Neon Flex User Manual
IP68 SLW LED® FLEX NEON (PRO-RGB-DMX)

Sign Lighting World
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Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
LED Flex Neon PRO

The products are widely used in the illumination and decorative lighting for piazza, restaurants, private villas, gardens, conference rooms, exhibition halls, stage bars, shopping malls, parking structures, and tourist attractions.

A. Specification

1. Structure
   - Material: PVC Body
   - Input Voltage: 24VDC
   - LED Qty/m: 60pcs
   - Protection: IP68*
   - Work Temperature: -22F – 113F (-30C to 45C)
   - IK Class: IK08

2. Model Configuration Table

<table>
<thead>
<tr>
<th>Model NO.</th>
<th>LED Color</th>
<th>LEDs/Unit</th>
<th>Cutting Length</th>
<th>Power/m</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>F21A-24V</td>
<td>Y/G/B/WW/W/NW</td>
<td>6 pcs SMD/5050</td>
<td>4in (10cm)</td>
<td>12W</td>
<td>1lb/3.28ft 0.5kg/m</td>
</tr>
<tr>
<td>F21A-24V</td>
<td>R/O</td>
<td>10pcs SMD/5050</td>
<td>6.5in (16.67CM)</td>
<td>7.2W</td>
<td>1lb/3.28ft 0.5kg/m</td>
</tr>
<tr>
<td>F15A-24V</td>
<td>Y/G/B/WW/W/NW</td>
<td>6pcs SMD/5050</td>
<td>4in (10cm)</td>
<td>12W</td>
<td>.8lb/3.28ft 0.38kg/m</td>
</tr>
<tr>
<td>F15A-24V</td>
<td>R/O</td>
<td>10pcs SMD/5050</td>
<td>6.5in (16.67CM)</td>
<td>7.2W</td>
<td>1.5lbs/3.28ft 0.68kg/m</td>
</tr>
</tbody>
</table>

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B. Photometric Parameters

1. Model: F21A-6000K

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Figure 1: Cadela Distribution

Figure 2: Illuminance at a Distance

Figure 3: Integrating Sphere Measurement

Photo Parameters:

Render Index: Ra = 71.2  Flux = 246.7 lm  Eff.: 22.20 lm/W  Fe = 732.8 mW

Figure 4: Cadela Distribution

Figure 5: Illuminance at a Distance

Figure 6: Integrating Sphere Measurement

Photo Parameters:
Render Index: Ra = 71.7
Flux = 302.3 lm
Eff.: 27.99 lm/W
Fe = 909.8 mW

C. Connection Length

Power at one end: 10M

Power at both ends: 20M

Customized Length

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D. Bending Direction

The minimum bending diameter is 3.15in (8cm).

E. Mounting

Every meter of aluminum channel has 2 screw holes. The installation usually requires installing aluminum channel as the first step, and then insert the LED neon product to the channel.

F. Connection

The use of LED neon requires a 24V constant voltage power supply.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
G. PRECAUTIONS

- Do not over extend the min. & max. bend radius.
- Although products do not generate a great amount of heat, it is recommended that you do not cover or conceal it.
- Do not route LED flex neon through walls, doors, windows, or building structures.
- Do not roll out LED flex neon on rough surfaces and over sharp corners. This will scratch the PVC optic.
- Do not use the product if outer PVC jacket is damaged, loose connections, or if the wire is visible without insulation.
- Do not secure the product with staples, nails, or like means that might damage the insulation or PVC material.
- Do not install LED flex neon on/in places where it is subject to continuous flexing.
- Do not operate/run LED flex neon in temperatures exceeding 115F (45C).
- Do no operate LED flex neon over the specified voltage or LED life degradation will be greatly increased.
- Do not leave any part of the LED flex neon unsecured. Movement over time from weather can cause damage from continuous movement.
- Always place 100% silicone inside every connection before assembly.
- All LED neon IP68 rated connectors must be assembled properly to obtain rating.
- Do not reverse polarity when connecting from both ends. This will damage the internal PCB board. Always test connections with your multi-meter.
- Do not energize LED flex neon in reel package.
- LED flex neon can be cut only where marked. Look for “Dotted Line” or “Scissor Mark.”
- Cutting outside the specified mark will damage the light.
- Do not cut while the LED flex neon is connected with power.
H. Accessory Assembling

1. Front Connector

![Diagram of Front Connector]

1. Place the anti-skidding clip on the very end of the tubing with the 2 tiny tabs that are pointing inwards still touching the end of the material and crimp in place.

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2. **End Connector**
1. Place the anti-skidding clip on the very end of the tubing with the 2 tiny tabs that are pointing inwards still touching the end of the material and crimp in place.

2-4. Line up the aluminum mounting piece so the screw holes face the plug and slide on over the anti-skidding clip. Put 100% clear silicone on the end of the Neon Flex tube material covering the circuit board completely before proceeding to step 5. This is to ensure a waterproof seal. Failure to properly seal and assemble as instructed may void warranty.

5. Place the rubber gasket on the end of the tube.

6. Place the tail plug over the rubber gasket.

7. Screw the tail plug to the aluminum mounting piece.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
8. Check the connection to ensure it is tight.

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RGB LED Flex Neon

A. Specification

1. Structure
   Material: PVC body
   Input Voltage: 24VDC
   LED Qty/m: 60pcs
   Protection: IP68
   Work Temperature: -22F – 113F (-30C to 45C)
   IK Class: IK08

2. Model Configuration Table

<table>
<thead>
<tr>
<th>Model NO.</th>
<th>LED Color</th>
<th>LEDs/Unit</th>
<th>Cutting Length</th>
<th>Power/m</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>F21RGB</td>
<td>RGB</td>
<td>10pcs</td>
<td>6.5in</td>
<td>12W</td>
<td>1.17lbs/3.28ft</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SMD/5050</td>
<td>(16.67cm)</td>
<td></td>
<td>0.53kg/m</td>
</tr>
<tr>
<td>F15RGB</td>
<td>RGB</td>
<td>10pcs</td>
<td>6.5in</td>
<td>12W</td>
<td>.8lb/3.28ft</td>
</tr>
<tr>
<td></td>
<td></td>
<td>SMD/5050</td>
<td>(16.67cm)</td>
<td></td>
<td>0.38kg/m</td>
</tr>
</tbody>
</table>

B. Photometric Parameters

1. Model: F21RGB

   B-1. Wave Length: Red 623.5nm, Green 522.8nm, Blue 469nm
   B-2. Lumen Output: F21RGB – Red 18lm/m, Green 64lm/m, Blue 16lm/m
   B-3. Lumen Output: F15RGB – Red 20lm/m, Green 71lm/m, Blue 17lm/m

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
C. Bending Direction
The minimum bending diameter is 3.15in (8cm).

D. Mounting

E. Connection
1. Connection with common RGB controller, 10 m max. for single length.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
2. Connection with common RGB controller, extended by using power repeater.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
3. Connection with DMX decoder and DMX controller.

4. Connection with CTR-RGB-24V, this controller has 350W Meanwell power supply and DMX decoder built in.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
F. PRECAUTIONS

- Do not over extend the min. & max. bend radius
- Although products do not generate a great amount of heat, it is recommended that you do not cover or conceal it.
- Do not puncture, cut, shorten, or splice LED neon outside of the designated cutting marks.
- Do not route LED flex neon through walls, doors, windows, or building structures.
- Do not roll out LED flex neon on rough surfaces and over sharp corners. This will scratch the PVC optic.
- Do not secure the product with staples, nails, or like means that might damage the insulation of PVC material.
- Do not use the product if outer PVC jacket is damaged, loose connections, or if wire is visible without insulation.
- Do not install LED flex neon on/in places where it is subject to continuous flexing.
- Do not operate/run LED flex neon in temperatures exceeding 115F (45C).
- Do not operate LED flex neon over the specified voltage or LED life degradation will be greatly increased.
- Do not leave any part of the LED flex neon unsecured. Movement over time from weather can cause damage from continuous movement.
- All LED neon IP68 rated connectors must be assembled properly to obtain rating.
- Do not reverse polarity when connection from both ends. This will damage the internal PCB board. Always test connections with your multi-meter.
- Do not energize LED flex neon in the reel package.
- LED flex neon can be cut only where marked. Look for “Dotted Line” or “Scissor Mark.” Cutting outside of the specified mark will damage the light.
- Do not cut while the LED flex neon is connected with power.

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**G. Accessory Assembling**

1. **Front Connector**

1. Place the anti-skidding clip on the very end of the tubing with the 2 tiny tabs that are pointing inwards still touching the end of the material and crimp in place.

2-4. Line up the aluminum mounting piece so the screw holes face the plug and slide on over the anti-skidding clip. Put 100% clear silicone on the end of the Neon Flex tube material covering the circuit board completely before proceeding to step 5. This is to ensure a waterproof seal. Failure to properly seal and assemble as instructed may void warranty.

5. Place the rubber gasket on the end of the tube.

6-7. Insert your front connector so the connector pins are in the narrow edge of the connection.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
8. Screw the front connector to the aluminum mounting piece.

9. Check the connection to ensure it is tight.

2. **End Connector**

1. Place the anti-skidding clip on the very end of the tubing with the 2 tiny tabs that are pointing inwards still touching the end of the material and crimp in place.

2-4. Line up the aluminum mounting piece so the screw holes face the plug and slide on over the anti-skidding clip. Put 100% clear silicone on the end of the Neon Flex.

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<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Place the rubber gasket on the end of the tube.</td>
</tr>
<tr>
<td>6.</td>
<td>Place the tail plug over the rubber gasket.</td>
</tr>
<tr>
<td>7.</td>
<td>Screw the tail plug to the aluminum mounting piece.</td>
</tr>
<tr>
<td>8.</td>
<td>Check the connection to ensure it is tight.</td>
</tr>
</tbody>
</table>

Tube material covering the circuit board completely before proceeding to step 5. This is to ensure a waterproof seal. Failure to properly seal and assemble as instructed may void warranty.
DMX LED Neon Flex

A. Specification

1. Structure
   Material: PVC Body
   Input Voltage: 24VDC
   LED Qty/m: 56pcs
   Protection: IP68
   Work Temperature: -22F – 113F (-30C to 45C)
   IK Class: IK08
   Pixel/m: 8 pixels
   IC Model: WS2821
   DMX address: Writeable
   Max Length: 7m (power at one end)
   15m (power at both ends)

2. Model Configuration Table

<table>
<thead>
<tr>
<th>Model No.</th>
<th>LED Color</th>
<th>LEDs/Unit</th>
<th>Cutting Length</th>
<th>Power/m</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>F21DMX</td>
<td>Pixel RGB</td>
<td>7pcs SMD/5050</td>
<td>5in (12.5cm)</td>
<td>12W</td>
<td>1lb/3.28ft 0.5kg/m</td>
</tr>
<tr>
<td>F15DMX</td>
<td>Pixel RGB</td>
<td>7pcs SMD/5050</td>
<td>5in (12.5cm)</td>
<td>12W</td>
<td>.8lb/3.28ft 0.38kg/m</td>
</tr>
</tbody>
</table>

B. Photometric Parameters

1. Model: F21DMX

B-1. Wave Length: Red 623.5nm, Green 522.8nm, Blue 469nm
B-2. Lumen Output: F21RGB: Red 17lm/m, Green 60lm/m, Blue 15lm/m
B-3. Lumen Output: F15RGB: Red 19lm/m, Green 66lm/m, Blue 16lm/m

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
C. Bending Direction
The minimum bending diameter is 3.15in (8cm).

D. Mounting
Every meter of aluminum channel has 2 screw holes. The installation usually requires installing aluminum channel as the first step, and then inserting the LED neon product to the channel.

E. Connection
1. Wire Illustration
   i. Bare Wire

   ![Bare Wire Diagram]

   ![Wire Diagram with DMX Console]

   ii. With DMX Console

   ![Wire Diagram with DMX Console]

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2. **Write Address**

   The DMX LED neon address is present to 001 in factory. The address writer is needed to write new address when users cut new or use specially.

   ![Address Pin Diagram]

   After connection, press the ➔ button until the whole DMX LED neon shows white. This means the address is written successfully with start from 001.

3. **Connection with DMX Controller LT-800. This controller can only take 170 pixels.**

   Connection Length: 7m
   ![Connection Diagram 7m]
   
   Connection Length: 15m
   ![Connection Diagram 15m]
   
   Connection Length: more than 15m
   ![Connection Diagram More than 15m]

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
4. Connection with specialized controller K-8000D. This controller has 8 outputs, each output can take 512 pixels. That means each output can take 60m of DMX LED neon. It has 32 kinds of built-in effects. This controller also has function of writing address.

F. PRECAUTIONS

- Do not over extend the min. & max. bend radius.
- Although products do not generate a great amount of heat, it is recommended that you do not cover or conceal it.
- Do not puncture, cut, shorten, or splice LED neon outside of the designated cutting marks.
- Do not route LED flex neon through walls, doors, windows, or building structures.
- Do not roll out LED flex neon on rough surfaces and over sharp corners. This will scratch the PVC optic.
- Do not use the product if outer PVC jacket is damaged, loose connections, or if wire is visible without insulation.
- Do not secure the product with staples, nails, or like means that might damage the insulation or PVC material.
- Do not install LED flex neon on/in places where it is subject to continuous flexing.
- Do not operate/run LED flex neon in temperatures exceeding 115F (45C).
- Do not operate LED flex neon over the specified voltage or LED life degradation will be greatly increased.
- Do not leave any part of the LED flex neon unsecured. Movement over time from weather can cause damage from continuous movement.
- All LED neon IP68 rated connectors must be assembled properly to obtain rating.
- Do not reverse polarity when connecting from both ends. This will damage the internal PCB board. Always test connections with your multi-meter.
- Do not energize LED flex neon in the reel package.
- LED flex neon can be cut only where marked. Look for “Dotted Line” or “Scissor Mark.” Cutting outside of the specified mark will damage the light.

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- Do not cut while the LED flex neon is connected with power.

**Figure 13: Light Surface**

**Figure 14: Accessory Attachment**

**Figure 15: Cutting Precautions**

G. Accessory Assembling

1. Front Connector
1. Place the anti-skidding clip on the very end of the tubing with the 2 tiny tabs that are pointing inwards still touching the end of the material and crimp in place.

2-4. Line up the aluminum mounting piece so the screw holes face the plug and slide on over the anti-skidding clip. Put 100% clear silicone on the end of the Neon Flex tube material covering the circuit board completely before proceeding to step 5. This is to ensure a waterproof seal. Failure to properly seal and assemble as instructed may void warranty.

5. Place the rubber gasket on the end of the tube.

6-7. Insert your front connector so the connector pins are in the narrow edge of the connection point.

8. Screw the front connector to the aluminum mounting piece.

9. Check the connection to ensure it is tight.

Product is IP68 rated when assembled according to instructions in user manual, if not assembled per instructions, warranty may be voided.
2. **End Connector**

<table>
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<tr>
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</tr>
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<td></td>
<td></td>
<td>5. Place the rubber gasket on the end of the tube.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Place the tail plug over the rubber gasket.</td>
</tr>
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<p>| | |</p>
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<tr>
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<tbody>
<tr>
<td>7.</td>
<td>Screw the tail plug to the aluminum mounting piece.</td>
</tr>
<tr>
<td>8.</td>
<td>Check the connection to ensure it is tight.</td>
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