OPTOLUM

OptoLum Twist
Linear Spot Lights

Important Safety Instructions

a) Read all instructions.
b) Do not conceal or extend exposed conductors through a building wall.
c) Do not install this system in wet locations.
d) To reduce the risk of fire and burns, do not install this lighting system where the exposed bare conductors can be shorted or contact any conductive material.
e) To reduce the risk of fire and overheating, make sure all connections are tight.
f) Do not install any luminaire closer than 6 inches (15.25cm) from any curtain, or similar combustible materials.
g) Turn off electrical power before modifying the lighting system in any way.
h)

SAVE THESE INSTRUCTIONS

GETTING STARTED

OptoLum Twist offers indoor accent lighting, display case lighting, compact spot lighting in an integrated linear form. This guide contains important information on planning, installing, and operating your new Twist fixture. For your protection, read it carefully and save it for future reference.

INCLUDED IN THIS BOX

- 1 Twist fixture with mounting optional flat or corner mount flanges. Flanges have predrilled holes to accommodate #6 screws for mounting and with mating power connector to attach to an approved power supply.
- Installation Guide

ADDITIONAL ITEMS NEEDED

• Mounting screws, screwdriver, drill

SCOPE OF THIS USER GUIDE

The goal of this user guide is to explain in an easily understandable language the necessary steps to install your Twist fixture and assure peak performance. Its intended use is for reference only, by persons who are fully qualified. This document should never be considered a substitute for any provision of a regulation or state and/or local code.

IDENTIFICATION AND WARNINGS OF SAFETY HAZARDS

In accordance with ANSI Z535.4-2002 the following system of identifying the severity of the hazards associated with the products is used:

"**DANGER**" Imminently hazardous situation which, if not avoided, will result in death or serious injury.

"**WARNING**" Potentially hazardous situation that, if not avoided, could result in death or serious injury.

"**CAUTION**" Potentially hazardous situation that, if not avoided, may result in minor or moderate injury or property damage.

DANGER: Ensure that main power supply is off before installing or wiring Twist. Failure to adhere to these instructions will result in death or serious injury.

DANGER: Twist must be installed by a qualified electrician in accordance with NEC and relevant local codes. Failure to comply will result in death, serious injury, or property damage.

WARNING: Do not install or use Twist until you read and understand the installation instructions and safety labels. Failure to do so could result in serious injury or property damage.

WARNING: Do not use Twist if the power cables are damaged. Doing so can result in death, serious injury, and property damage.

CAUTION: Use appropriate materials and mounting methods to support the fixture adequately. Failure to do so can result in property damage and void the warranty

CAUTION: Twist has no user serviceable parts. Do not attempt to service the fixture. Doing so will result in property damage and void the warranty.

CAUTION: Do not use any other power supply other than the one specified and provided by OptoLum. Doing so will result in property damage and void the warranty.

CAUTION: Do not exceed 10 linear feet Twist strip in a single series-connected fixture or multiple series-connected fixtures, 10 spots per fixture or combination of series-connected fixtures, or 42 total spots in parallel-connected fixtures per 96W power supply. Doing so will result in current overload. Heads within a fixture or fixtures that are daisy-chained are series-wired; multiple fixtures connected to separate leads from the 24VDC supply are parallel-connected.

CAUTION: Do not use sharp tools near or on the fixtures electrical components. Doing so will result in property damage and void the warranty.

CAUTION: Do not hot swap. Ensure that power to the fixture is off before connecting or disconnecting fixtures. Hot swapping will result in property damage and void the warranty.

CAUTION: Twist is a Class 2 LED product with LED radiation. Do not stare into beam or view directly with optical instruments.

CAUTION: For wall/ceiling or cabinet use only. To prevent the risk of fire, do not install closer than 0.5" to an adjacent wall or in a compartment smaller than 13" by 13" by 13".

NOTE: The instructions and precautions set forth in this user guide are not necessarily all-inclusive, all conceivable, or relevant to all applications as OptoLum cannot anticipate all conceivable or unique situations.

OPERATING TEMPERATURE

The Twist fixture is designed with the latest LED technology to provide the maximum possible light output in a miniature spot fixture. Although Twist operates at much cooler temperatures than traditional high illumination light fixtures, the housing can reach temperatures of 125º F (52C). For this reason, handle with care to prevent injuries and provide adequate ventilation to the fixture. During normal operation, the Twist spots and housing can become hot and remain hot for an extended time after operation is suspended. Exercise caution when handling the fixture after extended operation to prevent burns. It is necessary to provide adequate ventilation around the fixture. Adequate ventilation refers to the airflow over the surface of the fixture and air flow within the room, not the room temperature. A Twist fixture in a hot (40C) room with a fan or ventilation system that keeps air moving can actually run cooler on its surface than in a cool (20C) room with stagnant air.

OWNER/USER RESPONSIBILITIES

It is the responsibility of the contractor, installer, purchaser, owner, and user to install, maintain, and operate Twist in such a manner as to comply with all state and local laws, ordinances, regulations, and the American National Standard Institute Safety Code.

PLAN THE INSTALLATION

The nature and complexity of Twist installation requires in-depth planning to ensure timely, successful installation with minimal complications and down time.

PLANNING SUGGESTIONS

When planning Twist installation, OptoLum suggests doing the following:

- Consult an Electrical Inspector to approve all wiring plans.
- Refer to local and state codes for installation compliance.
- Employ OptoLum Application Engineering Services.

INSTALLATION CONSIDERATIONS

When creating your installation plan, consider the following:

- Zones. Create zones by wiring the power cables from all fixtures in a designated zone back to that zone's designated power supply. All fixtures attached to that power supply reside within the designated zone. For installations where groups of lights are controlled individually, set unique zones each with their own power supply.

• Location of power supply in relationship to lights. **Refer to Table 1.1 below to calculate maximum amount of lamps per power supply via an 11 (3.3m) foot leader cable. Power consumption depends on the quantity and wattage of Twist spots in the fixture.**
• Location of the fixture and method of attaching. Fixture locations need to be determined to mark hole locations of the flat or corner mount flanges. When the location has been determined, the hole location in the flanges at each end should be marked to indicated predrilling locations for screw installation. Twist is supplied with optional flat or corner mount flanges that are preinstalled to the fixture. The flanges are affixed to a mounting surface with two #6 screws per flange for the flat mount and four #6 screws per flange for the corner mount.
• Install and wire the power supply before installing Twist fixtures. Do not apply power to system until all wiring is completed.

STEPS TO A SUCCESSFUL INSTALLATION

1. Install the power supply
2. Install the fixture
3. Connect power from the power supplies to the fixture

DANGER: Ensure that the power source is off before wiring the power supply or connecting fixtures. Failure to do so can result in serious injuries or death.

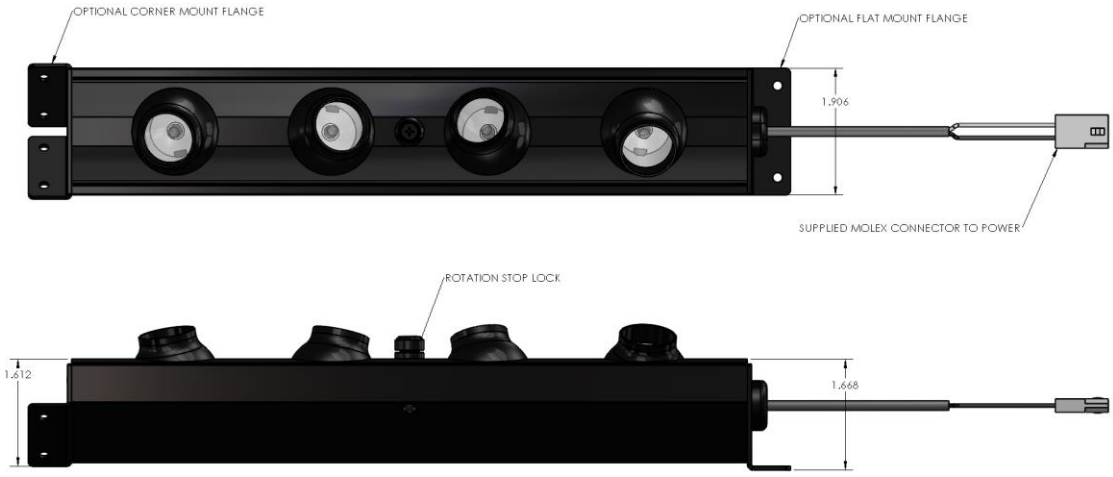
INSTALL THE JUNCTION BOX/POWER SUPPLY

Determine a location for the junction box/power supply. **To determine power supply requirements, refer to Table 1.1 to calculate maximum amount of lamps per power supply. *Things to remember:***
• Install the junction box/power supply according to state and local codes.
• Consult an Electrical Inspector to approve all wiring plans.
Ensure that power is off. Mount the junction box/power supply in a location that is serviceable for power supply replacement as needed. Remove lid of the junction box/power supply by unscrewing the four screws. Use screws appropriate to the mounting surface to attach the junction box/power supply to the chosen mounting location. Bring primary line voltage into junction box through the large hole in the end of the box using appropriate connection conduit. Connect the primary leads of the power supply to line voltage using UL approved wire connectors. Reattach lid to junction box with the four screws. Primary leads integrated within the power supply are 18AWG and that is the minimum wire gauge to be used to bring line voltage into the power supply. Ensure that the secondary power cable has remained free of strain and is ready to mate to the Twist fixture's power lead.

INSTALL THE FIXTURE

Each Twist zone should be wired to one power supply according to Table 1.1. First install the mounting clips in the marked locations with the appropriate length and type of screw for the surface that it is being mounted to (See drawings below). Twist will be supplied with a set of preinstalled flat or corner mount flanges. Holding a fixture in place, mark the mount hole locations and predrill holes for screws. Using the appropriate screw type for the mounting surface, screw fixture or fixtures for a zone into place. When all fixtures are installed by screwing them into place using the holes in the mount flanges, connect the mating connector to the next fixture as applicable, or connect the mating connector to the connector on the power supply (as applicable).

Twist With Single Connector
(For Single Fixture Connected to Supply or Last Fixture in Series)



Twist With Thru Connectors
(For Fixture Connected in Series)

Table 1.1

Use Table 1.1 to calculate maximum amount of lamps per power supply via an 11 (3.3m) foot leader cable. Power consumption depends on the quantity and wattage of Twist spots in the fixture.

Product	Watts/spot
Twist Spot 350mA	1.05W
Twist Spot 700mA	2.1W

CONNECT THE POWER

Connect the secondary power cable from the junction box/power supply to the power lead on the first Twist fixture in the series using the mating connectors at the ends of the wires to finalize the power connection.

TWIST SPECIFICATIONS

COLOR TEMPERATURE Refer to OptoLum catalog for available options
HOUSING Anodized Aluminum
Cable 2 wire 18AWG with Molex mating connectors
LISTINGS UL 2108

ELECTRICAL SPECIFICATIONS

INPUT DC constant current
JUNCTION BOX/POWER SUPPLY Compatible Class II DC constant current supply

ENVIRONMENTAL SPECIFICATIONS

TEMPERATURE RANGE -4ºF to 122ºF (-20ºC to 50ºC)

U.S. AND FOREIGN PATENTS AND PATENTS PENDING

U.S. Patent #6,573,536, U.S. Patent #6,815,724, and U.S. Patent #6,831,303. Other patents pending. OptoLum Inc. grants the purchaser of its lighting products and controllers a personal and non-transferable license to use ThermoLum™, its patented technology for thermally optimized LED-based lighting fixtures for illumination, display and design. This license is granted only by OptoLum Inc., and may not be transferred except by the grantor. The design, duplication, manufacture, or sale of other products using thermally optimized LED-based lighting may be prohibited and is not licensed hereunder.

SOURCE LIFE

OptoLum illumination products utilize high brightness LEDs as the illumination source. LED manufacturers predict LED life of up to 50,000 hours MTBF (mean time between failure), the standard used by conventional lamp manufacturers to measure source life. However, like all basic light sources, LEDs also experience lumen depreciation over time. So while LEDs can emit light for an extremely long period of time, MTBF is not the only consideration in determining useful life. LED lumen depreciation is affected by numerous environmental conditions such as ambient temperature, humidity and ventilation. Lumen depreciation is also affected by means of control, thermal management, current levels, and a host of other electrical design considerations. OptoLum systems are expertly engineered to optimize LED life when used under normal operating conditions
[ambient temperature: -4° F to 104° F (-20° C to 40° C), humidity: 0-95% non-condensing humidity, adequate ventilation and air volume]. Long-term operation outside of these ranges or conditions, or at the upper limits of these ranges or conditions, may subject the product to further degradation of the LED source life, or in extreme cases, failure of internal components. Source life information is based on LED manufacturers‘ data, as well as other third party testing.

FIVE YEAR LIMITED WARRANY

OptoLum, Inc. warrants its products, if properly used and installed, will be free from defects in materials and workmanship and will substantially conform to OptoLum's publicly available specifications for a period of five (5) year after the date the product was purchased. Lumen maintenance is 50,000 hours with of 70% of lumen output at 25C. If the product fails during the warranty period, purchaser's remedy under this limited warranty shall be at OptoLum's sole election:

- Repair the product by means of hardware and/or software or
- Replace the product with another product

This limited warranty does not cover damages due to external causes, including, but not limited to, accident, problems with electrical power, usage not in accordance with product instructions, misuse, neglect, modification, repair, improper installation, or improper testing. OptoLum is not responsible for indirect, incidental, or consequential damages resulting from any breach of warranty or under any other legal theory including, but not limited to, lost profits, downtime, goodwill, damage to or replacement of equipment and property. To obtain warranty service, you may contact your distributor in accordance with its instructions, or you may contact OptoLum. To request warranty service you should call OptoLum during the warranty period. Proof of purchase is required. When calling within warranty, please provide:

1) Your name, shipping address, and telephone number, purchased from
2) A description of the model, and serial number
3) An explanation of the problem

A Return Authorization (RA) number & ship-to address will be provided to send the product back. The RMA number must be clearly written on the exterior of the package when returning. The warranty and remedies set forth above are exclusive and in lieu of all others, whether oral or written, express or implied. OptoLum specifically disclaims any and all implied warranties, including, without limitation, warranties of merchantability and fitness for a particular purpose. No OptoLum distributor, dealer, agent or employee is authorized to make any modification, extension, or addition to this warranty. This warranty gives you specific legal rights, and you may also have other rights that vary from jurisdiction to jurisdiction.

Unless modified in writing signed by both OptoLum and Purchaser/User, this Limited Warranty is understood to be the complete and exclusive agreement between OptoLum and Purchaser, including without limitation any statements made by salespersons or other representatives of OptoLum. No employee or other representative of OptoLum or any other party is authorized to make any warranty in addition to the warranty contained in this document.

Items Explicitly NOT covered by this Warranty. OptoLum does not warrant: Defects caused by failure to provide a suitable installation environment (i.e., temperature above 104°F, humidity above 95%). Acts of God including but not limited to lightning surges, flooding, or earthquakes. Damage caused during shipment. Damage caused by any primary side (line voltage) power source problem including but not limited to unregulated power, short circuits, or lightning induced power surges. Damage caused by use of product for purposes other than those for which it was designed. Products incorporating white LED's (Light Emitting Diodes) are not covered for color temperature variations or changes, brightness reduction or diminished light output. Products installed by other than electricians, will not be covered. OPTOLUM DOES NOT COVER LABOR COST ASSOCIATED WITH REPLACEMENT OF PRODUCTS IN END APPLICATIONS. OPTOLUM CANNOT WARRANTY OR EXTEND ITS WARRANTY TO WORK PROVIDED BY OUTSIDE CONTRACTORS. OPTOLUM WILL HOWEVER WARRANTY LABOR IF THE INSTALLATION IS DONE BY OPTOLUM QUALIFIED PERSONNEL.