

Also available in 16 cells and in lensed.

**FEATURES**

- Ideal for manufacturing areas, retail stores, and gymnasiums
- Shallow depth allows for installation in a myriad of shallow plenum applications
- Uses EISA compliant pulse start metal halide technology
- Removable power door allows for access to the ballast from below fixture

**PROJECT INFORMATION**

Project Name \_\_\_\_\_

Type \_\_\_\_\_

Catalog No. \_\_\_\_\_

Date \_\_\_\_\_

**CONSTRUCTION**

Housing constructed of code gauge steel. Power door is constructed of 18 gauge steel and is secured with (2) ¼ turn fasteners. The power door contains all of the electrical components and can easily be removed from the fixture for maintenance. The ballast housing is constructed of aluminum for maximum heat dissipation. The housing is riveted together for maximum rigidity. A tempered glass overlay is standard on all pulse start metal halide lamped units. The tempered overlay is secured to the louver. Aluminum louver is retained by die formed latches and T-hinges and can be installed from either side.

**INSTALLATION**

A 7/8" knockout is provided in the capacitor housing. All leads are pulled through the knockout for installation. A plastic dust cover which eliminates construction dust and protects the louver is supplied around the louver.

**FINISH**

End and side rails are painted black to eliminate any light leaks. Housing and all other parts are painted after fabrication with a white polyester finish for maximum reflectance longevity.

**ELECTRICAL**

Wired with core and coil ballasts and are SCWA.

**CEILING COMPATIBILITY**

Luminaire is available to fit most standard ceiling types as shown at left. For information on compatibility with specific ceilings, contact your Columbia representative. All luminaires are provided as standard with integral T-Bar clips.

**CERTIFICATION**

All luminaires are built to UL 1598 standards and bear appropriate UL and cUL or CSA labels. Damp location labeling is standard.

**AIR HANDLING**

Supply or return air functions are provided on the side of the housing through the black reveal.

**ORDERING INFORMATION**

**EXAMPLE HH22-P400G-LD33-S480**

<b>HH</b>	<b>22</b>	<b>-</b>	<b>P</b>	<b>-</b>	<b>LD</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>MODEL</b>	<b>LAMP TYPE</b>	<b>CEILING TYPE</b>	<b>LOUVER FINISH</b>	<b>CELLS WIDE BY CELLS LONG</b>	<b>VOLTAGE</b>	<b>OPTIONS</b>	<b>SIZE</b>	<b>LAMP WATTS</b>
<b>HH</b> Horizontal Lamp Orientation	<b>P</b> Pulse Start Metal Halide	<b>G</b> Grid <b>F</b> Flange	<b>LD</b> Semi-Specular Low Iridescent	<b>33</b> 3 cells by 3 cells <b>44</b> 4 cells by 4 cells	<b>QT</b> Quad-Tap, 120V, 208V, 240V, 277V <b>480</b> 480V	<b>QR</b> Quartz Restrike <b>GLR</b> Fast Blow Fuse <b>NYC</b> NYC Compliant <b>NYCU</b> NYC Compliant, Union Label	<b>22</b> 2' x 2'	<b>175</b> 175 Watt <b>200</b> 200 Watt <b>250</b> 250 Watt <b>320</b> 320 Watt <b>350</b> 350 Watt <b>400</b> 400 Watt
					<b>AIR HANDLING FUNCTION</b>	<b>WIRED TO</b>		
					<b>S</b> Static <b>A</b> Air Handling <b>AV</b> Air Handling w/ supply vanes	<b>120</b> 120V <b>208</b> 208V <b>240</b> 240V <b>277</b> 277V (Std.)		

**PHOTOMETRIC DATA**

**LUMINAIRE DATA**

Luminaire	HH22-M400G-LD44 HH/HV HID 2 x 2 with 4 x 4 cell semi-spec louver, clear glass lens, and BWE side and top reflectors
Ballast	N/A
Ballast Factor	1.00
Lamp	MS400/C/HOR
Lumens per Lamp	40000
Watts	458
Spacing Criterion	0° = 1.32 90° = 1.35
Luminous Opening in Ft	Length: 1.87 Width: 1.88 Height: 0.00

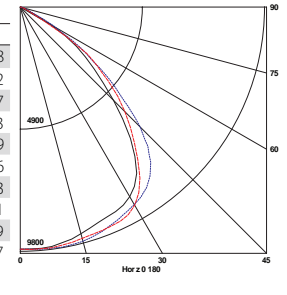
**AVG. LUMINANCE (Candela/Sq. M.)**

Average Luminance Angle	0.0	22.5	45.0	67.5	90.0
0	29730	29730	29730	29730	29730
30	31041	31897	32353	33060	32430
40	27498	29832	32514	29765	28509
45	22884	25629	29453	27028	25690
50	18439	20415	23450	23902	21901
55	14690	14973	17114	18390	17546
60	8506	9406	10104	8916	6222
65	2840	3630	3832	2963	2398
70	1620	2041	2068	2014	1647
75	1124	1479	1585	1585	1289
80	882	1234	1322	1322	1076
85	667	878	984	1089	878

**COEFFICIENTS OF UTILIZATION (%)**

RCR	80					70					50					0
	RW	70	50	30	10	70	50	30	10	50	30	10	0			
1	60	58	56	55	59	57	55	54	55	53	52	48				
2	56	52	49	47	54	51	49	46	50	47	45	42				
3	52	47	44	41	50	46	43	40	45	42	40	37				
4	48	43	39	36	47	42	38	35	41	37	35	33				
5	44	38	34	31	43	38	34	31	37	33	31	29				
6	41	35	31	28	40	35	31	28	34	30	27	26				
7	38	32	28	25	38	32	28	25	31	27	25	23				
8	36	29	25	22	35	29	25	22	28	25	22	21				
9	34	27	23	20	33	27	23	20	26	23	20	19				
10	32	25	21	18	31	25	21	18	24	21	18	17				

**INDOOR CANDELA PLOT**



**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	7971	19.9	37.1
0-40	13287	33.2	61.8
0-60	20746	51.9	96.5
0-90	21503	53.8	100.0
0-180	21503	53.8	100.0

**ENERGY DATA**

Total Luminaire Efficiency	53.8%
Luminaire Efficacy Rating (LER)	N/A
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$N/A based on 3000 hrs. and \$0.08 per KWH

**LUMINAIRE DATA**

Luminaire	HH22-M400G-LD33 HH/HV HID 2 x 2 with 3 x 3 cell semi-specular louver, tempered glass overlay, and BWE reflector
Ballast	N/A
Ballast Factor	1.00
Lamp	M400/C
Lumens per Lamp	32000
Watts	458
Spacing Criterion	0° = 1.22 90° = 1.24
Luminous Opening in Ft	Length: 1.77 Width: 1.77 Height: 0.00

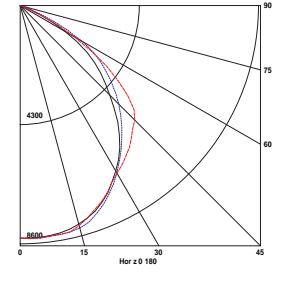
**AVG. LUMINANCE (Candela/Sq. M.)**

Average Luminance Angle	0.0	22.5	45.0	67.5	90.0
0	28819	28819	28819	28819	28819
30	27343	27910	27672	27553	27700
40	24574	24708	25605	26821	27973
45	22191	22059	24460	26117	28391
50	20247	18981	22963	24876	27105
55	17611	15850	21151	20528	22732
60	12898	11798	17536	14575	15564
65	6731	6219	10374	6983	6569
70	1848	1949	3024	1778	1708
75	1062	1062	1062	1062	1062
80	732	851	851	851	851
85	670	788	907	788	788

**COEFFICIENTS OF UTILIZATION (%)**

RCR	80					70					50					0
	RW	70	50	30	10	70	50	30	10	50	30	10	0			
1	64	62	60	58	63	61	59	57	58	57	56	51				
2	59	56	52	50	58	55	52	49	53	50	48	45				
3	55	50	46	43	54	49	45	42	47	44	42	39				
4	51	45	40	37	49	44	40	37	43	39	36	34				
5	47	40	36	32	46	40	35	32	39	35	32	30				
6	44	37	32	29	43	36	32	29	35	31	28	27				
7	41	33	29	26	40	33	29	25	32	28	25	24				
8	38	31	26	23	37	30	26	23	29	26	23	21				
9	35	28	24	21	35	28	24	21	27	23	21	19				
10	33	26	22	19	32	26	22	19	25	21	19	18				

**INDOOR CANDELA PLOT**



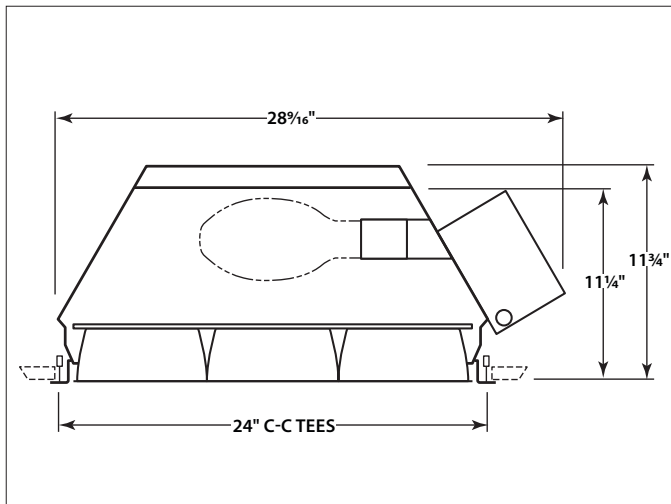
**ZONAL LUMEN SUMMARY**

Zone	Lumens	% Lamp	% Fixt.
0-30	6582	20.6	35.7
0-40	10584	33.1	57.3
0-60	17333	54.2	93.9
0-90	18459	57.7	100.0
0-180	18459	57.7	100.0

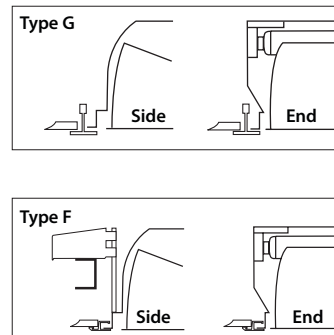
**ENERGY DATA**

Total Luminaire Efficiency	57.7%
Luminaire Efficacy Rating (LER)	N/A
IESNA RP-1-2004 Compliance	Non-Compliant
Comparative Yearly Lighting Energy Cost per 1000 Lumens	\$N/A based on 3000 hrs. and \$0.08 per KWH

**DIMENSIONAL DATA**



**CEILING COMPATIBILITY**



For lay-in installation in exposed grid ceilings. Maximum tee widths of 1" and maximum tee heights of 2" allowed.

For tile, plaster or plasterboard type ceilings. Overlapping extruded aluminum trim conceals edges of ceiling opening. Wing hanger suspension system included. For row mounting, row information is required.