LAL Series
LINEAR LED TECHNOLOGY
for Harsh and Hazardous Environments
LOW PROFILE LINEAR ALUMINUM LED • EXCLUSIVE DESIGN FEATURES

- High temperature rated silicone gasketing provides Type 4X & IP66 sealing.
- 2 Lens Choices:
  - Clear for maximum lumens
  - Diffused for glare control
- Optional Through Wiring
  - 2 Access Plates for feed through wiring
- Looping Terminal Blocks under Wiring Access Plate(s).
- Battery
  - E5, E13 and E26 models include internal Emergency battery systems to 50°C suitability
- Surge
  - Standard with internal 20kA/10kA Supplemental Surge Protection

- Endcaps standard with 1 x 3/4” hub; 1/2” NPT and M20 available.

- Shown with LAL-SB Height adjustable Swivel Brackets
- Earth
  - External Earth Ground for IECEx requirement
- Mounting Slots on back and at 45°
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- Optional Through Wiring
  - 2 Access Plates for feed through wiring

ENDCAPS INCLUDE FEET FOR DIRECT CEILING MOUNTING AND SAFETY CABLE CONNECTION

LOOMING TERMINAL BLOCKS UNDER WIRING ACCESS PLATE(S).

HIGH TEMPERATURE RATED SILICONE GASKETING PROVIDES TYPE 4X & IP66 SEALING.

2 LENS CHOICES:
- CLEAR FOR MAXIMUM LUMENS
- DIFFUSED FOR GLARE CONTROL

OPTIONAL THROUGH WIRING
2 ACCESS PLATES FOR FEED THROUGH WIRING
**LINEAR LED TECHNOLOGY**

**FEATURES-SPECIFICATIONS**

**Applications**

Linear LED Luminaires are designed for installations where moisture, dirt, dust, corrosion and vibration may be present, and Type 3, 4X, IP66 areas where wind, water, snow or high ambitions can be expected. They can be used in locations made hazardous by the presence of flammable vapors or gases or combustible dusts as defined by the NEC/CEC/IECEx & INMETRO.

Typical applications include land based oil rigs, offshore oil platforms, dockside installations, chemical and petrochemical processing facilities, sewage treatment plants, garages, storage facilities, tunnels, and grain/food facilities.

**ABS** (American Bureau of Shipping) type approval for use on decks, vessels, platforms, barges, ships and boats. Also suitable for docks and marinas.

**Compliances**

- UL-8750 for LED lighting
- ANSI/UL 1598(A)
- UL-844 Standard for lighting fixtures for hazardous locations, Class I, Division 2; Class II, Divisions 1 and 2; Class III
- CSA C22.2 no. 137-M1981 electric luminaires for use in hazardous locations
- IEC suffix Zone 2/21 to IEC 60079-0, 60079-15, 60079-31 Standards
- Enclosed and gasketed
- Type 3, 4X
- IP66

**Supplemental 20KA/10KV Surge Protection** is standard (for 120-277 VAC models)

**Materials**

- Housing – one piece natural finish ≤ .1% copper-free aluminum extrusion
- Endcaps & wiring – Access covers are copper-free (≤ .4%) aluminum with gray baked powder epoxy-polyester finish, electrostatically applied for complete uniform corrosion resistance.
- External screws are 316 stainless steel
- Lens – Impact resistant polycarbonate lens available in diffuse or clear

**LAL & LALxE Product Features**

- LALxE models have “built-in” battery backup for 90 or 180 minute emergency exit
- Shallow design minimizes profile in work areas with low ceiling heights
- Diffuse Lens Standard to minimize glare; Clear Lens available
- Polycarbonate Single Lens 18W to 60W; Double Lens model 80W & 120W
- Slot Back Design allows multiple mounting access points across length – slots can also be used with 5/16” or 8mm bolts & nuts, 3 housing slots, 1 center back and 2 at 45°.
- Variety of mounting options including swivel brackets, wall, ceiling brackets, or beam clamps
- End Caps each have 2 mounting feet built-in plus a safety strap attachment point

**LED Features and Standards**

- Many Midpower LEDs blend light to simulate fluorescent tubes
- Chromaticity outputs: standard – 5000K 70 CRI
- Energy Savings – High lumens per watt
- LED Array Life – 100,000+ hours with 70% initial lumens
- Long Fixture Life – 50,000 - 55,000 maintenance free hours
- Ambient suitability -40°C to 65°C (see tables). -20°C to 50°C Ambient suitability for Emergency models.
- Instant On – Including after power interruption
- World Voltage 120 - 277VAC 50/60Hz
- Solder-LESS LED Board Connections – Vibration Resistant

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### CATALOG LOGIC

**Lighting Solutions**

#### LAL/LALxE/LALC Series

- **LAL(C)** – Series Constant Aluminum Extrusion with Polycarbonate Lens
- **LAL(R)** – Rig Version with Poke out Hubs

#### Fixture Wattage

- **18**
  - Single Lens – Dimension B or C
- **28**
  - Two Lens – Dimension D
- **45**
  - Compact Lens – See Dimension A

#### Emergency Battery Backup (LAL 120-277VAC 50/60Hz, not LALC Compact)
- **Blank** – No Emergency
- **E5** – 5 watts LED Power 180 minute egress
- **E13** – 13 watts LED Power 90 minute egress
- **E26** – 26 watts LED Power 90 minute egress (2 Lens models only)

#### Options

- **L4-2AP** – approx. 4 foot with 2 access covers (Dimension C)
- **F** – Single Fuse (1 pole)
- **FF** – Two Fuses (2 pole - 2 hot legs)
- **SS2** – 1 Endcap with 1x1/2” NPT and 1xM20 Entries (3/4” NPT Plugged)
- **D52** – 2 Endcaps with 1x1/2” NPT and 1xM20 Entries (3/4” NPT Plugged)
- **D50** – 2x1/2” NPT Entries 1 end cap, 3/4” plugged; 2nd end cap std. 1x3/4” NPT
- **D502** – 2x1/2” Entries 2 end caps, 3/4” NPTs plugged
- **D20** – 2xM20 Entries 1 end cap, 3/4” plugged; 2nd end cap std. 1x3/4” NPT
- **D202** – 2xM20 Entries 2 end caps, 3/4” NPTs plugged
- **LSP** – Less Surge Protector
- **GH** – Gray Housing
- **RH** – Red Housing
- **2AP** – Dual Access Plates (Increases Length by 4.2” [102])
- **TBL** – Terminal Blocks Looping through Wiring
- **CAH** – Clear Anodized Housing
- **3590** – 3500K (CCT) and 90 CRI LEDs

#### Specials

- **Lens**
  - **D** – Diffuse Polycarbonate
  - **C** – Clear Polycarbonate

#### Voltage

- **30** – 120V-277VAC 50/60Hz LAL/LALC all models
- **27** – 12VDC - 24VDC LALC 20W, 25W non-emergency models
- **33** – 347-480VAC LAL 28W & 55W non-emergency models only

#### Energy Savings

### LED VS FLUORESCENT WATTAGE & DELIVERED LUMENS

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>LUMENS</th>
<th>L/W</th>
<th>FLUORESCENT</th>
<th>LUMENS</th>
<th>L/W</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAL1830C</td>
<td>2479</td>
<td>138</td>
<td>40W 1x40W BX</td>
<td>2471</td>
<td>63</td>
</tr>
<tr>
<td>LAL2830C</td>
<td>3624</td>
<td>129</td>
<td>55W 1x55W BX</td>
<td>3766</td>
<td>65</td>
</tr>
<tr>
<td>LAL4530C</td>
<td>5515</td>
<td>122</td>
<td>56W 2x28T5</td>
<td>4676</td>
<td>71</td>
</tr>
<tr>
<td>LAL6030C</td>
<td>7709</td>
<td>128</td>
<td>64W 2x32T8</td>
<td>4772</td>
<td>80</td>
</tr>
<tr>
<td>LAL8030C</td>
<td>11032</td>
<td>138</td>
<td>108W 2x54T5HO</td>
<td>8088</td>
<td>67</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>120W 2x60T12HO</td>
<td>6965</td>
<td>56</td>
</tr>
</tbody>
</table>

**Note:**

- **CA** – Contact Factory for custom configurations and options
- **T** – Terminal Block Looping through Wiring
- **H** – Housing Options
- **SP** – Surge Protector
- **M20** – M20 Entries
- **D** – Dimensions
- **E** – Emergency Options

**Example**

45W 4PCB with 13W Emergency 120 - 277VAC with Diffuse Lens, 2 Fuses, 2 Access Plates Dimension “B”
### ORDERING INFORMATION

| CATALOG NUMBER W/ DIFFUSE LENS | WEIGHT LBS./KG | WATTS STD. POWER | LENGTH STYLE - INCHES (MM) | VOLTAGE | DELIVERED LUMENS Diffuse/Clear | 40°C | 55°C | 65°C | 40°C | 55°C | 65°C | 40°C | 55°C | 65°C | 40°C | 55°C | 65°C |
|--------------------------------|----------------|------------------|-----------------------------|---------|-------------------------------|------|------|------|------|------|------|------|------|------|------|------|
| LAL1830D                       | 17.9 / 8.1     | 18               | B-32.6 (828)                | 0.15 - 0.06 | 2272 / 2479                  | T6   | T6   | T5   | T4   | T4   | T4   | T6   | T5   | T4   | T4   |
| LAL1830D-L4-2AP                | 21.9 / 9.9     | 28               | G-51 (1295)                 | 0.23 - 0.10 | 3321 / 3624                  | T6   | T6   | T5   | T4   | T4   | T4   | T6   | T5   | T4   | T4   |
| LAL2830D                       | 17.9 / 8.1     | 45               | G-51 (1295)                 | 0.38 - 0.16 | 5054 / 5515                  | T6   | T5   | T4   | T4   | T4   | T4   | T6   | T5   | T4   | T4   |
| LAL4530D                       | 17.9 / 8.1     | 60               | G-51 (1295)                 | 0.50 - 0.22 | 7064 / 7709                  | T6   | T5   | T4   | T4   | T4   | T4   | T6   | T5   | T4   | T4   |
| LAL8030D                       | 18.9 / 8.6     | 80               | G-51 (1295)                 | 0.67 - 0.29 | 10110 / 11032                | T6   | T5   | T4   | T4   | T4   | T4   | T6   | T5   | T4   | T4   |
| LAL12030D                      | 22.9 / 10.4    | 120              | G-51 (1295)                 | 1.00 - 0.45 | 16000 / 16467                | T6   | T5   | T4   | T4   | T4   | T4   | T6   | T5   | T4   | T4   |
| LALC1527D                      | 12.03 / 4.49   | 15               | A-18.73 (476)               | 1.3 - 0.6  | 1503 / 1640                  | T5   | T4   | T4   | T4   | T4   | T4   | T5   | T4   | T4   |
| LALC1530D                      | 12.03 / 4.49   | 20               | A-18.73 (476)               | 1.7 - 0.8  | 2337 / 2550                  | T5   | T5   | T4   | T4   | T4   | T4   | T5   | T5   | T4   | T4   |
| LALC2527D                      | 12.03 / 4.49   | 25               | A-18.73 (476)               | 2.1 - 1.0  | 3019 / 3294                  | T5   | T4   | T4   | T4   | T4   | T4   | T5   | T4   | T4   |
| LALC3030D                      | 12.03 / 4.49   | 30               | A-18.73 (476)               | 2.6 - 1.1  | 3603 / 3930                  | T5   | T4   | T4   | T4   | T4   | T4   | T5   | T4   | T4   |

### CABLE GLAND ORDERING OPTIONS

<table>
<thead>
<tr>
<th>CATALOG NUMBER</th>
<th>ENTRY THREAD SIZE (NPT)</th>
<th>CABLE ACCEPTANCE DETAILS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>DIAMETER 'C'</td>
</tr>
<tr>
<td>MCX1B</td>
<td>1/2&quot;</td>
<td>0.51” (13.0) 0.63” (16.0)</td>
</tr>
<tr>
<td>MCX1C</td>
<td>1/2&quot;</td>
<td>0.60” (15.2) 0.82” (20.8)</td>
</tr>
<tr>
<td>MCX2</td>
<td>3/4&quot;</td>
<td>0.73” (18.5) 1.03” (26.2)</td>
</tr>
</tbody>
</table>

For entire series, please see www.hubbell-killark.com.
DIMENSIONS AND ACCESSORIES

A: Dimensions for LALC

B: Dimension for Single Lens

C: Dimension Single Lens with approx. 4 foot length and 2 access covers

D: Dimension Double Lens

End Views
# ACCESSORIES AND REPLACEMENT PARTS

<table>
<thead>
<tr>
<th>Part</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAL-SB</td>
<td>Swivel Bracket Set w/ Adjustable Height; includes 5/16&quot; bolts/nuts/lock-washers for attachment to LAL(C) “slots”; can also be attached to end cap mounting feet with FBO bolts.</td>
</tr>
<tr>
<td>LZCB</td>
<td>Ceiling Bracket Set with Stainless Steel Bolts to attach to LAL(C) “slots”</td>
</tr>
<tr>
<td>LZW</td>
<td>Wall Bracket Set with Stainless Steel Bolts to attach to LAL(C) “slots”</td>
</tr>
<tr>
<td>LAL-BC</td>
<td>Steel/malleable Iron with Zinc electroplate for corrosion resistance; includes Stainless Steel Bolts to attach to LAL(C) “slots”</td>
</tr>
<tr>
<td>LAL-EB</td>
<td>Eyebolt Set with Stainless Steel Bolts to attach to LAL(C) “slots”</td>
</tr>
<tr>
<td>VMSC10</td>
<td>10’ Stainless Steel Safety Cable with loop grip</td>
</tr>
<tr>
<td>LALG</td>
<td>Stainless Guard for 1 LAL Lens, order two for 2 lens models</td>
</tr>
<tr>
<td>LALCG</td>
<td>LALC Stainless Guard</td>
</tr>
<tr>
<td>LAL-LENSCLR</td>
<td>Single Clear Lens with Gasket for LAL Series</td>
</tr>
<tr>
<td>LAL-LENSDIF</td>
<td>Single Diffuse Lens with Gasket for LAL Series</td>
</tr>
<tr>
<td>LALC-LENSCLR</td>
<td>Single Clear Lens with Gasket for LALC Series</td>
</tr>
<tr>
<td>LALC-LENSDIF</td>
<td>Single Diffuse Lens with Gasket for LALC Series</td>
</tr>
<tr>
<td>LAL-RIG-CB</td>
<td>Rig Mounting Style Ceiling Bracket</td>
</tr>
<tr>
<td>LAL-RIG-WB</td>
<td>Rig Mounting Style Wall Bracket</td>
</tr>
<tr>
<td>RIG-LALC</td>
<td>Rig End Caps for LALC</td>
</tr>
</tbody>
</table>

### Diagrams

- **LAL-SB on Center Slot**
- **LAL-SB on 45° Slot**
- **LAL-SB Dimensions – extended shown**
- **Wall Bracket Set**
  - Part Number LZW
  - Stainless Steel (natural finish)
- **VMSC10 Safety Cable**
- **LAL-BC Beam Clamp**
- **Ceiling Bracket Set**
  - Part Number LZCB
  - Stainless Steel (natural finish)
- Modern “Ribbon” Windows Interface with “Real Time” Calculations
- Easily import/export of CAD files (DWG/DXF/PDF)
- Enhanced photometric database with luminaire images and wireframes
- Ability to draw round or complex rooms and grids
- False Colors to indicate “Relative Brightness”

See “Lighting Software link” at www.hubbell-killark.com to download