

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: P219765

Luminaire Tested: **MRZ-1-REC-X-1H-L35-97-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219765
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-1H-L35-97-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1
Light Source: (1) 3500K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 413.3 lumens
Efficiency: N/A
Efficacy: 60.8 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

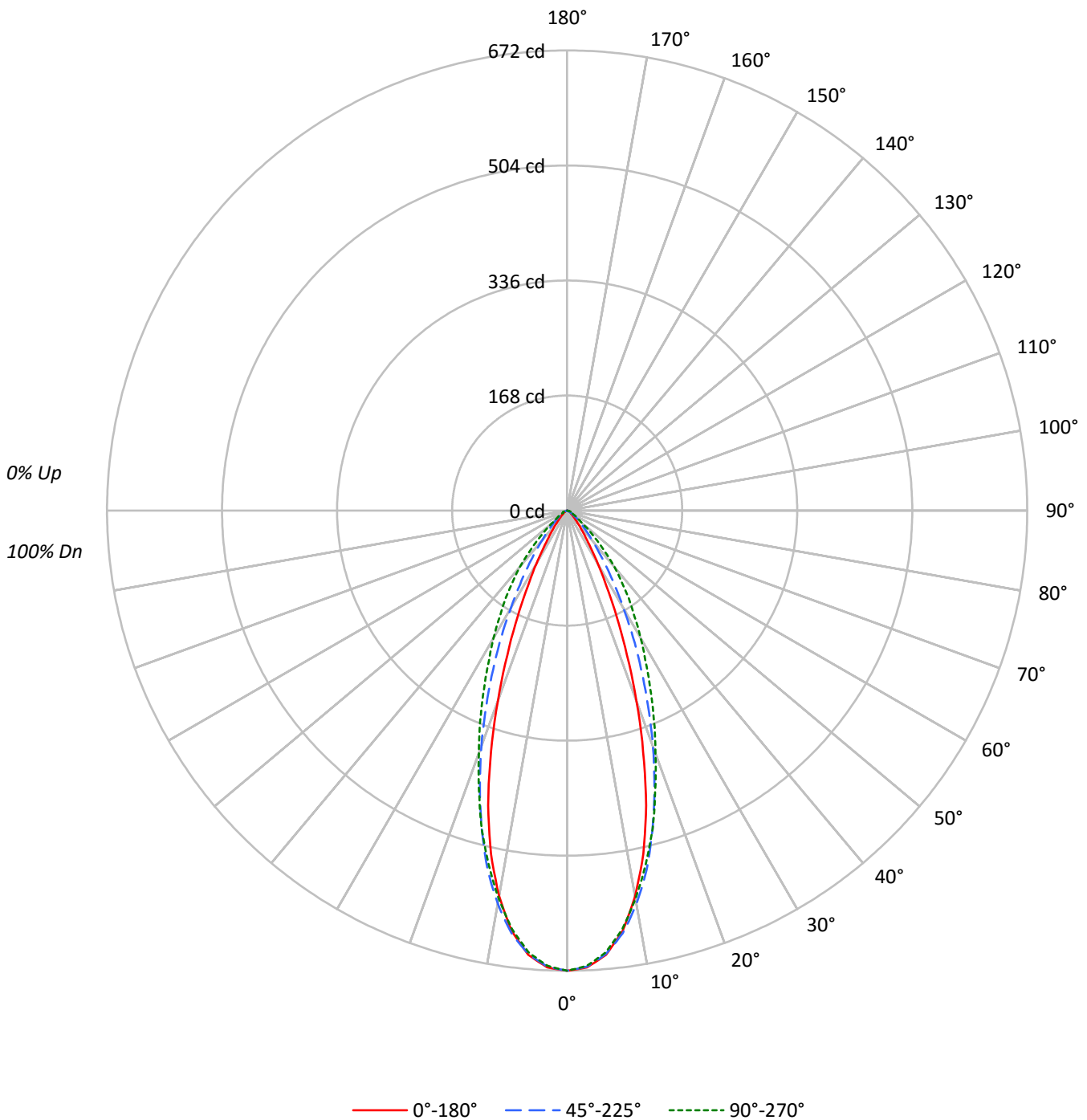
Input Watts (W): 6.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	331551	331551	331551
5°	322516	321922	320684
10°	286416	292228	288270
15°	227708	246096	246096
20°	155360	192323	198099
25°	92872	139145	156456
30°	51217	93375	122259
35°	26863	60050	94622
40°	15329	36647	69301
45°	9838	23444	43121
50°	7062	15505	22566
55°	5763	8946	14193
60°	4835	5427	9078
65°	4320	4320	7121
70°	3462	3462	9665
75°	3431	2288	5909
80°	1705	1705	3410
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.7	14.4
10°-20°	129.8	31.4
20°-30°	112.3	27.2
30°-40°	64.9	15.7
40°-50°	29.4	7.1
50°-60°	10.4	2.5
60°-70°	4.6	1.1
70°-80°	2.2	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°	301.8	73.0
0°-40°	366.7	88.7
0°-60°	406.4	98.3
0°-90°	413.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	413.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	672	672	672	672	672	
5°	651	651	650	648	648	60
15°	446	459	482	486	482	121
25°	171	196	256	293	287	80
35°	45	58	100	149	157	30
45°	14	17	34	59	62	12
55°	7	7	10	14	16	6
65°	4	4	4	6	6	4
75°	2	2	1	2	3	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



TEST NUMBER: P219765

CATALOG NUMBER: MRZ-1-REC-X-1H-L35-97-FL-UNV-X-STD-LSL

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	672.0	672.0	672.0	672.0	672.0	672.0	672.0	672.0	672.0	672.0	672.0
2.5°	667.7	666.5	666.5	666.5	667.1	667.1	666.5	666.5	666.5	666.5	666.5
5°	651.2	650.0	650.0	650.6	650.0	650.6	650.0	651.2	650.6	650.0	650.0
7.5°	619.4	619.4	619.4	620.0	620.6	620.6	620.6	621.9	621.9	623.1	622.5
10°	571.7	572.9	572.9	574.8	576.6	575.4	576.0	579.7	580.9	582.1	583.3
12.5°	513.6	515.5	516.7	517.9	519.7	521.6	522.2	528.3	530.1	532.6	536.9
15°	445.8	445.1	448.8	450.6	456.1	459.2	461.0	467.2	473.3	476.9	481.8
17.5°	369.3	371.2	373.0	377.9	384.6	388.9	391.3	398.7	408.5	416.4	423.7
20°	295.9	299.6	301.5	307.0	313.7	316.1	322.9	332.6	345.5	356.5	366.3
22.5°	228.1	229.9	234.8	240.9	248.3	253.8	260.5	270.3	283.7	294.7	308.2
25°	170.6	171.2	177.3	182.8	190.8	196.3	199.9	212.8	226.9	240.9	255.6
27.5°	124.1	125.3	129.0	134.5	143.1	146.8	152.9	163.9	177.3	192.6	207.9
30°	89.9	89.9	92.3	98.4	104.6	109.5	113.7	124.1	137.0	149.8	163.9
32.5°	63.0	63.6	66.0	70.3	76.4	80.1	83.2	92.9	103.3	116.2	128.4
35°	44.6	45.2	47.7	50.1	55.0	58.1	60.5	67.9	77.0	88.1	99.7
37.5°	32.4	33.0	34.2	36.1	39.7	41.6	44.0	50.1	57.5	66.0	76.4
40°	23.8	24.5	25.1	26.9	29.4	30.6	32.4	36.7	42.2	49.5	56.9
42.5°	18.3	18.3	19.0	20.2	21.4	22.6	23.8	26.9	31.2	36.7	43.4
45°	14.1	14.1	14.7	15.9	16.5	17.1	18.3	20.2	23.2	27.5	33.6
47.5°	11.6	11.6	11.6	12.2	12.8	13.5	14.1	15.9	17.7	22.0	25.7
50°	9.2	9.2	9.8	9.8	10.4	10.4	11.0	12.2	14.7	17.7	20.2
52.5°	7.9	7.9	7.9	7.9	7.9	8.6	8.6	9.8	12.2	13.5	14.7
55°	6.7	6.7	6.7	6.7	6.7	6.7	7.3	8.6	9.8	11.0	10.4
57.5°	5.5	5.5	5.5	5.5	5.5	6.1	6.1	7.3	7.9	7.3	7.3
60°	4.9	4.9	4.3	4.3	4.9	4.9	5.5	6.1	6.1	5.5	5.5
62.5°	4.3	3.7	3.7	3.7	4.3	4.9	4.9	4.9	4.3	4.3	4.3
65°	3.7	3.1	3.1	3.7	3.7	4.3	4.3	3.7	3.7	3.7	3.7
67.5°	3.1	3.1	3.1	3.1	3.7	3.7	3.7	3.1	3.1	3.1	3.1
70°	2.4	2.4	2.4	2.4	3.1	3.1	2.4	2.4	2.4	2.4	2.4
72.5°	1.8	1.8	1.8	2.4	2.4	2.4	1.8	1.8	1.8	2.4	1.8
75°	1.8	1.8	1.8	1.8	1.8	1.8	1.2	1.2	1.8	1.8	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
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°	672.0	672.0	672.0	672.0	672.0	672.0	672.0	672.0	672.0	672.0
2.5°	665.9	665.9	665.3	665.9	665.9	665.9	665.9	665.3	665.9	665.3
5°	649.4	649.4	649.4	648.1	647.5	648.1	647.5	646.9	646.9	647.5
7.5°	621.2	621.2	620.6	619.4	619.4	618.8	617.6	617.0	616.4	616.4
10°	584.6	583.9	582.1	581.5	581.5	579.7	577.2	577.2	574.8	575.4
12.5°	538.7	537.5	536.9	536.9	534.4	534.4	532.6	532.0	530.7	529.5
15°	483.7	485.5	486.7	486.1	486.1	484.3	483.7	482.4	480.6	481.8
17.5°	429.2	433.5	434.7	436.6	437.2	436.0	434.1	431.1	429.2	428.0
20°	375.4	381.6	385.8	387.1	387.1	386.4	385.8	380.9	380.3	377.3
22.5°	319.8	328.4	335.7	338.1	338.7	339.4	336.9	333.2	332.0	331.4
25°	267.8	279.4	286.8	291.7	292.9	294.7	293.5	291.7	288.0	287.4
27.5°	220.7	233.0	242.7	248.9	251.9	253.1	254.4	251.3	250.1	247.6
30°	178.5	192.6	203.0	211.6	213.4	215.8	216.5	217.1	214.6	214.6
32.5°	142.5	154.1	166.9	175.5	179.2	181.0	184.0	183.4	183.4	182.8
35°	111.9	123.5	135.1	144.3	148.6	151.0	154.7	156.5	157.1	157.1
37.5°	86.2	97.8	108.2	119.2	123.5	126.6	129.0	129.6	130.2	129.6
40°	66.0	77.0	87.4	94.8	97.8	100.3	103.3	105.8	107.0	107.6
42.5°	52.0	59.9	66.6	74.0	78.9	82.5	83.2	82.5	82.5	81.9
45°	39.1	45.2	55.6	57.5	58.7	59.3	61.1	61.8	61.8	61.8
47.5°	31.2	37.9	37.9	40.4	41.6	43.4	44.0	44.0	44.0	44.0
50°	23.2	24.5	26.3	28.1	28.7	28.7	29.4	29.4	29.4	29.4
52.5°	15.3	17.1	17.7	18.3	19.0	19.6	20.8	21.4	20.8	20.8
55°	11.0	11.6	12.2	13.5	13.5	14.1	16.5	16.5	16.5	16.5
57.5°	7.3	7.9	9.2	11.0	11.0	11.6	12.2	12.2	12.8	12.8
60°	6.1	6.7	7.3	7.9	8.6	9.8	11.0	9.2	9.2	9.2
62.5°	4.9	5.5	6.1	6.7	6.1	6.7	7.3	7.3	7.3	7.3
65°	4.3	4.9	4.3	4.9	5.5	5.5	4.9	5.5	5.5	6.1
67.5°	3.7	3.7	3.7	3.7	3.7	4.3	5.5	6.1	6.7	6.7
70°	2.4	2.4	2.4	3.7	3.7	4.3	4.9	6.1	6.1	6.7
72.5°	1.8	1.8	2.4	3.1	3.7	3.7	4.3	4.3	4.9	4.9
75°	1.8	1.8	2.4	2.4	2.4	2.4	3.1	3.1	3.1	3.1
77.5°	1.2	1.2	1.2	1.2	1.8	1.8	1.8	2.4	2.4	2.4
80°	0.6	0.6	0.6	0.6	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.6	0.6	0.6
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)