

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: P219616

Luminaire Tested: **MRZ-1-REC-X-2-L27-97-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219616  
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-2-L27-97-NFL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL2  
Light Source: (1) 2700K CCT, 97 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 518.0 lumens  
Efficiency: N/A  
Efficacy: 58.9 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

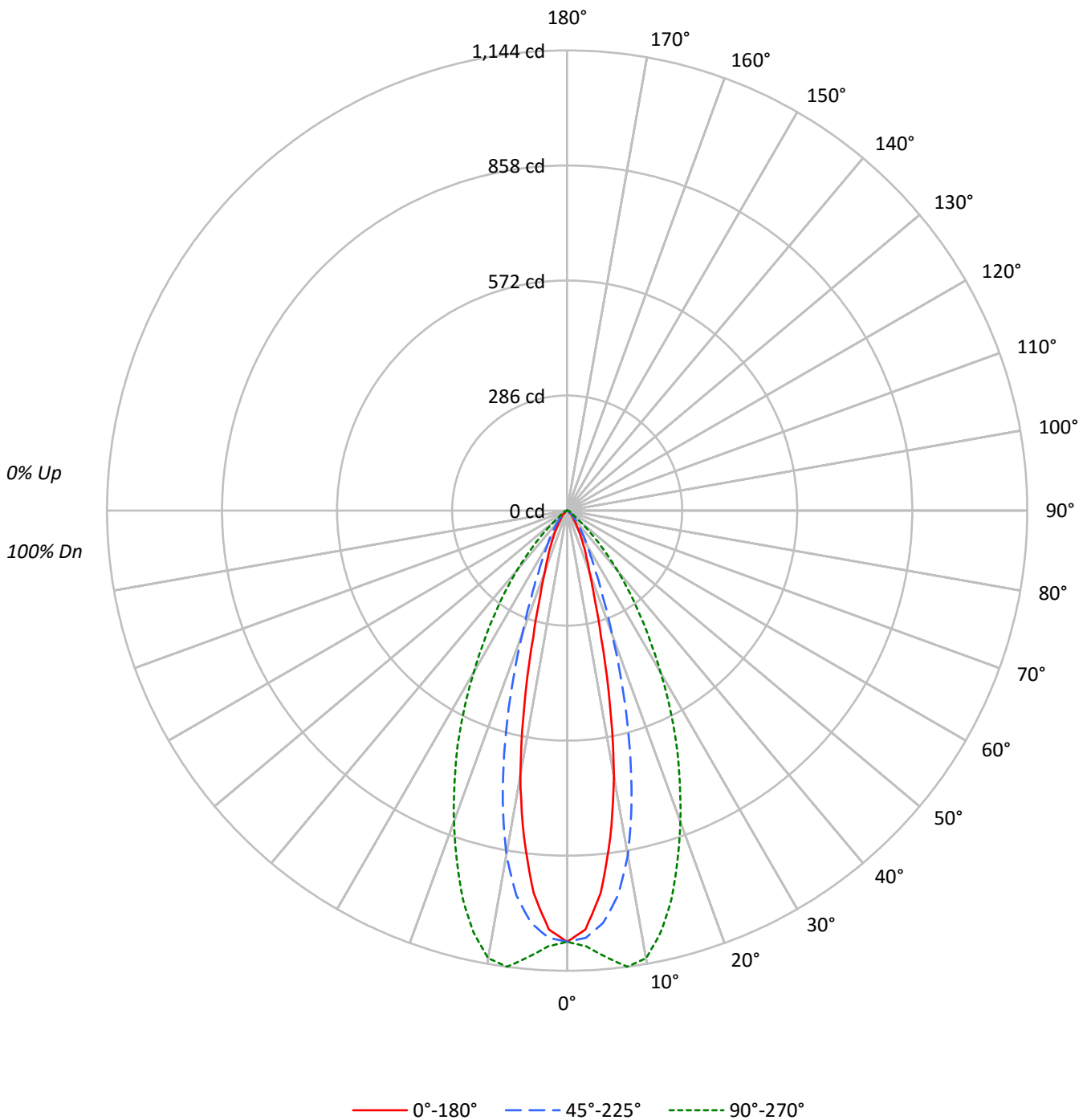
Input Watts (W): 8.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	528854	528854	528854
5°	472532	509478	551873
10°	335764	435461	565969
15°	165903	304938	511244
20°	84900	169799	432163
25°	53350	91184	350474
30°	32074	55831	264685
35°	20719	36138	189064
40°	14620	23573	124883
45°	11234	16327	69914
50°	6755	11206	29781
55°	5075	7570	15741
60°	4342	5032	10065
65°	4320	4320	8522
70°	4183	3174	11540
75°	4194	2859	8388
80°	1989	1989	4262
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	93.9	18.1
10°-20°	175.0	33.8
20°-30°	131.4	25.4
30°-40°	72.3	14.0
40°-50°	29.3	5.7
50°-60°	9.3	1.8
60°-70°	4.4	0.9
70°-80°	2.2	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°	400.4	77.3
0°-40°	472.6	91.2
0°-60°	511.2	98.7
0°-90°	518.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	518.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1072	1072	1072	1072	1072	
5°	954	976	1029	1089	1114	82
15°	325	382	597	888	1001	95
25°	98	110	168	489	644	46
35°	34	41	60	181	314	22
45°	16	15	23	45	100	12
55°	6	7	9	11	18	6
65°	4	4	4	4	7	4
75°	2	2	2	2	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°	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9
2.5°	1041.9	1041.9	1041.1	1043.3	1047.7	1047.7	1049.9	1052.1	1054.3	1058.7	1063.1
5°	954.1	955.5	954.8	962.8	968.7	976.0	978.2	990.6	1000.2	1014.8	1028.7
7.5°	820.9	821.6	828.2	837.7	852.4	860.4	871.4	888.9	910.2	938.0	965.0
10°	670.2	670.2	680.4	694.3	706.0	722.1	730.2	758.7	789.4	828.2	869.2
12.5°	488.0	488.0	505.6	515.8	537.0	550.9	562.6	595.6	635.8	685.6	739.7
15°	324.8	330.7	337.3	351.2	370.2	381.9	390.0	423.6	471.2	526.8	597.0
17.5°	221.0	224.6	229.0	240.0	249.5	255.3	262.7	291.2	325.6	379.7	453.6
20°	161.7	165.4	169.0	174.1	180.0	182.9	188.0	202.7	227.5	265.6	323.4
22.5°	125.1	128.0	131.0	133.9	138.3	140.5	143.4	152.9	166.1	190.2	231.9
25°	98.0	98.0	101.7	103.9	107.6	109.7	113.4	120.0	130.2	144.1	167.5
27.5°	74.6	75.4	77.6	80.5	83.4	85.6	89.3	95.1	101.7	111.2	125.8
30°	56.3	57.8	59.3	61.5	65.1	67.3	69.5	74.6	80.5	87.8	98.0
32.5°	43.2	44.6	45.4	47.6	50.5	51.9	54.1	58.5	63.7	71.0	77.6
35°	34.4	34.4	35.9	36.6	39.5	41.0	42.4	45.4	50.5	54.9	60.0
37.5°	27.1	27.8	28.5	29.3	31.5	32.2	32.9	35.1	38.0	42.4	46.8
40°	22.7	23.4	23.4	23.4	24.1	24.1	24.9	26.3	29.3	32.2	36.6
42.5°	19.0	19.0	19.0	19.0	19.0	19.0	19.8	20.5	22.7	25.6	29.3
45°	16.1	15.4	15.4	15.4	15.4	15.4	15.4	16.8	18.3	20.5	23.4
47.5°	11.7	12.4	12.4	12.4	12.4	12.4	13.2	13.2	14.6	16.8	18.3
50°	8.8	9.5	9.5	10.2	10.2	10.2	10.2	11.0	12.4	13.9	14.6
52.5°	7.3	7.3	7.3	8.0	8.0	8.0	8.0	8.8	10.2	11.0	11.7
55°	5.9	5.9	5.9	5.9	6.6	6.6	7.3	8.0	8.8	8.8	8.8
57.5°	5.1	5.1	5.1	5.1	5.1	5.9	5.9	6.6	7.3	6.6	6.6
60°	4.4	4.4	4.4	4.4	4.4	5.1	5.1	5.9	5.1	5.1	5.1
62.5°	4.4	4.4	3.7	3.7	4.4	4.4	4.4	4.4	4.4	4.4	3.7
65°	3.7	3.7	3.7	3.7	3.7	4.4	4.4	3.7	3.7	2.9	3.7
67.5°	3.7	3.7	2.9	3.7	3.7	3.7	3.7	2.9	2.9	2.9	2.9
70°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.2	2.2	2.2	2.2
72.5°	2.2	2.2	2.2	2.9	2.2	2.2	2.2	2.2	2.2	2.2	2.2
75°	2.2	2.2	2.2	2.2	2.2	1.5	1.5	1.5	1.5	1.5	1.5
77.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	0.7	0.7
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
82.5°	0.0	0.7	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°	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9	1071.9
2.5°	1066.7	1069.7	1073.3	1077.0	1078.4	1079.9	1082.1	1083.6	1084.3	1084.3
5°	1043.3	1058.0	1071.9	1083.6	1089.4	1094.5	1103.3	1109.2	1114.3	1114.3
7.5°	993.6	1024.3	1052.8	1077.7	1088.7	1100.4	1118.7	1132.6	1139.9	1143.6
10°	912.4	958.5	1001.6	1039.7	1057.2	1071.9	1098.2	1116.5	1125.3	1129.7
12.5°	801.9	862.6	917.5	965.0	986.3	1003.8	1030.9	1055.0	1067.5	1074.1
15°	673.1	744.8	809.9	864.1	888.2	910.2	946.0	975.3	992.8	1000.9
17.5°	537.0	625.6	699.5	761.6	783.6	807.7	849.4	883.1	906.5	912.4
20°	411.2	507.0	591.2	655.6	681.2	705.3	752.1	788.0	813.6	823.1
22.5°	299.2	392.2	485.1	553.9	583.1	609.5	656.3	695.1	722.1	731.6
25°	213.6	289.0	381.2	459.5	488.7	515.1	561.9	601.4	629.2	643.8
27.5°	155.8	207.1	288.3	368.7	400.2	428.0	471.2	512.2	538.5	552.4
30°	114.1	147.8	208.5	286.8	321.2	348.3	394.4	428.7	457.3	464.6
32.5°	87.1	106.1	147.8	211.4	246.6	275.1	319.7	352.7	375.3	383.4
35°	66.6	78.3	103.2	151.5	181.4	210.7	253.1	286.8	306.6	313.9
37.5°	51.9	60.0	74.6	106.8	130.2	155.8	197.5	225.3	241.4	251.0
40°	41.7	47.6	57.1	76.1	92.2	111.2	146.3	172.7	188.8	193.9
42.5°	33.7	38.0	43.2	54.1	65.1	79.0	107.6	125.8	139.0	141.9
45°	26.3	29.3	35.1	40.2	44.6	51.9	71.7	88.5	96.6	100.2
47.5°	21.2	24.9	24.9	27.8	30.7	35.9	48.3	57.8	63.7	65.1
50°	16.1	16.8	18.3	19.8	21.2	22.7	29.3	35.1	38.8	38.8
52.5°	11.7	12.4	12.4	13.2	13.9	15.4	19.0	21.9	24.1	24.9
55°	8.8	8.8	9.5	10.2	11.0	11.7	13.9	16.8	17.6	18.3
57.5°	6.6	6.6	7.3	8.0	8.8	8.8	11.0	12.4	13.9	15.4
60°	5.1	5.1	5.9	5.9	6.6	7.3	9.5	10.2	10.2	10.2
62.5°	4.4	4.4	4.4	5.1	5.1	5.1	6.6	8.8	9.5	9.5
65°	3.7	3.7	3.7	3.7	4.4	4.4	5.1	5.9	7.3	7.3
67.5°	2.9	2.9	2.9	2.9	3.7	3.7	5.1	5.9	7.3	8.0
70°	2.2	2.2	2.2	2.9	2.9	3.7	4.4	5.9	7.3	8.0
72.5°	1.5	1.5	2.2	2.2	2.2	2.9	3.7	4.4	5.1	5.1
75°	1.5	1.5	1.5	1.5	1.5	1.5	2.2	3.7	3.7	4.4
77.5°	1.5	1.5	0.7	1.5	1.5	1.5	1.5	2.2	2.9	2.9
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.5
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)