

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: P219767

Luminaire Tested: **MRZ-1-REC-X-2-L27-80-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219767
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-2-L27-80-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL2
Light Source: (1) 2700K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 693.3 lumens
Efficiency: N/A
Efficacy: 78.8 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

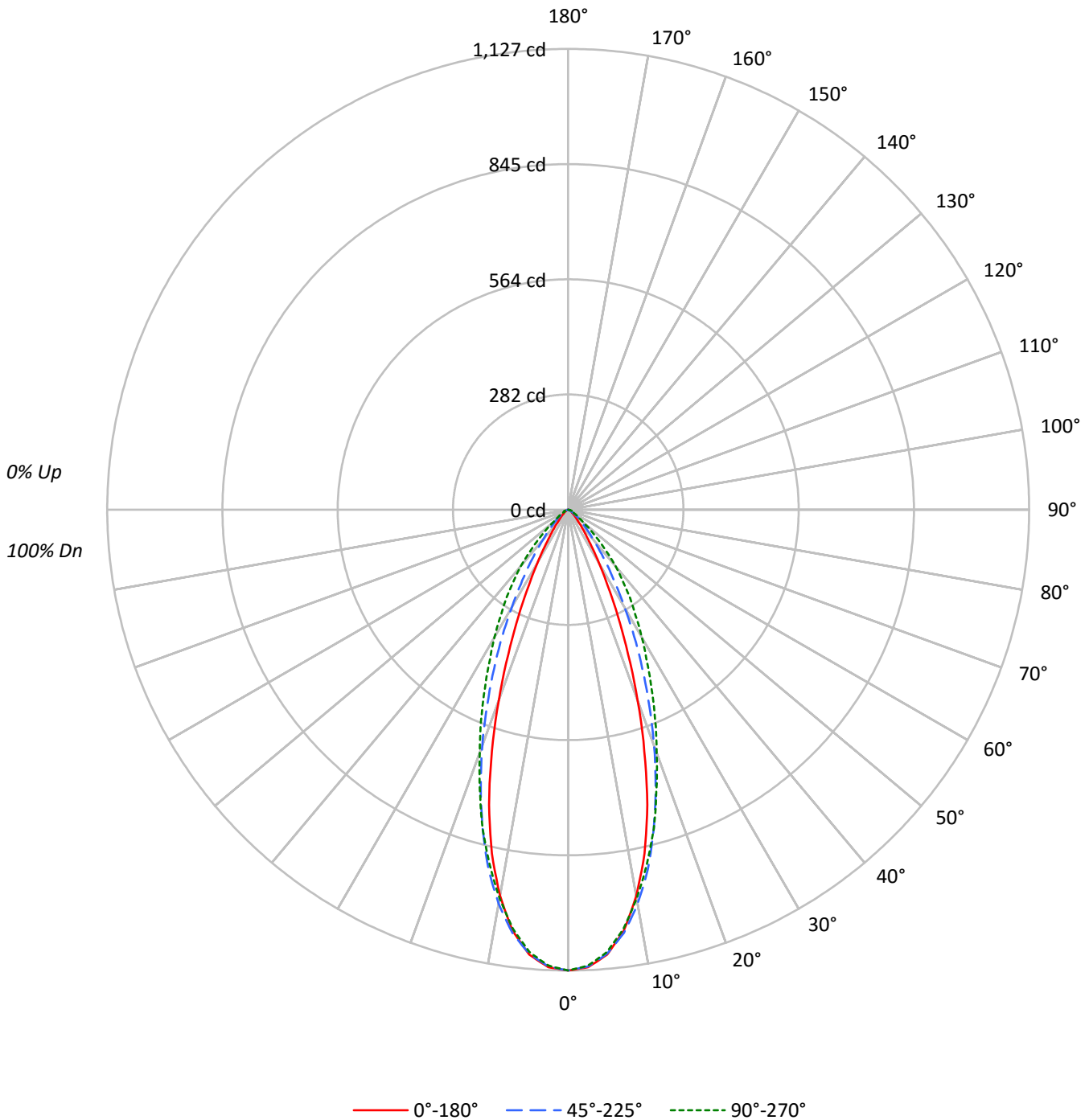
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				
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°	555989	555989	555989
5°	540878	539838	537807
10°	480350	490119	483406
15°	381811	412714	412714
20°	260579	322482	332195
25°	155748	233323	262393
30°	85855	156555	205037
35°	45113	100645	158707
40°	25762	61443	116253
45°	16467	39353	72286
50°	11820	25944	37764
55°	9720	14967	23827
60°	8091	9078	15196
65°	7238	7238	12025
70°	5914	5914	16301
75°	5909	4003	9722
80°	2841	2841	5967
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	100.2	14.4
10°-20°	217.7	31.4
20°-30°	188.3	27.2
30°-40°	108.8	15.7
40°-50°	49.3	7.1
50°-60°	17.4	2.5
60°-70°	7.7	1.1
70°-80°	3.7	0.5
80°-90°	0.3	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°	506.1	73.0
0°-40°	614.9	88.7
0°-60°	681.6	98.3
0°-90°	693.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	693.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1127	1127	1127	1127	1127	
5°	1092	1091	1090	1086	1086	100
15°	748	770	808	815	808	203
25°	286	329	429	491	482	134
35°	75	97	167	249	264	51
45°	24	29	56	98	104	19
55°	11	11	17	23	28	10
65°	6	7	6	9	10	6
75°	3	3	2	4	5	3
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°	1126.9	1126.9	1126.9	1126.9	1126.9	1126.9	1126.9	1126.9	1126.9	1126.9	1126.9
2.5°	1119.8	1117.7	1117.7	1117.7	1118.7	1118.7	1117.7	1117.7	1117.7	1117.7	1117.7
5°	1092.1	1090.0	1090.0	1091.1	1090.0	1091.1	1090.0	1092.1	1091.1	1090.0	1090.0
7.5°	1038.8	1038.8	1038.8	1039.8	1040.8	1040.8	1040.8	1042.9	1042.9	1044.9	1043.9
10°	958.8	960.8	960.8	963.9	967.0	964.9	966.0	972.1	974.2	976.2	978.3
12.5°	861.4	864.4	866.5	868.5	871.6	874.7	875.7	886.0	889.0	893.1	900.3
15°	747.5	746.5	752.7	755.7	765.0	770.1	773.2	783.4	793.7	799.8	808.0
17.5°	619.4	622.4	625.5	633.7	645.0	652.2	656.3	668.6	685.0	698.3	710.6
20°	496.3	502.5	505.5	514.8	526.0	530.1	541.4	557.8	579.4	597.8	614.2
22.5°	382.5	385.6	393.8	404.0	416.3	425.6	436.8	453.2	475.8	494.3	516.8
25°	286.1	287.1	297.4	306.6	319.9	329.2	335.3	356.8	380.4	404.0	428.6
27.5°	208.2	210.2	216.4	225.6	240.0	246.1	256.4	274.8	297.4	323.0	348.6
30°	150.7	150.7	154.8	165.1	175.3	183.6	190.7	208.2	229.7	251.2	274.8
32.5°	105.6	106.6	110.7	117.9	128.2	134.3	139.5	155.9	173.3	194.8	215.3
35°	74.9	75.9	80.0	84.1	92.3	97.4	101.5	113.8	129.2	147.7	167.1
37.5°	54.3	55.4	57.4	60.5	66.7	69.7	73.8	84.1	96.4	110.7	128.2
40°	40.0	41.0	42.0	45.1	49.2	51.3	54.3	61.5	70.8	83.1	95.4
42.5°	30.8	30.8	31.8	33.8	35.9	37.9	40.0	45.1	52.3	61.5	72.8
45°	23.6	23.6	24.6	26.7	27.7	28.7	30.8	33.8	39.0	46.1	56.4
47.5°	19.5	19.5	19.5	20.5	21.5	22.6	23.6	26.7	29.7	36.9	43.1
50°	15.4	15.4	16.4	16.4	17.4	17.4	18.5	20.5	24.6	29.7	33.8
52.5°	13.3	13.3	13.3	13.3	13.3	14.4	14.4	16.4	20.5	22.6	24.6
55°	11.3	11.3	11.3	11.3	11.3	11.3	12.3	14.4	16.4	18.5	17.4
57.5°	9.2	9.2	9.2	9.2	9.2	10.3	10.3	12.3	13.3	12.3	12.3
60°	8.2	8.2	7.2	7.2	8.2	8.2	9.2	10.3	10.3	9.2	9.2
62.5°	7.2	6.2	6.2	6.2	7.2	8.2	8.2	8.2	7.2	7.2	7.2
65°	6.2	5.1	5.1	6.2	6.2	7.2	7.2	6.2	6.2	6.2	6.2
67.5°	5.1	5.1	5.1	5.1	6.2	6.2	6.2	5.1	5.1	5.1	5.1
70°	4.1	4.1	4.1	4.1	5.1	5.1	4.1	4.1	4.1	4.1	4.1
72.5°	3.1	3.1	3.1	4.1	4.1	4.1	3.1	3.1	3.1	4.1	3.1
75°	3.1	3.1	3.1	3.1	3.1	3.1	2.1	2.1	3.1	3.1	2.1
77.5°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1	2.1
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
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°	1126.9	1126.9	1126.9	1126.9	1126.9	1126.9	1126.9	1126.9	1126.9	1126.9
2.5°	1116.7	1116.7	1115.7	1116.7	1116.7	1116.7	1116.7	1115.7	1116.7	1115.7
5°	1089.0	1089.0	1089.0	1087.0	1085.9	1087.0	1085.9	1084.9	1084.9	1085.9
7.5°	1041.8	1041.8	1040.8	1038.8	1038.8	1037.7	1035.7	1034.7	1033.6	1033.6
10°	980.3	979.3	976.2	975.2	975.2	972.1	968.0	968.0	963.9	964.9
12.5°	903.4	901.4	900.3	900.3	896.2	896.2	893.1	892.1	890.1	888.0
15°	811.1	814.2	816.2	815.2	815.2	812.1	811.1	809.1	806.0	808.0
17.5°	719.9	727.0	729.1	732.2	733.2	731.1	728.1	722.9	719.9	717.8
20°	629.6	639.9	647.0	649.1	649.1	648.1	647.0	638.8	637.8	632.7
22.5°	536.3	550.7	563.0	567.1	568.1	569.1	565.0	558.9	556.8	555.8
25°	449.1	468.6	480.9	489.1	491.2	494.3	492.2	489.1	483.0	482.0
27.5°	370.2	390.7	407.1	417.3	422.5	424.5	426.6	421.5	419.4	415.3
30°	299.4	323.0	340.4	354.8	357.9	362.0	363.0	364.0	359.9	359.9
32.5°	238.9	258.4	279.9	294.3	300.5	303.5	308.7	307.6	307.6	306.6
35°	187.7	207.1	226.6	242.0	249.2	253.3	259.4	262.5	263.5	263.5
37.5°	144.6	164.1	181.5	200.0	207.1	212.3	216.4	217.4	218.4	217.4
40°	110.7	129.2	146.6	158.9	164.1	168.2	173.3	177.4	179.5	180.5
42.5°	87.2	100.5	111.8	124.1	132.3	138.4	139.5	138.4	138.4	137.4
45°	65.6	75.9	93.3	96.4	98.4	99.5	102.5	103.6	103.6	103.6
47.5°	52.3	63.6	63.6	67.7	69.7	72.8	73.8	73.8	73.8	73.8
50°	39.0	41.0	44.1	47.2	48.2	48.2	49.2	49.2	49.2	49.2
52.5°	25.6	28.7	29.7	30.8	31.8	32.8	34.9	35.9	34.9	34.9
55°	18.5	19.5	20.5	22.6	22.6	23.6	27.7	27.7	27.7	27.7
57.5°	12.3	13.3	15.4	18.5	18.5	19.5	20.5	20.5	21.5	21.5
60°	10.3	11.3	12.3	13.3	14.4	16.4	18.5	15.4	15.4	15.4
62.5°	8.2	9.2	10.3	11.3	10.3	11.3	12.3	12.3	12.3	12.3
65°	7.2	8.2	7.2	8.2	9.2	9.2	8.2	9.2	9.2	10.3
67.5°	6.2	6.2	6.2	6.2	6.2	7.2	9.2	10.3	11.3	11.3
70°	4.1	4.1	4.1	6.2	6.2	7.2	8.2	10.3	10.3	11.3
72.5°	3.1	3.1	4.1	5.1	6.2	6.2	7.2	7.2	8.2	8.2
75°	3.1	3.1	4.1	4.1	4.1	4.1	5.1	5.1	5.1	5.1
77.5°	2.1	2.1	2.1	2.1	3.1	3.1	3.1	4.1	4.1	4.1
80°	1.0	1.0	1.0	1.0	2.1	2.1	2.1	2.1	2.1	2.1
82.5°	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	1.0	1.0
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)