

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: P226105

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226105
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-1-L27-97-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1
Light Source: (1) 2700K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 322.9 lumens
Efficiency: N/A
Efficacy: 59.8 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

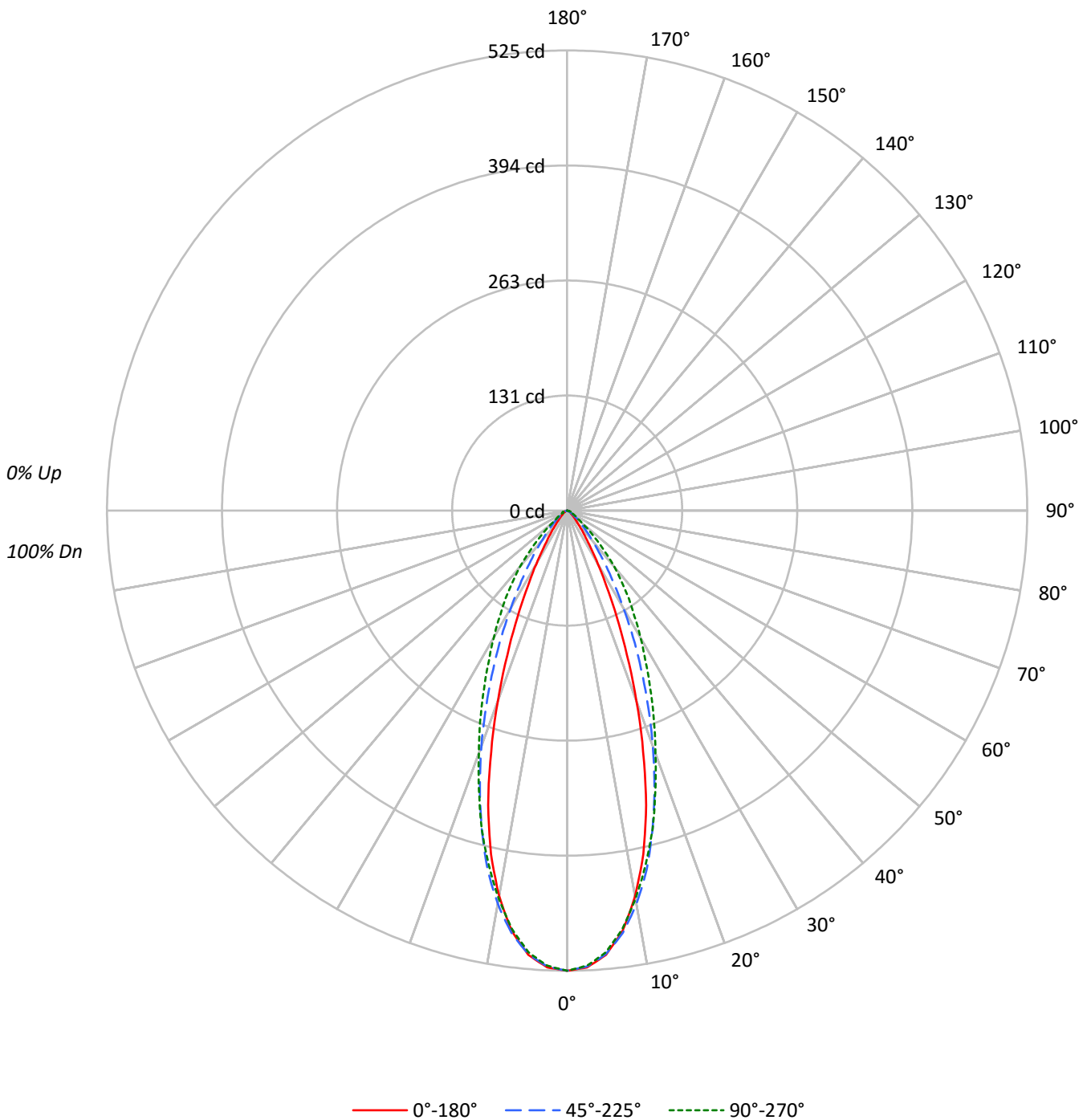
Input Watts (W): 5.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	92	90	89	87
3	103	96	91	87	101	95	90	87	92	88	85	90	87	84	88	85	83	81
4	98	90	85	81	96	89	84	80	87	83	79	85	81	78	83	80	77	76
5	93	85	79	75	91	84	78	74	82	77	74	80	76	73	79	75	72	71
6	88	80	74	70	87	79	74	70	78	73	69	76	72	69	75	71	68	67
7	84	75	70	65	83	75	69	65	73	68	65	72	68	65	71	67	64	63
8	81	71	66	62	79	71	65	61	70	65	61	69	64	61	68	64	61	59
9	77	68	62	58	76	67	62	58	66	61	58	65	61	58	65	61	57	56
10	74	64	59	55	73	64	59	55	63	58	55	62	58	55	62	58	55	53

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	259024	259024	259024
5°	251941	251495	250554
10°	223742	228301	225195
15°	177855	192259	192259
20°	121390	150215	154730
25°	72566	108714	122214
30°	40050	72922	95483
35°	21020	46859	73903
40°	12044	28661	54166
45°	7675	18281	33631
50°	5450	12127	17577
55°	4559	6967	11096
60°	3750	4243	7006
65°	3386	3386	5604
70°	2741	2741	7645
75°	2669	1906	4575
80°	1137	1137	2841
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	46.7	14.4
10°-20°	101.4	31.4
20°-30°	87.7	27.2
30°-40°	50.7	15.7
40°-50°	23.0	7.1
50°-60°	8.1	2.5
60°-70°	3.6	1.1
70°-80°	1.7	0.5
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°	235.8	73.0
0°-40°	286.4	88.7
0°-60°	317.5	98.3
0°-90°	322.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	322.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	525	525	525	525	525	
5°	509	508	508	506	506	47
15°	348	359	376	380	376	94
25°	133	153	200	229	224	63
35°	35	45	78	116	123	24
45°	11	13	26	46	48	9
55°	5	5	8	10	13	5
65°	3	3	3	4	5	3
75°	1	1	1	2	2	1
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°	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0
2.5°	521.6	520.6	520.6	520.6	521.2	521.2	520.6	520.6	520.6	520.6	520.6
5°	508.7	507.8	507.8	508.2	507.8	508.2	507.8	508.7	508.2	507.8	507.8
7.5°	483.8	483.8	483.8	484.4	484.8	484.8	484.8	485.8	485.8	486.8	486.2
10°	446.6	447.6	447.6	449.0	450.4	449.5	450.0	452.9	453.8	454.7	455.7
12.5°	401.3	402.7	403.6	404.6	406.0	407.4	408.0	412.7	414.1	416.1	419.4
15°	348.2	347.7	350.6	352.1	356.4	358.7	360.2	364.9	369.8	372.6	376.4
17.5°	288.5	289.9	291.4	295.2	300.5	303.8	305.7	311.5	319.0	325.3	331.0
20°	231.2	234.1	235.5	239.8	245.0	246.9	252.2	259.9	269.9	278.5	286.1
22.5°	178.2	179.6	183.4	188.2	193.9	198.3	203.4	211.1	221.7	230.2	240.8
25°	133.3	133.7	138.5	142.8	149.0	153.4	156.2	166.2	177.2	188.2	199.7
27.5°	96.9	97.9	100.8	105.1	111.8	114.6	119.4	128.0	138.5	150.5	162.4
30°	70.3	70.3	72.1	76.9	81.7	85.5	88.8	96.9	107.0	117.0	128.0
32.5°	49.2	49.6	51.6	54.9	59.7	62.6	65.0	72.6	80.7	90.8	100.3
35°	34.9	35.4	37.2	39.2	43.0	45.3	47.3	53.0	60.2	68.8	77.8
37.5°	25.4	25.8	26.8	28.2	31.1	32.5	34.4	39.2	44.9	51.6	59.7
40°	18.7	19.1	19.5	21.0	22.9	23.9	25.4	28.7	32.9	38.7	44.5
42.5°	14.4	14.4	14.8	15.8	16.7	17.7	18.7	21.0	24.4	28.7	33.9
45°	11.0	11.0	11.4	12.4	12.9	13.4	14.4	15.8	18.1	21.5	26.2
47.5°	9.1	9.1	9.1	9.6	10.0	10.5	11.0	12.4	13.8	17.2	20.1
50°	7.1	7.1	7.7	7.7	8.1	8.1	8.6	9.6	11.4	13.8	15.8
52.5°	6.2	6.2	6.2	6.2	6.2	6.7	6.7	7.7	9.6	10.5	11.4
55°	5.3	5.3	5.3	5.3	5.3	5.3	5.7	6.7	7.7	8.6	8.1
57.5°	4.3	4.3	4.3	4.3	4.3	4.8	4.8	5.7	6.2	5.7	5.7
60°	3.8	3.8	3.3	3.3	3.8	3.8	4.3	4.8	4.8	4.3	4.3
62.5°	3.3	2.9	2.9	2.9	3.3	3.8	3.8	3.8	3.3	3.3	3.3
65°	2.9	2.4	2.4	2.9	2.9	3.3	3.3	2.9	2.9	2.9	2.9
67.5°	2.4	2.4	2.4	2.4	2.9	2.9	2.9	2.4	2.4	2.4	2.4
70°	1.9	1.9	1.9	1.9	2.4	2.4	1.9	1.9	1.9	1.9	1.9
72.5°	1.4	1.4	1.4	1.9	1.9	1.9	1.4	1.4	1.4	1.9	1.4
75°	1.4	1.4	1.4	1.4	1.4	1.4	1.0	1.0	1.4	1.4	1.0
77.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
80°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
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°	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0	525.0
2.5°	520.2	520.2	519.7	520.2	520.2	520.2	520.2	519.7	520.2	519.7
5°	507.3	507.3	507.3	506.3	505.9	506.3	505.9	505.3	505.3	505.9
7.5°	485.3	485.3	484.8	483.8	483.8	483.4	482.4	482.0	481.5	481.5
10°	456.6	456.2	454.7	454.3	454.3	452.9	450.9	450.9	449.0	449.5
12.5°	420.8	419.8	419.4	419.4	417.5	417.5	416.1	415.5	414.7	413.7
15°	377.9	379.3	380.2	379.7	379.7	378.3	377.9	376.9	375.5	376.4
17.5°	335.3	338.7	339.6	341.1	341.5	340.6	339.1	336.7	335.3	334.4
20°	293.2	298.1	301.4	302.4	302.4	301.9	301.4	297.6	297.1	294.7
22.5°	249.8	256.5	262.3	264.1	264.6	265.1	263.2	260.3	259.4	258.9
25°	209.2	218.3	224.1	227.8	228.8	230.2	229.2	227.8	225.0	224.5
27.5°	172.5	182.0	189.6	194.4	196.8	197.7	198.7	196.3	195.3	193.4
30°	139.4	150.5	158.5	165.2	166.7	168.6	169.1	169.6	167.6	167.6
32.5°	111.3	120.3	130.4	137.1	140.0	141.4	143.8	143.3	143.3	142.8
35°	87.4	96.5	105.6	112.7	116.0	118.0	120.9	122.3	122.7	122.7
37.5°	67.3	76.4	84.5	93.1	96.5	98.9	100.8	101.2	101.8	101.2
40°	51.6	60.2	68.3	74.0	76.4	78.4	80.7	82.7	83.6	84.1
42.5°	40.6	46.8	52.0	57.8	61.6	64.5	65.0	64.5	64.5	64.0
45°	30.5	35.4	43.5	44.9	45.9	46.3	47.8	48.2	48.2	48.2
47.5°	24.4	29.6	29.6	31.5	32.5	33.9	34.4	34.4	34.4	34.4
50°	18.1	19.1	20.5	22.0	22.4	22.4	22.9	22.9	22.9	22.9
52.5°	12.0	13.4	13.8	14.4	14.8	15.3	16.2	16.7	16.2	16.2
55°	8.6	9.1	9.6	10.5	10.5	11.0	12.9	12.9	12.9	12.9
57.5°	5.7	6.2	7.1	8.6	8.6	9.1	9.6	9.6	10.0	10.0
60°	4.8	5.3	5.7	6.2	6.7	7.7	8.6	7.1	7.1	7.1
62.5°	3.8	4.3	4.8	5.3	4.8	5.3	5.7	5.7	5.7	5.7
65°	3.3	3.8	3.3	3.8	4.3	4.3	3.8	4.3	4.3	4.8
67.5°	2.9	2.9	2.9	2.9	2.9	3.3	4.3	4.8	5.3	5.3
70°	1.9	1.9	1.9	2.9	2.9	3.3	3.8	4.8	4.8	5.3
72.5°	1.4	1.4	1.9	2.4	2.9	2.9	3.3	3.3	3.8	3.8
75°	1.4	1.4	1.9	1.9	1.9	1.9	2.4	2.4	2.4	2.4
77.5°	1.0	1.0	1.0	1.0	1.4	1.4	1.4	1.9	1.9	1.9
80°	0.4	0.4	0.4	0.4	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.4	0.4	0.4
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)