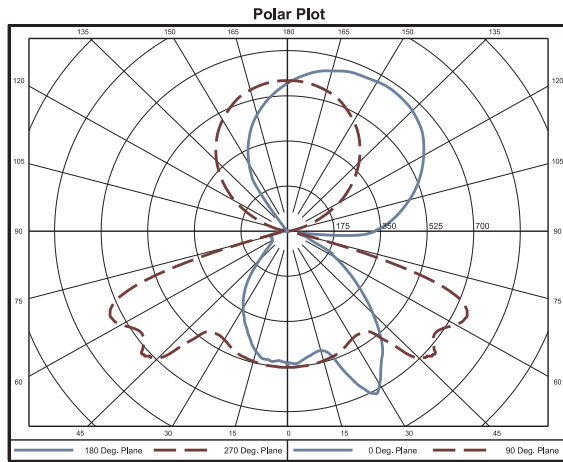


Made in the USA

DIMENSIONAL DATA



PHOTOMETRICS



SPECIFICATIONS

Housing: 0.125" thick extruded aluminum.

Optics: LED Light Source > 100,000 hours.

Lens: DOWNLIGHT: Silicon, chemical resistant.
UPLIGHT: .187" THK polycarbonate with nano antistatic coating.

Electrical: Universal – single or dual feed (95VAC-295VAC), 480VAC, or 600VDC with charging indicator for battery model.

Operating Range: -20° to 130° F.

Wireless: 900MHz wireless mesh network. 3,000ft max between nodes. 1,000 nodes per gateway. Control and monitoring.

Battery: NiMH self-diagnosing battery (1-4 hours).

Hardware: Tamper-resistant, stainless steel T15 center-pin reject fasteners.

Connections: 3' whip standard, optional quick-connect or 2-hour fire rated quick-connect.

Listings & Certifications: UL (pending), IK10, IP66.

5 Year Warranty | Made in USA

ORDERING INFORMATION

SERIES	TYPE	COLOR TEMP	PAINT COLOR	STANDARD LUMEN OUTPUT/ DOWNLIGHT	POWER INPUTS	OPTIONS
TL4064						
TL4064= MTLx	00= No Battery 01= 1-hour Battery 02= 2-hour Battery 04= 4-hour Battery	35= 3,500K 40= 4,000K 50= 5,000K B= Blue Y= Yellow	06= Gunmetal 05= Matte Black	L= 800 L2= 1,200 M1= 2,600 H1= 3,900	U= 95-295VAC U2= Dual Feed 95-295VAC D= 600VDC S= 480VAC	W1= Uplight (1,000 lumens) CN1= clearNET Wireless Control & Monitoring HS1= Ambient Temperature Sensor QC1= Standard Quick Connect QC2= Dual Feed Quick Connect FR= 2-Hour Fire Rated Quick Connector