

# KBL Series

LED Low-Bay/High-Bay Luminaire

Rev. Date: V12 05/23/2023

## Product Description

KBL LED delivers 20,900(M) or 27,500(H) lumens, allowing for one-for-one replacement or fixture count reduction of 250W, 400W HID or up to six lamp 54W T5HO fixtures. With energy savings of up to 65% over traditional light sources, lightweight construction and multiple mounting options, the KBL is optimized for new construction or retrofit installations.

The KBL delivers even illumination with reflector choices of aluminum, clear acrylic, clear polycarbonate, or white acrylic. Optional lenses offer enhanced uplight and maximum uniformity, making it ideal for a variety of applications including retail, gymnasiums, light manufacturing, and warehouses.

**Applications:** Retail, gymnasiums (aluminum or polycarbonate reflector), industrial, manufacturing and warehouse spaces.

## Performance Summary

**Initial Delivered Lumens:** 22,100 or 29,100 lumens

**Operating Temperature Range:** M Lumen Package: -40°C to 50°C (-40°F to +122°F); H Lumen Package: -40°C to 40°C (-40°F to +104°F); minimum operating temperature of 0°C (32°F) for EB

**Efficacy:** Up to 156 LPW

**CRI:** 70

**CCT:** 4000K, 5000K

**Input Voltage:** 120-277 VAC or 347-480 VAC (without step-down transformer)

**L<sub>70</sub> Lifetime:** > 100,000 hours at maximum operating temperature

**Limited Warranty\*:** 10 years for luminaire/5 years for ML and PML sensor/1 year for luminaire accessories

**Limited Warranty Emergency Back Up (EB) Battery:** 1 Year Battery Back Up. Test regularly in accordance with local codes

**Universal Mounting:** Hook & Cord or Pendant Mount

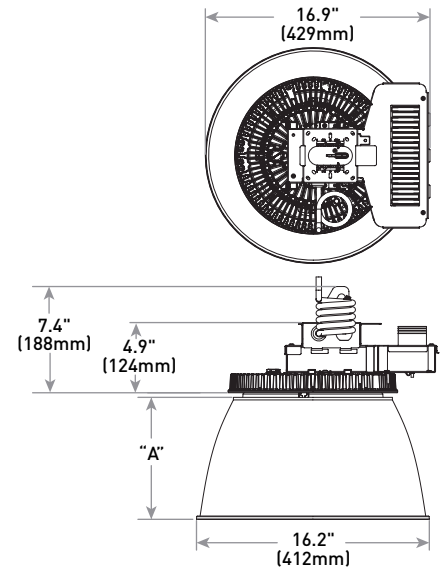
**Weight:** Maximum 14 lbs. (6.4kg)

**Controls:** 0-10V dimming to 10%, Multi-Level /Programmable Multi-Level Occupancy

Assembled in the USA by Cree Lighting from US and imported parts

\* See <http://creelighting.com/warranty> for warranty terms.

**Shown Fully Assembled with Prismatic Reflector and Universal Mount**



| Reflector                       | "A" Height   |
|---------------------------------|--------------|
| ALR16 (Aluminum)                | 9.0" (229mm) |
| ACR16 (Clear Prismatic Acrylic) | 8.5" (216mm) |
| AWR16 (White Acrylic)           | 8.5" (216mm) |
| PCR16 (Clear Polycarbonate)     | 8.5" (216mm) |

Refer to page 4 for EB20 detail.

## Ordering Information

Example: KBL-A-UV-H-40K-7-UL-10V

| KBL     | A       | UV  |  |                              |             |                                  |   |  |
|---------|---------|---|--|------------------------------|-------------|----------------------------------|---|--|
| Product | Version | Mounting  | Lumen Package*                           | CCT                          | CRI         | Voltage                          | Controls  | Options  |
| KBL     | A       | UV<br>Universal Mount: hook and cord with 6ft whip, adaptor plate for pendant | M<br>20,900 Lumens<br>H<br>27,500 Lumens | 40K<br>4000K<br>50K<br>5000K | 7<br>70 CRI | UL<br>120-277V<br>UH<br>347-480V | 10V 0-10V Dimming<br>ML Multi-Level<br>- Refer to ML install instructions<br>- Coverage Lens Mounting Ht: 15-45' (4.6-13.7m) - detects walking to 35' and fork lifts to 45'<br>PML Programmable Multi-Level<br>- Refer to PML spec sheets for details<br>- Coverage Lens Mounting Ht: 15-40' (4.6-12.2m) - detects walking to 30' and fork lifts to 40' | EB20 Integral Emergency<br>- Not available with UH voltage<br>- Provides 20W and 90 minutes of emergency operation |

\* Lumen Package codes identify approximate light output only. Actual lumen output levels vary depending on CCT and reflector/lens selection. Refer to Delivered Lumens & Electrical Data and Reflector Illumination Performance tables for specific lumen values.



US: [creelighting.com](http://creelighting.com) (800) 236-6800

Canada: [creelighting-canada.com](http://creelighting-canada.com) (800) 473-1234

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## Product Specifications

### CONSTRUCTION & MATERIALS

- Die cast aluminum heatsink
- IP65 optics with tempered glass lens protect LEDs while keeping the dust out
- Low-profile, lightweight design provides ease of installation
- UV mount is provided with factory installed spring lock hook for mounting, factory installed 6' (1.8m) 16/3 AWG white power cord and an adaptor plate to accept a 3/4 IP pendant (by others)
- Factory calibrated to hang straight
- Designed for downlight applications only
- EB20 comes with factory installed 3' (0.9m) 18/4 AWG white cord w/1.5" (38mm) flying leads
- **Weight:** Maximum 14 lbs. (6.4kg); w/EB20 20 lbs. (9.1kg)

### ELECTRICAL SYSTEM

- **Input Voltage:** 120-277V or 347-480V 50/60Hz
- **Power Factor:** > 0.9 at full load
- **Total Harmonic Distortion:** < 20% at full load
- **Operating Temperature Range:** M Lumen Package: -40°C to 50°C (-40°F to +122°F); H Lumen Package: -40°C to 40°C (-40°F to +104°F); minimum operating temperature for ML option is -20°C (-4°F); and EB20 option is 0°C (32°F)
- **Transient Protection:** 6kV/3kA tested in accordance to IEEE/ANSI
- When code dictates fusing, a slow blow fuse or type C/D breaker should be used to address inrush current
- EB20 is wired for switched emergency mode (lights can be turned off without going into emergency mode)

### 0-10V DIMMING

- Continuous dimming to 10% with 0-10V DC control protocol
- 10V Source Current: 0.15mA
- Use only lighting controls with neutral connection or controls intended for use with LED fixtures
- Reference dimming document for additional information

### MULTI-LEVEL OPTION (PIR)

- High/low occupancy, dim to min of 30%
- Available with UL and UH voltages
- Refer to KBL install instructions for details on sensor functionality, operation and lumen and power multipliers

### PROGRAMMABLE MULTI-LEVEL OPTION (PIR)

- High/low/off photo/motion sensor
- Available with UL and UH voltages
- Refer to PML spec sheet for details on sensor functionality, operation and lumen and power multipliers

### REGULATORY & VOLUNTARY QUALIFICATIONS

- cULus Listed (UL1598; UL8750)
- Designed for indoor use only
- Suitable for damp locations
- Requires minimum 90°C supply conductors
- LED optics meet IP65 requirements
- UL924 (EB option). Maximum mounting height: 29' (8.8m)
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- Assembled in the U.S.A. of U.S. and imported parts
- RoHS compliant. Consult factory for additional details
- **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – [www.p65warnings.ca.gov](http://www.p65warnings.ca.gov)

| Delivered Lumens & Electrical Data* |       |                    |              |                         |                   |      |      |      |      |      |
|-------------------------------------|-------|--------------------|--------------|-------------------------|-------------------|------|------|------|------|------|
| Lumen Package                       | CCT   | Delivered Lumens** | System Watts | Efficacy (LPW at 70CRI) | Total Current (A) |      |      |      |      |      |
|                                     |       | 70 CRI             | 120-480V     |                         | 120V              | 208V | 240V | 277V | 347V | 480V |
| M                                   | 4000K | 22,100             | 142          | 156                     | 1.20              | 0.69 | 0.60 | 0.51 | 0.41 | 0.29 |
|                                     | 5000K | 22,100             |              | 156                     |                   |      |      |      |      |      |
| H                                   | 4000K | 29,100             | 189          | 154                     | 1.60              | 0.92 | 0.80 | 0.68 | 0.54 | 0.39 |
|                                     | 5000K | 29,000             |              | 153                     |                   |      |      |      |      |      |

\* Data provided at 25°C (77°F). Actual wattage may differ by +/- 10% when operating between 120 -277V or 347-480V +/- 10%.

\*\* Initial delivered lumen values based on luminaire without reflector. Refer to reflector Illumination Performance table for lumen multipliers when using reflector accessory.

| Delivered Emergency Lumens at 70 CRI* |       |       |
|---------------------------------------|-------|-------|
| Lumen Package                         | 4000K | 5000K |
| M                                     | 3,120 | 3,120 |
| H                                     | 3,080 | 3,060 |

\* Emergency lumen values do not include reflector options.

| Delivered Emergency Lumens at 70 CRI, ACR16 |       |       |
|---|-------|-------|
| Lumen Package                               | 4000K | 5000K |
| M   | 2,995 | 2,995 |
| H   | 2,957 | 2,938 |

| KBL Series Ambient Adjusted Lumen Maintenance <sup>1</sup> |             |                                  |                                   |                                   |                                    |
|--|-------------|----------------------------------|-----------------------------------|-----------------------------------|------------------------------------|
| Ambient  | Initial LMF | 36K hr Reported <sup>2</sup> LMF | 50K hr Estimated <sup>3</sup> LMF | 75K hr Estimated <sup>3</sup> LMF | 100K hr Estimated <sup>3</sup> LMF |
| 25°C (77°F)  | 1.00        | 0.95                             | 0.94                              | 0.93                              | 0.92                               |
| 30°C (86°F)  | 0.99        | 0.94                             | 0.93                              | 0.92                              | 0.91                               |
| 35°C (95°F)  | 0.98        | 0.93                             | 0.92                              | 0.91                              | 0.90                               |
| 40°C (104°F)   | 0.97        | 0.92                             | 0.91                              | 0.90                              | 0.90                               |
| 45°C (113°F)   | 0.96        | 0.91                             | 0.90                              | 0.89                              | 0.89                               |
| 50°C (122°F)   | 0.95        | 0.90                             | 0.89                              | 0.89                              | 0.88                               |

<sup>1</sup> Lumen maintenance values at 25°C (77°F) are calculated per IES TM-21 based on IES LM-80 report data for the LED package and in-situ luminaire testing. Luminaire ambient temperature factors (LATF) have been applied to all lumen maintenance factors.

<sup>2</sup> In accordance with IES TM-21, Reported values represent interpolated values based on time durations that are up to 6x the tested duration in the IES LM-80 report for the LED.

<sup>3</sup> Estimated values are calculated and represent time durations that exceed the 6x test duration of the LED.

**Accessories**

| Reflector  |   |  |
|--|---|--|
| <p><b>ALR16 (Single Pack)</b><br/> <b>ALR16-MP (Multi-Pack)</b><br/>                     - 16" (406mm) Aluminum</p> <p><b>ACR16 (Single Pack)</b><br/> <b>ACR16-MP (Multi-Pack)</b><br/>                     - 16" (406mm) Clear Acrylic Prismatic<br/>                     - Acrylic reflector is not impact resistant nor intended for use unprotected in a gymnasium</p> <p><b>Notes:</b><br/>                     - Single pack SKUs ship as one reflector per box<br/>                     - Multi-pack SKUs require a minimum order of 10 pieces or more, and ship together in as few boxes as possible<br/>                     - Acrylic or polycarbonate reflectors and lenses are not intended for use in environments containing airborne corrosive agents such as chemical solvents, cleaners, or cutting fluids</p> | <p><b>AWR16 (Single Pack)</b><br/> <b>AWR16-MP (Multi-Pack)</b><br/>                     - 16" (406mm) White Acrylic<br/>                     - Acrylic reflector is not impact resistant nor intended for use unprotected in a gymnasium</p>                                       | <p><b>PCR16 (Single Pack)</b><br/> <b>PCR16-MP (Multi-Pack)</b><br/>                     - 16" (406mm) Clear Polycarbonate<br/>                     - Suitable for use in gymnasiums; WG-AP wire guard recommended</p> |
| Wire Guards  |   |  |
| <p><b>16" (406mm) Wire Guards</b><br/>                     WG-A<br/>                     - For Aluminum Reflector<br/>                     WG-AP<br/>                     - For Acrylic and Polycarbonate Reflectors</p> <p><b>Note:</b> Not for use with lens accessories</p>   | <p><b>Full Body Wire Guard</b><br/>                     FBGWH<br/>                     - Suitable for use with reflector and lens accessories<br/>                     - 8 AWG steel construction w/painted white finish<br/>                     - Not for use with ML and PML</p> |  |
| Lenses   |   |  |
| <p><b>16" (406mm) Clear Prismatic Drop Acrylic Lenses</b><br/>                     DLA16<br/>                     - For Aluminum Reflector<br/>                     DL16<br/>                     - For Acrylic and Polycarbonate Reflectors</p> <p><b>Note:</b> Lenses and WG-A/WG-AP wire guard accessories can't be used together</p>   | <p><b>16" (406mm) Clear Conical Acrylic Lenses</b><br/>                     CLA16<br/>                     - For Aluminum Reflector<br/>                     CL16<br/>                     - For Acrylic and Polycarbonate Reflectors</p>   |  |
| Safety Cables  |   |  |
| <p><b>Galvanized Safety Cables</b><br/>                     SC-5<br/>                     - 5.0' (1.5m) Cable</p>  | <p>SC-10<br/>                     - 10.0' (3.0m) Cable</p>  |  |
| Field-Installed NEMA® Plugs  |   |  |
| <p><b>AP-515P</b><br/>                     - 15 amp 120V Straight Blade Plug<br/> <b>AP-L515P</b><br/>                     - 15 amp 120V Twist Lock Plug<br/> <b>Note:</b> Not for use with EB20 option</p>  | <p><b>AP-L615P</b><br/>                     - 15 amp 240V Twist Lock Plug<br/> <b>AP-L715P</b><br/>                     - 15 amp 277V Twist Lock Plug</p>   | <p><b>AP-L2420P</b><br/>                     - 20 amp 347V Twist Lock Plug<br/> <b>AP-L820P</b><br/>                     - 20 amp 480V Twist Lock Plug</p>   |
| Field-Installed  |   |  |
| <p><b>Anti-Spin Adaptor</b><br/>                     HXB-AS<br/>                     - Anti-spin accessory for hook and cord mounting configuration</p>  | <p><b>Hand-Held Remote</b><br/>                     XA-SENSREM<br/>                     - For successful implementation of the programmable multi-level option, a minimum of one hand-held remote is required</p>   |  |

**Optional Reflectors/Lens:** shown fully assembled with universal mount

Aluminum Reflector w/Drop Lens



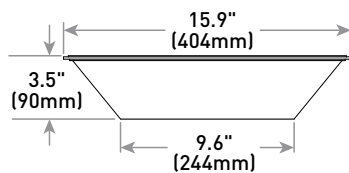
Clear Prismatic Acrylic Reflector



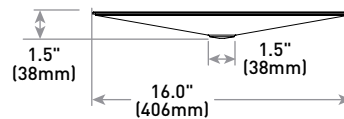
White Acrylic Reflector w/Conical Lens



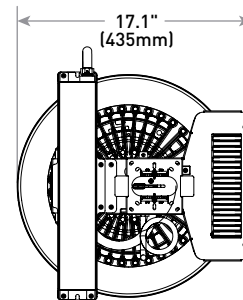
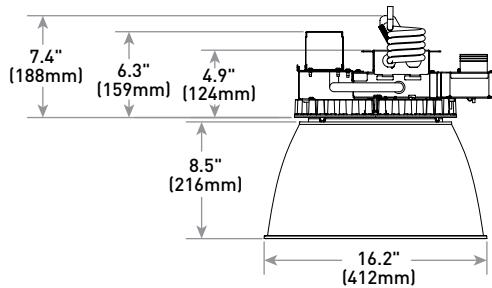
Drop Lens



Clear Conical Lens



**Emergency Battery Pack: EB20**



| Reflector Uplight Illumination Performance                  |              |                  |
|---|--------------|------------------|
| Reflector   | % of Uplight | Lumen Multiplier |
| ALR16 (Aluminum)  | 0%           | 0.86             |
| ALR16 w/CLA16 (Aluminum w/Clear Conical Lens)               | 0%           | 0.76             |
| ALR16 w/DLA16 (Aluminum w/Clear Drop Lens)                  | 2%           | 0.77             |
| ACR16 (Clear Prismatic Acrylic)                             | 3%           | 0.96             |
| ACR16 w/CL16 (Clear Prismatic Acrylic w/Clear Conical Lens) | 6%           | 0.93             |
| ACR16 w/DL16 (Clear Prismatic Acrylic w/Clear Drop Lens)    | 8%           | 0.93             |
| AWR16 (White Acrylic)                                       | 13%          | 0.93             |
| AWR16 w/CL16 (White Acrylic w/Clear Conical Lens)           | 16%          | 0.88             |
| AWR16 w/DL16 (White Acrylic w/Clear Drop Lens)              | 16%          | 0.90             |
| PCR16 (Clear Polycarbonate)                                 | 2%           | 0.89             |
| PCR16 w/CL16 (Clear Polycarbonate w/Clear Conical Lens)     | 5%           | 0.85             |
| PCR16 w/DL16 (Clear Polycarbonate w/Clear Drop Lens)        | 7%           | 0.84             |

| Cross Reference Reflectors |                      |  |
|----------------------------|----------------------|--|
| Previous Nomenclature      | Updated Nomenclature | Description  |
| CXBP16                     | ACR16                | Reflector 16" (406mm) Clear Prismatic Acrylic              |
| CXBP16-MP                  | ACR16-MP             | Reflector 16" (406mm) Clear Prismatic Acrylic - Multi-Pack |
| CXBW16                     | AWR16                | Reflector 16" (406mm) White Acrylic                        |
| CXBW16-MP                  | AWR16-MP             | Reflector 16" (406mm) White Acrylic - Multi-Pack           |
| CXBC16                     | PCR16                | Reflector 16" (406mm) Clear Polycarbonate                  |
| CXBC16-MP                  | PCR16-MP             | Reflector 16" (406mm) Clear Polycarbonate - Multi-Pack     |
| CXBA16N                    | ALR16                | Reflector 16" (406mm) Aluminum                             |
| CXBA16N-MP                 | ALR16-MP             | Reflector 16" (406mm) Aluminum- Multi-Pack                 |

Reference <http://creelighting.com/products/indoor/high-bay-low-bay/kbl-series> for detailed photometric data. IES files include reflector multipliers.

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