

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: P219609

Luminaire Tested: **MRZ-1-REC-X-1H-L30-97-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219609  
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-L30-97-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) 3000K CCT, 97 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 414.2 lumens  
Efficiency: N/A  
Efficacy: 60.9 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

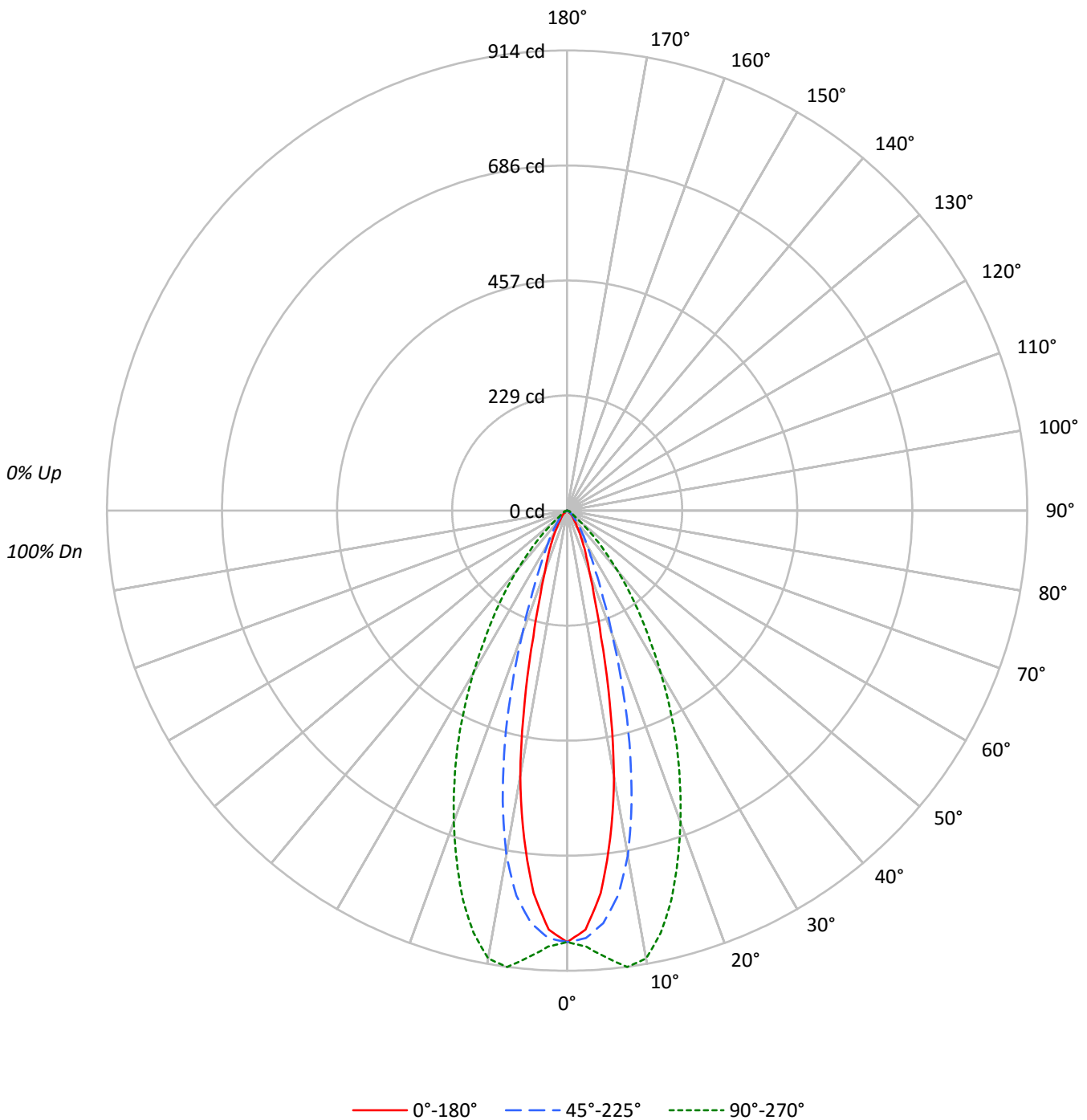
Input Watts (W): 6.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	88	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	82	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	72	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°	422826	422826	422826
5°	377788	407355	441280
10°	268481	348189	452495
15°	132651	243848	408781
20°	67888	135776	345531
25°	42680	72947	280249
30°	25637	44665	211646
35°	16563	28911	151179
40°	11658	18871	99829
45°	9001	13048	55889
50°	5373	8980	23794
55°	4043	6021	12559
60°	3454	4046	8091
65°	3386	3386	6888
70°	3318	2597	9232
75°	3431	2288	6672
80°	1705	1705	3410
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	75.1	18.1
10°-20°	140.0	33.8
20°-30°	105.1	25.4
30°-40°	57.8	14.0
40°-50°	23.4	5.7
50°-60°	7.5	1.8
60°-70°	3.5	0.9
70°-80°	1.7	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°	320.1	77.3
0°-40°	377.9	91.2
0°-60°	408.8	98.7
0°-90°	414.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	414.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	857	857	857	857	857	
5°	763	780	822	871	891	65
15°	260	305	477	710	800	76
25°	78	88	134	391	515	37
35°	28	33	48	145	251	18
45°	13	12	19	36	80	10
55°	5	5	7	9	15	4
65°	3	4	3	4	6	3
75°	2	1	1	1	4	2
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°	857.0	857.0	857.0	857.0	857.0	857.0	857.0	857.0	857.0	857.0	857.0
2.5°	833.0	833.0	832.5	834.2	837.7	837.7	839.5	841.2	843.0	846.5	850.0
5°	762.8	764.0	763.4	769.9	774.5	780.4	782.1	792.1	799.7	811.4	822.5
7.5°	656.4	657.0	662.2	669.8	681.5	688.0	696.7	710.8	727.7	750.0	771.6
10°	535.9	535.9	544.1	555.2	564.5	577.4	583.8	606.6	631.2	662.2	695.0
12.5°	390.2	390.2	404.2	412.4	429.4	440.5	449.9	476.2	508.4	548.1	591.4
15°	259.7	264.4	269.7	280.8	296.0	305.4	311.8	338.7	376.7	421.2	477.4
17.5°	176.7	179.6	183.1	191.9	199.5	204.2	210.0	232.8	260.3	303.6	362.7
20°	129.3	132.2	135.1	139.2	143.9	146.3	150.3	162.0	181.9	212.4	258.6
22.5°	100.0	102.4	104.7	107.1	110.6	112.3	114.7	122.3	132.8	152.1	185.4
25°	78.4	78.4	81.3	83.1	86.0	87.8	90.7	95.9	104.1	115.2	134.0
27.5°	59.7	60.3	62.0	64.4	66.7	68.4	71.4	76.1	81.3	88.9	100.6
30°	45.0	46.2	47.4	49.1	52.1	53.8	55.6	59.7	64.4	70.2	78.4
32.5°	34.5	35.7	36.3	38.0	40.4	41.5	43.3	46.8	50.9	56.7	62.0
35°	27.5	27.5	28.7	29.3	31.6	32.8	33.9	36.3	40.4	43.9	48.0
37.5°	21.6	22.2	22.8	23.4	25.2	25.7	26.3	28.1	30.4	33.9	37.4
40°	18.1	18.7	18.7	18.7	19.3	19.3	19.9	21.1	23.4	25.7	29.3
42.5°	15.2	15.2	15.2	15.2	15.2	15.2	15.8	16.4	18.1	20.5	23.4
45°	12.9	12.3	12.3	12.3	12.3	12.3	12.3	13.5	14.6	16.4	18.7
47.5°	9.4	9.9	9.9	9.9	9.9	9.9	10.5	10.5	11.7	13.5	14.6
50°	7.0	7.6	7.6	8.2	8.2	8.2	8.2	8.8	9.9	11.1	11.7
52.5°	5.9	5.9	5.9	6.4	6.4	6.4	6.4	7.0	8.2	8.8	9.4
55°	4.7	4.7	4.7	4.7	5.3	5.3	5.9	6.4	7.0	7.0	7.0
57.5°	4.1	4.1	4.1	4.1	4.1	4.7	4.7	5.3	5.9	5.3	5.3
60°	3.5	3.5	3.5	3.5	3.5	4.1	4.1	4.7	4.1	4.1	4.1
62.5°	3.5	3.5	2.9	2.9	3.5	3.5	3.5	3.5	3.5	3.5	2.9
65°	2.9	2.9	2.9	2.9	2.9	3.5	3.5	2.9	2.9	2.3	2.9
67.5°	2.9	2.9	2.3	2.9	2.9	2.9	2.9	2.3	2.3	2.3	2.3
70°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.8	1.8	1.8	1.8
72.5°	1.8	1.8	1.8	2.3	1.8	1.8	1.8	1.8	1.8	1.8	1.8
75°	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.6	0.6
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.6	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°	857.0	857.0	857.0	857.0	857.0	857.0	857.0	857.0	857.0	857.0
2.5°	852.9	855.3	858.2	861.1	862.3	863.5	865.2	866.4	867.0	867.0
5°	834.2	845.9	857.0	866.4	871.1	875.2	882.2	886.9	891.0	891.0
7.5°	794.4	819.0	841.8	861.7	870.5	879.8	894.5	905.6	911.4	914.4
10°	729.5	766.4	800.9	831.3	845.3	857.0	878.1	892.7	899.7	903.2
12.5°	641.2	689.7	733.6	771.6	788.6	802.6	824.3	843.6	853.5	858.8
15°	538.2	595.5	647.6	690.9	710.2	727.7	756.4	779.8	793.8	800.3
17.5°	429.4	500.2	559.3	609.0	626.5	645.8	679.2	706.1	724.8	729.5
20°	328.8	405.4	472.7	524.2	544.6	563.9	601.4	630.0	650.5	658.1
22.5°	239.3	313.6	387.9	442.8	466.2	487.3	524.7	555.8	577.4	585.0
25°	170.8	231.1	304.8	367.4	390.8	411.8	449.3	480.9	503.1	514.8
27.5°	124.6	165.6	230.5	294.8	320.0	342.2	376.7	409.5	430.6	441.7
30°	91.3	118.2	166.7	229.3	256.8	278.5	315.3	342.8	365.6	371.5
32.5°	69.6	84.8	118.2	169.1	197.1	220.0	255.6	282.0	300.1	306.5
35°	53.2	62.6	82.5	121.1	145.1	168.5	202.4	229.3	245.1	251.0
37.5°	41.5	48.0	59.7	85.4	104.1	124.6	158.0	180.2	193.1	200.7
40°	33.3	38.0	45.6	60.8	73.7	88.9	117.0	138.1	150.9	155.0
42.5°	26.9	30.4	34.5	43.3	52.1	63.2	86.0	100.6	111.2	113.5
45°	21.1	23.4	28.1	32.2	35.7	41.5	57.3	70.8	77.2	80.1
47.5°	17.0	19.9	19.9	22.2	24.6	28.7	38.6	46.2	50.9	52.1
50°	12.9	13.5	14.6	15.8	17.0	18.1	23.4	28.1	31.0	31.0
52.5°	9.4	9.9	9.9	10.5	11.1	12.3	15.2	17.6	19.3	19.9
55°	7.0	7.0	7.6	8.2	8.8	9.4	11.1	13.5	14.0	14.6
57.5°	5.3	5.3	5.9	6.4	7.0	7.0	8.8	9.9	11.1	12.3
60°	4.1	4.1	4.7	4.7	5.3	5.9	7.6	8.2	8.2	8.2
62.5°	3.5	3.5	3.5	4.1	4.1	4.1	5.3	7.0	7.6	7.6
65°	2.9	2.9	2.9	2.9	3.5	3.5	4.1	4.7	5.9	5.9
67.5°	2.3	2.3	2.3	2.3	2.9	2.9	4.1	4.7	5.9	6.4
70°	1.8	1.8	1.8	2.3	2.3	2.9	3.5	4.7	5.9	6.4
72.5°	1.2	1.2	1.8	1.8	1.8	2.3	2.9	3.5	4.1	4.1
75°	1.2	1.2	1.2	1.2	1.2	1.2	1.8	2.9	2.9	3.5
77.5°	1.2	1.2	0.6	1.2	1.2	1.2	1.2	1.8	2.3	2.3
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	1.2
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)