

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: P219771

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219771
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14877)
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-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE 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: 494.6 lumens
Efficiency: N/A
Efficacy: 56.2 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.69 / 0.7
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

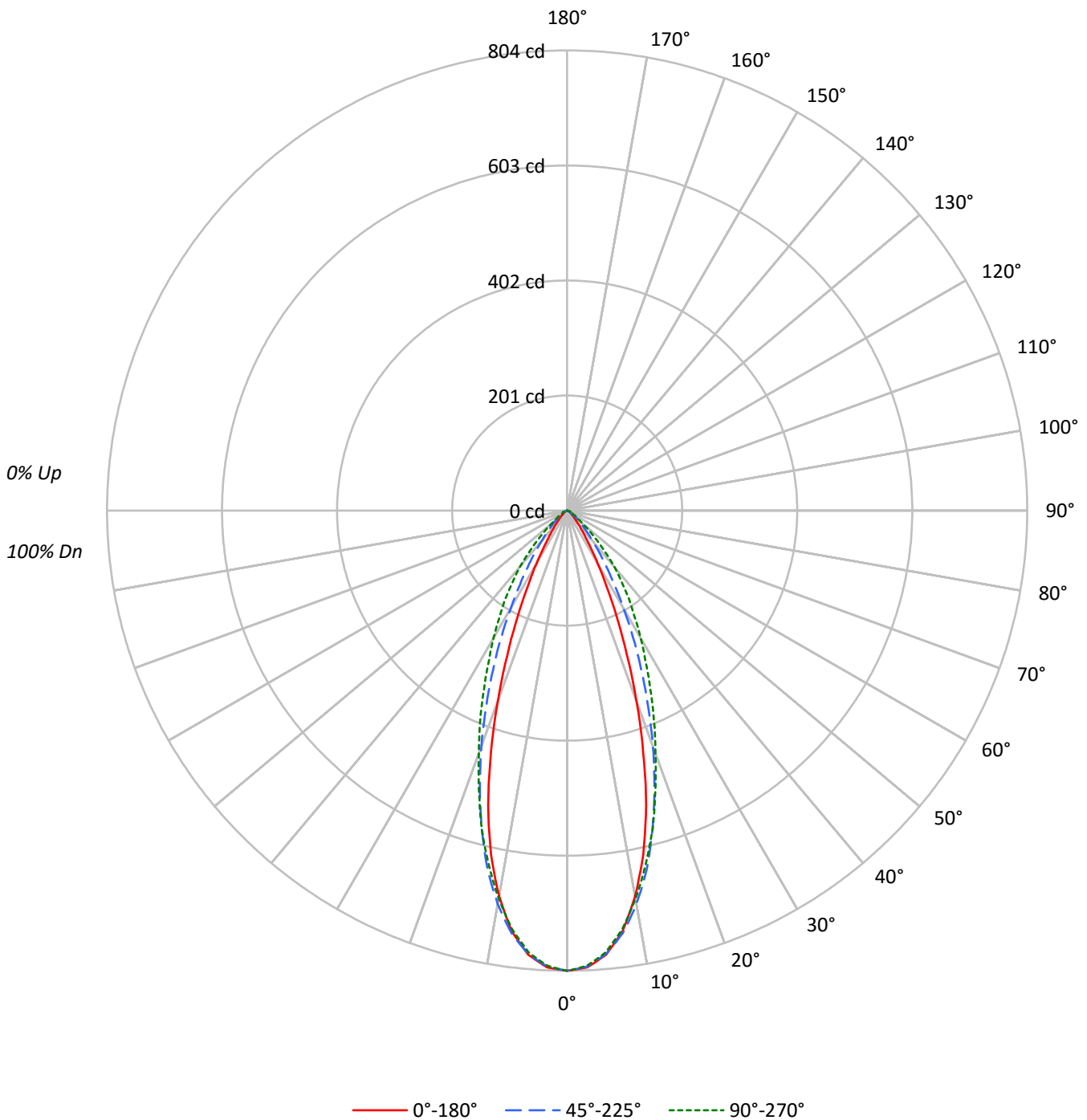
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93				93
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	92	90	89	87				87
3	103	96	91	87	101	95	90	87	92	88	85	90	87	84	88	85	83	81				81
4	98	90	85	81	96	89	84	80	87	83	79	85	81	78	83	80	77	76				76
5	93	85	79	75	91	84	78	74	82	77	74	80	76	73	79	75	72	71				71
6	88	80	74	70	87	79	74	70	78	73	69	76	72	69	75	71	68	67				67
7	84	75	70	65	83	75	69	65	73	68	65	72	68	65	71	67	64	63				63
8	81	71	66	62	79	71	65	61	70	65	61	69	64	61	68	64	61	59				59
9	77	68	62	58	76	67	62	58	66	61	58	65	61	58	65	61	57	56				56
10	74	64	59	55	73	64	59	55	63	58	55	62	58	55	62	58	55	53				53

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	396726	396726	396726
5°	385910	385167	383731
10°	342728	349692	344932
15°	272452	294467	294467
20°	185918	230127	237005
25°	111109	166473	187214
30°	61300	111719	146300
35°	32163	71855	113233
40°	18356	43796	82955
45°	11722	28049	51563
50°	8443	18498	26941
55°	6881	10666	17032
60°	5822	6513	10854
65°	5137	5137	8522
70°	4183	4183	11540
75°	4194	2859	7053
80°	1989	1989	4262
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.5	14.4
10°-20°	155.3	31.4
20°-30°	134.3	27.2
30°-40°	77.6	15.7
40°-50°	35.2	7.1
50°-60°	12.4	2.5
60°-70°	5.5	1.1
70°-80°	2.6	0.5
80°-90°	0.2	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°	361.1	73.0
0°-40°	438.7	88.7
0°-60°	486.3	98.3
0°-90°	494.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	494.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	804	804	804	804	804	
5°	779	778	778	775	775	71
15°	533	550	576	582	576	145
25°	204	235	306	350	344	96
35°	53	70	119	178	188	36
45°	17	20	40	70	74	14
55°	8	8	12	16	20	7
65°	4	5	4	7	7	4
75°	2	2	2	3	4	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



TEST NUMBER: P219771

CATALOG NUMBER: MRZ-1-REC-X-2-L27-97-FL-UNV-X-STD-LSL

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	804.1	804.1	804.1	804.1	804.1	804.1	804.1	804.1	804.1	804.1	804.1
2.5°	799.0	797.5	797.5	797.5	798.2	798.2	797.5	797.5	797.5	797.5	797.5
5°	779.2	777.7	777.7	778.5	777.7	778.5	777.7	779.2	778.5	777.7	777.7
7.5°	741.2	741.2	741.2	741.9	742.6	742.6	742.6	744.1	744.1	745.5	744.8
10°	684.1	685.5	685.5	687.7	689.9	688.5	689.2	693.6	695.1	696.5	698.0
12.5°	614.6	616.8	618.2	619.7	621.9	624.1	624.8	632.1	634.3	637.3	642.4
15°	533.4	532.6	537.0	539.2	545.8	549.5	551.7	559.0	566.3	570.7	576.5
17.5°	441.9	444.1	446.3	452.2	460.2	465.3	468.2	477.0	488.7	498.2	507.0
20°	354.1	358.5	360.7	367.3	375.3	378.3	386.3	398.0	413.4	426.5	438.3
22.5°	272.9	275.1	280.9	288.3	297.0	303.6	311.7	323.4	339.5	352.7	368.7
25°	204.1	204.9	212.2	218.8	228.3	234.9	239.2	254.6	271.4	288.3	305.8
27.5°	148.5	150.0	154.4	161.0	171.2	175.6	182.9	196.1	212.2	230.5	248.8
30°	107.6	107.6	110.5	117.8	125.1	131.0	136.1	148.5	163.9	179.3	196.1
32.5°	75.4	76.1	79.0	84.1	91.5	95.8	99.5	111.2	123.6	139.0	153.6
35°	53.4	54.1	57.1	60.0	65.8	69.5	72.4	81.2	92.2	105.4	119.3
37.5°	38.8	39.5	41.0	43.2	47.6	49.8	52.7	60.0	68.8	79.0	91.5
40°	28.5	29.3	30.0	32.2	35.1	36.6	38.8	43.9	50.5	59.3	68.0
42.5°	21.9	21.9	22.7	24.1	25.6	27.1	28.5	32.2	37.3	43.9	51.9
45°	16.8	16.8	17.6	19.0	19.8	20.5	21.9	24.1	27.8	32.9	40.2
47.5°	13.9	13.9	13.9	14.6	15.4	16.1	16.8	19.0	21.2	26.3	30.7
50°	11.0	11.0	11.7	11.7	12.4	12.4	13.2	14.6	17.6	21.2	24.1
52.5°	9.5	9.5	9.5	9.5	9.5	10.2	10.2	11.7	14.6	16.1	17.6
55°	8.0	8.0	8.0	8.0	8.0	8.0	8.8	10.2	11.7	13.2	12.4
57.5°	6.6	6.6	6.6	6.6	6.6	7.3	7.3	8.8	9.5	8.8	8.8
60°	5.9	5.9	5.1	5.1	5.9	5.9	6.6	7.3	7.3	6.6	6.6
62.5°	5.1	4.4	4.4	4.4	5.1	5.9	5.9	5.9	5.1	5.1	5.1
65°	4.4	3.7	3.7	4.4	4.4	5.1	5.1	4.4	4.4	4.4	4.4
67.5°	3.7	3.7	3.7	3.7	4.4	4.4	4.4	3.7	3.7	3.7	3.7
70°	2.9	2.9	2.9	2.9	3.7	3.7	2.9	2.9	2.9	2.9	2.9
72.5°	2.2	2.2	2.2	2.9	2.9	2.9	2.2	2.2	2.2	2.9	2.2
75°	2.2	2.2	2.2	2.2	2.2	2.2	1.5	1.5	2.2	2.2	1.5
77.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
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°	804.1	804.1	804.1	804.1	804.1	804.1	804.1	804.1	804.1	804.1
2.5°	796.8	796.8	796.0	796.8	796.8	796.8	796.8	796.0	796.8	796.0
5°	777.0	777.0	777.0	775.5	774.8	775.5	774.8	774.1	774.1	774.8
7.5°	743.3	743.3	742.6	741.2	741.2	740.4	739.0	738.2	737.5	737.5
10°	699.4	698.7	696.5	695.8	695.8	693.6	690.7	690.7	687.7	688.5
12.5°	644.6	643.1	642.4	642.4	639.5	639.5	637.3	636.5	635.1	633.6
15°	578.7	580.9	582.4	581.7	581.7	579.5	578.7	577.3	575.1	576.5
17.5°	513.6	518.7	520.2	522.4	523.1	521.7	519.5	515.8	513.6	512.1
20°	449.2	456.5	461.7	463.1	463.1	462.4	461.7	455.8	455.1	451.4
22.5°	382.6	392.9	401.7	404.6	405.3	406.1	403.1	398.7	397.3	396.5
25°	320.5	334.4	343.1	349.0	350.5	352.7	351.2	349.0	344.6	343.9
27.5°	264.1	278.8	290.5	297.8	301.4	302.9	304.4	300.7	299.2	296.3
30°	213.6	230.5	242.9	253.1	255.3	258.3	259.0	259.7	256.8	256.8
32.5°	170.5	184.4	199.7	210.0	214.4	216.6	220.2	219.5	219.5	218.8
35°	133.9	147.8	161.7	172.7	177.8	180.7	185.1	187.3	188.0	188.0
37.5°	103.2	117.1	129.5	142.7	147.8	151.4	154.4	155.1	155.8	155.1
40°	79.0	92.2	104.6	113.4	117.1	120.0	123.6	126.6	128.0	128.8
42.5°	62.2	71.7	79.7	88.5	94.4	98.8	99.5	98.8	98.8	98.0
45°	46.8	54.1	66.6	68.8	70.2	71.0	73.2	73.9	73.9	73.9
47.5°	37.3	45.4	45.4	48.3	49.8	51.9	52.7	52.7	52.7	52.7
50°	27.8	29.3	31.5	33.7	34.4	34.4	35.1	35.1	35.1	35.1
52.5°	18.3	20.5	21.2	21.9	22.7	23.4	24.9	25.6	24.9	24.9
55°	13.2	13.9	14.6	16.1	16.1	16.8	19.8	19.8	19.8	19.8
57.5°	8.8	9.5	11.0	13.2	13.2	13.9	14.6	14.6	15.4	15.4
60°	7.3	8.0	8.8	9.5	10.2	11.7	13.2	11.0	11.0	11.0
62.5°	5.9	6.6	7.3	8.0	7.3	8.0	8.8	8.8	8.8	8.8
65°	5.1	5.9	5.1	5.9	6.6	6.6	5.9	6.6	6.6	7.3
67.5°	4.4	4.4	4.4	4.4	4.4	5.1	6.6	7.3	8.0	8.0
70°	2.9	2.9	2.9	4.4	4.4	5.1	5.9	7.3	7.3	8.0
72.5°	2.2	2.2	2.9	3.7	4.4	4.4	5.1	5.1	5.9	5.9
75°	2.2	2.2	2.9	2.9	2.9	2.9	3.7	3.7	3.7	3.7
77.5°	1.5	1.5	1.5	1.5	2.2	2.2	2.2	2.9	2.9	2.9
80°	0.7	0.7	0.7	0.7	1.5	1.5	1.5	1.5	1.5	1.5
82.5°	0.7	0.7	0.7	0.7	0.7	0.0	0.0	0.7	0.7	0.7
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)