Outdoor IP65
Outline™ Series
Product Data Sheet

Title 24 is regulated for lamps with color temperatures 4000k and below
Description

Less is more with our Outdoor (IP65) UltraBright™ Outline Series. These elegant, weatherproof lights fill the specific need for a lower-output strip with remarkable color accuracy that's guaranteed to make an unforgettable first impression. Not only does the IP65 silicone cover ensures complete protection against dust and can withstand powerful streams of water, but it also makes the strips very easy to clean. Longer run lengths also gives you liberated, uninterrupted design as you get creative with larger projects. From adorning your balcony and bar to outlining commercial windows and kitchens, the IP65-rated Outline Series promises the sophistication that is difficult to achieve in outdoor settings.

Product Features

- High CRI of 95+
- High R9 (95) & R13 (98) values
- Up to 125 Lumens/ft (411/meter)
- Fully dimmable
- Highest quality components and premium packaged
- 2216 LEDs
- Single BIN LED selection to ensure color consistency (3-Step MacAdam)
- Thermally Resistant 3M VHB 9731 for long lasting bond
- 120° Beam Angle
- Efficiency up to 84 Lumens/W
- Only 1/2" (12mm) strip width
- Short LED pitch of 5/16" (8mm)
- 24V and 48V DC Input
- 24V can be cut every 2" (50mm)
- 48V can be cut every 5" (125mm)
- 37 LEDs / Foot (120/Meter)
- Thick double layer 4 oz copper PCB for excellent thermal management
- Operating Temperature -4°F to +104°F (-20°C to 40°C)
- Maximum Run Length in Series: 24V (25m / 82ft), 48V (40m / 131ft)
- IP65 Rated with non-yellowing and UV resistant silicone sleeve

Product Specific Specifications

<table>
<thead>
<tr>
<th>Product SKU</th>
<th>Color* (CCT)</th>
<th>Watts / foot (Meter)</th>
<th>Lumen / foot (Meter)</th>
<th>Luminous efficacy (Lumens / Watt)</th>
<th>CRI</th>
<th>Gamut Score Rg (Color Sat.)</th>
<th>Relative Fidelity Score (RF)</th>
<th>TLCI (Qa)</th>
<th>CQS</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP65-UB-OL-24K97C (special order only)</td>
<td>2400K</td>
<td>1.5 W/ft 4.8 W/m</td>
<td>98 lm/ft (320 lm/m)</td>
<td>65 lm/W</td>
<td>97</td>
<td>104</td>
<td>96</td>
<td>98</td>
<td>97</td>
</tr>
<tr>
<td>IP65-UB-OL-27K97C</td>
<td>2700K</td>
<td>1.5 W/ft 4.8 W/m</td>
<td>97 lm/ft (318 lm/m)</td>
<td>65 lm/W</td>
<td>97</td>
<td>102</td>
<td>96</td>
<td>99</td>
<td>97</td>
</tr>
<tr>
<td>IP65-UB-OL-30K97C</td>
<td>3000K</td>
<td>1.5 W/ft 4.8 W/m</td>
<td>100 lm/ft (328 lm/m)</td>
<td>67 lm/W</td>
<td>97</td>
<td>104</td>
<td>96</td>
<td>99</td>
<td>98</td>
</tr>
<tr>
<td>IP65-UB-OL-35K97C</td>
<td>3500K</td>
<td>1.5 W/ft 4.8 W/m</td>
<td>116 lm/ft (379 lm/m)</td>
<td>77 lm/W</td>
<td>98</td>
<td>103</td>
<td>96</td>
<td>99</td>
<td>98</td>
</tr>
<tr>
<td>IP65-UB-OL-40K95C</td>
<td>4000K</td>
<td>1.5 W/ft 4.8 W/m</td>
<td>111 lm/ft (363 lm/m)</td>
<td>74 lm/W</td>
<td>95</td>
<td>103</td>
<td>94</td>
<td>98</td>
<td>97</td>
</tr>
<tr>
<td>IP65-UB-OL-50K95C</td>
<td>5000K</td>
<td>1.5 W/ft 4.8 W/m</td>
<td>125 lm/ft (411 lm/m)</td>
<td>84 lm/W</td>
<td>95</td>
<td>101</td>
<td>94</td>
<td>99</td>
<td>98</td>
</tr>
</tbody>
</table>

*CCT may be +/-100K but always ordered from same bin and will present no noticeable differences perceived by the human eye.
## Ordering Code

<table>
<thead>
<tr>
<th>IP Protection</th>
<th>Brand</th>
<th>Series</th>
<th>CCT</th>
<th>Voltage</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>IP65 - Weatherproof</td>
<td>UB - UltraBright</td>
<td>OL - Outline Series</td>
<td>24K97C - 2400K/97+ CRI</td>
<td>24V</td>
<td>16FT - 16ft Reel</td>
</tr>
<tr>
<td>27K97C - 2700K/97+ CRI</td>
<td>30K97C - 3000K/97+ CRI</td>
<td>35K97C - 3500K/97+ CRI</td>
<td>40K95C - 4000K/95+ CRI</td>
<td>48V</td>
<td>32FT - 32ft Reel</td>
</tr>
<tr>
<td>50K95C - 5000K/95+ CRI</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

Note: * Special Order only

## Dimensions 24V

- 2" (50mm)
- 1/2" (12mm)
- 5/16" (8mm)
- 3/16" (4mm)

## Dimensions 48V

- 5" (125mm)
- 1/2" (12mm)
- 5/16" (8mm)
- 3/16" (4mm)
Dimming Options

Lutron Style Wall Dimmer

<table>
<thead>
<tr>
<th>Input</th>
<th>Output</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>Symbol</td>
</tr>
<tr>
<td>Green</td>
<td>L</td>
</tr>
<tr>
<td>Black</td>
<td>R</td>
</tr>
<tr>
<td>White</td>
<td>N</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Color</th>
<th>Symbol</th>
<th>Type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Black</td>
<td>–</td>
<td>Negative</td>
</tr>
<tr>
<td>Red</td>
<td>+</td>
<td>Positive</td>
</tr>
</tbody>
</table>

120V AC Magnetic/Electronic Low Voltage Dimmer Switch

Remote Control (SKU: SC-MZ-CTRL) can be paired to 8 total receivers. Multiple remotes cannot be paired to a single receiver (max 1)

In-Line Dimming
Included Accessories

- Weatherproof C1 Connector (Male)
- Weatherproof C1 Connector (Female)
- End Cap (with 2 holes for lead wires)
- End Cap
- Mounting Bracket

Width - 14 mm
Height - 6 mm

Width - 6 mm
Length - 28 mm

Resealing Outdoor Strips

1. Find the cut line on the strip (between the solder pads).
2. Carefully cut the strip on the cut line.
3. Fill an end cap (without holes) with sealant and slide it over the end of the strip until it fits snugly.

Sealing Outdoor Strips with End Caps and a Solderless Connector

1. Cut the strip and remove the silicone covering just enough to expose the solder pads on the strip.
2. Carefully insert the strip into the connector and ensure it fits snugly.
3. Spread the wires on the connector and slide them through the holes in the end cap.
4. Fill the end cap (with holes) with sealant and slide carefully over the connector at the end of the strip.
**Compatible Drivers (24V)**

**Wall Mounted Power Supply / Desktop Power Supply**

<table>
<thead>
<tr>
<th>LED Strip Length</th>
<th>SKU</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 - 12 ft</td>
<td>24V-WMPS-1</td>
</tr>
<tr>
<td>13 - 32 ft</td>
<td>24V-DPS-2.5</td>
</tr>
<tr>
<td>33 - 51 ft</td>
<td>24V-DPS-4</td>
</tr>
<tr>
<td>52 - 64 ft</td>
<td>24V-DPS-5</td>
</tr>
</tbody>
</table>

**Mean Well HLG**

<table>
<thead>
<tr>
<th>LED Strip Length</th>
<th>SKU</th>
</tr>
</thead>
<tbody>
<tr>
<td>3-24 ft</td>
<td>HLG-40H-24A</td>
</tr>
<tr>
<td>25-36 ft</td>
<td>HLG-60H-24A</td>
</tr>
<tr>
<td>37-60 ft</td>
<td>HLG-100H-24A</td>
</tr>
<tr>
<td>61-72 ft</td>
<td>HLG-120H-24A</td>
</tr>
<tr>
<td>73-111 ft</td>
<td>HLG-185H-24A</td>
</tr>
<tr>
<td>112-144 ft</td>
<td>HLG-240H-24A</td>
</tr>
<tr>
<td>145-192 ft</td>
<td>HLG-320H-24A</td>
</tr>
<tr>
<td>193-360 ft</td>
<td>HLG-600H-24A</td>
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</tbody>
</table>

**Mean Well LPV**

<table>
<thead>
<tr>
<th>LED Strip Length</th>
<th>SKU</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-12 ft</td>
<td>LPV-20-24</td>
</tr>
<tr>
<td>13-21 ft</td>
<td>LPV-35-24</td>
</tr>
<tr>
<td>22-36 ft</td>
<td>LPV-60-24</td>
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</tbody>
</table>

**Zurik EMLV2**

<table>
<thead>
<tr>
<th>LED Strip Length</th>
<th>SKU</th>
</tr>
</thead>
<tbody>
<tr>
<td>2-18 ft</td>
<td>ZRK-EMLV2-30W-24VDC</td>
</tr>
<tr>
<td>19-36 ft</td>
<td>ZRK-EMLV2-60W-24VDC</td>
</tr>
<tr>
<td>37-57 ft</td>
<td>ZRK-EMLV2-96W-24VDC-J</td>
</tr>
<tr>
<td>58-72 ft</td>
<td>ZRK-EMLV2-120W-24VDC-J</td>
</tr>
<tr>
<td>73-120 ft</td>
<td>ZRK-EMLV2-200W-24VDC-J</td>
</tr>
<tr>
<td>121-180 ft</td>
<td>ZRK-EMLV2-300W-24VDC-J</td>
</tr>
</tbody>
</table>
## Compatible Drivers (48V)

<table>
<thead>
<tr>
<th>LED Strip Length</th>
<th>Mean Well HLG</th>
<th>Mean Well LPV</th>
</tr>
</thead>
<tbody>
<tr>
<td>7-60 ft</td>
<td>HLG-100H-48</td>
<td></td>
</tr>
<tr>
<td>61-90 ft</td>
<td>HLG-150H-48</td>
<td></td>
</tr>
<tr>
<td>91-192 ft</td>
<td>HLG-320H-48</td>
<td></td>
</tr>
<tr>
<td>193-360 ft</td>
<td>HLG-600H-48</td>
<td></td>
</tr>
<tr>
<td>4-36 ft</td>
<td>LPV-60-48</td>
<td></td>
</tr>
</tbody>
</table>
Compatible Aluminum Extrusions

**KLUS GIZA Anodized Extrusion**

((SKU: KL-B556ANODA-1m))

**Note:** This extrusion only fits the IP65 Outline Series without cover

**Covers**
- KLUS - HS 22 Clear Cover (SKU: KL-17022-1m)
- KLUS LIGER 22 Frosted Cover (SKU: KL-17032-1m)

**End Caps**
- KLUS GIZA End Cap (SKU: KL-24007)

**Mounting Accessories**
- KLUS GP Surface Spring (SKU: KL-00293)
- KLUS Mounting Bracket (SKU: KL-24143)

**KLUS LIPOD Anodized Extrusion**

((SKU: KL-B554ANODA-1m))

**Covers**
- KLUS LIGER 22 Frosted Cover (SKU: KL-17032-1m)

**End Caps**
- KLUS LIPOD-MET End Cap (SKU: KL-24051)

**Mounting Accessories**
- KLUS Mounting Bracket (SKU: KL-24143)

**KLUS KOPRO Anodized Extrusion**

((SKU: KL-B6367ANODA-1m))

**Covers**
- KLUS KOPRO L Cover (SKU: KL-17092-1m)

**End Caps**
- KLUS KOPRO L End Cap (SKU: KL-24116)

**Mounting Accessories**
- KLUS GP Surface Spring (SKU: KL-00293)

**KLUS SILER Anodized Extrusion**

((SKU: KL-B9325ANODA-1m))

**Covers**
- KLUS SILER Frosted Cover (SKU: KL-17039-1m)

**End Caps**
- KLUS SILER End Cap (SKU: KL-24236)

**Mounting Accessories**
- KLUS 45-STN Mounting Bracket (SKU: KL-24144)

Compatible Aluminum Extrusions

**Compatible Aluminum Extrusions**

- KLUS - HS 22 Clear Cover (SKU: KL-17022-1m)
- KLUS LIGER 22 Frosted Cover (SKU: KL-17032-1m)
- KLUS GIZA End Cap (SKU: KL-24007)
- KLUS LIPOD-MET End Cap (SKU: KL-24051)
- KLUS KOPRO L End Cap (SKU: KL-24116)
- KLUS SILER End Cap (SKU: KL-24236)

**Note:** This extrusion only fits the IP65 Outline Series without cover

**Mounting Accessories**
- KLUS GP Surface Spring (SKU: KL-00293)
- KLUS Mounting Bracket (SKU: KL-24143)
- KLUS Mounting Bracket (SKU: KL-24143)
- KLUS 45-STN Mounting Bracket (SKU: KL-24144)
Safety And Disclosures

1. Installation must be in accordance with local and national electrical code regulations.

2. To ensure safety and correct installation, our strips are intended to be installed by a qualified, licensed electrician.

3. Only install with a Class 2 DC Constant Voltage LED driver to meet UL requirements.

4. Do not install in environment where excessive heat may exist.

5. LED strip lights must be handled with care. Excessive handling, bending, and pressure may damage the product, voiding the warranty.

6. Do not install indoor LED tape light products in outdoor / wet location environments. Only use copper wiring. Use wires rated for at least 176°F (80°C) and certified for use with external connection of electrical equipment.

7. Each maximum run requires a dedicated power feed from the driver. Do not extend beyond the recommended maximum run length.

8. Make sure the appropriate gauge wire is installed between driver, LEDs, and any dimmers. When choosing wire, calculate voltage drop, maximum amperage rating, and the location ratings on the wire. Improper wire selection and installation could overheat wires, and cause fire.

9. Do not modify product beyond instructions or warranty will be void.

10. We reserve the right to modify and improve the design of our fixtures without prior notice. Although we try our best to order the same colors every time, due to changes in technology and phosphors over time, we cannot guarantee to match existing installed fixtures for subsequent orders or replacements in regards to product appearance, CCT, or lumen output.

Warranty Information

Limited Warranty
This product has a 15 year limited warranty from the date of shipment. This warranty only includes the main product outlined in this specification sheet and does not include the additional accessories that are used as a reference. Complete warranty details for fixtures and additional accessories are available at https://www.flexfireleds.com/warranties/ within the Policies section. For warranty related questions please contact product support team at (support@flexfireleds.com).

Consumer’s Acknowledgment
Flexfire LEDs, Inc. stands behind its products when they are used properly and according to our specifications. When you purchase our products, you are agreeing to the terms and conditions outlined in our warranty section. We try our best to make recommendations, but the burden of proper installation, design, and maintenance relies on the purchaser.

This limited warranty does not include product failures that are the result of:
Not using a voltage regulated power supply to connect the LED product or controls; Connecting LED products to the wrong output voltage; Improper connection of power supplies, LED products, or controls; Connecting LED products or controls directly to any AC power source if they are stated for DC only input; Connecting power supplies backwards to an AC power source; Products used in an inappropriate location or in environmental conditions (temperature, humidity, moisture, etc.) outside the normal specified range; Water damage to products not specifically sold as waterproof products; Electrical power surges and spikes; Damage from hail, flooding, tornado, fire, wind, earthquake, lightning, electrical storm, or any other natural disasters or “force majeure” incidences; Damage caused by a vehicle or other accident; Damage caused when transporting the item; Damage to any products that were modified by the user, used for purposes other than as intended or directed, or connected to LED systems or components not purchased from Flexfire LEDs; Products that have been subjected to misuse, mishandling, misapplication or accident. Products used in connection with any components, devices or systems other than those explicitly approved as compatible with Company’s products and listed on Company’s website. Excessive wear and tear and/or physical or accidental abuse, loss, or theft. Improper repairs or warranty services performed by someone other than Flexfire LEDs will void this warranty.