SAFETY & WARNINGS

READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. Install in accordance with national and local electrical code regulations.
2. This product is intended to be installed and serviced by a qualified, licensed electrician.
3. Do not modify or disassemble this product beyond instructions or the warranty will be void.
4. Do not use if there is any damage to the fixture or wiring. Inspect periodically.
5. Do not install in direct sunlight or damage to the LED phosphor will occur.
6. Do not attempt to fix this product in the field.
7. Failure to follow safety warnings, and installation instructions will void the warranty for this product.

HANDLE PRODUCT WITH CARE!

DO NOT BEND LED STRIP LIGHT TO A DIAMETER LESS THAN 4 INCHES.

DO NOT BEND LED STRIP LIGHT ON A HORIZONTAL PLANE.

DO NOT FOLD, CREASE, OR TWIST LED STRIP LIGHT.

DO NOT POWER STRIP LIGHT WHILE ATTACHED TO SPOOL OR TIGHTLY COILED.

DO NOT BEND LED STRIP LIGHT LIGHT TO A DIAMETER LESS THAN 4 INCHES.

QUICK SPECS / MODELS

<table>
<thead>
<tr>
<th>Input</th>
<th>24VDC Constant Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ambient Temp*</td>
<td>-4° - 122°F (-20° - 50°C)</td>
</tr>
<tr>
<td>Environment</td>
<td>Indoor/Outdoor/IP69</td>
</tr>
</tbody>
</table>

* Do not install product in environment outside listed temperature.
**REQUIRED TOOLS**

1. Phillips-head Screwdriver
2. Ruler (Recommended)
3. Wire Stripper (Recommended)
4. Mounting Channel, or (2) Mounting Clips per 12”.
5. (2) Screws per Mounting Clip

**CHANNEL SIDE VIEW**

**INSTALLATION**

1. **TURN POWER OFF AT CIRCUIT BREAKER**

   **SHOCK HAZARD!** May result in serious injury or death. Turn power OFF at circuit breaker prior to installation.

2. **DETERMINE LOCATION TO INSTALL COMPONENTS**

   Refer to **SYSTEM DIAGRAMS**

   1) Class 2 Driver  
   2) Control  
   3) Strip Light

3. **WIRE GAUGE & VOLTAGE DROP**

   Ensure applicable wire is installed between driver, fixture, and any controls in between. When choosing wire, factor in voltage drop, amperage rating, and type (in-wall rated, wet location rated, etc.).

   **Note:** AlphaTECH® Strip Light is available with the following connections. Ensure Class 2 power supply is compatible with connector prior to installation.

   - Bare Lead*
   - MIC Lead**
   - DC Lead**

   *Must be used for pool/spa applications.
   **For use in non-waterproof applications only.

4. **INSTALLATION (CONT.)**

5. **TEST CONNECTION**

   Prior to mounting, attach to Class 2 LED Driver, turn on power and test connection to ensure system is operating properly. Turn off power again before mounting.

6. **MOUNT AlphaTECH® LED STRIP LIGHT**

   *Note: There are several ways to install AlphaTECH® LED Strip Light. Please follow one of the options listed below.

   1. Indoor/Outdoor Installation (pg. 3)
   2. Underwater/Pool Installation (pg. 4)
**INDOOR/OUTDOOR INSTALLATION**

**MOUNTING CLIP**

1. Screw mounting clip to surface

![Screw mounting clip to surface](image1)

3.9mm dia.

2. Place AlphaTECH® Strip Light into mounting clip

![Place the Strip Light into the mounting clip](image2)

**CHANNEL**

1. *Note: Placing AlphaTECH® LED Strip Light within another channel may not be necessary nor recommended.*

Press AlphaTECH® LED Strip Light firmly into channel. If necessary, include a small amount of silicone adhesive/sealant within the channel to hold it in place.

![Press channel around the outside edges of the Strip Light](image3)

2. Press channel around the outside edges of AlphaTECH® Strip Light.

![Press the channel around the outside edges](image4)
NEC 680
When installing in water, install in accordance with NEC 680. Per UL instructions it is required to mount strip light with AlphaTech Mounting Channel for these applications.

CHANNEL & MOUNTING CLIPS

ATTENTION: FIBERGLASS & VINYL LINED POOLS
Unlike concrete pools, most fiberglass and vinyl lined pools have strict warranty guidelines that do not allow the user to deface the pool wall surface. Diode LED does not recommend mounting to fiberglass or vinyl pool walls and/or defacing the surface in any way (ex. drilling into surface to route lead wires). It is recommended to mount to a separate pool coping or lip to ensure your pool warranty is not voided. Always consult with your pool supplier and contractor for proper installation of 3rd party products.

Wall Mount
(Channel only)
Concrete Pools Only

Recessed Mount
(Channel or Clips)
Concrete Pools Only

Coping Mount
(Channel only)
Concrete Pools
Fiberglass Pools
Vinyl-Line Pools

Mount channel to dry surface using either a mounting clip, or chlorine resistant waterproof adhesive. Allow adhesive to cure/dry.

For concrete pools, seal conduit entry with pool-grade silicone sealant. DO NOT drill holes in fiberglass pools/hot tubs or vinyl-lined pools. An alternate method is to route the wire directly out of pool.
5 ATTACH DRIVER AND LIGHTING CONTROL.

OUTDOOR/UNDERWATER INSTALLATION

Using a pool/spa rated junction box, connect lead wires from AlphaTECH® Strip Light to wet location rated wires connected to power supply.

Verify a compatible driver is installed. Utilize applicable wiring when installing outdoors. (Use of wet location-rated junction box recommended)

6 TURN POWER ON AT CIRCUIT BREAKER

TROUBLESHOOTING

<table>
<thead>
<tr>
<th>Shift in brightness and/or kelvin</th>
<th>• Ensure an appropriate gauge of wire is installed between strip light and LED driver. See VOLTAGE DROP CHARTS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Some LEDs are not functional</td>
<td>• Ensure strip light has not been bent excessively, which could damage circuitry.</td>
</tr>
<tr>
<td>Lights are flickering</td>
<td>• Ensure a compatible driver and/or dimming control is installed. Check for loose connections.</td>
</tr>
<tr>
<td>Lights are turning on/off repeatedly</td>
<td>• Ensure driver is not overloaded. An overloaded driver will trip the internal auto-reset (of driver) repeatedly, turning the system on/off.</td>
</tr>
</tbody>
</table>

TOOLS & RESOURCES

AlphaTECH® SPECIFICATION SHEET
For full specifications.
The following diagrams are provided as example system designs. For information regarding larger systems or systems not pictured below, please see our web page or contact technical support. Always review each component installation guide for detailed and up-to-date wiring instructions. Install in accordance with national and local electrical codes.

1. Driver may not require a fault ground connection. Refer to driver specifications for additional information.
2. Install a compatible Class 2 constant voltage driver. Refer to each driver specification sheet for full power ratings & load deratings.
3. Install a Class 2 constant voltage driver compatible with a low voltage PWM controller/dimmer switch. Refer to each driver specification sheet for full power ratings & load deratings.
4. Determine the number of low voltage outputs of the driver when installing multiple PWM controllers/dimmer switches. No more than one PWM controller/dimmer switch can be attached to a single output of the driver.
5. Install a compatible dimming control or switch. See the ‘Electronic Dimmable Driver / Dimmer Compatibility List’ for compatible dimming controls. See the dimming control manufacturer installation guide for complete wiring instructions.
6. Ensure to load the driver at least 60% of the labeled load for proper dimming performance (required for dimmable installations only).
7. Refer to driver or controller specifications for a compatible junction box.
8. See fixture specifications for maximum series run limits.
### Voltage Drop Charts

For best performance and lumen output, ensure proper wire gauge is installed to compensate for voltage drop of low voltage circuits.

#### Example: 24V Voltage Drop & Wire Length Distance Chart

<table>
<thead>
<tr>
<th>Wire Gauge</th>
<th>10 W</th>
<th>20 W</th>
<th>30 W</th>
<th>40 W</th>
<th>50 W</th>
<th>60 W</th>
<th>70 W</th>
<th>80 W</th>
<th>100 W</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>.42 A</td>
<td>.83 A</td>
<td>1.3 A</td>
<td>1.7 A</td>
<td>2.1 A</td>
<td>2.5 A</td>
<td>2.9 A</td>
<td>3.3 A</td>
<td>4.2 A</td>
</tr>
<tr>
<td>22 AWG</td>
<td>53 ft.</td>
<td>27 ft.</td>
<td>17 ft.</td>
<td>13 ft.</td>
<td>11 ft.</td>
<td>9 ft.</td>
<td>8 ft.</td>
<td>7 ft.</td>
<td>6 ft.</td>
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<tr>
<td>18 AWG</td>
<td>134 ft.</td>
<td>68 ft.</td>
<td>45 ft.</td>
<td>33 ft.</td>
<td>27 ft.</td>
<td>22 ft.</td>
<td>19 ft.</td>
<td>17 ft.</td>
<td>14 ft.</td>
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<td>16 AWG</td>
<td>215 ft.</td>
<td>109 ft.</td>
<td>72 ft.</td>
<td>54 ft.</td>
<td>43 ft.</td>
<td>36 ft.</td>
<td>31 ft.</td>
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<td>174 ft.</td>
<td>115 ft.</td>
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<td>57 ft.</td>
<td>49 ft.</td>
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<td>12 AWG</td>
<td>539 ft.</td>
<td>272 ft.</td>
<td>181 ft.</td>
<td>135 ft.</td>
<td>108 ft.</td>
<td>90 ft.</td>
<td>77 ft.</td>
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<td>56 ft.</td>
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<tr>
<td>10 AWG</td>
<td>784 ft.</td>
<td>397 ft.</td>
<td>263 ft.</td>
<td>197 ft.</td>
<td>158 ft.</td>
<td>131 ft.</td>
<td>112 ft.</td>
<td>98 ft.</td>
<td>82 ft.</td>
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1. Determine load size. Let’s assume load is 55 W. Round up to nearest load.
2. Determine distance from driver to load. Let’s assume the distance is 90 ft.
3. It is recommended to install 12 AWG to eliminate excess voltage drop.

#### 24V Voltage Drop & Wire Length Distance Chart

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