

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: P219604

Luminaire Tested: **MRZ-1-REC-X-1H-L27-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219604
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-L27-80-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) 2700K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 530.8 lumens
Efficiency: N/A
Efficacy: 78.1 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

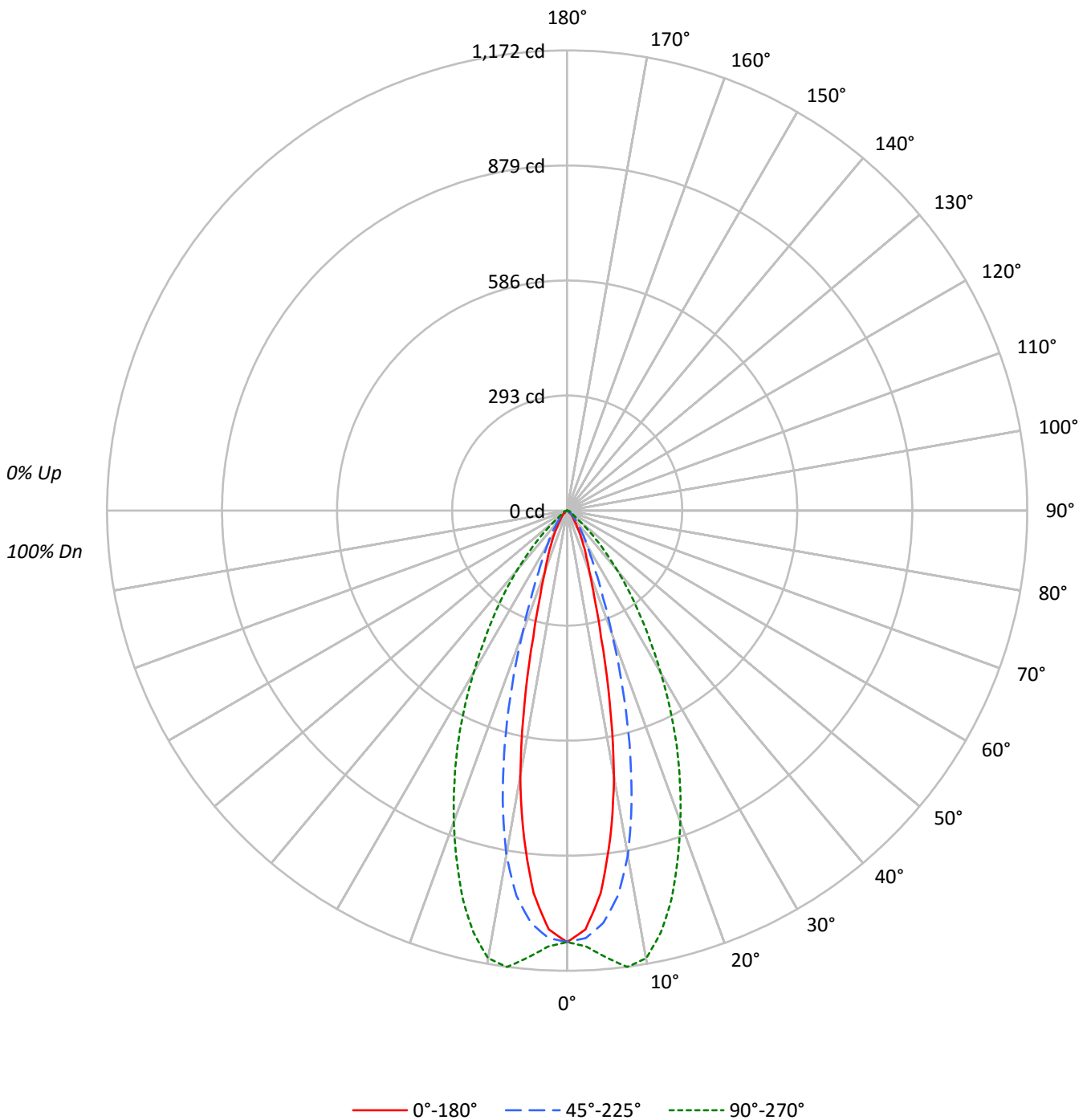
Input Watts (W): 6.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	542076	542076	542076
5°	484319	522207	565691
10°	344181	446333	580097
15°	170091	312600	524013
20°	87000	174052	442979
25°	54711	93471	359294
30°	32872	57255	271294
35°	21201	37042	193762
40°	14942	24152	127975
45°	11513	16746	71658
50°	6908	11513	30472
55°	5161	7742	16085
60°	4440	5131	10361
65°	4320	4320	8756
70°	4328	3174	11829
75°	4194	2859	8578
80°	1989	1989	4262
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	96.2	18.1
10°-20°	179.4	33.8
20°-30°	134.7	25.4
30°-40°	74.1	14.0
40°-50°	30.0	5.7
50°-60°	9.5	1.8
60°-70°	4.5	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°	410.4	77.3
0°-40°	484.4	91.3
0°-60°	524.0	98.7
0°-90°	530.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	530.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1099	1099	1099	1099	1099	
5°	978	1000	1054	1117	1142	84
15°	333	392	612	910	1026	98
25°	100	112	172	501	660	47
35°	35	42	62	186	322	23
45°	16	16	24	46	103	12
55°	6	7	9	11	19	6
65°	4	4	4	4	8	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°	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7
2.5°	1067.9	1067.9	1067.2	1069.4	1073.9	1073.9	1076.2	1078.4	1080.7	1085.2	1089.7
5°	977.9	979.4	978.7	986.9	992.9	1000.4	1002.7	1015.4	1025.2	1040.2	1054.4
7.5°	841.4	842.2	848.9	858.7	873.7	881.9	893.2	911.2	932.9	961.4	989.2
10°	687.0	687.0	697.5	711.7	723.7	740.2	748.5	777.7	809.2	848.9	890.9
12.5°	500.2	500.2	518.2	528.7	550.5	564.7	576.7	610.5	651.7	702.7	758.2
15°	333.0	339.0	345.7	360.0	379.5	391.5	399.7	434.2	483.0	540.0	612.0
17.5°	226.5	230.2	234.7	246.0	255.7	261.7	269.2	298.5	333.7	389.2	465.0
20°	165.7	169.5	173.2	178.5	184.5	187.5	192.7	207.7	233.2	272.2	331.5
22.5°	128.2	131.2	134.2	137.2	141.7	144.0	147.0	156.7	170.2	195.0	237.7
25°	100.5	100.5	104.2	106.5	110.2	112.5	116.2	123.0	133.5	147.7	171.7
27.5°	76.5	77.2	79.5	82.5	85.5	87.7	91.5	97.5	104.2	114.0	129.0
30°	57.7	59.2	60.7	63.0	66.7	69.0	71.2	76.5	82.5	90.0	100.5
32.5°	44.2	45.7	46.5	48.7	51.7	53.2	55.5	60.0	65.2	72.7	79.5
35°	35.2	35.2	36.7	37.5	40.5	42.0	43.5	46.5	51.7	56.2	61.5
37.5°	27.7	28.5	29.2	30.0	32.2	33.0	33.7	36.0	39.0	43.5	48.0
40°	23.2	24.0	24.0	24.0	24.7	24.7	25.5	27.0	30.0	33.0	37.5
42.5°	19.5	19.5	19.5	19.5	19.5	19.5	20.2	21.0	23.2	26.2	30.0
45°	16.5	15.7	15.7	15.7	15.7	15.7	15.7	17.2	18.7	21.0	24.0
47.5°	12.0	12.7	12.7	12.7	12.7	12.7	13.5	13.5	15.0	17.2	18.7
50°	9.0	9.7	9.7	10.5	10.5	10.5	10.5	11.2	12.7	14.2	15.0
52.5°	7.5	7.5	7.5	8.2	8.2	8.2	8.2	9.0	10.5	11.2	12.0
55°	6.0	6.0	6.0	6.0	6.7	6.7	7.5	8.2	9.0	9.0	9.0
57.5°	5.2	5.2	5.2	5.2	5.2	6.0	6.0	6.7	7.5	6.7	6.7
60°	4.5	4.5	4.5	4.5	4.5	5.2	5.2	6.0	5.2	5.2	5.2
62.5°	4.5	4.5	3.7	3.7	4.5	4.5	4.5	4.5	4.5	4.5	3.7
65°	3.7	3.7	3.7	3.7	3.7	4.5	4.5	3.7	3.7	3.0	3.7
67.5°	3.7	3.7	3.0	3.7	3.7	3.7	3.7	3.0	3.0	3.0	3.0
70°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.2	2.2	2.2	2.2
72.5°	2.2	2.2	2.2	3.0	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°	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7	1098.7
2.5°	1093.4	1096.4	1100.2	1103.9	1105.4	1106.9	1109.2	1110.7	1111.4	1111.4
5°	1069.4	1084.4	1098.7	1110.7	1116.7	1121.9	1130.9	1136.9	1142.2	1142.2
7.5°	1018.4	1049.9	1079.2	1104.7	1115.9	1127.9	1146.7	1160.9	1168.4	1172.2
10°	935.2	982.4	1026.7	1065.7	1083.7	1098.7	1125.7	1144.4	1153.4	1157.9
12.5°	821.9	884.2	940.4	989.2	1010.9	1028.9	1056.7	1081.4	1094.2	1100.9
15°	690.0	763.5	830.2	885.7	910.4	932.9	969.7	999.7	1017.7	1025.9
17.5°	550.5	641.2	717.0	780.7	803.2	827.9	870.7	905.2	929.2	935.2
20°	421.5	519.7	606.0	672.0	698.2	723.0	771.0	807.7	833.9	843.7
22.5°	306.7	402.0	497.2	567.7	597.7	624.7	672.7	712.5	740.2	750.0
25°	219.0	296.2	390.7	471.0	501.0	528.0	576.0	616.5	645.0	660.0
27.5°	159.7	212.2	295.5	378.0	410.2	438.7	483.0	525.0	552.0	566.2
30°	117.0	151.5	213.7	294.0	329.2	357.0	404.2	439.5	468.7	476.2
32.5°	89.2	108.7	151.5	216.7	252.7	282.0	327.7	361.5	384.7	393.0
35°	68.2	80.2	105.7	155.2	186.0	216.0	259.5	294.0	314.2	321.7
37.5°	53.2	61.5	76.5	109.5	133.5	159.7	202.5	231.0	247.5	257.2
40°	42.7	48.7	58.5	78.0	94.5	114.0	150.0	177.0	193.5	198.7
42.5°	34.5	39.0	44.2	55.5	66.7	81.0	110.2	129.0	142.5	145.5
45°	27.0	30.0	36.0	41.2	45.7	53.2	73.5	90.7	99.0	102.7
47.5°	21.7	25.5	25.5	28.5	31.5	36.7	49.5	59.2	65.2	66.7
50°	16.5	17.2	18.7	20.2	21.7	23.2	30.0	36.0	39.7	39.7
52.5°	12.0	12.7	12.7	13.5	14.2	15.7	19.5	22.5	24.7	25.5
55°	9.0	9.0	9.7	10.5	11.2	12.0	14.2	17.2	18.0	18.7
57.5°	6.7	6.7	7.5	8.2	9.0	9.0	11.2	12.7	14.2	15.7
60°	5.2	5.2	6.0	6.0	6.7	7.5	9.7	10.5	10.5	10.5
62.5°	4.5	4.5	4.5	5.2	5.2	5.2	6.7	9.0	9.7	9.7
65°	3.7	3.7	3.7	3.7	4.5	4.5	5.2	6.0	7.5	7.5
67.5°	3.0	3.0	3.0	3.0	3.7	3.7	5.2	6.0	7.5	8.2
70°	2.2	2.2	2.2	3.0	3.0	3.7	4.5	6.0	7.5	8.2
72.5°	1.5	1.5	2.2	2.2	2.2	3.0	3.7	4.5	5.2	5.2
75°	1.5	1.5	1.5	1.5	1.5	1.5	2.2	3.7	3.7	4.5
77.5°	1.5	1.5	0.7	1.5	1.5	1.5	1.5	2.2	3.0	3.0
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)