COOPER LIGHTING - LUMARK®

energy solutions

DESCRIPTION

The 18" BenchMark EB features a die-cast aluminum neck for superior strength and an extruded aluminum door frame with stainless steel latches for access to the lamp without tools. The EB is fully enclosed and gasketed at three separate points to prevent entry of external contaminants. U.L. listed and CSA certified for damp locations standard. Wet location optional.

The BenchMark EB is perfect for textile mills, gymnasiums, hangars, assembly and auto service areas.

Catalog #	MPEBENSA18M250MTF1	Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

A ... Mounting
Easy slide-on die-cast aluminum mounting box with tapped opening for 3/4" conduit.

B ... Housing
Durable heavy-duty die-cast aluminum housing for lasting performance in the harshest environments. Integrally hinged for ease of maintenance with optional toolless entry. Finished in a white polyester powder coat.

C ... Ballast
High power factor ballast with class H insulation. Minimum starting temperature is -40°C (-40°F) for HPS and -30°C (-20°F) for MH.

D ... Socket
Mogul-base porcelain socket.

E ... Neck
Die-cast aluminum neck with staggered mounting bosses for eight-position adjustability of the socket which provides a variety of distributions from concentrated to wide.

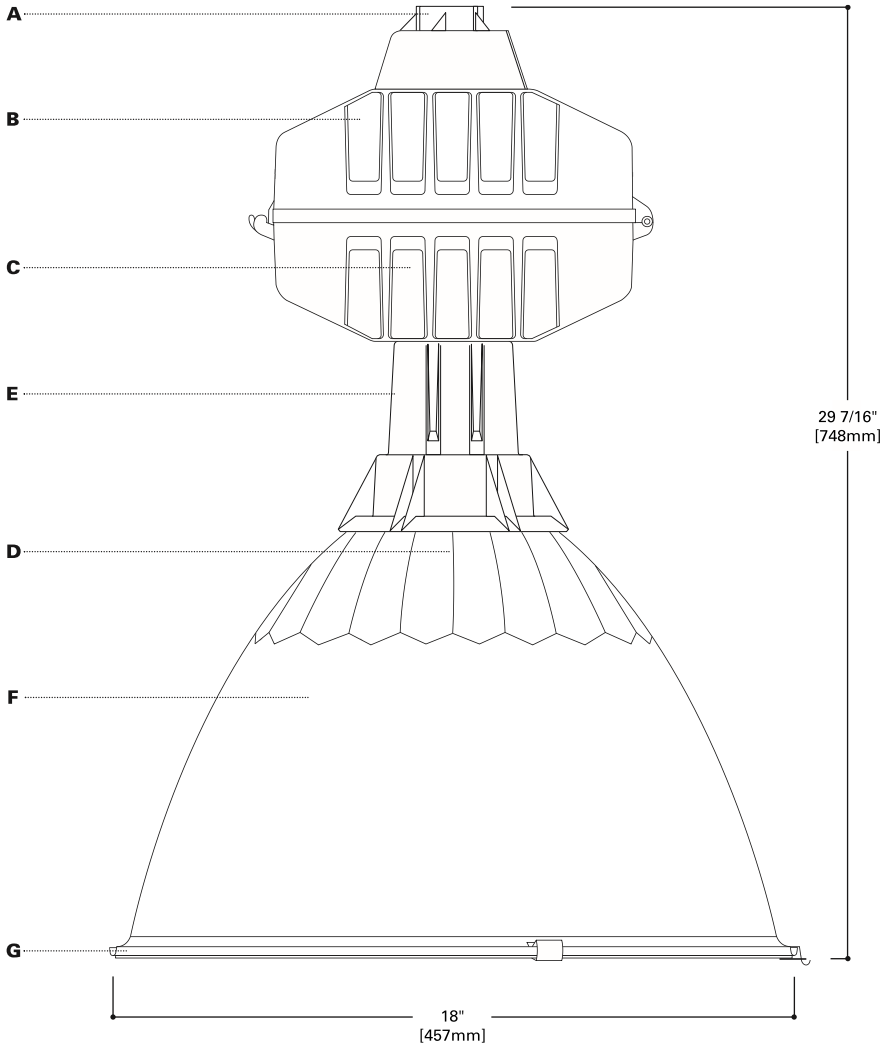
F ... Reflector System
Computer designed, faceted SA18 reflector provides maximum photometric performance and beam efficiency. The system is completely enclosed and gasketed at three points: door to reflector, reflector to neck, and neck to housing.

G ... Lens
Clear tempered glass lens in an extruded aluminum door frame with stainless steel latches allows access for relamping without tools.

EB
18" E&G
BENCHMARK

175 - 450W
High Pressure Sodium
Pulse Start Metal Halide
Metal Halide

DIE-CAST ALUMINUM
ENCLOSED & GASKETED
HIGH-BAY
HEAVY-DUTY
INDUSTRIAL LUMINAIRE



TECHNICAL DATA

EISA Compliant Ⓔ
65° Ambient Environment
55° Ambient Environment
(450W and above)
External Supply Wire Rating
90° Minimum

ENERGY DATA

CWI Ballast Input Watts
250W HPS HPF (300 Watts) Ⓔ

CWA Ballast Input Watts
175W MP HPF (198 Watts) Ⓔ
200W MP HPF (227 Watts) Ⓔ
250W MP HPF (283 Watts) Ⓔ
320W MP HPF (365 Watts) Ⓔ
350W MP HPF (400 Watts) Ⓔ
400W MP HPF (452 Watts) Ⓔ
400W HPS HPF (465 Watts)
450W MP HPF (508 Watts) Ⓔ

SHIPPING DATA

Approximate Net Weight:
34 lbs. (15 kgs.)

ORDERING INFORMATION

Sample Number: MPEB-ENSA18-C-250-120V

Lamp Type
- **MP**= Pulse Start Metal Halide[1]
- **MH**= Metal Halide[1]
- **HP**= High Pressure Sodium[2]
- **ML**= Pulse Start MH (Linear Reactor)[1, 3]

Series
- **EB**= E & G Benchmark

Reflector Type
- **ENSA**= Enclosed & Gasketed Spun Aluminum

Reflector Diameter
- **18**= 18" Diameter

Distribution[4]
- **C**= Concentrated
- **M**= Medium
- **W**= Wide

Lamp Wattage

MP
- **175**= 175W
- **200**= 200W
- **250**= 250W
- **320**= 320W
- **350**= 350W
- **400**= 400W
- **450**= 450W

MH
- **175**= 175W
- **250**= 250W
- **400**= 400W

HP
- **250**= 250W
- **400**= 400W

Voltage[5]
- **120V**
- **208V**
- **240V**
- **277V**
- **347V**
- **480V**
- **MT**[6]
- **TT**[7]
- **5T**[8]

Options[9]

C3= 3' Cord with no plug (Specify Voltage)[10]

PC3= 3' Cord with NEMA Plug (120V-L5-15P, 208V-L6-15P, 347V-L37-20P, AND 480V-L8-20P) Other cord lengths are available by specifying length (PC6 for 6' Cord) Requires FH-1 or FL-1, or SHK. Example: PC3-120V Use with TPPH-NEMA. Specify Voltage.[10]

PHC= Power Cord and Plug (18" Power Cord and Non-NEMA plug configuration. Must be used with FL-1 and TPPH (Thru-Way Pendant Power Hook). Must specify single voltage.

PHC-NEMA= Power Cord and NEMA Plug (18" Power Cord and 20 AMP NEMA plug configuration). Must be used with FL-1 and TPPH-NEMA (Thru-Way Pendant Power Hook).

VI= Visual Indicator system, externally mounted LED Signal

SCF= 3' Aircraft Safety Cable secures Housing to Ceiling (Alternative lengths available. Example: SCF6 = 6' Cable)

PS= Protective Starter (Available in 1000W HPS only. For other wattages consult factory).

SS= Space Saver Feature

QB= Quiet Ballast

Q= Quartz Restrike (Hot Strike Only)

EM= Quartz Restrike with "Delay Relay" (Quartz lamp strikes at both hot and cold starts)

EM/SC= Emergency Separate Circuit[3]

LL= Lamp Included[11]

QD= Quick Disconnect Die-Cast Pendant Mount Box(Specify Single Voltage, Not Compatible with PC3, PHC, C3, MWS, RM or HC)

SCR= Aircraft Safety Cable-Housing to Reflector

TE= Toolless Entry

L/TCB= Less Top Connector Box (Housing shipped less top connector box. (Specify when using TWMBS accessory)

RM= Remote Mount[12]

QLL= Quartz Lamp Included (Lamp is Cooper designated product based on luminaire requirements. Lamp is shipped separate from luminaire unless otherwise noted)

FILT= Sintered Bronze filter (Sintered bronze filter prevents the entrance of contaminants)

W/MWS= MWS Industrial components attached to the fixture at the factory. (Standard cord length is 3 ft. 6 ft. and 11 ft. also available. Please refer to MWS Modular Wiring System section for additional information.

FH-1= Die-cast Aluminum Fixture Hook (with 3/4" threads for easy installation)

FL-1= Malleable Iron Plated Fixture Loop (with 3/4" threads for easy installation)

SHK= Die-cast Aluminum Fixture Hook (with safety screw and 3/4" threads for easy installation)

F1= Single Fuse (120, 277 or 347V only)

F2= Double Fuse (208, 240 or 480V only)

HL= LumaWatt Fixture Control Module (Allows low voltage control wire to be daisy-chained between fixtures outside AC conduit run similar to low voltage intercom's, fire alarms and phone systems)[13]

HSW= Integral LumaWatt Sensor and Control w/ Wide Distribution[13]

HC= LumaWatt Fixture Control Module (Low voltage leads pulled out of top connection box for areas requiring all wiring to be installed in conduit)[13, 14]

WL= UL Labeled for Wet Location

WG18= Wire Guard (Factory Installed Only)

Accessories[15]

C3= 3' Cord-No Plug - Requires FH-1, FL-1, or SHK[10]

PC3= 3' Cord with NEMA Plug - (120V-L5, 208V-L6-15P, 347V-L37-20P and 480V-L8-20P) Other cord lengths are available by specifying length (PC6 for 6' cord). Requires FH-1 or FL-1, or SHK. Use with TPPH-NEMA. Specify Voltage.[10]

PHC= Power Hook Cord and Non-NEMA plug configuration. Must be used with FL-1 and TPPH (Thru-Way Pendant Power Hook)

PHC-NEMA= Power Cord and NEMA plug - 18" Power Cord and 20 Amp NEMA plug configuration. Must be used with FL-1 and TPPH-NEMA (Thru-Way Pendant Power Hook)

MBT= Twin Mount Bracket (Fixtures must be same voltage and without hooks, loops or plugs.)

TPPH= Thru-Way Pendant Power Hook. Requires FL-1 and PHC. Specify Voltage.

TPPH-F= Thru-Way Pendant Power Hook Single Fuse, 120, 277 or 347 Volt. Requires FL-1 and PHC. Specify Voltage.

TPPH-F2= Thru-Way Pendant Power Hook - Double Fused, 208, 240, or 480 Volt. Requires FL-1 and PHC. Specify Voltage.

TPPH-F-QD= Thru-Way Pendant Power Hook Single Fuse, Quick Disconnect. Requires FL-1 and PHC. Specify Voltage (120, 277, or 347V)

TPPH-F2-QD= Thru-Way Pendant Power Hook Double Fuse, Quick Disconnect. Requires FL-1 and PHC. Specify Voltage (208, 240, or 480V)

TPPH-NEMA= Thru-Way Pendant Power Hook. Requires FL-1 and PHC-XXXV-NEMA. (Specify

FH-1= Fixture Hook

FL-1= Fixture Loop

SHK= Hook with Safety Screw

TW= Thru-Way Mounting Box

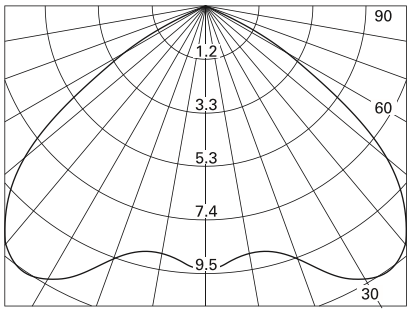
LL= Coated Lamp Included

Notes:
1. Approved lamp containment barrier required when enclosed rated MP/ML/MH lamps are used. 2005 NEC code requires that open luminaires must utilize a safety glass bottom (SGB) accessory or an Open rated socket (OR) and lamp.
2. Not available in 175, 200, 320, 350, 450 and 750W.
3. 277V only, not available with HSW, Q, EM, HL or HC options.
4. Factory set for concentrated, medium or wide distributions only if P (factory pre-set) is in the nomenclature of the fixture. Otherwise fixture is shipped in medium setting.
5. Products also available in non-US voltages and 50HZ for international markets. Consult your Cooper Representative for availabiltiy and ordering information. 88% Efficient EISA Compliant MP Fixtures not available in 347V and TT Voltages.
6. Multi-Tap ballast 120/208/240/277V wired 277V.
7. Triple-Tap ballast 120/277/347V wired 347V.
8. 5-Tap ballast 120/208/240/277/480V wired 277V. 400W Metal Halide only. 88% efficient EISA Compliant MP fixtures not available in 5-Tap Voltages.
9. Must be listed in the order shown and separated by a dash.
10. Requires FH-1, FL-1.
11. Lamp is shipped separately.
12. Not available with QD, W or WL options.
13. 30 second time delay when switching from bright to dim. Consult individual lamp manufacturers recommendations for compatible lamps. For use with CWA ballast only.
14. Not available with QD, PC3, C3, PHC or MWS. Not available with single circuit MWS special order.
15. Order separately.

LAMP TYPE	WATTAGE
Pulse Start Metal Halide (MP)	175, 200, 250, 320, 350, 400, 450W
Metal Halide (MH)	175, 250, 400W
High Pressure Sodium (HP)	250, 400W

VOLTAGE CHART	
MT=Multi-Tap	120/208/240/277 (wired 277V)
TT=Triple-Tap	120/277/347 (wired 347V)
5T=5-Tap[10]	120/208/240/277/480 (wired 277V)

PHOTOMETRICS



CP/1000

MPEB-ENSA18W-400
400-Watt MP
44,000-Lumen Clear Lamp

Coefficients Of Utilization

	Effective floor cavity reflectance																			
rc	**80%**				**70%**				**50%**			**30%**			**10%**			**0%**
rw	**70**	**50**	**30**	**10**	**70**	**50**	**30**	**10**	**50**	**30**	**10**	**50**	**30**	**10**	**50**	**30**	**10**	**0**
RCR																		
0	80	80	80	80	79	79	79	79	75	75	75	72	72	72	69	69	69	68
1	75	73	71	69	74	72	70	68	69	67	66	66	65	64	64	63	62	61
2	70	66	63	60	69	65	62	59	63	60	58	61	58	57	59	57	55	54
3	65	60	55	52	64	59	55	51	57	53	51	55	52	50	53	51	49	48
4	61	54	49	45	59	53	49	45	52	48	44	50	47	44	49	46	43	42
5	56	49	43	40	55	48	43	39	46	42	39	45	42	39	44	41	38	37
6	51	43	38	34	50	43	38	34	42	37	34	41	37	34	40	36	33	32
7	47	39	33	29	46	38	33	29	37	32	29	36	32	29	35	32	29	27
8	43	35	29	25	42	34	29	25	33	29	25	32	28	25	32	28	25	24
9	40	31	26	22	39	31	25	22	30	25	22	29	25	22	28	24	22	20
10	36	28	22	19	36	27	22	19	27	22	19	26	22	19	25	21	19	17

Spacing Criterion 1.7

Zone	%Lamp	Zone	%Lamp
0-30	19.3	0-90	67.5
0-40	35.7	90-180	0.0
0-60	64.2	Total	67.5

Candlepower

Degree	CP
0	9440
5	9316
10	9143
15	9255
20	9755
25	10668
30	11414
35	11536
40	11169
45	9982
50	8355
55	5422
60	2267
65	1098
70	505
75	183
80	57
85	10
90	0