

DESCRIPTION

A low brightness 3-1/2 inch aperture adjustable accent fixture for MR16 lamps (75W max). Optics provide 50° cutoff and maximize output by allowing the lamp axis to pivot about the center of the aperture at the ceiling line, allowing maximum light output with no flashback. For use with all MR16 lamp varieties.

Catalog #		Type
Project		
Comments		Date
Prepared by		

SPECIFICATION FEATURES

Reflector

Spun 0.040" aluminum. Available in a variety of Alzak® finishes. Painted white finish as well as white or black baffles. Two torsion springs pull trim tight to ceiling. Reflector is keyed to prevent improper orientation relative to lamp.

Trim Ring

Self flanged or white painted trim ring. Mechanical light trap eliminates spill light at edge of flange or reflector.

Aiming Mechanism

Stable lamp aiming and locking mechanism allows smooth 361° rotation and 45° elevation adjustment. Lamp aiming scale enables consistent setting across multiple fixtures. Unit is relamped without unlocking adjustments.

Housing

One piece die cast 1" deep collar. 18 gauge CRS housing is painted optical matte black to eliminate stray light. Housing is top accessible.

Universal Mounting Bracket

Accepts 1/2" EMT, C Channel, T bar fasteners and hanger bars. Provides 5" total adjustment.

Junction Box

Listed for six #12g (three in, three out) 90°C conductors feed through branch wiring. Pry-outs for six 1/2" conduits and 4 integral Romex traps. Access to junction box through panel in side of housing.

Socket

GX5.3 base for Bi-pin MR16 lamps. Field replaceable with keyed connector.

Transformer

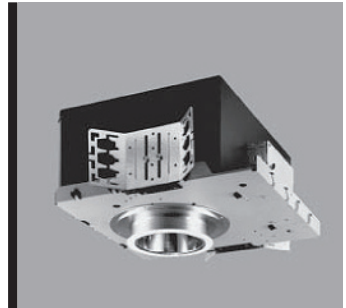
75VA, 115V magnetic core and coil dual tap 120/277V transformer features a bolted and acoustically isolated mounting to ensure quiet operation. Transformer is serviceable from below ceiling.

Insulation Detector

Self-resetting insulation detector opens circuit if insulation is improperly installed.

Labels

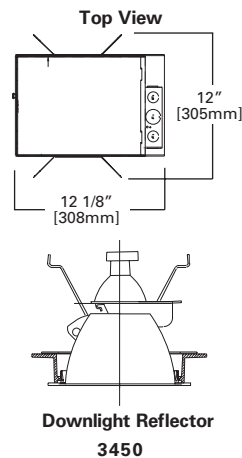
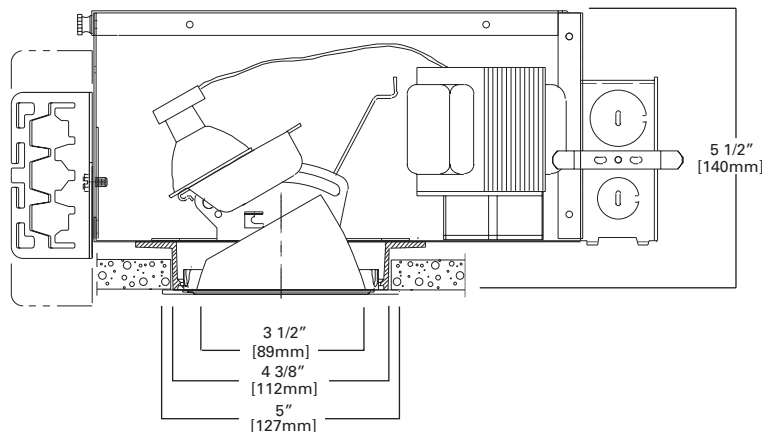
U.L. listed, C.S.A. certified, damp location.



HA3MR
3450/3451
3470/3471

75W MAX
MR16

3-1/2-Inch Adjustable
Top Access



To learn more visit:
www.soraa.com/wws/fixtures
for recommended lamp ratings.

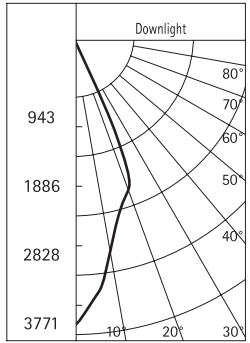
NOTES:
Accessories should be ordered separately.
For additional options please consult your
Cooper Lighting Representative.
Alzak is a registered trademark of
Aluminum Company of America.

Sample Number: Complete unit consists of housing, ballast and trim.

Housing HA3MR=3" Low Voltage MR16 Directional, 120/277V	Options CP=Chicago Plenum DR20=20W Max DR37=37W Max DR50=50W Max	Trims 3451=Downlight Reflector, Self Flanged 3450=Downlight Reflector, Metal Trim Ring, White 3471=Angle Cut Reflector, Self Flanged 3470=Angle Cut Reflector, Metal Trim Ring, White	Finish LI=Specular Clear H=Semi-Specular Clear WMH=Warm Haze G=Specular Gold WH=Wheat WHH=Wheat Haze GP=Graphite GPH=Graphite Haze B=Specular Black W=Gloss White 3450, 3470 Only BB=Black Baffle WB=White Baffle	Options WF=White Painted Flanged (Self Flanged only)	Accessories HB26=C Channel Bar Hanger, 26" Long, Pair HB50=C Channel Bar Hanger, 50" Long, Pair FK5=5 Amp Field Installed Fuse Kit 300V Max L100 Series=Color Filters and Lens RMB22=Wood Joist Bar Hanger, 22" Long, Pair
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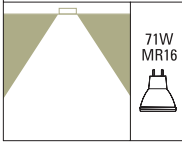
PHOTOMETRICS

Candlepower Distribution Curve



Spacing Criterion = .4
Efficiency = 93.9%

Test No. 21037
HA3MR 3450LI
Lamp = 71W MR16/FL



Cone of Light

Distance Fixture to Lighted Plane	Initial Footcandles at Nadir	Beam Diameter
4'6"	185	2'0"
5'6"	124	2'6"
6'6"	89	3'0"
8'0"	59	3'6"
10'0"	38	4'6"
12'0"	26	5'6"

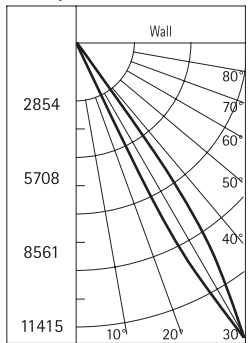
Coefficients of Utilization

Ceiling Wall % RCR	80%				70%			50%	
	70	50	30	10	50	30	10	50	10
0	112	112	112	112	109	109	109	104	104
1	108	105	104	102	103	102	100	100	97
2	104	100	97	94	98	96	93	95	91
3	100	95	91	88	94	90	88	91	86
4	96	91	86	83	90	86	83	88	82
5	93	86	82	79	86	82	79	84	78
6	89	83	78	75	82	78	75	81	74
7	86	79	75	72	79	75	72	78	71
8	83	76	72	69	76	72	69	75	68
9	81	73	69	66	73	69	66	72	66
10	78	71	66	64	70	66	63	70	63

Candelas

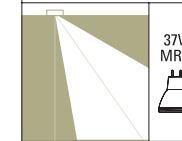
Vertical Angle	CD	Deg.	cd/m ²
90	0	85°	0
85	0	75°	0
75	0	65°	0
65	0	55°	0
55	0	45°	2505
45	11		
35	81		
25	672		
15	1755		
5	2894		
0	3771		

Candlepower Distribution Curve

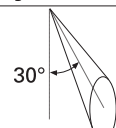


Spacing Criterion = 2.0
Efficiency = 66.8%

Test No. H21251
HA3MR 3470LI
Lamp=37W MR16IRSP10



Cone of Light



D	FC	L	W	CB
6'0"	181	1.5	1.1	3.5
8'0"	102	1.9	1.5	4.6
10'0"	65	2.4	1.9	5.8
12'6"	42	3.0	2.3	7.2

30° Tilt Vertical Illuminance

Single Unit Footcandles

DD	2'6" from wall - 30° Aim (distance from fixture along wall)					
	1'	2'	3'	4'	5'	6'
1	0	0	0	0	0	0
2	5	1	0	0	0	0
3	38	7	1	0	0	0
4	222	10	3	0	0	0
5	113	12	3	1	0	0
6	23	7	2	1	0	0
7	6	3	2	1	0	0
8	2	2	1	1	0	0
9	1	1	1	1	0	0
10	1	1	1	1	0	0

Lamp	0° Aiming Angle				30° Aiming Angle					30° Aiming Angle					Luminance		
	Horizontal Footcandles				Horizontal Footcandles					Horizontal Footcandles					cd/m ² @ Maximum Tilt		
Q75 MR16/C/NSP	D	FC	L	W	D	FC	L	W	CB	D	FC	L	W	CB	Degree	@180°	@90°
Beam Spread	5'0"	582	1.5	1.5	5'0"	397	1.5	1.5	2'9"	2'0"	573	2.0	1.0	3'6"	85°	0	0
14° x 14°	7'6"	259	2.0	2.0	7'6"	177	2.5	2.5	4'3"	3'0"	255	3.0	2.0	5'3"	75°	0	0
12,000 CBCP	10'0"	146	3.0	3.0	10'0"	99	3.5	3.5	5'9"	4'0"	143	4.0	2.0	7'0"	65°	0	0
	12'6"	96	3.5	3.4	12'6"	64	4.0	4.0	7'3"	5'6"	92	5.0	3.0	8'9"	55°	0	0
															45°	0	1240

Lamp	0° Aiming Angle				30° Aiming Angle					30° Aiming Angle				
	Horizontal Footcandles				Horizontal Footcandles					Horizontal Footcandles				
Q75 MR16/C/NFL	D	FC	L	W	D	FC	L	W	CB	D	FC	L	W	CB
Beam Spread	5'0"	196	4.0	4.0	5'0"	127	3.5	3.5	2'9"	2'0"	207	3.0	2.5	3'6"
25° x 25°	7'6"	87	5.5	5.5	7'6"	56	5.0	5.0	4'3"	3'0"	92	4.5	3.5	5'3"
4,900CBCP	10'0"	49	7.5	7.5	10'0"	32	6.5	6.5	5'9"	4'0"	52	6.0	5.0	7'0"
	12'6"	31	9.5	9.5	12'6"	20	8.0	8.0	7'3"	5'6"	33	7.5	6.0	8'9"