

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: P219912

Luminaire Tested: **MRZ-1-REC-X-4-L35-97-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219912
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14882)
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-4-L35-97-WFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
55 DEGREE WIDE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 4
Light Source: (1) 3500K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 890.6 lumens
Efficiency: N/A
Efficacy: 56.4 lumens/watt
Spacing Criteria (0/90/45): 0.88 / 0.83 / 0.87
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

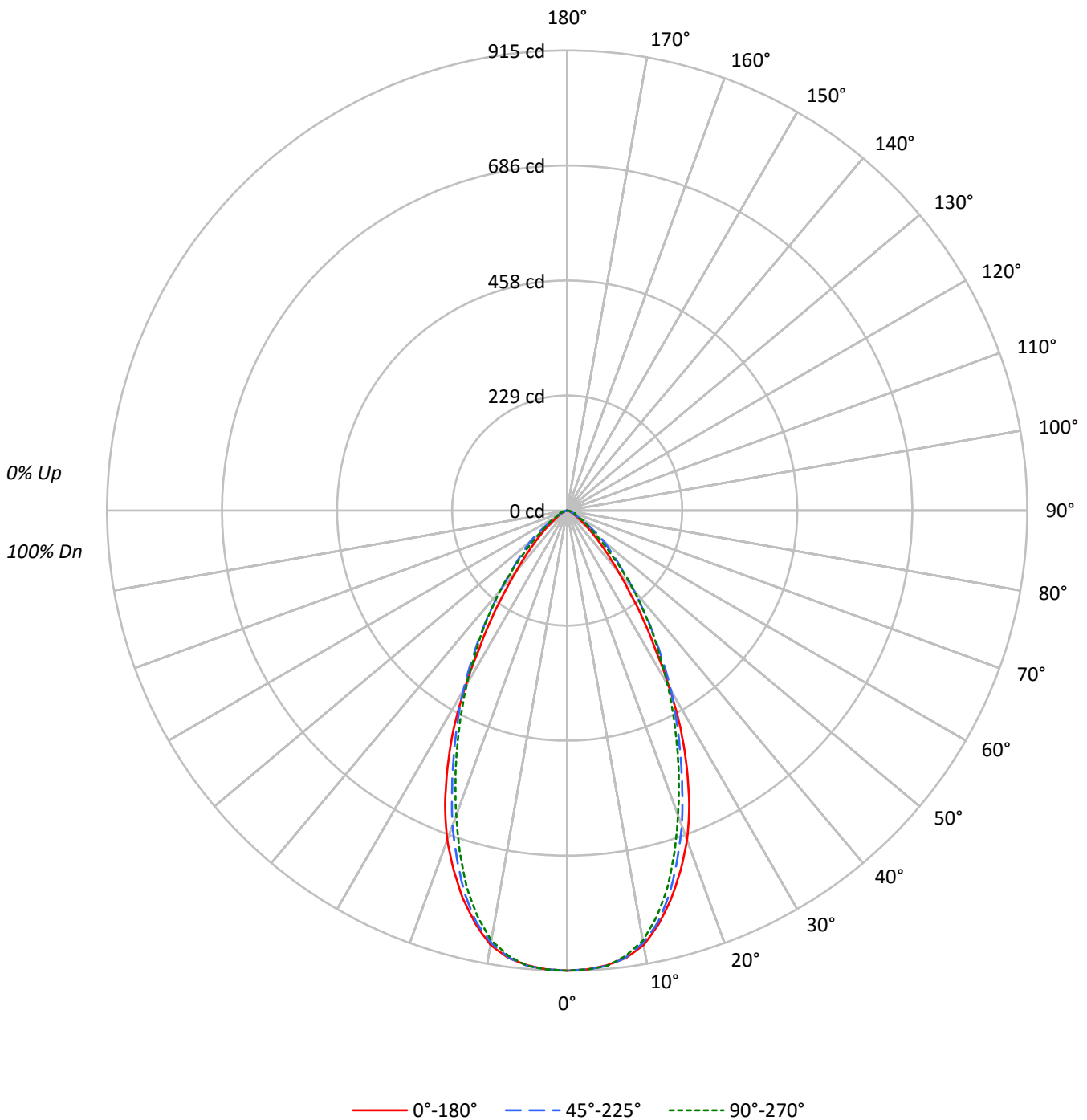
Input Watts (W): 15.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94					92				
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86					84				
3	100	93	88	83	98	92	87	83	89	85	81	87	83	80	84	81	79					77				
4	95	86	80	76	93	85	80	75	83	78	74	81	77	73	79	76	73					71				
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67					65				
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62					61				
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	66	61	58					56				
8	76	66	59	55	75	65	59	55	64	58	54	63	58	54	62	57	54					52				
9	72	62	55	51	71	61	55	51	60	55	51	59	54	51	58	54	50					49				
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47					46				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	451393	451393	451393
5°	449502	450195	450195
10°	439319	437114	434910
15°	408321	402345	394887
20°	366008	349889	338391
25°	306325	289612	281610
30°	231471	235630	227313
35°	157563	179547	177800
40°	101633	131775	132741
45°	65239	95870	88683
50°	41525	72918	54957
55°	25117	41461	40256
60°	15887	23090	25952
65°	11908	17045	18796
70°	10531	14714	25245
75°	8388	11056	16775
80°	4262	8240	12502
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	85.6	9.6
10°-20°	218.1	24.5
20°-30°	245.6	27.6
30°-40°	181.6	20.4
40°-50°	96.8	10.9
50°-60°	39.8	4.5
60°-70°	15.5	1.7
70°-80°	6.9	0.8
80°-90°	0.7	0.1
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°	549.2	61.7
0°-40°	730.9	82.1
0°-60°	867.5	97.4
0°-90°	890.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	890.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	915	915	915	915	915	
5°	908	908	909	909	909	86
15°	799	792	788	778	773	223
25°	563	555	532	522	517	255
35°	262	286	298	295	295	165
45°	94	105	137	136	127	75
55°	29	35	48	45	47	28
65°	10	15	15	18	16	11
75°	4	4	6	9	9	5
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°	914.9	914.9	914.9	914.9	914.9	914.9	914.9	914.9	914.9	914.9	914.9
2.5°	913.4	913.4	913.4	913.4	913.4	913.4	913.4	913.4	913.4	913.4	913.4
5°	907.6	907.6	907.6	907.6	907.6	907.6	907.6	909.0	907.6	909.0	909.0
7.5°	897.3	895.9	895.9	895.9	895.9	895.9	895.9	895.9	895.9	895.9	895.9
10°	876.9	875.4	875.4	872.5	873.9	872.5	872.5	872.5	872.5	872.5	872.5
12.5°	841.8	841.8	840.3	838.9	837.4	837.4	837.4	837.4	837.4	837.4	837.4
15°	799.4	799.4	797.9	795.0	793.6	792.1	790.6	790.6	789.2	789.2	787.7
17.5°	749.7	749.7	746.8	743.9	740.9	739.5	736.6	733.6	732.2	730.7	727.8
20°	697.1	697.1	692.7	691.3	685.4	684.0	679.6	675.2	669.3	667.9	666.4
22.5°	634.3	631.3	629.9	629.9	625.5	622.6	619.6	613.8	605.0	602.1	597.7
25°	562.7	561.2	561.2	559.7	558.3	555.3	556.8	552.4	545.1	539.3	532.0
27.5°	488.1	486.7	485.2	486.7	489.6	489.6	488.1	485.2	482.3	475.0	470.6
30°	406.3	406.3	409.2	413.6	418.0	419.4	420.9	419.4	418.0	413.6	413.6
32.5°	325.9	328.8	331.7	342.0	346.4	349.3	350.7	355.1	355.1	355.1	352.2
35°	261.6	261.6	267.4	274.7	280.6	286.4	287.9	293.7	298.1	298.1	298.1
37.5°	203.1	204.6	210.4	216.3	223.6	226.5	229.4	238.2	244.1	247.0	248.4
40°	157.8	160.8	163.7	169.5	176.8	178.3	181.2	188.5	195.8	201.7	204.6
42.5°	122.8	122.8	125.7	130.1	134.5	138.8	141.8	146.1	154.9	159.3	165.1
45°	93.5	95.0	96.5	99.4	103.8	105.2	108.1	114.0	119.8	125.7	137.4
47.5°	71.6	71.6	73.1	74.5	78.9	80.4	81.8	87.7	93.5	105.2	114.0
50°	54.1	54.1	54.1	55.5	58.5	61.4	62.8	67.2	78.9	87.7	95.0
52.5°	39.5	39.5	39.5	42.4	43.8	45.3	46.8	52.6	67.2	68.7	71.6
55°	29.2	29.2	29.2	30.7	33.6	35.1	36.5	46.8	49.7	54.1	48.2
57.5°	21.9	21.9	21.9	23.4	24.8	26.3	29.2	36.5	40.9	35.1	33.6
60°	16.1	16.1	16.1	17.5	20.5	21.9	24.8	27.8	27.8	24.8	23.4
62.5°	13.2	13.2	13.2	13.2	16.1	19.0	19.0	21.9	19.0	17.5	17.5
65°	10.2	10.2	10.2	11.7	13.2	14.6	16.1	14.6	13.2	13.2	14.6
67.5°	8.8	8.8	8.8	8.8	11.7	11.7	11.7	10.2	10.2	10.2	11.7
70°	7.3	7.3	7.3	7.3	8.8	8.8	8.8	7.3	7.3	8.8	10.2
72.5°	5.8	5.8	5.8	7.3	7.3	7.3	5.8	5.8	5.8	7.3	7.3
75°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	5.8	5.8	5.8
77.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	4.4	4.4	4.4
80°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	2.9
82.5°	0.0	1.5	1.5	0.0	0.0	0.0	0.0	1.5	1.5	1.5	1.5
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°	914.9	914.9	914.9	914.9	914.9	914.9	914.9	914.9	914.9	914.9
2.5°	913.4	913.4	914.9	913.4	913.4	913.4	913.4	913.4	913.4	913.4
5°	909.0	909.0	909.0	909.0	909.0	909.0	909.0	909.0	909.0	909.0
7.5°	895.9	895.9	895.9	894.4	894.4	894.4	894.4	894.4	894.4	892.9
10°	872.5	872.5	871.0	869.6	871.0	868.1	868.1	866.6	866.6	868.1
12.5°	835.9	834.5	831.6	831.6	830.1	828.6	827.2	827.2	825.7	825.7
15°	787.7	784.8	781.9	780.4	777.5	778.9	777.5	774.6	774.6	773.1
17.5°	729.3	726.3	721.9	717.6	717.6	716.1	716.1	713.2	711.7	710.3
20°	662.0	660.6	659.1	654.7	653.3	650.3	647.4	647.4	643.0	644.5
22.5°	594.8	593.3	590.4	589.0	586.0	586.0	583.1	583.1	580.2	580.2
25°	530.5	529.0	526.1	524.7	521.7	521.7	518.8	520.3	517.3	517.3
27.5°	466.2	464.7	461.8	463.3	460.4	458.9	457.4	457.4	456.0	456.0
30°	407.7	403.4	403.4	401.9	400.4	400.4	400.4	397.5	397.5	399.0
32.5°	350.7	347.8	346.4	346.4	347.8	346.4	344.9	344.9	343.4	342.0
35°	298.1	296.7	295.2	295.2	295.2	295.2	295.2	295.2	295.2	295.2
37.5°	248.4	249.9	248.4	249.9	251.4	249.9	248.4	247.0	247.0	247.0
40°	206.1	209.0	210.4	207.5	206.1	206.1	204.6	206.1	204.6	206.1
42.5°	172.4	173.9	171.0	172.4	173.9	173.9	171.0	166.6	163.7	162.2
45°	140.3	143.2	150.5	140.3	135.9	134.5	130.1	128.6	127.1	127.1
47.5°	119.8	125.7	111.1	106.7	103.8	103.8	100.8	97.9	97.9	96.5
50°	97.9	86.2	83.3	80.4	77.5	76.0	74.5	73.1	73.1	71.6
52.5°	65.8	62.8	59.9	58.5	57.0	57.0	57.0	57.0	57.0	57.0
55°	46.8	45.3	43.8	45.3	45.3	46.8	48.2	48.2	48.2	46.8
57.5°	32.2	32.2	35.1	38.0	38.0	38.0	38.0	36.5	36.5	36.5
60°	24.8	26.3	29.2	29.2	29.2	30.7	29.2	27.8	26.3	26.3
62.5°	19.0	21.9	23.4	23.4	21.9	21.9	20.5	20.5	20.5	20.5
65°	16.1	17.5	17.5	17.5	17.5	16.1	14.6	14.6	16.1	16.1
67.5°	13.2	13.2	13.2	11.7	11.7	13.2	14.6	16.1	16.1	17.5
70°	10.2	10.2	10.2	11.7	13.2	13.2	16.1	16.1	17.5	17.5
72.5°	7.3	7.3	10.2	11.7	13.2	13.2	13.2	11.7	11.7	11.7
75°	5.8	7.3	10.2	8.8	8.8	8.8	8.8	8.8	8.8	8.8
77.5°	4.4	5.8	5.8	4.4	5.8	5.8	5.8	7.3	7.3	8.8
80°	2.9	2.9	2.9	2.9	2.9	2.9	4.4	4.4	4.4	4.4
82.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
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)