

DESCRIPTION

Recessed lens downlight luminaire with 2-1/4 inch square pinhole aperture utilizing a MR16 GX10 ceramic metal halide lamp. Modular platform can be reconfigured from below the ceiling to accept a broad range of lamp modules and optical elements. Platform is suitable for shallow plenum commercial construction. Insulation must be kept 3" from top and sides of housing. Platform + module + element combination supports various lamp beam spreads for desired optical distribution with excellent light control and low aperture brightness.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Frame

Galvanized steel plaster frame with integral bar hanger receivers. Set-screws provide positive horizontal locking.

Collar

Matte black steel collar adjusts vertically for 1/2" - 1" thick ceilings and can be rotated +/- 7.5° thru the aperture. Integral gun sights facilitate the use of guide strings or laser lines. Shipped with a paint overspray protector installed in the collar.

Lamp Module

Installed or removed thru the aperture or from the top and allows lamp orientation at 0°, 90°, 180° and 270° positions.

Housing

Steel housing painted matte black for a visually dark interior. Removable hinged top allows for top access. All fasteners are captive.

Gaskets

Closed cell gaskets achieve restrictive airflow requirements without additional caulking.

Bar Hangers

Captive preinstalled bar hangers adjusts from 8-1/2" to 24" wide; pass thru feature allows shortening without removal. Captive nail penetrates standard and engineered lumber. Mounting flange levels platform with ceiling. Integral clip attaches directly to t-bar.

Pinhole

Diecast aluminum flange with square pinhole aperture and integral glass lens. Lens can be removed to facilitate painting to match ceiling finish. Mousetrap type springs pull flange tight to ceiling. Light trap eliminates spill light at edge of flange. Provided with both straight and angle cut parabolic shielding cone, shipped with angle cut version installed.

Butterfly Bracket

Provides 3" of vertical adjustment and accept 1/2" EMT, C channel or bar hangers.

Junction Box

(7) 1/2" trade size pry outs, (3) integral clamps for non-metallic cable. Rated for (8) #12 thru branch circuits. Wago® type push wire connectors for field connections

Thermal Protector

Self-resetting thermal protector protects against improper lamping and direct contact with insulation.

Ballast

Universal input electronic ballast provides full light output and rated lamp life. Provides noise free operation and starting. Offers excellent line voltage regulation resulting in increased color stability and flicker free operation.

Lamp Capsule

Pulse rated GX10 lampholder connects to ballast with electrical quick connects. Accepts 1 lens, filter, or optional lamp snoot.

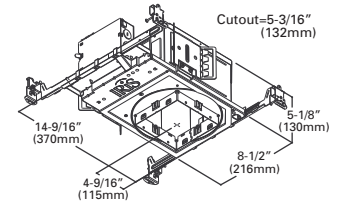
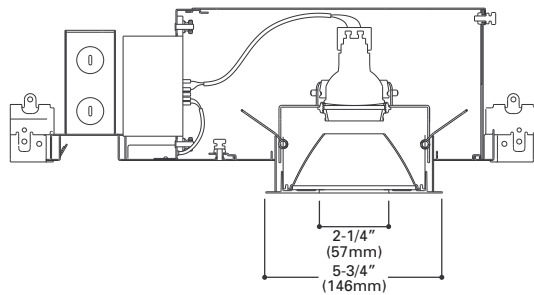
Code Compliance

Thermally protected, cULus listed for protected wet locations and ASTM-E283 AIRTITE(tm).



**P406TAT
MV4CMH20MRE
E4PINSR
20W MR16
Ceramic Metal
Halide**

2-1/4 Inch Square Lens Downlight



ENERGY DATA		Min. Starting Temp -30°C
Sound Rating Class A	EMI/RFI Emissions FCC 18C	
Input Frequency 50/60 Hz	Power Factor > 0.99	
Input Voltage 108V - 305V	THD < 10%	
20W	Input Power	24W Nominal
	Input Current	120V 0.20A 277V 0.09A

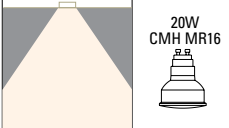
ORDERING INFORMATION: Complete unit consists of platform, lamp module and optical element.

Platform	Lamp Module	Ballast Option	Optical Element	Flange	Accessories
	MV4CMH				
<p>P406TAT = 4" Square Aperture Non-IC Housing</p> <p>P406TCP = 4" Square Aperture Non-IC Chicago Plenum Housing</p>	<p>MV4CMH = Vertical Ceramic Metal Halide, MR16 Lamp Module</p>	<p>20MRE = 20W CMH MR16 120-277V UNV</p>	<p>E4PINSR = 2-1/4" Square Aperture Pinhole, Lens</p>	<p>[Blank] = Self Flanged, Matte White Flange</p>	<p>LSA16 = Matte black lamp snoot accessory</p> <p>L - Series Filter Media For MR16 Lamps (see accessories spec sheet)</p>

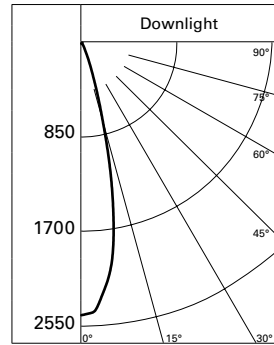
Photometric Results

Spacing Criterion = .4
Efficiency = 52.9%

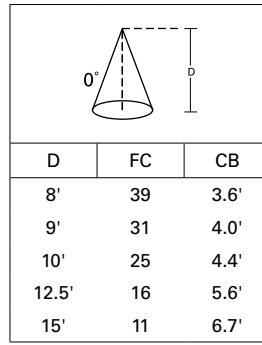
Test No. P11075
Platform = P4
Element = E4PINSR
Lumens = 1000
Lamp = CDM20/MR16/
FL25



Candlepower Distribution



Cone of Light



Candelas

Vertical Angle	CD
90	0
85	1
75	1
65	1
55	1
45	1
35	21
25	110
15	864
5	2302
0	2488

Zonal Lumens Summary

Zone	Lumens	% Lamp	% Luminaire
0- 30	510	51	96.4
0- 40	524	52.4	99
0- 60	526	52.6	99.4
0- 90	529	52.9	100
90-180	0	0	0
0-180	529	52.9	100

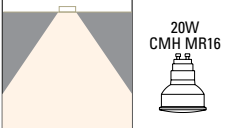
Coefficients of Utilization

Ceiling Wall % RCR	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
	Zonal cavity method -- floor reflectance = 20%					
0	63 63 63 63	62 62 62 62	59 59 59	56 56 56	54 54 54	53
1	61 60 59 58	60 59 58 57	57 56 55	55 54 54	53 52 52	51
2	59 57 56 54	58 56 55 54	55 54 53	53 52 51	52 51 50	50
3	57 55 53 52	56 54 53 51	53 52 50	52 51 50	51 50 49	48
4	56 53 51 49	55 52 51 49	51 50 49	50 49 48	49 48 48	47
5	54 51 49 48	53 51 49 47	50 48 47	49 48 47	48 47 46	46
6	53 50 47 46	52 49 47 46	49 47 46	48 46 45	47 46 45	44
7	51 48 46 45	51 48 46 44	47 46 44	47 45 44	46 45 44	43
8	50 47 45 43	50 47 45 43	46 44 43	46 44 43	45 44 43	42
9	49 46 44 42	48 45 43 42	45 43 42	45 43 42	44 43 42	41
10	48 44 42 41	47 44 42 41	44 42 41	44 42 41	43 42 41	40

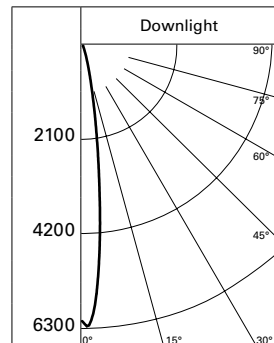
Photometric Results

Spacing Criterion = .3
Efficiency = 59.1%

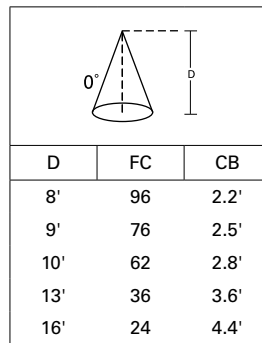
Test No. P10975
Platform = P4
Element = E4PINSR
Lumens = 1000
Lamp = CMH20/MR16/
G10/SP 12°



Candlepower Distribution



Cone of Light



Candelas

Vertical Angle	CD
90	0
85	1
75	1
65	1
55	1
45	1
35	22
25	61
15	630
5	4678
0	6168

Zonal Lumens Summary

Zone	Lumens	% Lamp	% Luminaire
0-30	573	57.3	97
0-40	587	58.7	99.2
0-60	589	58.9	99.5
0-90	591	59.1	100
90-180	0	0	0
0-180	591	59.1	100

Coefficients of Utilization

Ceiling Wall % RCR	70 50 30 10	70 50 30 10	50 30 10	50 30 10	50 30 10	0
	Zonal cavity method -- floor reflectance = 20%					
0	70 70 70 70	69 69 69 69	66 66 66	63 63 63	60 60 60	59
1	68 67 66 65	67 66 65 64	64 63 62	61 61 60	59 59 59	58
2	66 65 63 62	65 64 62 61	62 61 60	60 59 59	59 58 57	57
3	65 63 61 59	64 62 60 59	60 59 58	59 58 57	58 57 56	56
4	63 61 59 57	63 60 58 57	59 58 56	58 57 56	57 56 55	55
5	62 59 57 56	61 59 57 55	58 56 55	57 56 55	56 55 54	54
6	61 58 56 54	60 57 56 54	57 55 54	56 55 54	55 54 53	53
7	60 57 55 53	59 56 54 53	56 54 53	55 54 53	55 53 52	52
8	59 55 53 52	58 55 53 52	55 53 52	54 53 52	54 52 52	51
9	58 54 53 51	57 54 52 51	54 52 51	53 52 51	53 52 51	50
10	57 53 52 50	56 53 52 50	53 51 50	53 51 50	52 51 50	50

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