

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: P226131

Luminaire Tested: **MRZ-1-REC-X-1-L30-97-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226131
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-L30-97-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1
Light Source: (1) 3000K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 353.1 lumens
Efficiency: N/A
Efficacy: 65.4 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

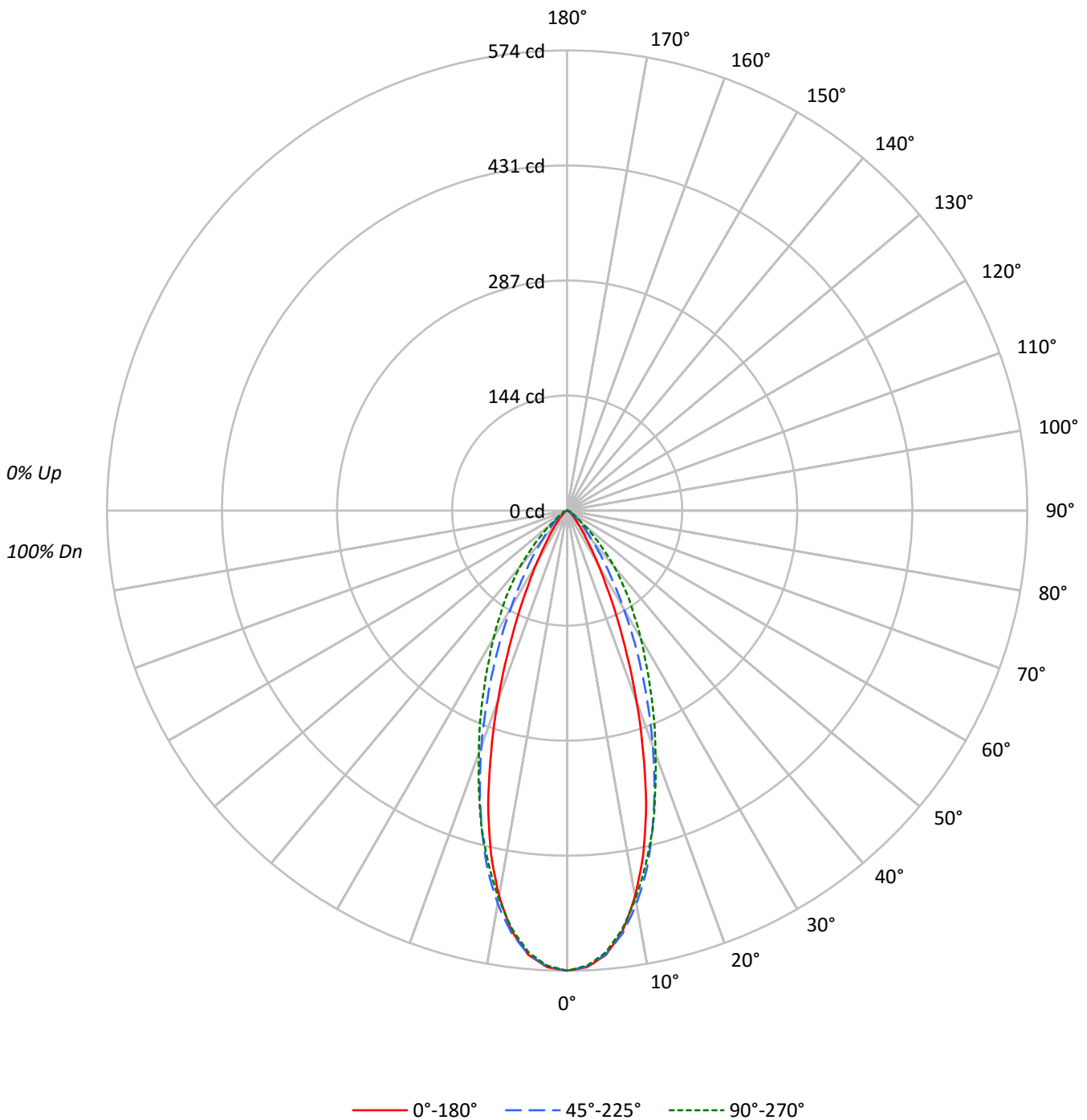
Input Watts (W): 5.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	113	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°	283151	283151	283151
5°	275416	274971	273881
10°	244634	249594	246187
15°	194456	210188	210188
20°	132679	164234	169169
25°	79317	118839	133592
30°	43753	79759	104427
35°	22948	51316	80829
40°	13139	31301	59189
45°	8443	20025	36841
50°	6064	13202	19266
55°	4903	7570	12129
60°	4144	4638	7795
65°	3619	3619	6071
70°	3029	3029	8223
75°	3050	2097	4956
80°	1421	1421	3125
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.0	14.4
10°-20°	110.8	31.4
20°-30°	95.9	27.2
30°-40°	55.4	15.7
40°-50°	25.1	7.1
50°-60°	8.9	2.5
60°-70°	3.9	1.1
70°-80°	1.9	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°	257.7	73.0
0°-40°	313.2	88.7
0°-60°	347.1	98.3
0°-90°	353.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	353.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	574	574	574	574	574	
5°	556	556	555	553	553	51
15°	381	392	412	415	412	103
25°	146	168	218	250	245	68
35°	38	50	85	127	134	26
45°	12	15	29	50	53	10
55°	6	6	9	12	14	5
65°	3	4	3	5	5	3
75°	2	2	1	2	3	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°	573.9	573.9	573.9	573.9	573.9	573.9	573.9	573.9	573.9	573.9	573.9
2.5°	570.2	569.2	569.2	569.2	569.7	569.7	569.2	569.2	569.2	569.2	569.2
5°	556.1	555.2	555.2	555.6	555.2	555.6	555.2	556.1	555.6	555.2	555.2
7.5°	529.0	529.0	529.0	529.5	530.1	530.1	530.1	531.1	531.1	532.1	531.6
10°	488.3	489.3	489.3	490.9	492.5	491.4	492.0	495.1	496.1	497.1	498.2
12.5°	438.7	440.3	441.3	442.3	443.8	445.5	446.0	451.2	452.8	454.8	458.5
15°	380.7	380.2	383.3	384.8	389.6	392.2	393.8	398.9	404.2	407.3	411.5
17.5°	315.4	317.0	318.5	322.7	328.5	332.2	334.2	340.5	348.9	355.6	361.9
20°	252.7	255.8	257.5	262.2	267.9	269.9	275.8	284.1	295.0	304.5	312.8
22.5°	194.8	196.4	200.5	205.8	212.0	216.7	222.5	230.8	242.3	251.7	263.2
25°	145.7	146.2	151.4	156.1	162.9	167.6	170.8	181.8	193.7	205.8	218.3
27.5°	106.1	107.0	110.2	114.9	122.2	125.3	130.5	140.0	151.4	164.5	177.6
30°	76.8	76.8	78.8	84.1	89.3	93.5	97.1	106.1	116.9	127.9	140.0
32.5°	53.8	54.3	56.4	60.1	65.3	68.4	71.1	79.4	88.3	99.2	109.6
35°	38.1	38.7	40.7	42.8	47.0	49.6	51.7	57.9	65.8	75.2	85.2
37.5°	27.7	28.2	29.3	30.8	33.9	35.5	37.6	42.8	49.1	56.4	65.3
40°	20.4	20.9	21.4	22.9	25.1	26.1	27.7	31.3	36.1	42.3	48.6
42.5°	15.6	15.6	16.2	17.2	18.3	19.3	20.4	22.9	26.6	31.3	37.0
45°	12.1	12.1	12.5	13.6	14.1	14.6	15.6	17.2	19.8	23.5	28.7
47.5°	9.9	9.9	9.9	10.4	11.0	11.5	12.1	13.6	15.2	18.8	22.0
50°	7.9	7.9	8.4	8.4	8.8	8.8	9.4	10.4	12.5	15.2	17.2
52.5°	6.8	6.8	6.8	6.8	6.8	7.3	7.3	8.4	10.4	11.5	12.5
55°	5.7	5.7	5.7	5.7	5.7	5.7	6.2	7.3	8.4	9.4	8.8
57.5°	4.7	4.7	4.7	4.7	4.7	5.2	5.2	6.2	6.8	6.2	6.2
60°	4.2	4.2	3.7	3.7	4.2	4.2	4.7	5.2	5.2	4.7	4.7
62.5°	3.7	3.1	3.1	3.1	3.7	4.2	4.2	4.2	3.7	3.7	3.7
65°	3.1	2.6	2.6	3.1	3.1	3.7	3.7	3.1	3.1	3.1	3.1
67.5°	2.6	2.6	2.6	2.6	3.1	3.1	3.1	2.6	2.6	2.6	2.6
70°	2.1	2.1	2.1	2.1	2.6	2.6	2.1	2.1	2.1	2.1	2.1
72.5°	1.6	1.6	1.6	2.1	2.1	2.1	1.6	1.6	1.6	2.1	1.6
75°	1.6	1.6	1.6	1.6	1.6	1.6	1.1	1.1	1.6	1.6	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
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°	573.9	573.9	573.9	573.9	573.9	573.9	573.9	573.9	573.9	573.9
2.5°	568.7	568.7	568.2	568.7	568.7	568.7	568.7	568.2	568.7	568.2
5°	554.6	554.6	554.6	553.6	553.0	553.6	553.0	552.5	552.5	553.0
7.5°	530.6	530.6	530.1	529.0	529.0	528.5	527.4	527.0	526.4	526.4
10°	499.3	498.7	497.1	496.6	496.6	495.1	492.9	492.9	490.9	491.4
12.5°	460.1	459.0	458.5	458.5	456.4	456.4	454.8	454.3	453.3	452.2
15°	413.0	414.7	415.7	415.2	415.2	413.6	413.0	412.1	410.5	411.5
17.5°	366.6	370.3	371.3	372.9	373.4	372.3	370.7	368.1	366.6	365.6
20°	320.7	325.8	329.5	330.6	330.6	330.0	329.5	325.4	324.8	322.2
22.5°	273.2	280.4	286.7	288.8	289.3	289.9	287.7	284.6	283.6	283.1
25°	228.7	238.6	245.0	249.1	250.1	251.7	250.7	249.1	245.9	245.4
27.5°	188.5	199.0	207.3	212.5	215.1	216.2	217.3	214.6	213.6	211.5
30°	152.5	164.5	173.4	180.7	182.3	184.3	184.9	185.4	183.3	183.3
32.5°	121.7	131.6	142.6	149.9	153.0	154.6	157.2	156.7	156.7	156.1
35°	95.6	105.5	115.4	123.3	126.9	129.0	132.1	133.7	134.2	134.2
37.5°	73.6	83.6	92.4	101.9	105.5	108.1	110.2	110.7	111.2	110.7
40°	56.4	65.8	74.7	81.0	83.6	85.6	88.3	90.3	91.4	91.9
42.5°	44.4	51.2	57.0	63.2	67.4	70.5	71.1	70.5	70.5	70.0
45°	33.4	38.7	47.5	49.1	50.2	50.6	52.2	52.8	52.8	52.8
47.5°	26.6	32.4	32.4	34.5	35.5	37.0	37.6	37.6	37.6	37.6
50°	19.8	20.9	22.5	24.0	24.5	24.5	25.1	25.1	25.1	25.1
52.5°	13.0	14.6	15.2	15.6	16.2	16.7	17.8	18.3	17.8	17.8
55°	9.4	9.9	10.4	11.5	11.5	12.1	14.1	14.1	14.1	14.1
57.5°	6.2	6.8	7.9	9.4	9.4	9.9	10.4	10.4	11.0	11.0
60°	5.2	5.7	6.2	6.8	7.3	8.4	9.4	7.9	7.9	7.9
62.5°	4.2	4.7	5.2	5.7	5.2	5.7	6.2	6.2	6.2	6.2
65°	3.7	4.2	3.7	4.2	4.7	4.7	4.2	4.7	4.7	5.2
67.5°	3.1	3.1	3.1	3.1	3.1	3.7	4.7	5.2	5.7	5.7
70°	2.1	2.1	2.1	3.1	3.1	3.7	4.2	5.2	5.2	5.7
72.5°	1.6	1.6	2.1	2.6	3.1	3.1	3.7	3.7	4.2	4.2
75°	1.6	1.6	2.1	2.1	2.1	2.1	2.6	2.6	2.6	2.6
77.5°	1.1	1.1	1.1	1.1	1.6	1.6	1.6	2.1	2.1	2.1
80°	0.5	0.5	0.5	0.5	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.5	0.5	0.5
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)