

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: RSA

Report Number: P219608

Luminaire Tested: **MRZ-1-REC-X-1H-L27-97-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219608
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14872)
Test Lab: INNOVATION CENTER (G1)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: RSA
Catalog Number: MRZ-1-REC-X-1H-L27-97-NFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1
Light Source: (1) 2700K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 378.8 lumens
Efficiency: N/A
Efficacy: 55.7 lumens/watt
Spacing Criteria (0/90/45): 0.4 / 0.87 / 0.54
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

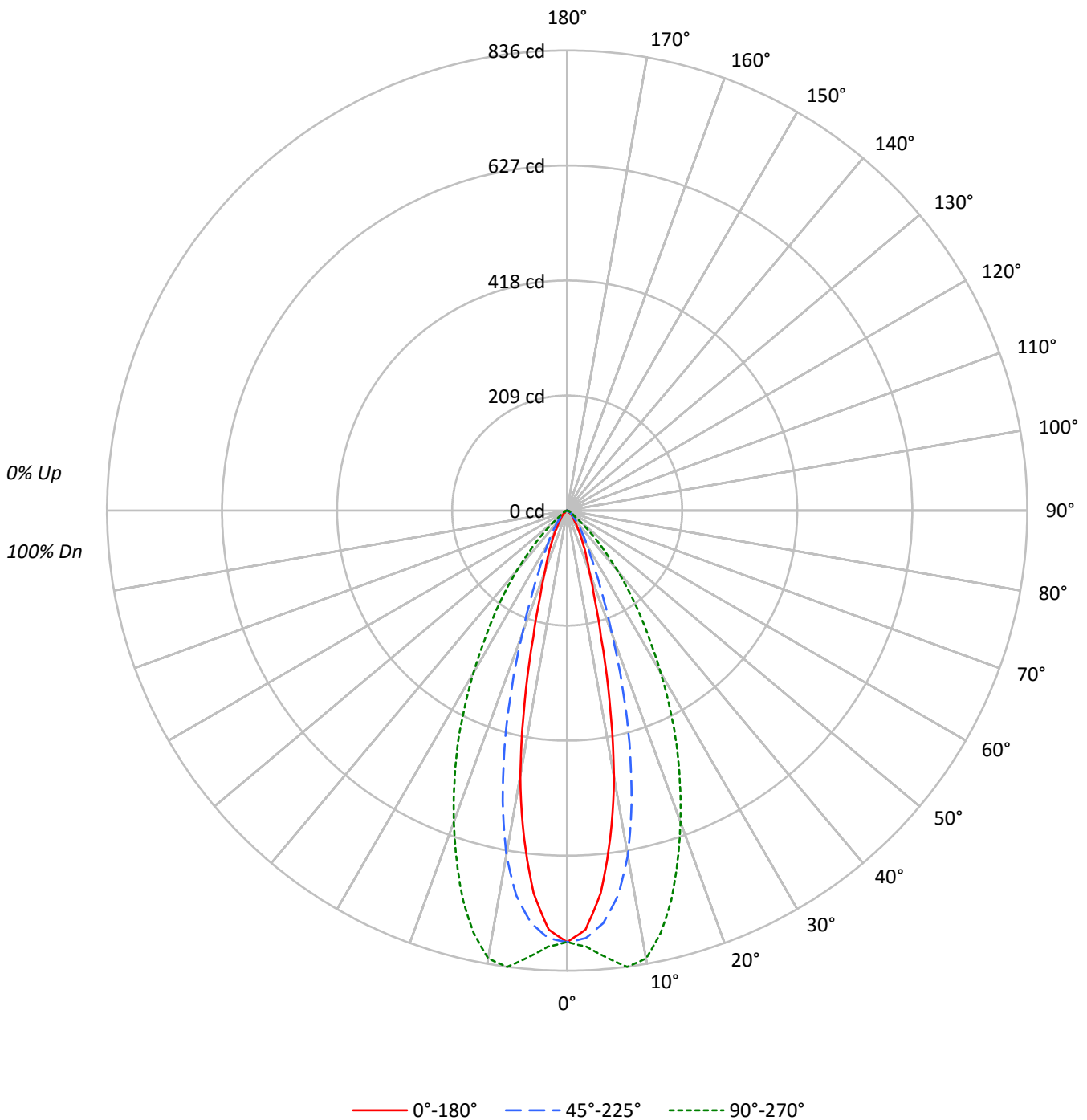
Input Watts (W): 6.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94					94			
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88					88			
3	104	98	93	89	102	96	92	89	94	90	87	91	88	86	89	87	84	83					83			
4	99	92	87	83	97	91	86	82	89	85	81	87	83	80	85	82	80	78					78			
5	95	87	81	77	93	86	81	77	84	80	76	83	79	76	81	78	75	74					74			
6	90	82	77	73	89	81	76	72	80	75	72	79	75	72	77	74	71	70					70			
7	87	78	73	69	85	77	72	68	76	71	68	75	71	68	74	70	67	66					66			
8	83	74	69	65	82	74	68	65	73	68	65	72	67	64	71	67	64	63					63			
9	80	71	65	62	79	70	65	62	69	65	61	69	64	61	68	64	61	60					60			
10	77	68	62	59	76	67	62	59	66	62	59	66	61	58	65	61	58	57					57			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	386760	386760	386760
5°	345595	372587	403591
10°	245536	318480	413919
15°	121362	223008	373894
20°	62113	124173	316076
25°	39032	66687	256350
30°	23472	40848	193586
35°	15118	26441	138289
40°	10691	17261	91328
45°	8233	11931	51145
50°	4912	8213	21799
55°	3699	5505	11526
60°	3158	3651	7401
65°	3152	3152	6304
70°	3029	2308	8511
75°	3050	2097	6100
80°	1421	1421	3125
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	68.7	18.1
10°-20°	128.0	33.8
20°-30°	96.1	25.4
30°-40°	52.8	14.0
40°-50°	21.4	5.7
50°-60°	6.8	1.8
60°-70°	3.2	0.9
70°-80°	1.6	0.4
80°-90°	0.1	0.0
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	292.8	77.3
0°-40°	345.6	91.2
0°-60°	373.9	98.7
0°-90°	378.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	378.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	784	784	784	784	784	
5°	698	714	752	797	815	60
15°	238	279	437	650	732	70
25°	72	80	122	357	471	33
35°	25	30	44	133	230	16
45°	12	11	17	33	73	9
55°	4	5	6	8	13	4
65°	3	3	3	3	5	3
75°	2	1	1	1	3	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	783.9	783.9	783.9	783.9	783.9	783.9	783.9	783.9	783.9	783.9	783.9
2.5°	762.0	762.0	761.4	763.0	766.2	766.2	767.9	769.5	771.1	774.3	777.5
5°	697.8	698.8	698.3	704.2	708.5	713.8	715.4	724.5	731.5	742.2	752.3
7.5°	600.4	600.9	605.7	612.7	623.4	629.3	637.3	650.1	665.7	686.0	705.8
10°	490.1	490.1	497.6	507.8	516.4	528.1	534.0	554.9	577.4	605.7	635.7
12.5°	356.9	356.9	369.7	377.2	392.8	402.9	411.5	435.6	465.0	501.4	541.0
15°	237.6	241.9	246.7	256.8	270.8	279.3	285.2	309.8	344.6	385.3	436.6
17.5°	161.6	164.3	167.5	175.5	182.5	186.7	192.1	213.0	238.1	277.7	331.8
20°	118.3	120.9	123.6	127.4	131.6	133.8	137.5	148.2	166.4	194.2	236.5
22.5°	91.5	93.6	95.8	97.9	101.1	102.7	104.9	111.8	121.5	139.1	169.6
25°	71.7	71.7	74.4	76.0	78.7	80.3	82.9	87.8	95.2	105.4	122.5
27.5°	54.6	55.1	56.7	58.9	61.0	62.6	65.3	69.6	74.4	81.3	92.0
30°	41.2	42.3	43.3	44.9	47.6	49.2	50.8	54.6	58.9	64.2	71.7
32.5°	31.6	32.6	33.2	34.8	36.9	38.0	39.6	42.8	46.6	51.9	56.7
35°	25.1	25.1	26.2	26.8	28.9	30.0	31.0	33.2	36.9	40.1	43.9
37.5°	19.8	20.3	20.9	21.4	23.0	23.5	24.1	25.7	27.8	31.0	34.2
40°	16.6	17.1	17.1	17.1	17.7	17.7	18.2	19.3	21.4	23.5	26.8
42.5°	13.9	13.9	13.9	13.9	13.9	13.9	14.4	15.0	16.6	18.7	21.4
45°	11.8	11.2	11.2	11.2	11.2	11.2	11.2	12.3	13.4	15.0	17.1
47.5°	8.6	9.1	9.1	9.1	9.1	9.1	9.6	9.6	10.7	12.3	13.4
50°	6.4	7.0	7.0	7.5	7.5	7.5	7.5	8.0	9.1	10.2	10.7
52.5°	5.4	5.4	5.4	5.9	5.9	5.9	5.9	6.4	7.5	8.0	8.6
55°	4.3	4.3	4.3	4.3	4.8	4.8	5.4	5.9	6.4	6.4	6.4
57.5°	3.7	3.7	3.7	3.7	3.7	4.3	4.3	4.8	5.4	4.8	4.8
60°	3.2	3.2	3.2	3.2	3.2	3.7	3.7	4.3	3.7	3.7	3.7
62.5°	3.2	3.2	2.7	2.7	3.2	3.2	3.2	3.2	3.2	3.2	2.7
65°	2.7	2.7	2.7	2.7	2.7	3.2	3.2	2.7	2.7	2.1	2.7
67.5°	2.7	2.7	2.1	2.7	2.7	2.7	2.7	2.1	2.1	2.1	2.1
70°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6	1.6	1.6	1.6
72.5°	1.6	1.6	1.6	2.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6
75°	1.6	1.6	1.6	1.6	1.6	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	783.9	783.9	783.9	783.9	783.9	783.9	783.9	783.9	783.9	783.9
2.5°	780.2	782.3	785.0	787.7	788.7	789.8	791.4	792.5	793.0	793.0
5°	763.0	773.7	783.9	792.5	796.7	800.5	806.9	811.2	814.9	814.9
7.5°	726.7	749.1	770.0	788.2	796.2	804.8	818.2	828.3	833.7	836.3
10°	667.3	701.0	732.5	760.4	773.2	783.9	803.2	816.5	823.0	826.2
12.5°	586.5	630.9	671.0	705.8	721.3	734.1	753.9	771.6	780.7	785.5
15°	492.3	544.7	592.3	631.9	649.6	665.7	691.9	713.3	726.1	732.0
17.5°	392.8	457.5	511.5	557.0	573.1	590.7	621.2	645.9	663.0	667.3
20°	300.7	370.8	432.4	479.4	498.2	515.8	550.1	576.3	595.0	602.0
22.5°	218.9	286.8	354.8	405.1	426.5	445.7	480.0	508.3	528.1	535.1
25°	156.2	211.4	278.8	336.0	357.4	376.7	410.9	439.8	460.2	470.9
27.5°	114.0	151.4	210.8	269.7	292.7	313.0	344.6	374.6	393.8	404.0
30°	83.5	108.1	152.5	209.8	234.9	254.7	288.4	313.6	334.4	339.8
32.5°	63.7	77.6	108.1	154.6	180.3	201.2	233.8	257.9	274.5	280.4
35°	48.7	57.3	75.4	110.8	132.7	154.1	185.1	209.8	224.2	229.6
37.5°	38.0	43.9	54.6	78.1	95.2	114.0	144.5	164.8	176.6	183.5
40°	30.5	34.8	41.7	55.6	67.4	81.3	107.0	126.3	138.1	141.8
42.5°	24.6	27.8	31.6	39.6	47.6	57.8	78.7	92.0	101.7	103.8
45°	19.3	21.4	25.7	29.4	32.6	38.0	52.4	64.7	70.6	73.3
47.5°	15.5	18.2	18.2	20.3	22.5	26.2	35.3	42.3	46.6	47.6
50°	11.8	12.3	13.4	14.4	15.5	16.6	21.4	25.7	28.4	28.4
52.5°	8.6	9.1	9.1	9.6	10.2	11.2	13.9	16.1	17.7	18.2
55°	6.4	6.4	7.0	7.5	8.0	8.6	10.2	12.3	12.8	13.4
57.5°	4.8	4.8	5.4	5.9	6.4	6.4	8.0	9.1	10.2	11.2
60°	3.7	3.7	4.3	4.3	4.8	5.4	7.0	7.5	7.5	7.5
62.5°	3.2	3.2	3.2	3.7	3.7	3.7	4.8	6.4	7.0	7.0
65°	2.7	2.7	2.7	2.7	3.2	3.2	3.7	4.3	5.4	5.4
67.5°	2.1	2.1	2.1	2.1	2.7	2.7	3.7	4.3	5.4	5.9
70°	1.6	1.6	1.6	2.1	2.1	2.7	3.2	4.3	5.4	5.9
72.5°	1.1	1.1	1.6	1.6	1.6	2.1	2.7	3.2	3.7	3.7
75°	1.1	1.1	1.1	1.1	1.1	1.1	1.6	2.7	2.7	3.2
77.5°	1.1	1.1	0.5	1.1	1.1	1.1	1.1	1.6	2.1	2.1
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.1
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)