

# **APPENDIX E**

## **Lighting Fixtures**

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Project		Catalog #		Type	A/AE
Prepared by		Notes		Date	



# Metalux

## BMK LED

### Benchmark High Bay

#### Typical Applications

Industrial • Manufacturing • Sports Venues

#### Interactive Menu

- Order Information page 2
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- Connected Systems page 4
- Product Warranty

#### Top Product Features

- High lumen packages available up to 75,000 delivered lumens
- cULus listed for wet locations -40°C to 65°C ambient environments
- IP66 listed for demanding and complex environments
- Integrated WaveLinx Wireless Sensor – provides 1200 sq ft. coverage
- High performance efficacy up to 181 lm/W

#### Product Certification

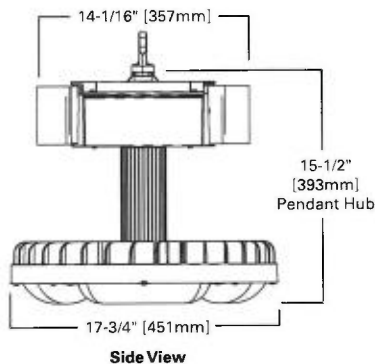


#### Product Features

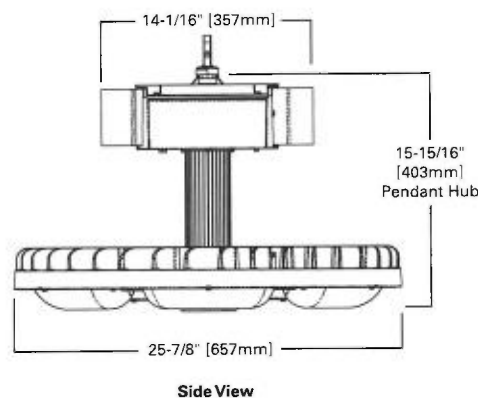


#### Dimensional and Mounting Details

12,000 up to 36,000 Lumen Versions



50,000 up to 70,000 Lumen Versions



[additional product diagrams](#)

## Order Information

SAMPLE ORDER NUMBER: **BMK-36-MCL-UNV-L750-CD-U**

BMK	-	36	MCL	UNV	L840	EL20-W-REM (AE)
Series	Revision	Lumen Package	Distribution/Shielding	Voltage	CCT/CRL	Options
Series <sup>(1)</sup>	Revision	Lumen Package	Distribution/Shielding	Voltage	CCT/CRL	EBP/TD
BMK=Benchmark High Bay	[Blank]=	12=12,000 Lumens 15=15,000 Lumens 18=18,000 Lumens 24=24,000 Lumens 30=30,000 Lumens 36=36,000 Lumens 50=50,000 Lumens 60=60,000 Lumens 70=70,000 Lumens	NCL=Narrow Clear NFL=Narrow Frosted MCL=Medium Clear MFL=Medium Frosted WCL=Wide Clear WFL=Wide Frosted	120V=120 Volt 277V=277 Volt 347V=347 Volt 480V=480 Volt UNV=Universal Voltage 120-277 UNC=Universal Voltage 347/480	L735=70CRI / 3500K L740=70CRI / 4000K L750=70CRI / 5000K L835=80CRI / 3500K L840=80CRI / 4000K L850=80CRI / 5000K	EL20-W-REM=20-watt 120V-277V emergency battery pack remote mounted <sup>(2), (3), (4)</sup> GTR2=Bodine Generator Transfer Device ETRD=Iota Emergency Transfer Relay with dimming control
<b>Notes</b> (1) DesignLights Consortium® Qualified and classified for both DLC Standard and DLC Premium, refer to www.designlights.org for details.						<b>Notes</b> (2) EL20W-REM max ambient of 50°C and damp location only. (3) EL20W-REM battery pack must be remote mounted to building structure or electrical enclosure. (4) EL20W-REM battery pack not available with 347/480V + SWPD and LWR Sensors

CD	-	-				
Driver Type	Color	Mounting	Wiring	Motion Sensors	Packaging	
Driver Type	Color	Mounting	Wiring	Motion Sensors <sup>(15)</sup>	Packaging	
CD=0-10V Dimming Driver 5LTD=Five Light DALI <sup>(5)</sup>	[Blank]=White GRY=Gray BLK=Black	[Blank]=3/4" Treaded Hub <sup>(6), (7), (8)</sup>	10KV=10KV Surge Protector C3 (1)=1 Circuit, 3' Cord with no Plug C3 (2)=2 Circuits, 3' Cord with no Plug C6 (1)=1 Circuit, 6' Cord with no Plug C6 (2)=2 Circuits, 6' Cord with no Plug PC3/120=(NEMA L5-15P) 3' Cord with NEMA Plug <sup>(9)</sup> PC3/277=(NEMA L7-15P) 3' Cord with NEMA Plug <sup>(9)</sup> PC3/347=(NEMA L24-20P) 3' Cord with NEMA Plug <sup>(9)</sup> PC3/480=(NEMA L8-20P) 3' Cord with NEMA Plug <sup>(9)</sup> PC6/120=(NEMA L5-15P) 6' Cord with NEMA Plug <sup>(9)</sup> PC6/277=(NEMA L7-15P) 6' Cord with NEMA Plug <sup>(9)</sup> PC6/347=(NEMA L24-20P) 6' Cord with NEMA Plug <sup>(9)</sup> PC6/480=(NEMA L8-20P) 6' Cord with NEMA Plug <sup>(9)</sup>	MS=360° or 180° Motion Sensor Installed, (specify voltage) <sup>(11), (12)</sup> SVPD3=Integrated occupancy and daylight dimming sensor, 1200 sq. ft. coverage <sup>(12)</sup> LWR=LumaWatt Wireless Sensor system <sup>(10), (14)</sup> ZW-SWPD3=Integrated Wavelinx Wireless Sensor, 1200 sq. ft. coverage <sup>(10), (14)</sup> ZW=WaveLinx Wireless Ready (does not include sensor) <sup>(10), (13)</sup>	U=Unit Pack PALC=Job Pack, in carton	
<b>Notes</b> (5) 5LTD drivers not available for 50, 60, & 70 lumen SKU's at 347V/480V/UNC.		<b>Notes</b> (6) IP-66 other than stem mount must use 1/2" NPT access fittings. (7) Rigid mount not recommended in gymnasiums. Due to potential impact from projectiles, hook mount is recommended. (8) Fixture cannot be surface mounted and must be a minimum of 18" below ceiling surface.	<b>Notes</b> (9) Voltage must be specified when ordering accessory cord and plug. Modular plug not available.	<b>Notes</b> (10) EL20W-REM battery pack not available with 347/480V + SWPD and LWR Sensors. (11) When ordering MS option, specify either 120-277v or 347-480v. (12) Damp location only. (13) ZW only available with SWPD sensors (IP-65). (14) 30-36K lumen fixtures with SWPD or LWR sensor are UNV only. (15) Sensors not available on 50, 60, & 70 lumen SKU's at 347V/480V/UNC.		

## Accessories

Accessories (order separately)
BMK-WG17=17" Wire Guard (for use with 12,000 to 36,000 lumens only) SHK/IP=IP Rated Fixture Hook <sup>(16)</sup> SHK=Fixture Hook with through Hole (not IP rated) <sup>(17)</sup> SWPD3=WaveLinx Wireless Sensor (to be installed with "ZW" sensor ready fixtures only) <sup>(18), (20)</sup> LOOP-310=Ten Foot Loop Hanger, #3 Cable <sup>(19)</sup> LOOP-330=Thirty Foot Loop Hanger, #3 Cable <sup>(19)</sup> LOOP-410=Ten Foot Loop Hanger, #4 Cable <sup>(19), (21)</sup> LOOP-430=Thirty Foot Loop Hanger, #4 Cable <sup>(19), (21)</sup>
<b>Notes</b> (16) IP-66 other than stem mount must use 1/2" NPT access fittings. (17) Damp location only and used for center cable entry. (18) EL20W-REM battery pack not available with 347/480V + SWPD and LWR Sensors. (19) The accessory Loop Hanger shall be utilized only as a secondary safety and not the primary means of mounting. (20) 30-36K lumen fixtures with SWPD or LWR sensor are UNV only. (21) The 10' #4 cable is included on 50, 60, & 70 lm SKU's from the factory and does not need to be ordered separately. #3 cable cannot be used on 50, 60, & 70lm SKU's.

## Product Specifications

### Construction

- Constructed of die cast and extruded aluminum

### Optics

- Precision optics deliver highly efficient illumination
- Three distribution options available for superior performance in key areas: narrow, medium, and wide

### LED and Light Engine

- Drivers available in 120-277V, 347V and 480V
- 0-10V dimming driver is standard
- Available in 4000K and 5000K in either 70 or 80 CRI

### Finish

- Standard white polyester powder coat finish
- Painted after fabrication for increased durability and corrosion resistance

### Mounting

- Designed for suspension mounting
- 3/4" NPT internal thread with locking set screw

### Compliance

- IC rated for insulation contact
- cULus listed for wet locations -40°C to 65°C ambient environments
- RoHS compliant
- Tested to IESNA LM-79 and LM-80
- Stated life tested to TM21 standards

### Warranty

- Five-year warranty standard.

## Energy and Performance Data

BMK 5000K 70CRI													
Catalog Number	Lumen Output						Watts	Efficacy (LPW)					
	NCL	NFL	MCL	MFL	WCL	WFL	277V	NCL	NFL	MCL	MFL	WCL	WFL
BMK-12	13171	13038	13234	12906	13485	13101	74	177	175	178	174	181	176
BMK-15	16661	16494	16742	16326	17059	16574	95	175	174	176	172	180	174
BMK-18	19931	19731	20028	19530	20407	19827	114	175	173	176	172	179	174
BMK-24	26471	26206	26600	25939	27103	26333	156	170	169	171	167	174	169
BMK-30	32678	32351	32837	32021	33458	32507	203	161	159	162	158	165	160
<u>BMK-36</u>	38921	38531	<u>39110</u>	<u>38138</u>	<u>39850</u>	<u>38717</u>	<u>243</u>	160	159	<u>161</u>	157	164	159
BMK-50	53719	53003	53901	52820	55438	55099	332	162	160	162	159	167	166
BMK-60	63353	62509	63567	62293	65380	64980	406	156	154	157	154	161	160
BMK-70	74547	73555	74800	73301	76933	76462	501	149	147	149	146	154	153

BMK 5000K 80CRI													
Catalog Number	Lumen Output						Watts	Efficacy (LPW)					
	NCL	NFL	MCL	MFL	WCL	WFL	277V	NCL	NFL	MCL	MFL	WCL	WFL
BMK-12	12256	12133	12315	12009	12548	12192	7	165	163	166	162	169	164
BMK-15	15504	15349	15579	15192	15874	15423	95	163	162	164	160	167	162
BMK-18	18547	18361	18637	18174	18990	18450	114	163	161	164	160	167	162
BMK-24	24633	24386	24753	24138	25221	24504	156	158	157	159	155	162	158
BMK-30	30409	30104	30556	29797	31135	30249	203	150	148	151	147	153	149
BMK-36	36218	35855	36394	35490	37083	36028	243	149	148	150	146	153	148
BMK-50	49991	49326	50161	49155	51591	51276	332	151	149	151	148	155	154
BMK-60	58957	58172	59157	57971	60844	60472	406	145	143	146	143	150	149
BMK-70	69375	68451	69610	68215	71595	71157	501	139	137	139	136	143	142

NCL=Narrow Distribution, Clear Lens, NFL=Narrow Distribution, Frosted Lens, MCL=Medium Distribution, Clear Lens, MFL=Medium Distribution, Frosted Lens, WCL=Wide Distribution, Clear Lens, WFL=Wide Distribution, Frosted Lens

### Lumen Maintenance

Ambient Temperature	TM-21 Lumen Maintenance (60,000 hours)	Theoretical L70 (hours)
25°C	> 92%	> 355,000

### Ambient Ratings

Lumen Package	Ambient Rated	EM
BMK-12	65°C	50°C
BMK-15	65°C	50°C
BMK-18	65°C	50°C
BMK-24	65°C	50°C
BMK-30	65°C	50°C
<u>BMK-36</u>	65°C	50°C
BMK-50	65°C	50°C
BMK-60	55°C	50°C
BMK-70	45°C	45°C

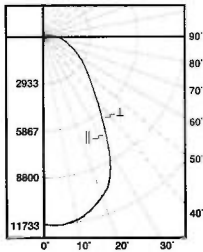
### Shipping Data

Catalog No.	Wt.
BMK-12	32 lbs.
BMK-15	32 lbs.
BMK-18	32 lbs.
BMK-24	32 lbs.
BMK-30	38 lbs.
<u>BMK-36</u>	<u>38 lbs.</u>
BMK-50	55 lbs.
BMK-60	55 lbs.
BMK-70	55 lbs.

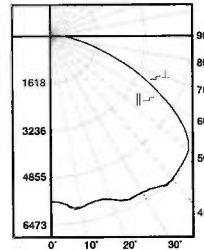


## Photometric Data

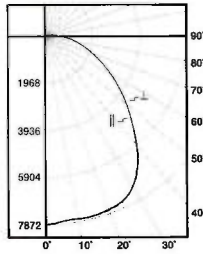
 [View IES files](#)



**BMK-24-NFL-UNV-L850-CD-U**  
 Dimming Driver  
 Linear LED 5000K  
 Spacing criterion: (H) 1.06 x mounting height,  
 (L) 1.06 x mounting height  
 Lumens: 24386  
 Input Watts: 156W  
 Efficacy: 157 LPW  
 Test Report:  
 BMK-24-NFL-UNV-L850-CD-U.IES



**BMK-24-WFL-UNV-L850-CD-U**  
 Dimming Driver  
 Linear LED 5000K  
 Spacing criterion: (H) 1.7 x mounting height,  
 (L) 1.7 x mounting height  
 Lumens: 24504  
 Input Watts: 156W  
 Efficacy: 158 LPW  
 Test Report:  
 BMK-24-WFL-UNV-L850-CD-U.IES



**BMK-24-MFL-UNV-L850-CD-U**  
 Dimming Driver  
 Linear LED 5000K  
 Spacing criterion: (H) 1.33 x mounting height,  
 (L) 1.33 x mounting height  
 Lumens: 24138  
 Input Watts: 156W  
 Efficacy: 155 LPW  
 Test Report:  
 BMK-24-MFL-UNV-L850-CD-U.IES

## Control Systems

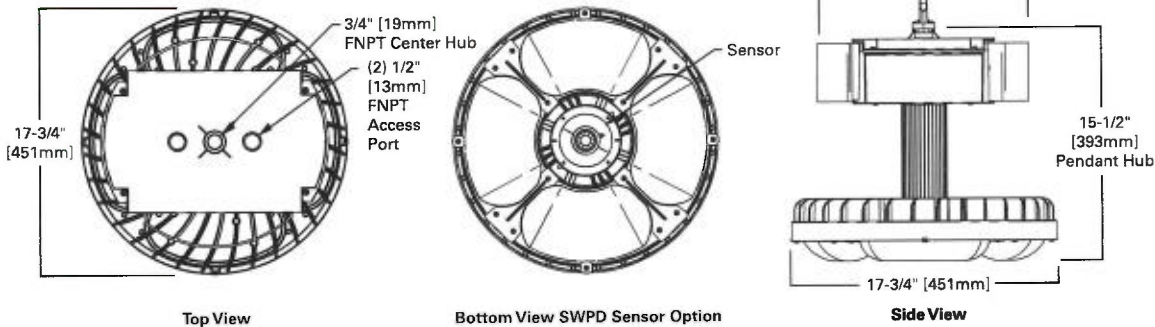
- WaveLinX
- DLVP
- LumaWatt Pro
- iLumin Plus
- VividTune



**Connected Systems**  
[CLICK HERE](#)

## Dimensional and Mounting Details

### 12,000 up to 36,000 Lumen Versions



### 50,000 up to 70,000 Lumen Versions

