

COOPER LIGHTING - METALUX®

DESCRIPTION

The Optica HP series is an energy saving solution for new construction applications. It uses a high performance T8 system that can save over 60% of energy costs when compared to standard 3-lamp, 18-cell parabolics. The Optica HP series incorporates a 2" high, 12-cell louver combined with a precision engineered cross blade to create a soft, even distribution while delivering a highly efficient T8 luminaire. The Optica HP is compatible with all of today's popular ceiling systems and is available with a number of options and accessories for increased application versatility. The Optica HP series is an excellent choice for new commercial office spaces, schools, hospitals or retail merchandising areas.

SPECIFICATION FEATURES

Construction

4-3/4" deep, para-contoured housing, die formed code gauge, prime cold rolled steel. Full length die formed stiffeners for added strength. Contoured ballast/wireway cover, easily removed without tools. Die formed captive lampholder bracket fully encloses lampholder wiring permitting easy lampholder replacement. Heavy end plates, securely attached with interlocking tabs and screws. Four auxiliary fixture end suspension points provided. KOs for continuous row wiring. End plates have integral Grid-Lock feature for safety and convenience.

Electrical**

Ballasts are CBM/ETL Class "P" are positively secured by mounting bolts. Pressure lock lampholders. UL/CUL listed. Suitable for damp locations.

Finish

Cold rolled steel w/multistage iron phosphate pretreatment for maximum bonding and a highly reflective matte white finish on reflective surfaces for increased efficiency.

Optics

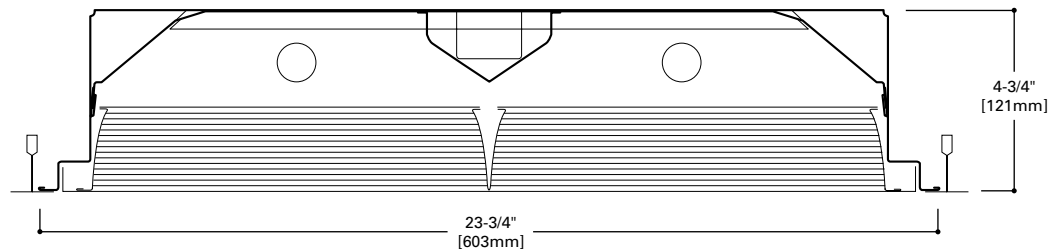
Die formed white louver w/faceted straight-blade cross-members are engineered for optimal efficiency and performance. True-cut mitered corners and interlocking features provide strength and durability. Louver is protected by polyethylene cover when shipped w/fixture.

Hinging/Latching

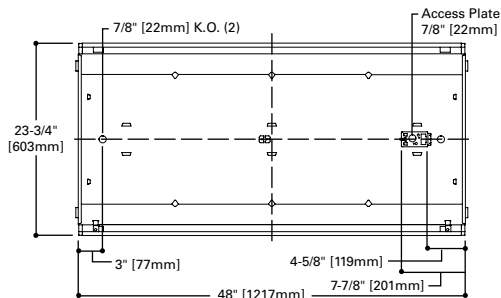
Positive cam action spring loaded, self locking, steel latches with safety lock T-hinges allow hinging and latching from either side.

Controls

Fifth Light ballast options are offered for both 0-10V continuous dimming and DALI applications. Combine with energy-saving products like occupancy sensors, daylighting controls, and lighting relay panels from Cooper Controls (www.coopercontrol.com) to maximize energy savings.



MOUNTING DATA

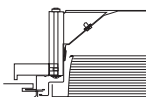


CEILING COMPATIBILITY

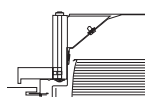
G
Grid/Lay-in
Standard



F
Aluminum Flange Trim
With Supporting
Swing Gates



MZ
Modular Trim
With Supporting
Swing Gates



**Ceiling
Type**

Exposed Grid
Concealed T
Slot Grid
Flange
Concealed "T" or "Z"
Metal Pan

(Verify compatibility/ consult
Pre Sales Technical Support.)

**Trim
Type**

G
G
G
F
MZ
MZ

Specifications and dimensions subject to change without notice.
Consult your representative for additional options and finishes.



**OPTICAHP
SERIES**
228T8
232

12 Cell

2' X 4'
2 LAMP

OPTICA™
ARCHITECTURAL LIGHTING MEDIA

powered by
fifthlight
technology

ENERGY DATA

Input Watts:

HB Ballast & HL Lamps

228T8 (48)

232 (56)

Luminaire Efficacy Rating

LER = FP-84

Catalog Number: 20PG-232

Yearly Cost of 1000 lumens,

3000 hrs at .08 KWH = \$2.86

*Convertibility applies to housing only.
Appropriate shielding media assemblies
must be utilized.

**Reference the lamp/ballast data in the
Technical Section for specific lamp/ballast
requirements.

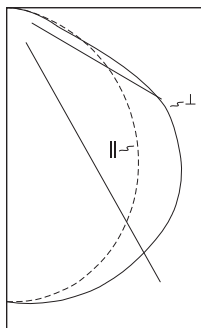
**LAMPS CONTAIN MERCURY. DISPOSE ACCORDING
TO LOCAL, STATE OR FEDERAL LAWS**

LINEAR DISCONNECT

Safe and convenient means of
disconnecting power.



PHOTOMETRICS



2OPG-232-UNV
Electronic Ballast
F32T8 32W lamps
3100 lumens.

Spacing criterion:
(II) 1.2 x mounting
height, (L) 1.4 x
mounting height.
Efficiency = 87.1%.

Test Report:
2OPG-232FB26W
LER = FP-84

Yearly Cost of 1000
lumens, 3000 hrs at
.08 KWH = \$2.86

Coefficients of Utilization

Effective floor cavity reflectance										20%								
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	104	104	104	104	101	101	101	101	97	97	97	93	93	93	89	89	89	87
1	95	91	87	84	93	89	86	83	85	83	80	82	80	78	79	77	75	74
2	87	80	74	69	84	78	73	68	75	70	66	72	68	65	69	66	64	62
3	79	70	63	57	77	69	62	57	66	60	56	64	59	55	61	57	54	52
4	72	62	54	48	70	61	54	48	59	52	47	56	51	47	55	50	46	44
5	66	55	47	42	65	54	47	41	52	46	41	51	45	40	49	44	40	38
6	61	50	42	36	60	49	41	36	47	41	36	46	40	35	44	39	35	33
7	57	45	37	32	55	44	37	32	43	36	32	42	36	31	40	35	31	29
8	53	41	33	28	51	40	33	28	39	33	28	38	32	28	37	32	28	26
9	49	37	30	25	48	37	30	25	36	30	25	35	29	25	34	29	25	23
10	46	35	28	23	45	34	27	23	33	27	23	32	27	23	32	26	23	21

Zonal Lumen Summary

Zone	Lumens	%Lamp	%Fixture
0-30	1463	23.6	27.1
0-40	2425	39.1	44.9
0-60	4397	70.9	81.4
0-90	5400	87.1	100.0
90-180	0	0.0	0.0
0-180	5400	87.1	100

Typical VCP Percentages

Room Size (Ft.)	Height Along		Height Across	
	8.5'	10.0'	8.5'	10.0'
20 x 20	60	66	60	63
30 x 30	59	60	59	61
30 x 60	55	56	57	58
60 x 30	63	64	63	64
60 x 60	58	58	59	59

Candela

Angle	Along II	45°	Across L
0	1825	1825	1825
5	1823	1834	1844
10	1797	1823	1848
15	1755	1795	1838
20	1688	1751	1816
25	1607	1690	1781
30	1508	1617	1737
35	1397	1529	1689
40	1273	1432	1624
45	1141	1327	1530
50	1001	1206	1405
55	857	1062	1260
60	711	896	1051
65	562	720	649
70	407	480	333
75	263	250	235
80	155	149	145
85	73	68	62
90	0	0	0

ORDERING INFORMATION

SAMPLE NUMBER: 20PG-232FB26W-UNV-HB81-U

Rating Blank = Standard	Number of Lamps 2 =2 Lamps	Voltage ⁽²⁾ 120V =120 Volt 277V =277 Volt 347V =347 Volt UNV =Universal Voltage 120-277 ⁽³⁾	Ballast Type EB8 __=T8 Electronic Start. Total Harmonic Distortion < 10% EB8 _/PLUS=T8 Electronic Start. Total Harmonic Distortion < 10%. High Ballast Factor > 1.15. ER8 __=T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10% High Performance T8 Ballasts HB8 __=T8 Electronic Instant Start. Total Harmonic Distortion < 10%. Standard Ballast Factor .86 – .88 HB8 _L=T8 Electronic Instant Start. Total Harmonic Distortion < 10%. Low Ballast Factor .77 – .82 HB8 _N=T8 Electronic Instant Start. Total Harmonic Distortion < 10%. Normal Ballast Factor 1.0 HB8 _H=T8 Electronic Instant Start. Total Harmonic Distortion < 10%. High Ballast Factor 1.15 – 1.20 HR8 _T8=T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. Standard Ballast Factor .86 – .88 HR8 _DIM=T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. Step Dimming. Ballast Factor .88 HR8 _L=T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. Low Ballast Factor .71 – .79 HR8 _H=T8 Electronic Program Rapid Start. Total Harmonic Distortion < 10%. High Ballast Factor 1.15 – 1.20 0-10V Dimming Ballasts ⁽⁹⁾ 5LTV8 __=T8 0-10V Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 0.87 ⁽¹¹⁾ 5LTVS8 __=T8 0-10V Spec Grade Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 0.87 ⁽¹⁰⁾ Fifth Light DALI Ballasts ⁽⁸⁾ 5LT8 __=T8 DALI Program Rapid Start. Total Harmonic Distortion < 10%. Ballast Factor 1.0	Options GL =Single Element Fuse GM =Double Element Fuse Flex =Flex Installed (Reference Flex ordering information) EL =Emergency Installed ⁽⁵⁾ Lamps Installed Blank =No Lamps Installed L8835 =T8 Lamp, 28W and 32W, 3500K ⁽⁴⁾ L8841 =T8 Lamp, 28W and 32W, 4100K ⁽⁴⁾ L8835HL =T8 Lamp, 32W, 3500K, 3100 Lumens L8841HL =T8 Lamp, 32W, 4100K, 3100 Lumens	Options R =Internal Reflector Packaging U =Unit Pack PAL =Job Pack, out of carton PALC =Job Pack, in carton					
Width 2 =2' Width OP =Optica HP Series Trim Type G =Grid/Lay-in (Standard) ⁽⁶⁾ F =Aluminum Flange Trim ⁽⁷⁾ MZ =Modular Trim	Wattage (Length) 28T8 =28WT8 (48") ⁽⁴⁾ 32 =32WT8 (48") Cross Blade FB =Faceted Blade Cell Configuration 26 =2 Rows of 6, 12 Cell Louver Finish W =Matte White Option – Aluminum Flange Trim ⁽⁷⁾ Blank =SW (Single White) <table border="1"> <thead> <tr> <th>Type</th> <th>Color</th> </tr> </thead> <tbody> <tr> <td>'S' Single</td> <td>'N' Natural</td> </tr> <tr> <td>'R' In Row</td> <td>'W' White</td> </tr> <tr> <td>'E' End of Row</td> <td></td> </tr> </tbody> </table>	Type	Color	'S' Single	'N' Natural	'R' In Row	'W' White	'E' End of Row		ACCESSORIES EQ-CLIP-U =T-BAR Safety Earthquake Clips ⁽¹⁾
Type	Color									
'S' Single	'N' Natural									
'R' In Row	'W' White									
'E' End of Row										

NOTES: ⁽¹⁾ An EQ Grid Clip is recommended for all 9/16" ceiling systems. Four required per fixture. ⁽²⁾ Products also available in non-US voltages and frequencies for international markets. ⁽³⁾ Not available when specifying emergencies, voltage must be specific. ⁽⁴⁾ When utilizing 28WT8 lamps, HPT8 Ballast must be specified. ⁽⁵⁾ Fixtures equipped with "EL" option may require a 5-1/2" housing depth. If installing in field, must use low profile battery pack. ⁽⁶⁾ Louver is recessed by 5/16" in ConcealedT or Slot Grid. ⁽⁷⁾ Specify row configuration, type in catalog number when ordering complete fixture. ⁽⁸⁾ For a complete listing of Fifthlight Technology products and other solutions from Cooper Controls, visit www.coopercontrol.com. ⁽⁹⁾ 0-10V ballast do not include DALI feature. Please select DALI ballast for use with Fifth Light system. ⁽¹⁰⁾ Specification grade 0-10V dimming ballast are NEMA premium and CEE listed. They are compatible with low mercury and energy saving lamps. ⁽¹¹⁾ Standard 0-10V ballast not available for 28WT8 lamps.

For complete product data, reference the Fluorescent Specification binder. Specifications & dimensions subject to change without notice. Consult your Cooper Lighting Representative for availability and ordering information.

SHIPPING DATA

Catalog No.	Wt.
20PG-228T8	28 lbs.
20PG-232	28 lbs.