

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: P219898

Luminaire Tested: **MRZ-1-REC-X-2-L40-97-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219898
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-2-L40-97-WFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
55 DEGREE WIDE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL2
Light Source: (1) 4000K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 529.4 lumens
Efficiency: N/A
Efficacy: 60.2 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

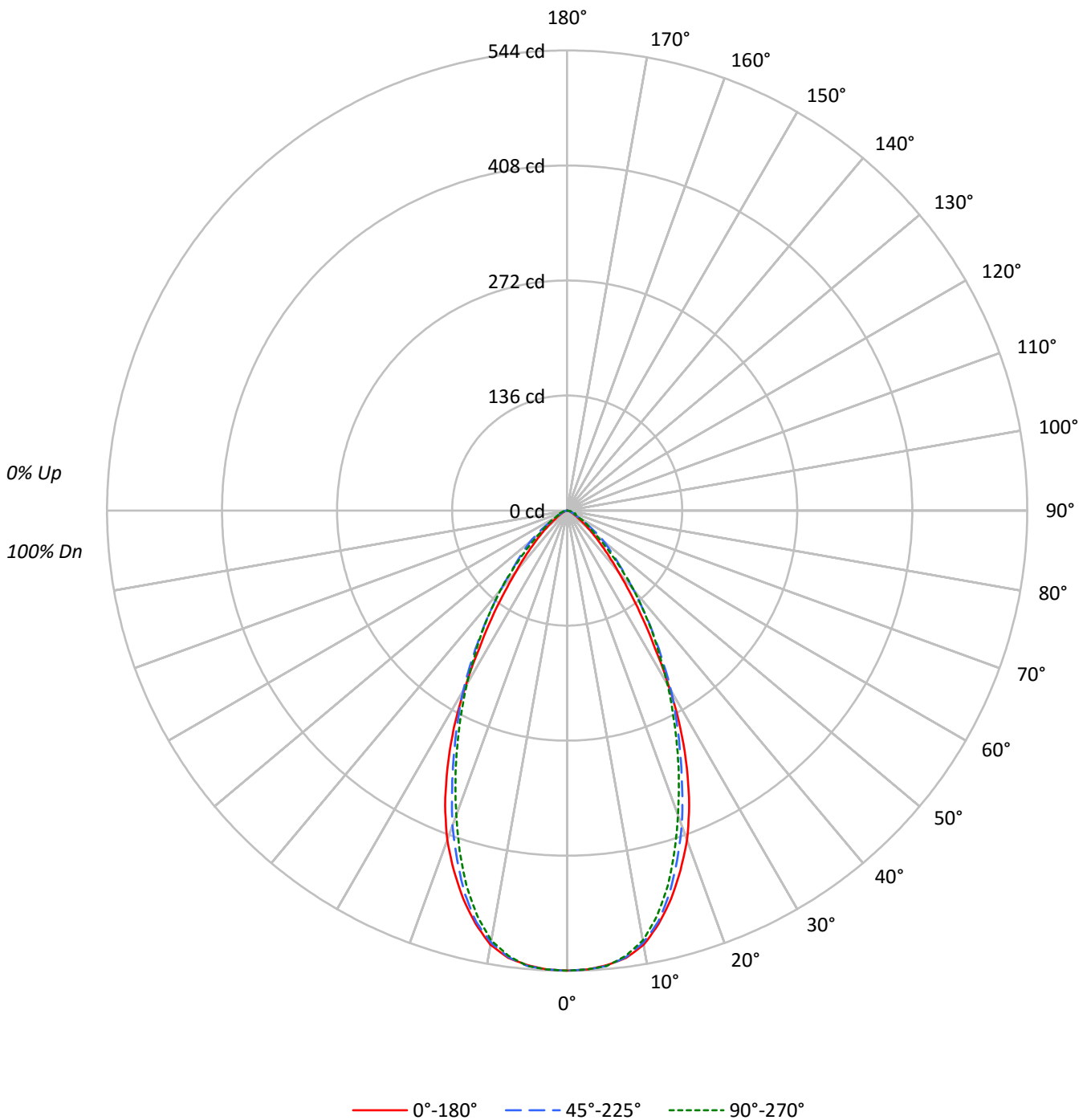
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	268300	268300	268300
5°	267195	267591	267591
10°	261116	259814	258511
15°	242725	239149	234705
20°	217578	207970	201144
25°	182096	172134	167398
30°	137584	140034	135134
35°	93658	106728	105705
40°	60413	78318	78898
45°	38795	57006	52749
50°	24639	43367	32698
55°	14967	24687	23913
60°	9473	13716	15393
65°	7121	10157	11207
70°	6203	8800	15002
75°	4956	6672	9913
80°	2557	4830	7387
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	50.9	9.6
10°-20°	129.7	24.5
20°-30°	146.0	27.6
30°-40°	108.0	20.4
40°-50°	57.6	10.9
50°-60°	23.7	4.5
60°-70°	9.2	1.7
70°-80°	4.1	0.8
80°-90°	0.4	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°	326.5	61.7
0°-40°	434.4	82.1
0°-60°	515.7	97.4
0°-90°	529.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	529.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	544	544	544	544	544	
5°	540	540	540	540	540	51
15°	475	471	468	462	460	132
25°	334	330	316	310	308	152
35°	156	170	177	176	176	98
45°	56	62	82	81	76	45
55°	17	21	29	27	28	17
65°	6	9	9	10	10	6
75°	3	3	4	5	5	3
85°	0	0	0	0	0	0
90°	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°	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8
2.5°	542.9	542.9	542.9	542.9	542.9	542.9	542.9	542.9	542.9	542.9	542.9
5°	539.5	539.5	539.5	539.5	539.5	539.5	539.5	540.3	539.5	540.3	540.3
7.5°	533.4	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5	532.5
10°	521.2	520.4	520.4	518.6	519.5	518.6	518.6	518.6	518.6	518.6	518.6
12.5°	500.4	500.4	499.5	498.6	497.8	497.8	497.8	497.8	497.8	497.8	497.8
15°	475.2	475.2	474.3	472.6	471.7	470.8	470.0	470.0	469.1	469.1	468.2
17.5°	445.6	445.6	443.9	442.2	440.4	439.6	437.8	436.1	435.2	434.4	432.6
20°	414.4	414.4	411.8	410.9	407.4	406.6	404.0	401.3	397.9	397.0	396.1
22.5°	377.0	375.3	374.4	374.4	371.8	370.1	368.3	364.9	359.6	357.9	355.3
25°	334.5	333.6	333.6	332.7	331.8	330.1	331.0	328.4	324.0	320.6	316.2
27.5°	290.1	289.3	288.4	289.3	291.0	291.0	290.1	288.4	286.7	282.3	279.7
30°	241.5	241.5	243.2	245.8	248.5	249.3	250.2	249.3	248.5	245.8	245.8
32.5°	193.7	195.5	197.2	203.3	205.9	207.6	208.5	211.1	211.1	211.1	209.4
35°	155.5	155.5	159.0	163.3	166.8	170.3	171.1	174.6	177.2	177.2	177.2
37.5°	120.8	121.6	125.1	128.6	132.9	134.7	136.4	141.6	145.1	146.8	147.7
40°	93.8	95.6	97.3	100.8	105.1	106.0	107.7	112.1	116.4	119.9	121.6
42.5°	73.0	73.0	74.7	77.3	79.9	82.5	84.3	86.9	92.1	94.7	98.2
45°	55.6	56.5	57.3	59.1	61.7	62.5	64.3	67.8	71.2	74.7	81.7
47.5°	42.6	42.6	43.4	44.3	46.9	47.8	48.6	52.1	55.6	62.5	67.8
50°	32.1	32.1	32.1	33.0	34.7	36.5	37.4	40.0	46.9	52.1	56.5
52.5°	23.5	23.5	23.5	25.2	26.1	26.9	27.8	31.3	40.0	40.8	42.6
55°	17.4	17.4	17.4	18.2	20.0	20.8	21.7	27.8	29.5	32.1	28.7
57.5°	13.0	13.0	13.0	13.9	14.8	15.6	17.4	21.7	24.3	20.8	20.0
60°	9.6	9.6	9.6	10.4	12.2	13.0	14.8	16.5	16.5	14.8	13.9
62.5°	7.8	7.8	7.8	7.8	9.6	11.3	11.3	13.0	11.3	10.4	10.4
65°	6.1	6.1	6.1	6.9	7.8	8.7	9.6	8.7	7.8	7.8	8.7
67.5°	5.2	5.2	5.2	5.2	6.9	6.9	6.9	6.1	6.1	6.1	6.9
70°	4.3	4.3	4.3	4.3	5.2	5.2	5.2	4.3	4.3	5.2	6.1
72.5°	3.5	3.5	3.5	4.3	4.3	4.3	3.5	3.5	3.5	4.3	4.3
75°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.5	3.5	3.5
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	2.6	2.6	2.6
80°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.7
82.5°	0.0	0.9	0.9	0.0	0.0	0.0	0.0	0.9	0.9	0.9	0.9
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°	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8	543.8
2.5°	542.9	542.9	543.8	542.9	542.9	542.9	542.9	542.9	542.9	542.9
5°	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3	540.3
7.5°	532.5	532.5	532.5	531.7	531.7	531.7	531.7	531.7	531.7	530.8
10°	518.6	518.6	517.8	516.9	517.8	516.0	516.0	515.1	515.1	516.0
12.5°	496.9	496.0	494.3	494.3	493.4	492.6	491.7	491.7	490.8	490.8
15°	468.2	466.5	464.8	463.9	462.2	463.0	462.2	460.4	460.4	459.5
17.5°	433.5	431.7	429.1	426.5	426.5	425.7	425.7	423.9	423.1	422.2
20°	393.5	392.7	391.8	389.2	388.3	386.6	384.8	384.8	382.2	383.1
22.5°	353.6	352.7	351.0	350.1	348.4	348.4	346.6	346.6	344.9	344.9
25°	315.3	314.5	312.7	311.9	310.1	310.1	308.4	309.3	307.5	307.5
27.5°	277.1	276.3	274.5	275.4	273.6	272.8	271.9	271.9	271.0	271.0
30°	242.4	239.8	239.8	238.9	238.0	238.0	238.0	236.3	236.3	237.2
32.5°	208.5	206.8	205.9	205.9	206.8	205.9	205.0	205.0	204.1	203.3
35°	177.2	176.3	175.5	175.5	175.5	175.5	175.5	175.5	175.5	175.5
37.5°	147.7	148.5	147.7	148.5	149.4	148.5	147.7	146.8	146.8	146.8
40°	122.5	124.2	125.1	123.4	122.5	122.5	121.6	122.5	121.6	122.5
42.5°	102.5	103.4	101.6	102.5	103.4	103.4	101.6	99.0	97.3	96.4
45°	83.4	85.1	89.5	83.4	80.8	79.9	77.3	76.4	75.6	75.6
47.5°	71.2	74.7	66.0	63.4	61.7	61.7	59.9	58.2	58.2	57.3
50°	58.2	51.3	49.5	47.8	46.0	45.2	44.3	43.4	43.4	42.6
52.5°	39.1	37.4	35.6	34.7	33.9	33.9	33.9	33.9	33.9	33.9
55°	27.8	26.9	26.1	26.9	26.9	27.8	28.7	28.7	28.7	27.8
57.5°	19.1	19.1	20.8	22.6	22.6	22.6	22.6	21.7	21.7	21.7
60°	14.8	15.6	17.4	17.4	17.4	18.2	17.4	16.5	15.6	15.6
62.5°	11.3	13.0	13.9	13.9	13.0	13.0	12.2	12.2	12.2	12.2
65°	9.6	10.4	10.4	10.4	10.4	9.6	8.7	8.7	9.6	9.6
67.5°	7.8	7.8	7.8	6.9	6.9	7.8	8.7	9.6	9.6	10.4
70°	6.1	6.1	6.1	6.9	7.8	7.8	9.6	9.6	10.4	10.4
72.5°	4.3	4.3	6.1	6.9	7.8	7.8	7.8	6.9	6.9	6.9
75°	3.5	4.3	6.1	5.2	5.2	5.2	5.2	5.2	5.2	5.2
77.5°	2.6	3.5	3.5	2.6	3.5	3.5	3.5	4.3	4.3	5.2
80°	1.7	1.7	1.7	1.7	1.7	1.7	2.6	2.6	2.6	2.6
82.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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)