KBL Series

LED Low-Bay/High-Bay Luminaire - Version C

Rev. Date: V7 01/15/2025

Product Description

KBL LED Low-Bay/High-Bay delivers 9,000 - 35,000 lumens, allowing for one-for-one replacement or fixture count reduction of 150W to 575W 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, industrial, manufacturing and warehouse spaces.

Performance Summary

Initial Delivered Lumens: 9,000 - 35,000 lumens

Operating Temperature Range: 9L - 18L Lumen Packages: -40˚C to 50˚C (-40˚F to +122˚F); 24L - 35L Lumen Packages: -40˚C to 40˚C (-40˚F to +104˚F); minimum operating temperature 0˚C (32˚F) for EB, SWC, SWR and SWS/SWSS

Efficacy: Up to 178 LPW

CRI: 80+

CCT: 3000K, 3500K, 4000K, 5000K

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

L_{70} Lifetime (Light Engine): > 100,000 hours at maximum operating temperature

Limited Warranty†: 5 years for luminaire, BML, BMLS, SWC, SWR, SWS, SWSS options; up to 5 years for Synapse® accessories; 1 year for luminaire accessories; 10-year luminaire warranty option also available

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

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

Weight: Maximum 14 lbs. (6.4kg)

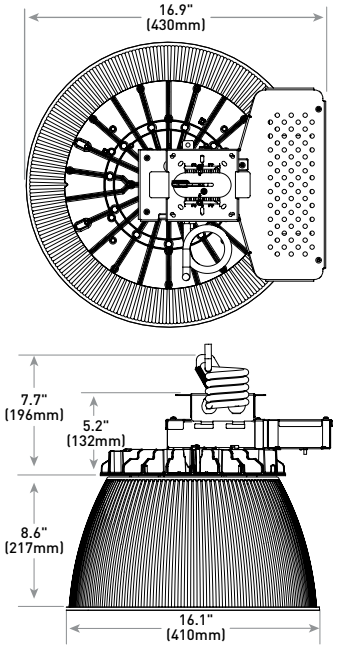
Controls: 0-10V dimming to 10%, Bluetooth® Technology Enabled Multi-Level, Synapse® Wireless

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

† See https://www.creelighting.com/resources/warranties/ for warranty terms. For Synapse accessories, consult Synapse spec sheets for details on warranty terms.

Reflector	"A" Height	Reflector	"A" Height
KBL-ALR-16 (Aluminum)	9.0" (229mm)	KBL-PCR-16 (Clear Polycarbonate)	8.5" (216mm)
KBL-ACR-16 (Clear Prismatic Acrylic)	8.5" (216mm)	KBL-ACR-16S (Low-Profile Clear Prismatic Acrylic)	4.5" (114mm)
KBL-AWR-16 (White Acrylic)	8.5" (216mm)	KBL-PCR-16S (Low-Profile Clear Polycarbonate)	4.5" (114mm)

24L Lumen Package Shown Fully Assembled with Prismatic Reflector and Universal Mount



Refer to pages 9-12 for EB, BML/BMLS low-profile reflectors, and wireless drawings.

Ordering Information

Example: KBL-C-24L-840-MC-UL-UV-10V-C6

KBL	C								
Family	**Series**	**Lumen Package**	**CRI/ CCT**	**Optic**	**Voltage**	**Mounting**	**Controls**	**Cord/Plug**	**Options**
KBL	C	**9L** 9,000 Lumens **12L** 12,000 Lumens **18L** 18,000 Lumens **24L** 24,000 Lumens **30L** 30,000 Lumens **35L** 35,000 Lumens	**830** 80CRI, 3000K **835** 80CRI, 3500K **840** 80CRI, 4000K **850** 80CRI, 5000K	**MC** Medium w/Clear Glass Lens	**Cord Only** **UL** Universal 120-277V **UH** Universal 347-480V **Cord w/ Plug Only** **12** 120V **25** 208-240V **27** 277V **34** 347V **48** 480V	**UV** Universal Hook & Cord Mount w/ Adaptor Plate for Pendant Mount **PD** Dedicated Pendant Mount	**10V** 0-10V Dimming **BML** Bluetooth® Technology Enabled Multi-Level Sensor (Standard Reflector) **BMLS** Bluetooth® Technology Enabled Multi-Level Sensor (Low-Profile Reflector) - Refer to BML spec sheet for details - 20-40' sensor lens installed on luminaire; 8-20' sensor lens and aisle shrouds included **Synapse Wireless® Control Offerings** - SimplySNAP On-Site Controller is required (see Accessory table on page 3) - 9L/12L available only with UL, 12, 25 & 27 voltages - 18L-35L available with all voltages - SWR, SWS and SWSS utilize a multi-function sensor **SWC** Synapse Wireless® Controls **SWR** Synapse Wireless® Controls w/Remote Sensor w/10' Cord **SWS** Synapse Wireless® Controls w/Network Sensor (Standard Reflector) **SWSS** Synapse Wireless® Controls w/Network Sensor (Low-Profile Reflector)	**UL/UH Voltages** **NC** No cord - Required with PD. Not available with UV **3-Conductor Cords** - Not available with PD or EB **C6** 6' 16/3 Cord, No Plug **C12** 12' 16/3 Cord, No Plug **C15** 15' 16/3 Cord, No Plug **5-Conductor Cords** - Required when EB option is selected. EB option includes 4-conductor cord (non-dimming) - Not available with BML/ BMLS or SWC/SWS/SWSS unless EB option is also selected **5C6** 6' 16/5 Cord, No Plug **5C12** 12' 16/5 Cord, No Plug **5C15** 15' 16/5 Cord, No Plug	**12/25/27/34/48 Voltage Required** **3-Conductor Cords w/Plug** - 15A for 120-277V; 20A for 347-480V - Not available with PD or EB **C6P** 6' 16/3 Cord w/Twist Lock-Plug **C12P** 12' 16/3 Cord w/Twist Lock-Plug **C15P** 15' 16/3 Cord w/Twist Lock-Plug **C6S** 6' 16/3 Cord w/Straight Blade Plug - Available only in 120V	**EB** - Provides 20W and 90 minutes of power in emergency mode - Available only with UL voltage - Not available with plug options per NEC requirements - Not available with 3-conductor cords - Requires 5-conductor cord option, but provided with 4-conductor cord (non-dimming) **PG** Previous Generation Compatibility - Reflector mount compatible with KBL-A & CXB reflectors - Not available with 35L lumen package - Not available with BMLS or SWSS controls - Not available with reflectors on page 3 **PP** Pallet Pack (Qty. 45/pallet) - For orders of more than 12 units - Not available with EB option **W10** 10-Year Limited Luminaire Warranty

* 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.

Website: creelighting.com
US: (800) 236-6800 **Canada:** (800) 473-1234

Product Specifications

CONSTRUCTION & MATERIALS

- Low-profile, lightweight design provides ease of installation
- Die cast aluminum heatsink
- IP65 optics with tempered glass lens protect LEDs while keeping the dust out
- UV mount is provided with factory installed spring lock hook for mounting, and an adapter plate to accept a 3/4 IP pendant (by others)
- UV mount offers factory-installed 3-conductor or 5-conductor white cords. Cords are 14ga. or 16ga. SEOW, STOW, or SOOW. Factory-installed plug options available for 3-conductor cords
- EB luminaires require 5-conductor cord
- PD mount is provided with factory installed pendant adaptor plate to accept a 3/4 IP pendant (by others)
- 9L-35L luminaires come with a perforated driver cover, and 35L luminaires with W10 option include a heat sink driver cover
- Factory calibrated to hang straight
- Designed for downlight applications only
- **Weight:** 9L-12L: 10.4 lbs. (4.7kg); 18L-35L: 11.8 lbs. (5.4kg); add 1.6 lbs. (0.7kg) for EB option
- Includes QR code on top of the driver housing cover which provides access to: Online installation instructions, Luminaire information (Part number, Serial number, Build date, and Warranty end date), and Warranty claim submission form
- Duplicate 1" and 2" QR code labels are included. 1" labels can be affixed next to fixtures, on site plans, or in maintenance records. 2" labels can be scanned from the ground when placed at an appropriate height

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:** 9L - 18L Lumen Packages: -40˚C to 50˚C (-40˚F to +122˚F); 24L - 35L Lumen Packages: -40˚C to 40˚C (-40˚F to +104˚F); minimum operating temperature for Synapse Wireless controls or EB options 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
- EB options are 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

SYNAPSE WIRELESS

- Connected lighting via a wireless mesh network
- Utility grade power monitoring (+/-2%)
- Daylight harvesting accessory (see table on page 3)
- Scheduling, zonal control, alerts and notifications

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 options). Refer to table at right for maximum mounting heights
- Meets FCC Part 15, Subpart B, Class A limits for conducted and radiated emissions
- Luminaire with SWC, SWR, SWS, or SWSS options meet FCC Part 15, Subpart C limits for conducted and radiated emissions
- Assembled in the USA by Cree Lighting from US and imported parts
- Some configurations meet requirements of BAA and/or BABA. Consult factory when needed for a project: www.creelighting.com/BAA-BABA
- RoHS compliant. Consult factory for additional details
- DLC (light engine w/o reflector) and DLC Premium qualified SKUs available. Please refer to https://qpl.designlights.org/solid-state-lighting for most current information
- **CA RESIDENTS WARNING:** Cancer and Reproductive Harm – www.p65warnings.ca.gov

Website: creelighting.com
US: (800) 236-6800 **Canada:** (800) 473-1234

Product Specifications

SYNAPSE® SIMPLYSNAP INTELLIGENT CONTROL

The Synapse SimplySNAP platform is a highly intuitive connected lighting solution featuring zone dimming, motion sensing, and daylight harvesting with utility-grade power monitoring and support of up to 1000 nodes per gateway. The system features a reliable and robust self-healing mesh network with a browser-based interface that runs on smartphones, tablets, and PCs. The integrated Synapse® Wireless Controller (SWC), Wireless Controller with Remote Sensor (SWR), and Wireless Controller with Network Sensor (SWS/SWSS) take the KBL Series to a new performance plateau, providing extreme energy productivity, code compliance and a better light experience.

Electrical Data*

Lumen Package	System Watts 120-480V	Total Current (A)						EB System Watts 120-277V	Total Current (A)			
		120V	208V	240V	277V	347V	480V		120V	208V	240V	277V
9L	55	0.45	0.26	0.23	0.20	0.16	0.11	58	0.48	0.28	0.24	0.21
12L	71	0.60	0.34	0.30	0.26	0.21	0.15	74	0.62	0.36	0.31	0.27
18L	102	0.86	0.49	0.42	0.37	0.30	0.21	105	0.89	0.50	0.44	0.38
24L	138	1.17	0.67	0.58	0.50	0.41	0.29	141	1.20	0.68	0.59	0.51
30L	171	1.45	0.82	0.71	0.62	0.50	0.36	184	1.56	0.89	0.77	0.66
35L	200	1.71	0.96	0.84	0.72	0.59	0.41	203	1.73	0.98	0.85	0.73

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

Delivered Emergency Lumens

Lumen Package	3000K	3500K/4000K/5000K
12L	1,600	1,700
12L w/KBL-ACR-16	1,590	1,680
24L	3,360	3,550
24L w/KBL-ACR-16	3,320	3,520

*To calculate approximate delivered lumens in EB mode, multiply efficacy of the luminaire from page 4 or 5 by EB wattage (20W).

Maximum Mounting Height w/EB Options

Acrylic Reflector	42' (12.8m)
Acrylic Reflector w/Conical Lens	32' (9.8m)
Short Acrylic Reflector	39' (11.9m)
Short Acrylic Reflector w/Conical Lens	32' (9.8m)

KBL-C Series (Light Engine) Ambient Adjusted Lumen Maintenance[1]

Ambient	Lumen Package	Initial LMF	25K hr Reported[2] LMF	50K hr Reported[2] LMF	75K hr Estimated[3] LMF	100K hr Estimated[3] LMF
25˚C (77˚F)	9L-18L	1.00	0.97	0.91	0.86	0.81
	24L-35L					
30˚C (86˚F)	9L-18L	0.99	0.96	0.90	0.85	0.80
	24L-35L					
35˚C (95˚F)	9L-18L	0.99	0.95	0.90	0.85	0.80
	24L-35L	0.99	0.94	0.88	0.83	0.78
40˚C (104˚F)	9L-18L	0.98	0.95	0.89	0.84	0.79
	24L-35L	0.98	0.93	0.87	0.81	0.75
45˚C (113˚F)	9L-18L	0.98	0.94	0.89	0.84	0.79
50˚C (122˚F)	9L-18L	0.97	0.93	0.87	0.82	0.78

[1] 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.
[2] 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.
[3] Estimated values are calculated and represent time durations that exceed the 6x test duration of the LED.

CREE LIGHTING®

Accessories

16" (406mm) O.D. Reflectors

Standard Profile Reflectors (recommended for 18L - 35L lumen packages)

KBL-ALR-16 (Single Pack)
KBL-ALR-16-MP (10-Pack)
- Aluminum

KBL-ACR-16 (Single Pack)
KBL-ACR-16-MP (10-Pack)
- Clear Prismatic Acrylic

KBL-AWR-16 (Single Pack)
KBL-AWR-16-MP (10-Pack)
- White Acrylic

KBL-PCR-16 (Single Pack)
KBL-PCR-16-MP (10-Pack)
- Clear Polycarbonate

Low-Profile Reflectors (recommended for 9L & 12L lumen packages)

KBL-ACR-16S (Single Pack)
KBL-ACR-16S-MP (10-Pack)
- Clear Prismatic Acrylic
- If ordering light engine with sensor, must order BMLS or SWSS controls

KBL-PCR-16S (Single Pack)
KBL-PCR-16S-MP (10-Pack)
- Clear Polycarbonate
- If ordering light engine with sensor, must order BMLS or SWSS controls

Notes:
- Single pack SKUs ship as one reflector per box
- 10-pack SKUs require order quantities in multiples of 10, and ship together in as few boxes as possible
- 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
- When installing acrylic reflectors in a gymnasium, it is recommended to use the FBGWH accessory

Wire Guards

16" (406mm) Wire Guards
WG-A
- For Aluminum Reflector

WG-AP
- For Acrylic and Polycarbonate Reflectors

Note: Not for use with lens accessories

Full Body Wire Guard
FBGWH
- Suitable for use with reflector and lens accessories
- 8 AWG steel construction w/painted white finish

Lenses

16" (406mm) Clear Prismatic Drop Acrylic Lenses
DLA16
- For Aluminum Reflector

DL16
- For Acrylic and Polycarbonate Reflectors

16" (406mm) Clear Conical Acrylic Lenses
CLA16
- For Aluminum Reflector

CL16
- For Acrylic and Polycarbonate Reflectors

Note: Lenses and WG-A/WG-AP wire guard accessories can't be used together

Safety Cables

Galvanized Safety Cables
SC-5 (Single Cable)
- 5.0' (1.5m) Cable

SC-5-BP (Bulk Pack of 100)
- 5.0' (1.5m) Cable

SC-10 (Single Cable)
- 10.0' (3.0m) Cable

Field-Installed NEMA® Plugs

AP-515P
- 15 amp 120V Straight Blade Plug

AP-L515P
- 15 amp 120V Twist Lock Plug

Note: Not for use with EB options

AP-L615P
- 15 amp 240V Twist Lock Plug

AP-L715P
- 15 amp 277V Twist Lock Plug

AP-L2420P
- 20 amp 347V Twist Lock Plug

AP-L820P
- 20 amp 480V Twist Lock Plug

Field-Installed

Anti-Spin Adaptor
HXB-AS
- Anti-spin accessory for hook and cord mounting configuration

Synapse Wireless Control Accessories

SimplySNAP On-Site Controller
SS450-002
- Verizon® LTE-enabled
- Designed for indoor applications
- Refer to SS450-002 spec sheet for details

Synapse 10V Interface
DIM10-220F
- 120V-277V
- Requires other Synapse components to complete system
- Use to retro fit controls to existing KBL 10V projects
- Refer to DIM10-220F spec sheet for details

Synapse Wireless Sensor
WSN-DPM
- Motion and light sensor
- Control multiple zones
- Refer to WSN-DPM spec sheet for details

Building Management System (BMS) Gateway
BMS-GW-002
- Required for BACnet integration
- Refer to BMS-GW-002 spec sheet for details

Synapse Wireless Switch
WSW-02-PS
WSW-08-PS
- Two or eight button low-voltage wall control
- Refer to WSW spec sheet for details

Delivered Lumens

Luminaire	Lumen Package	3000K, 80 CRI		3500K/4000K/5000K, 80 CRI	
		Initial Delivered Lumens*	Efficacy (LPW)	Initial Delivered Lumens*	Efficacy (LPW)
Light Engine Only	9L	8,550	155	9,050	165
	12L	11,375	160	12,050	170
	18L	17,100	168	18,100	177
	24L	23,200	168	24,500	178
	30L	28,300	165	30,000	175
	35L	32,900	165	34,800	174
KBL w/KBL-ALR-16 Aluminum Reflector	9L	7,875	143	8,325	151
	12L	10,475	148	11,075	156
	18L	15,700	154	16,600	163
	24L	21,300	154	22,600	164
	30L	26,100	153	27,600	161
	35L	30,300	152	32,000	160
KBL w/KBL-ACR-16 Clear Prismatic Acrylic Reflector	9L	8,475	154	8,975	163
	12L	11,275	159	11,925	168
	18L	16,900	166	17,900	175
	24L	22,900	166	24,300	176
	30L	28,100	164	29,700	174
	35L	32,600	163	34,500	173
KBL w/KBL-ACR-16S Low-Profile Acrylic Reflector	9L	8,475	154	8,975	163
	12L	11,275	159	11,950	168
	18L	16,900	166	17,900	175
	24L	23,000	167	24,300	176
	30L	28,100	164	29,700	174
	35L	32,600	163	34,500	173
KBL w/KBL-AWR-16 White Acrylic Reflector	9L	8,300	151	8,775	160
	12L	11,025	155	11,675	164
	18L	16,600	163	17,600	173
	24L	22,500	163	23,800	172
	30L	27,500	161	29,100	170
	35L	31,900	160	33,800	169
KBL w/KBL-PCR-16 Polycarbonate Reflector	9L	8,050	146	8,525	155
	12L	10,700	151	11,325	160
	18L	16,100	158	17,000	167
	24L	21,800	158	23,100	167
	30L	26,600	156	28,200	165
	35L	30,900	155	32,700	164
KBL w/KBL-PCR-16S Low-Profile Polycarbonate Reflector	9L	8,250	150	8,750	159
	12L	10,975	155	11,625	164
	18L	16,500	162	17,500	172
	24L	22,400	162	23,700	172
	30L	27,300	160	29,000	170
	35L	31,700	159	33,600	168

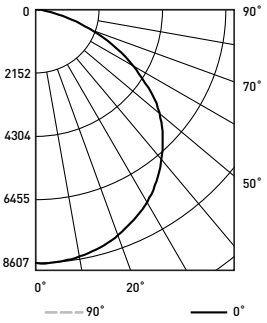
Delivered Lumens

Luminaire	Lumen Package	3000K, 80 CRI		3500K/4000K/5000K, 80 CRI	
		Initial Delivered Lumens*	Efficacy (LPW)	Initial Delivered Lumens*	Efficacy (LPW)
KBL w/KBL-ALR-16 Aluminum Reflector and CLA16 Conical or DLA16 Drop Lens	9L	7,025	128	7,425	135
	12L	9,325	131	9,875	139
	18L	14,025	138	14,850	146
	24L	19,000	138	20,100	146
	30L	23,200	136	24,600	144
	35L	27,000	135	28,600	143
KBL w/KBL-ACR-16 Clear Prismatic Acrylic Reflector and CL16 Conical or DL16 Drop Lens	9L	8,200	149	8,700	158
	12L	10,925	154	11,575	163
	18L	16,400	161	17,400	171
	24L	22,200	161	23,500	170
	30L	27,200	159	28,800	168
	35L	31,600	158	33,400	167
KBL w/KBL-ACR-16S Low-Profile Acrylic Reflector and CL16 Conical or DL16 Drop Lens	9L	7,975	145	8,450	154
	12L	10,625	150	11,250	158
	18L	15,900	156	16,900	166
	24L	21,600	157	22,900	166
	30L	26,400	154	28,000	164
	35L	30,700	154	32,500	163
KBL w/KBL-AWR-16 White Acrylic Reflector and CL16 Conical or DL16 Drop Lens	9L	7,900	144	8,375	152
	12L	10,525	148	11,150	157
	18L	15,800	155	16,700	164
	24L	21,400	155	22,700	164
	30L	26,200	153	27,800	163
	35L	30,400	152	32,200	161
KBL w/KBL-PCR-16 Polycarbonate Reflector and CL16 Conical or DL16 Drop Lens	9L	7,600	138	8,050	146
	12L	10,125	143	10,725	151
	18L	15,200	149	16,100	158
	24L	20,600	149	21,800	158
	30L	25,200	147	26,700	156
	35L	29,300	147	31,000	155
KBL w/KBL-PCR-16S Low-Profile Polycarbonate Reflector and CL16 Conical or DL16 Drop Lens	9L	7,725	140	8,200	149
	12L	10,300	145	10,900	154
	18L	15,500	152	16,400	161
	24L	21,000	152	22,200	161
	30L	25,600	150	27,100	158
	35L	29,800	149	31,500	158

* Initial delivered lumens at 25°C (77°F). Actual production yield may vary between -10 and +10% of initial delivered lumens.

Photometry

KBL-C-24L-840-MC-UL-xx-10V-xxxx BASED ON RESTL TEST REPORT #: PL17920-001A
Luminaire photometry has been conducted in accordance with IES LM-79. IES LM-79 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.



Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	110	105	101	98
2	100	92	86	80
3	91	81	73	67
4	84	72	63	57
5	77	64	55	49
6	71	58	49	43
7	66	52	44	38
8	61	48	39	33
9	57	44	36	30
10	53	40	32	27

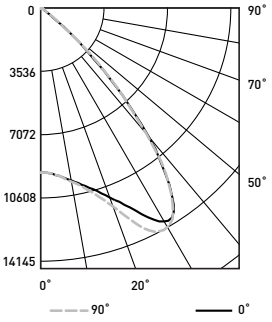
Effective Floor Cavity Reflectance: 20%

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	6,776	N/A	28.1%
0-40	11,207	N/A	46.4%
0-60	20,000	N/A	82.9%
0-90	24,130	N/A	100%
0-180	24,130	N/A	100%

Average Luminance Table (cd/m²)				
	Horizontal Angle			
Vertical Angle		0°	45°	90°
	45°	397,040	398,827	399,988
	55°	377,403	376,935	376,977
	65°	314,910	315,104	311,959
	75°	193,363	193,669	193,514
	85°	49,508	50,644	52,513

Photometry

KBL-C-24L-840-MC-UL-xx-10V-xxxx w/KBL-ALR-16 BASED ON RESTL TEST REPORT #: PL17958-001A
Luminaire photometry has been conducted in accordance with IES LM-79. IES LM-79 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.



Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	113	109	106	104
2	106	100	95	91
3	99	91	85	81
4	93	84	77	72
5	87	77	70	64
6	81	70	63	58
7	76	65	57	52
8	71	60	52	48
9	66	55	48	43
10	52	51	44	39

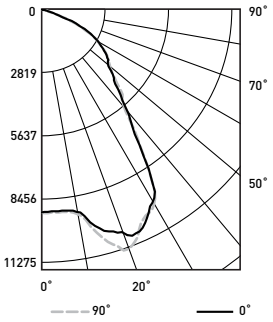
Effective Floor Cavity Reflectance: 20%

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	9,997	N/A	44.9%
0-40	17,696	N/A	79.5%
0-60	22,123	N/A	99.4%
0-90	22,259	N/A	100%
0-180	22,259	N/A	100%

Average Luminance Table (cd/m²)				
	Horizontal Angle			
Vertical Angle		0°	45°	90°
	45°	53,448	54,780	56,770
	55°	5,227	5,413	5,401
	65°	1,676	1,725	1,722
	75°	816	841	834
	85°	431	447	444

Photometry

KBL-C-24L-840-MC-UL-xx-10V-xxxx w/KBL-ACR-16 BASED ON RESTL TEST REPORT #: PL17924-001A
Luminaire photometry has been conducted in accordance with IES LM-79. IES LM-79 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.



Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	110	106	103	99
2	102	94	89	84
3	94	84	77	71
4	86	76	68	62
5	80	68	60	54
6	74	62	54	48
7	69	57	49	43
8	65	52	44	39
9	60	48	40	35
10	57	44	37	32

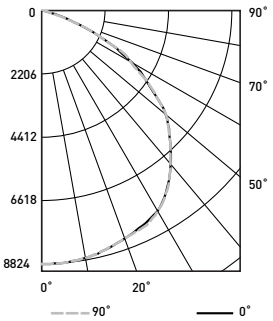
Effective Floor Cavity Reflectance: 20%

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	8,643	N/A	36.3%
0-40	13,616	N/A	57.2%
0-60	20,513	N/A	86.2%
0-90	23,355	N/A	98.2%
90-180	440	N/A	1.8%
0-180	23,795	N/A	100%

Average Luminance Table (cd/m²)				
	Horizontal Angle			
Vertical Angle		0°	45°	90°
	45°	30,156	31,328	32,254
	55°	24,211	24,354	24,427
	65°	16,952	16,818	16,359
	75°	4,034	3,952	3,855
	85°	899	909	947

Photometry

KBL-C-24L-840-MC-UL-xx-10V-xxxx w/KBL-ACR-16S BASED ON RESTL TEST REPORT #: PL17952-001B
Luminaire photometry has been conducted in accordance with IES LM-79. IES LM-79 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.



Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	110	106	102	99
2	101	94	87	82
3	92	83	75	69
4	85	74	65	59
5	78	66	57	51
6	72	59	51	45
7	67	54	45	39
8	62	49	41	35
9	58	45	37	32
10	54	41	34	29

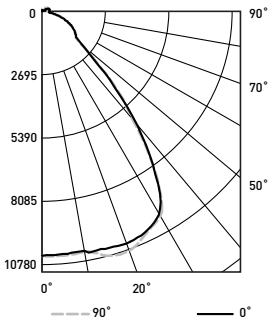
Effective Floor Cavity Reflectance: 20%

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	7,107	N/A	29.4%
0-40	11,855	N/A	49.1%
0-60	20,838	N/A	86.3%
0-90	23,791	N/A	98.5%
90-180	361	N/A	1.5%
0-180	24,152	N/A	100%

Average Luminance Table (cd/m²)				
	Horizontal Angle			
Vertical Angle		0°	45°	90°
	45°	49,872	49,840	49,817
	55°	40,082	40,023	40,306
	65°	24,179	24,296	23,885
	75°	4,325	3,976	3,780
	85°	1,471	1,475	1,449

Photometry

KBL-C-24L-840-MC-UL-xx-10V-xxxx w/KBL-AWR-16 BASED ON RESTL TEST REPORT #: PL17946-001A
Luminaire photometry has been conducted in accordance with IES LM-79. IES LM-79 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.



Coefficients Of Utilization – Zonal Cavity Method

RC %:	80			
RW %:	70	50	30	10
RCR: 0	117	117	117	117
1	109	104	101	97
2	100	93	87	83
3	93	84	77	71
4	86	76	68	62
5	80	69	61	55
6	75	63	55	50
7	70	58	50	45
8	65	53	46	40
9	61	49	42	37
10	58	46	39	34

Effective Floor Cavity Reflectance: 20%

Zonal Lumen Summary

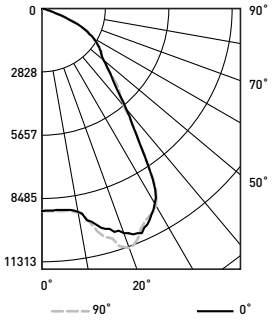
Zone	Lumens	% Lamp	Luminaire
0-30	8,745	N/A	37.9%
0-40	13,918	N/A	60.3%
0-60	18,718	N/A	81.1%
0-90	21,491	N/A	93.1%
90-180	1,597	N/A	6.9%
0-180	23,088	N/A	100%

Average Luminance Table (cd/m²)

Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	26,399	26,785	27,773
55°	11,917	11,935	11,931
65°	10,265	10,302	10,310
75°	7,337	7,370	7,378
85°	4,399	4,430	4,433

Photometry

KBL-C-24L-840-MC-UL-xx-10V-xxxx w/KBL-PCR-16 BASED ON RESTL TEST REPORT #: PL17949-001A
Luminaire photometry has been conducted in accordance with IES LM-79. IES LM-79 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.



Coefficients Of Utilization – Zonal Cavity Method

RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	110	107	103	100
2	102	95	89	85
3	94	85	78	73
4	87	77	69	63
5	81	69	61	56
6	75	63	55	49
7	70	58	50	44
8	65	53	45	40
9	61	49	41	36
10	58	45	38	33

Effective Floor Cavity Reflectance: 20%

Zonal Lumen Summary

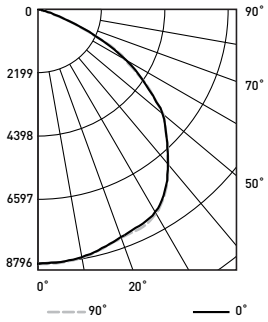
Zone	Lumens	% Lamp	Luminaire
0-30	8,714	N/A	38.3%
0-40	13,700	N/A	60.1%
0-60	19,974	N/A	87.8%
0-90	22,390	N/A	98.4%
90-180	371	N/A	1.6%
0-180	22,761	N/A	100%

Average Luminance Table (cd/m²)

Vertical Angle	Horizontal Angle		
	0°	45°	90°
45°	28,840	29,267	30,005
55°	21,446	21,569	21,351
65°	14,252	14,572	14,461
75°	3,105	2,999	2,960
85°	914	869	880

Photometry

KBL-C-24L-840-MC-UL-xx-10V-xxxx w/KBL-PCR-16S BASED ON RESTL TEST REPORT #: PL17955-001B
Luminaire photometry has been conducted in accordance with IES LM-79. IES LM-79 specifies the entire luminaire as the source resulting in a luminaire efficiency of 100%.



Coefficients Of Utilization – Zonal Cavity Method				
RC %:	80			
RW %:	70	50	30	10
RCR: 0	119	119	119	119
1	110	106	103	99
2	101	94	88	83
3	93	83	76	70
4	85	74	66	60
5	79	66	58	52
6	73	60	51	45
7	67	54	46	40
8	63	50	41	36
9	58	45	37	32
10	55	42	34	29

Effective Floor Cavity Reflectance: 20%

Zonal Lumen Summary			
Zone	Lumens	% Lamp	Luminaire
0-30	7,093	N/A	29.9%
0-40	11,867	N/A	50.1%
0-60	20,801	N/A	87.8%
0-90	23,414	N/A	98.8%
90-180	279	N/A	1.2%
0-180	23,693	N/A	100%

Average Luminance Table (cd/m²)				
Vertical Angle	Horizontal Angle			
	0°	45°	90°	
45°	49,669	49,659	49,678	
55°	39,652	39,793	39,846	
65°	21,959	22,006	21,486	
75°	3,167	2,908	2,868	
85°	1,363	1,335	1,332	

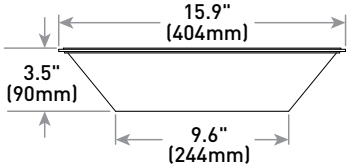
Optional Reflectors/Lens: shown fully assembled with universal mount

Aluminum Reflector w/Drop Lens

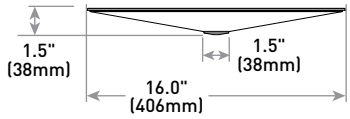
Clear Prismatic Acrylic Reflector

White Acrylic Reflector w/Conical Lens

Drop Lens



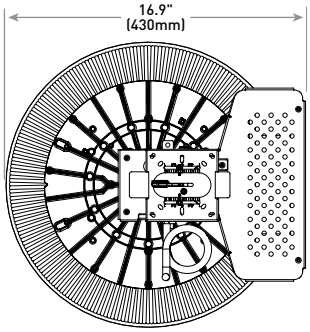
Clear Conical Lens

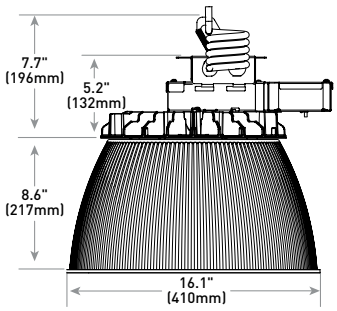


Reflector Uplight Illumination Performance				
Reflector	% Uplight		Reflector	% Uplight
KBL-ALR-16 (Aluminum)	0%		**KBL-PCR-16 (Clear Polycarbonate)**	1.6%
KBL-ALR-16 w/CLA16 (Aluminum w/Clear Conical Lens)	0%		KBL-PCR-16 w/CL16 (Clear Polycarbonate w/Clear Conical Lens)	3.9%
KBL-ALR-16 w/DLA16 (Aluminum w/Clear Drop Lens)	1.3%		KBL-PCR-16 w/DL16 (Clear Polycarbonate w/Clear Drop Lens)	5.9%
KBL-ACR-16 (Clear Prismatic Acrylic)	1.9%		**KBL-ACR-16S (Low-Profile Clear Prismatic Acrylic)**	1.5%
KBL-ACR-16 w/CL16 (Clear Prismatic Acrylic w/Clear Conical Lens)	4.4%		KBL-ACR-16S w/CL16 (Low-Profile Clear Prismatic Acrylic w/Clear Conical Lens)	5.0%
KBL-ACR-16 w/DL16 (Clear Prismatic Acrylic w/Clear Drop Lens)	6.3%		KBL-ACR-16S w/DL16 (Low-Profile Clear Prismatic Acrylic w/Clear Drop Lens)	5.5%
KBL-AWR-16 (White Acrylic)	6.9%		**KBL-PCR-16S (Low-Profile Clear Polycarbonate)**	1.2%
KBL-AWR-16 w/CL16 (White Acrylic w/Clear Conical Lens)	9.6%		KBL-PCR-16S w/CL16 (Low-Profile Clear Polycarbonate w/Clear Conical Lens)	4.4%
KBL-AWR-16 w/DL16 (White Acrylic w/Clear Drop Lens)	10.1%		KBL-PCR-16S w/DL16 (Low-Profile Clear Polycarbonate w/Clear Drop Lens)	4.9%

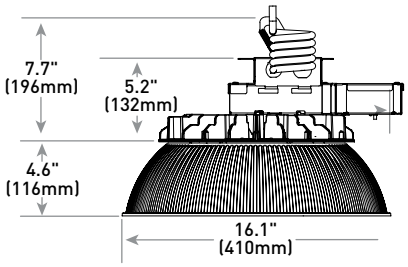
Reference https://www.creelighting.com/products/indoor/high-bay-low-bay/kbl-series/ for detailed photometric data.

KBL 9L-35L



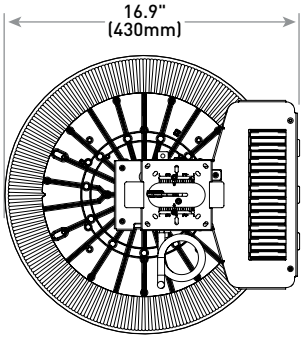


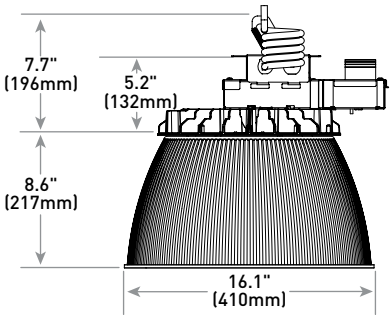
Shown w/KBL-ACR-16 Reflector



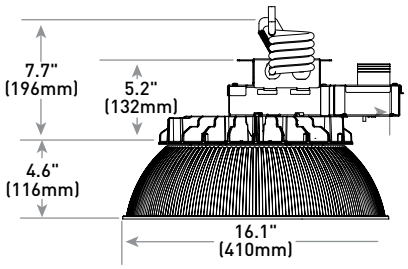
Shown w/KBL-ACR-16S Reflector

KBL 35L w/W10



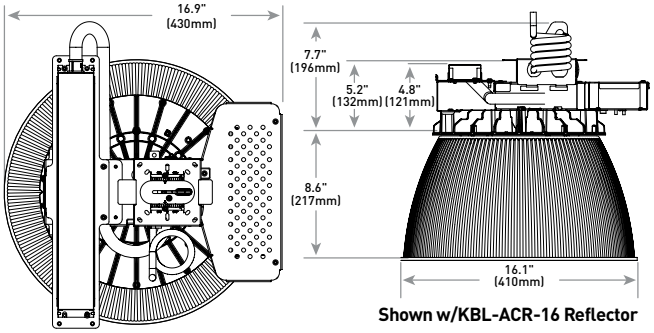


Shown w/KBL-ACR-16 Reflector



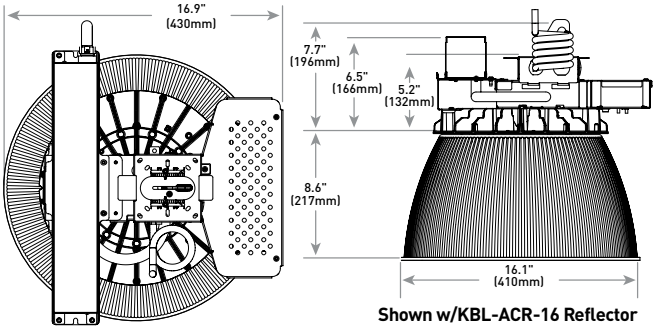
Shown w/KBL-ACR-16S Reflector

KBL 9L-12L w/EB



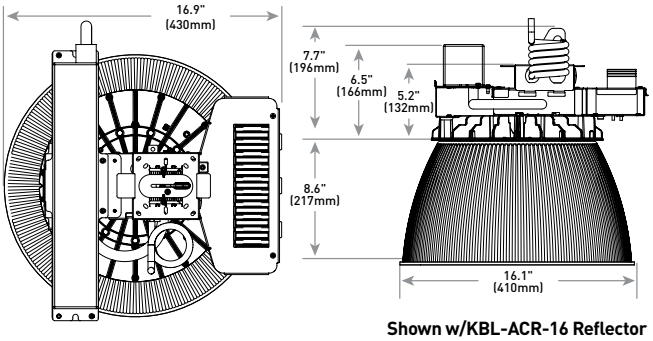
Shown w/KBL-ACR-16 Reflector

KBL 18L-35L w/EB



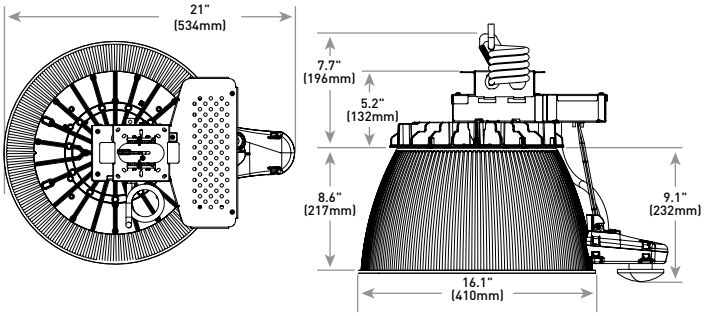
Shown w/KBL-ACR-16 Reflector

KBL 35L w/EB & W10



Shown w/KBL-ACR-16 Reflector

KBL 9L-35L w/UL Voltage & BML



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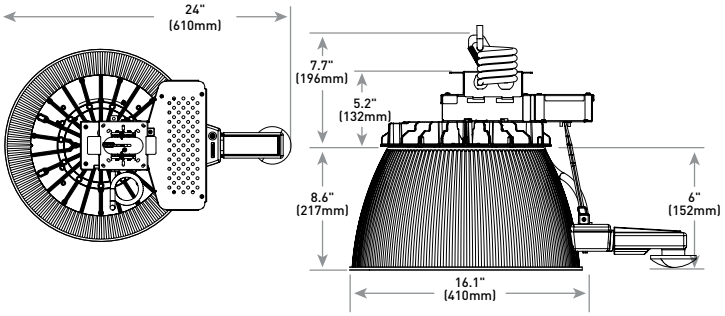
KBL 9L-35L w/UH Voltage & BML



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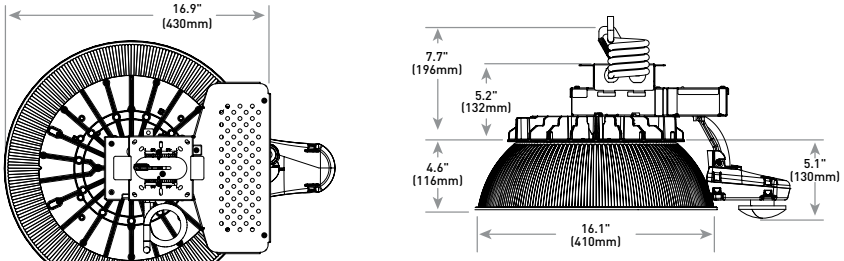
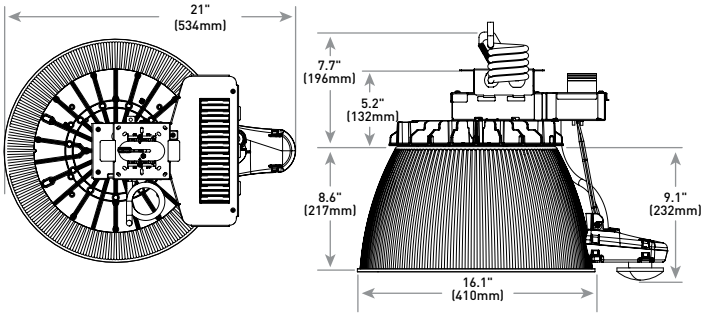
KBL 9L-35L w/UL Voltage & BMLS



Shown w/KBL-ACR-16S Reflector

KBL 35L w/UL Voltage, BML & W10



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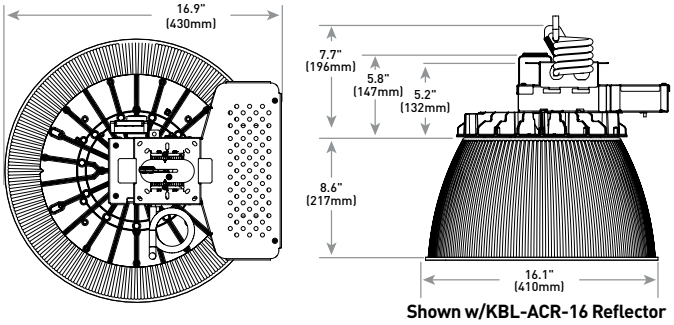
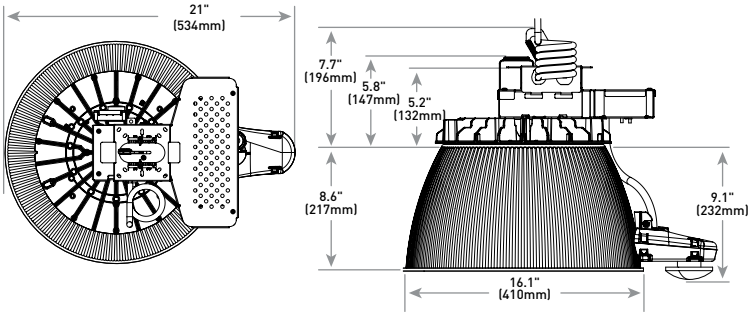
KBL 9L-35L w/SWC



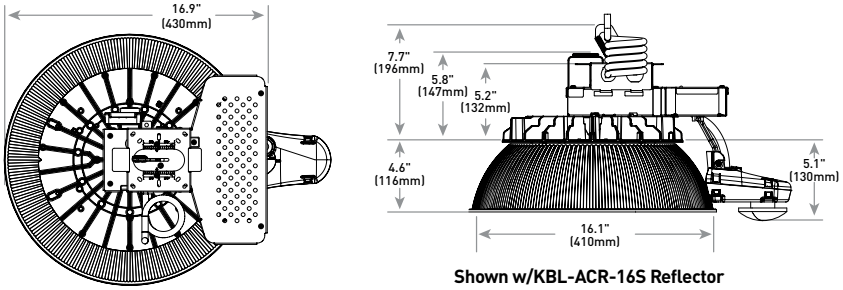
Shown w/KBL-ACR-16 Reflector

KBL 9L-35L w/SWS



Shown w/KBL-ACR-16 Reflector

KBL 9L-35L w/SWSS



Shown w/KBL-ACR-16S Reflector

Replacement Kits	
EB Replacement Kits (120-277V only) - Replaces EB driver in existing luminaire **KBL-C-EBKIT-1 (20W, all lumen packages)**	**BML Replacement Kits** - Replaces BML option in existing luminaire **KBL-C-BMLKIT-UL (120-277V, Standard Reflector)** **KBL-C-BMLKIT-UH (347-480V, Standard Reflector)** **KBL-C-BMLKIT-UL-S (120-277V, Short Reflector)** **KBL-C-BMLKIT-UH-S (347-480V, Short Reflector)**

KBL-C-DVRKIT			
Product	**Lumen Package**	**Voltage**	**Control**
KBL-C-DVRKIT	**9L** 9,000 Lumens **12L** 12,000 Lumens **18L** 18,000 Lumens **24L** 24,000 Lumens **30L** 30,000 Lumens **35L** 35,000 Lumens	**UL** 120-277V **UH** 347-480V	**10V** 0-10V Dimming - For use with luminaires with 10V or BML/BMLS options **SWX** Synapse - For use with SWC, SWR, SWS and SWSS options

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