

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: P226122

Luminaire Tested: **MRZ-1-REC-X-1-L30-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P226122  
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-1-L30-80-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, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 481.6 lumens  
Efficiency: N/A  
Efficacy: 89.2 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

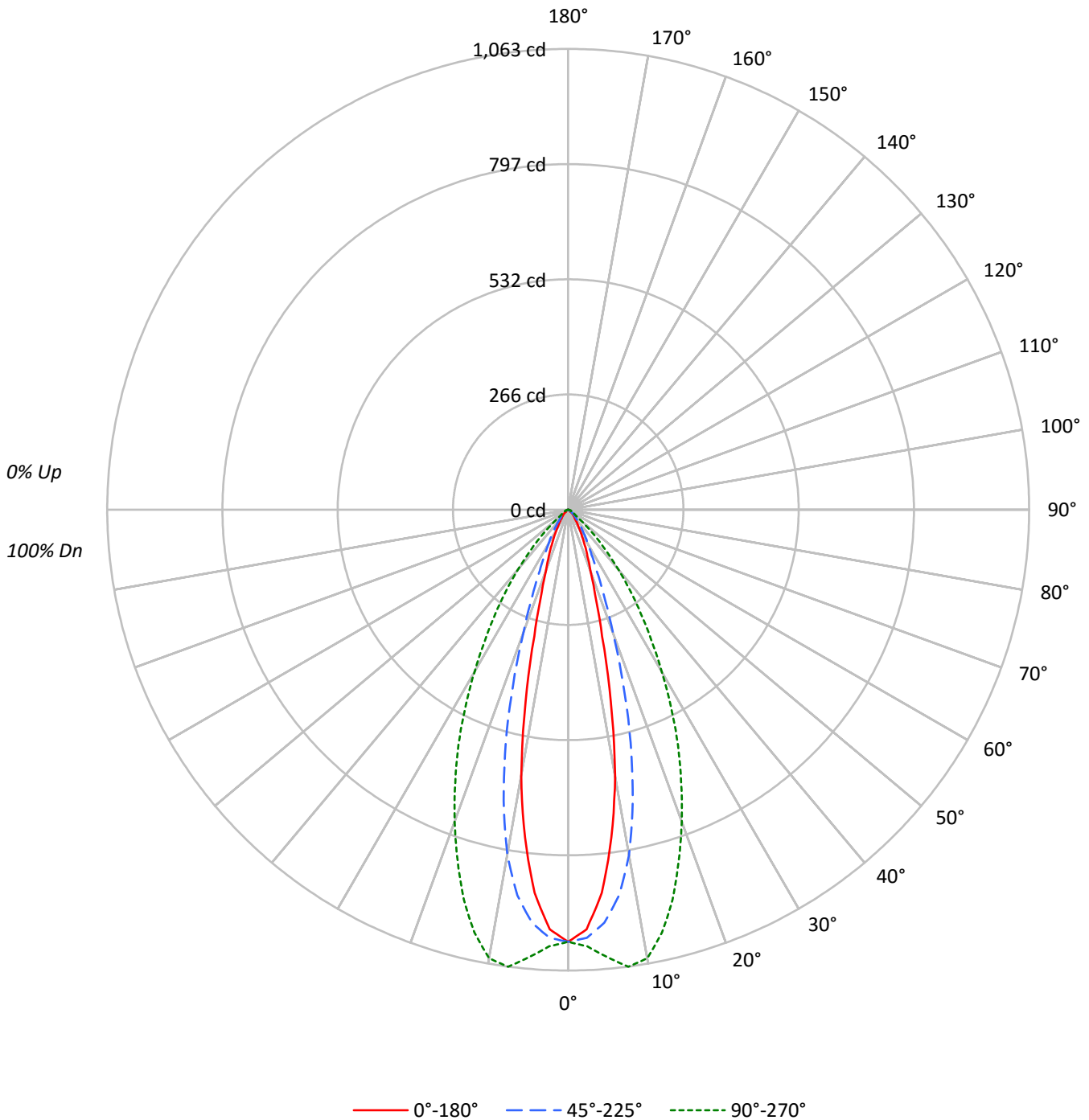
Input Watts (W): 5.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	491751	491751	491751
5°	439398	473720	513143
10°	312217	404901	526241
15°	154308	283587	475387
20°	78914	157881	401868
25°	49593	84815	325923
30°	29853	51900	246113
35°	19274	33609	175753
40°	13590	21898	116124
45°	10466	15211	65030
50°	6217	10439	27709
55°	4645	6967	14709
60°	4046	4638	9473
65°	3969	3969	7939
70°	3895	3029	10819
75°	4003	2478	7816
80°	1989	1989	3694
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	87.3	18.1
10°-20°	162.8	33.8
20°-30°	122.2	25.4
30°-40°	67.2	14.0
40°-50°	27.3	5.7
50°-60°	8.7	1.8
60°-70°	4.1	0.9
70°-80°	2.0	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°	372.3	77.3
0°-40°	439.5	91.2
0°-60°	475.4	98.7
0°-90°	481.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	481.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	997	997	997	997	997	
5°	887	908	956	1013	1036	76
15°	302	355	555	826	931	89
25°	91	102	156	454	599	42
35°	32	38	56	169	292	21
45°	15	14	22	42	93	11
55°	5	6	8	10	17	5
65°	3	4	3	4	7	4
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°	996.7	996.7	996.7	996.7	996.7	996.7	996.7	996.7	996.7	996.7	996.7
2.5°	968.7	968.7	968.1	970.2	974.2	974.2	976.2	978.3	980.3	984.5	988.5
5°	887.2	888.5	887.9	895.3	900.7	907.6	909.6	921.2	930.0	943.6	956.5
7.5°	763.3	764.0	770.1	779.0	792.6	800.0	810.3	826.6	846.4	872.2	897.3
10°	623.2	623.2	632.7	645.6	656.5	671.5	679.0	705.5	734.1	770.1	808.2
12.5°	453.8	453.8	470.1	479.6	499.4	512.3	523.2	553.8	591.2	637.5	687.8
15°	302.1	307.5	313.6	326.5	344.2	355.1	362.6	393.9	438.1	489.8	555.2
17.5°	205.5	208.9	212.9	223.2	232.0	237.5	244.2	270.8	302.7	353.1	421.8
20°	150.3	153.7	157.1	161.9	167.4	170.1	174.9	188.4	211.6	246.9	300.7
22.5°	116.3	119.1	121.8	124.5	128.5	130.6	133.4	142.2	154.4	176.8	215.7
25°	91.1	91.1	94.5	96.6	100.0	102.0	105.4	111.6	121.1	134.0	155.8
27.5°	69.4	70.1	72.1	74.8	77.6	79.6	83.0	88.5	94.5	103.4	117.0
30°	52.4	53.7	55.1	57.1	60.5	62.6	64.6	69.4	74.8	81.7	91.1
32.5°	40.2	41.5	42.2	44.2	47.0	48.3	50.3	54.5	59.2	66.0	72.1
35°	32.0	32.0	33.3	34.0	36.8	38.1	39.5	42.2	47.0	51.1	55.8
37.5°	25.2	25.9	26.5	27.2	29.3	29.9	30.6	32.7	35.4	39.5	43.6
40°	21.1	21.8	21.8	21.8	22.4	22.4	23.1	24.5	27.2	29.9	34.0
42.5°	17.7	17.7	17.7	17.7	17.7	17.7	18.4	19.0	21.1	23.8	27.2
45°	15.0	14.3	14.3	14.3	14.3	14.3	14.3	15.6	17.1	19.0	21.8
47.5°	10.9	11.6	11.6	11.6	11.6	11.6	12.2	12.2	13.6	15.6	17.1
50°	8.1	8.8	8.8	9.6	9.6	9.6	9.6	10.2	11.6	12.9	13.6
52.5°	6.8	6.8	6.8	7.5	7.5	7.5	7.5	8.1	9.6	10.2	10.9
55°	5.4	5.4	5.4	5.4	6.2	6.2	6.8	7.5	8.1	8.1	8.1
57.5°	4.7	4.7	4.7	4.7	4.7	5.4	5.4	6.2	6.8	6.2	6.2
60°	4.1	4.1	4.1	4.1	4.1	4.7	4.7	5.4	4.7	4.7	4.7
62.5°	4.1	4.1	3.4	3.4	4.1	4.1	4.1	4.1	4.1	4.1	3.4
65°	3.4	3.4	3.4	3.4	3.4	4.1	4.1	3.4	3.4	2.7	3.4
67.5°	3.4	3.4	2.7	3.4	3.4	3.4	3.4	2.7	2.7	2.7	2.7
70°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.1	2.1	2.1	2.1
72.5°	2.1	2.1	2.1	2.7	2.1	2.1	2.1	2.1	2.1	2.1	2.1
75°	2.1	2.1	2.1	2.1	2.1	1.3	1.3	1.3	1.3	1.3	1.3
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	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°	996.7	996.7	996.7	996.7	996.7	996.7	996.7	996.7	996.7	996.7
2.5°	992.0	994.6	998.0	1001.4	1002.8	1004.2	1006.2	1007.6	1008.2	1008.2
5°	970.2	983.7	996.7	1007.6	1013.0	1017.8	1026.0	1031.4	1036.1	1036.1
7.5°	923.8	952.5	979.0	1002.1	1012.3	1023.2	1040.2	1053.1	1060.0	1063.4
10°	848.3	891.3	931.3	966.8	983.0	996.7	1021.1	1038.2	1046.3	1050.4
12.5°	745.7	802.1	853.1	897.3	917.1	933.4	958.6	981.1	992.6	998.7
15°	625.9	692.5	753.2	803.4	825.9	846.4	879.7	906.9	923.2	930.7
17.5°	499.4	581.7	650.4	708.3	728.6	751.1	789.8	821.2	843.0	848.3
20°	382.3	471.4	549.7	609.5	633.4	655.9	699.3	732.7	756.6	765.4
22.5°	278.3	364.7	451.1	515.0	542.2	566.7	610.2	646.3	671.5	680.3
25°	198.6	268.7	354.5	427.2	454.5	478.9	522.5	559.3	585.1	598.7
27.5°	144.9	192.6	268.1	342.9	372.2	398.0	438.1	476.2	500.7	513.7
30°	106.1	137.4	193.9	266.6	298.7	323.9	366.7	398.7	425.2	432.0
32.5°	81.0	98.6	137.4	196.6	229.2	255.8	297.3	327.9	349.0	356.4
35°	62.0	72.8	96.0	140.9	168.7	195.9	235.4	266.6	285.0	291.8
37.5°	48.3	55.8	69.4	99.4	121.1	144.9	183.7	209.5	224.5	233.3
40°	38.7	44.2	53.0	70.8	85.7	103.4	136.0	160.6	175.5	180.3
42.5°	31.3	35.4	40.2	50.3	60.5	73.5	100.0	117.0	129.3	131.9
45°	24.5	27.2	32.7	37.4	41.5	48.3	66.7	82.3	89.8	93.2
47.5°	19.7	23.1	23.1	25.9	28.6	33.3	44.9	53.7	59.2	60.5
50°	15.0	15.6	17.1	18.4	19.7	21.1	27.2	32.7	36.1	36.1
52.5°	10.9	11.6	11.6	12.2	12.9	14.3	17.7	20.4	22.4	23.1
55°	8.1	8.1	8.8	9.6	10.2	10.9	12.9	15.6	16.3	17.1
57.5°	6.2	6.2	6.8	7.5	8.1	8.1	10.2	11.6	12.9	14.3
60°	4.7	4.7	5.4	5.4	6.2	6.8	8.8	9.6	9.6	9.6
62.5°	4.1	4.1	4.1	4.7	4.7	4.7	6.2	8.1	8.8	8.8
65°	3.4	3.4	3.4	3.4	4.1	4.1	4.7	5.4	6.8	6.8
67.5°	2.7	2.7	2.7	2.7	3.4	3.4	4.7	5.4	6.8	7.5
70°	2.1	2.1	2.1	2.7	2.7	3.4	4.1	5.4	6.8	7.5
72.5°	1.3	1.3	2.1	2.1	2.1	2.7	3.4	4.1	4.7	4.7
75°	1.3	1.3	1.3	1.3	1.3	1.3	2.1	3.4	3.4	4.1
77.5°	1.3	1.3	0.7	1.3	1.3	1.3	1.3	2.1	2.7	2.7
80°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	1.3
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)