

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: P219910

Luminaire Tested: **MRZ-1-REC-X-4-L27-97-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219910
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-L27-97-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) 2700K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 779.4 lumens
Efficiency: N/A
Efficacy: 49.3 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

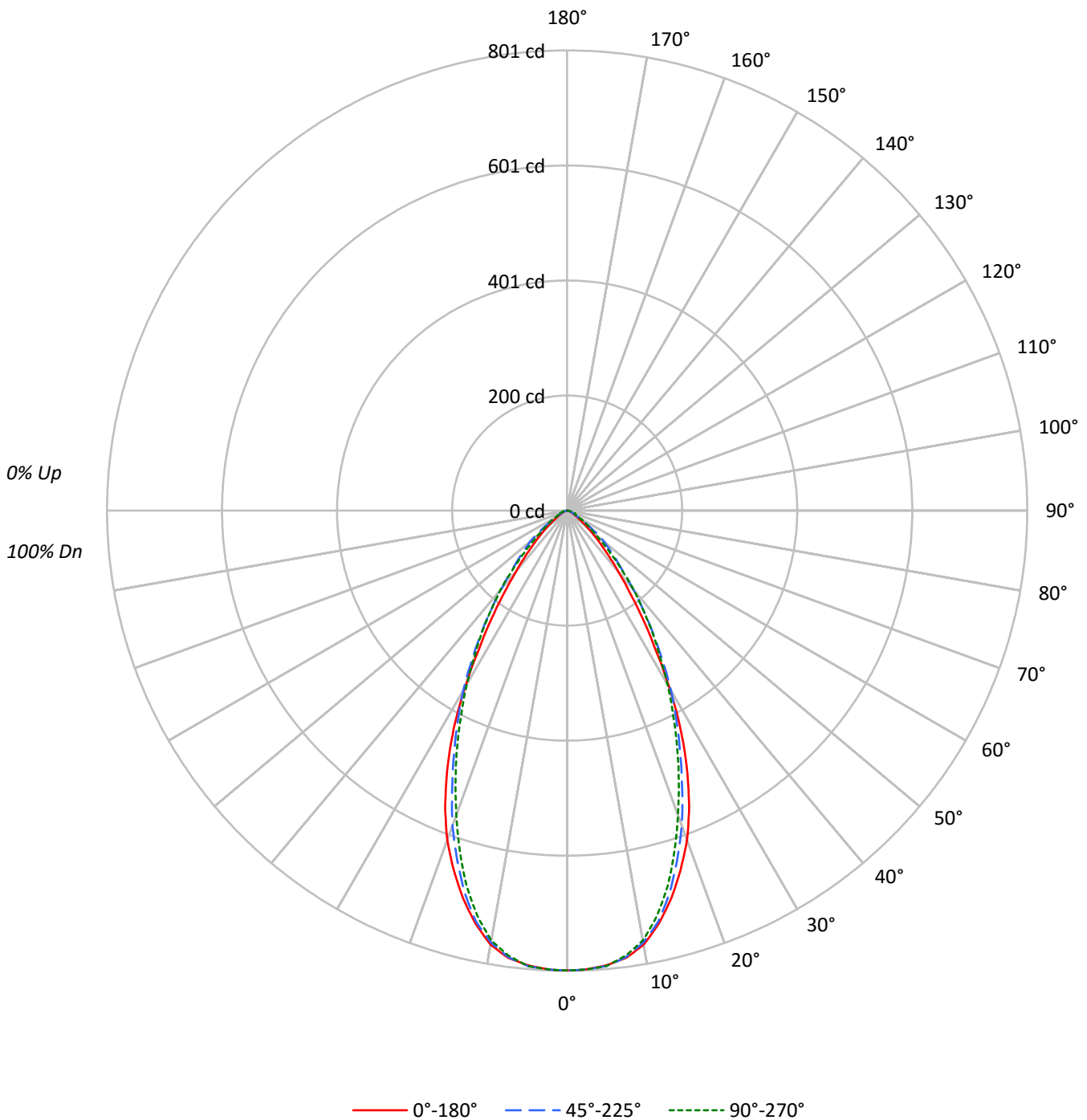
Input Watts (W): 15.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	100	96	95	94	92		
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92	92	92	90	88	86	84		
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84	84	84	83	81	79	77		
3	100	93	88	83	98	92	87	83	89	85	81	87	83	80	84	81	79	77	77	77	76	74	73	71		
4	95	86	80	76	93	85	80	75	83	78	74	81	77	73	79	76	73	71	71	71	70	68	67	65		
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65	65	65	64	62	61	59		
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61	61	61	60	58	57	55		
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	66	61	58	56	56	56	55	53	52	50		
8	76	66	59	55	75	65	59	55	64	58	54	63	58	54	62	57	54	52	52	52	51	49	48	46		
9	72	62	55	51	71	61	55	51	60	55	51	59	54	51	58	54	50	49	49	49	48	46	45	43		
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47	46	46	46	45	43	42	40		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	395000	395000	395000
5°	393339	393983	393983
10°	384410	382506	380603
15°	357345	352083	345545
20°	320277	306205	296125
25°	268055	253411	246443
30°	202530	206176	198884
35°	137868	157141	155575
40°	88945	115287	116124
45°	57075	83869	77659
50°	36306	63784	48126
55°	22021	36300	35181
60°	13913	20229	22695
65°	10507	14943	16461
70°	9232	12983	22071
75°	7244	9722	14678
80°	3694	7387	10797
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.9	9.6
10°-20°	190.9	24.5
20°-30°	214.9	27.6
30°-40°	158.9	20.4
40°-50°	84.7	10.9
50°-60°	34.8	4.5
60°-70°	13.6	1.7
70°-80°	6.1	0.8
80°-90°	0.6	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°	480.6	61.7
0°-40°	639.6	82.1
0°-60°	759.1	97.4
0°-90°	779.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	779.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	801	801	801	801	801	
5°	794	794	796	796	796	75
15°	700	693	689	680	676	195
25°	492	486	466	457	453	223
35°	229	251	261	258	258	145
45°	82	92	120	119	111	66
55°	26	31	42	40	41	24
65°	9	13	13	15	14	9
75°	4	4	5	8	8	4
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°	800.6	800.6	800.6	800.6	800.6	800.6	800.6	800.6	800.6	800.6	800.6
2.5°	799.3	799.3	799.3	799.3	799.3	799.3	799.3	799.3	799.3	799.3	799.3
5°	794.2	794.2	794.2	794.2	794.2	794.2	794.2	795.5	794.2	795.5	795.5
7.5°	785.2	784.0	784.0	784.0	784.0	784.0	784.0	784.0	784.0	784.0	784.0
10°	767.3	766.1	766.1	763.5	764.8	763.5	763.5	763.5	763.5	763.5	763.5
12.5°	736.6	736.6	735.4	734.1	732.8	732.8	732.8	732.8	732.8	732.8	732.8
15°	699.6	699.6	698.3	695.7	694.4	693.2	691.9	691.9	690.6	690.6	689.3
17.5°	656.1	656.1	653.5	651.0	648.4	647.1	644.6	642.0	640.7	639.4	636.9
20°	610.0	610.0	606.2	604.9	599.8	598.5	594.7	590.8	585.7	584.5	583.2
22.5°	555.0	552.5	551.2	551.2	547.4	544.8	542.3	537.1	529.5	526.9	523.1
25°	492.4	491.1	491.1	489.8	488.5	486.0	487.3	483.4	477.0	471.9	465.5
27.5°	427.1	425.9	424.6	425.9	428.4	428.4	427.1	424.6	422.0	415.6	411.8
30°	355.5	355.5	358.1	361.9	365.8	367.0	368.3	367.0	365.8	361.9	361.9
32.5°	285.2	287.8	290.3	299.3	303.1	305.7	306.9	310.8	310.8	310.8	308.2
35°	228.9	228.9	234.0	240.4	245.5	250.7	251.9	257.1	260.9	260.9	260.9
37.5°	177.8	179.0	184.2	189.3	195.7	198.2	200.8	208.5	213.6	216.1	217.4
40°	138.1	140.7	143.2	148.4	154.7	156.0	158.6	165.0	171.4	176.5	179.0
42.5°	107.4	107.4	110.0	113.8	117.7	121.5	124.1	127.9	135.6	139.4	144.5
45°	81.8	83.1	84.4	87.0	90.8	92.1	94.6	99.8	104.9	110.0	120.2
47.5°	62.7	62.7	63.9	65.2	69.1	70.3	71.6	76.7	81.8	92.1	99.8
50°	47.3	47.3	47.3	48.6	51.2	53.7	55.0	58.8	69.1	76.7	83.1
52.5°	34.5	34.5	34.5	37.1	38.4	39.6	40.9	46.0	58.8	60.1	62.7
55°	25.6	25.6	25.6	26.9	29.4	30.7	32.0	40.9	43.5	47.3	42.2
57.5°	19.2	19.2	19.2	20.5	21.7	23.0	25.6	32.0	35.8	30.7	29.4
60°	14.1	14.1	14.1	15.3	17.9	19.2	21.7	24.3	24.3	21.7	20.5
62.5°	11.5	11.5	11.5	11.5	14.1	16.6	16.6	19.2	16.6	15.3	15.3
65°	9.0	9.0	9.0	10.2	11.5	12.8	14.1	12.8	11.5	11.5	12.8
67.5°	7.7	7.7	7.7	7.7	10.2	10.2	10.2	9.0	9.0	9.0	10.2
70°	6.4	6.4	6.4	6.4	7.7	7.7	7.7	6.4	6.4	7.7	9.0
72.5°	5.1	5.1	5.1	6.4	6.4	6.4	5.1	5.1	5.1	6.4	6.4
75°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	5.1	5.1	5.1
77.5°	2.6	2.6	2.6	2.6	2.6	2.6	2.6	2.6	3.8	3.8	3.8
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	2.6
82.5°	0.0	1.3	1.3	0.0	0.0	0.0	0.0	1.3	1.3	1.3	1.3
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°	800.6	800.6	800.6	800.6	800.6	800.6	800.6	800.6	800.6	800.6
2.5°	799.3	799.3	800.6	799.3	799.3	799.3	799.3	799.3	799.3	799.3
5°	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5	795.5
7.5°	784.0	784.0	784.0	782.7	782.7	782.7	782.7	782.7	782.7	781.4
10°	763.5	763.5	762.2	760.9	762.2	759.7	759.7	758.4	758.4	759.7
12.5°	731.5	730.2	727.7	727.7	726.4	725.1	723.9	723.9	722.6	722.6
15°	689.3	686.8	684.2	682.9	680.4	681.6	680.4	677.8	677.8	676.5
17.5°	638.2	635.6	631.8	627.9	627.9	626.7	626.7	624.1	622.8	621.5
20°	579.3	578.1	576.8	572.9	571.7	569.1	566.5	566.5	562.7	564.0
22.5°	520.5	519.2	516.7	515.4	512.8	512.8	510.3	510.3	507.7	507.7
25°	464.2	463.0	460.4	459.1	456.6	456.6	454.0	455.3	452.7	452.7
27.5°	408.0	406.7	404.1	405.4	402.9	401.6	400.3	400.3	399.0	399.0
30°	356.8	353.0	353.0	351.7	350.4	350.4	350.4	347.9	347.9	349.1
32.5°	306.9	304.4	303.1	303.1	304.4	303.1	301.8	301.8	300.5	299.3
35°	260.9	259.6	258.3	258.3	258.3	258.3	258.3	258.3	258.3	258.3
37.5°	217.4	218.7	217.4	218.7	220.0	218.7	217.4	216.1	216.1	216.1
40°	180.3	182.9	184.2	181.6	180.3	180.3	179.0	180.3	179.0	180.3
42.5°	150.9	152.2	149.6	150.9	152.2	152.2	149.6	145.8	143.2	142.0
45°	122.8	125.3	131.7	122.8	118.9	117.7	113.8	112.5	111.3	111.3
47.5°	104.9	110.0	97.2	93.4	90.8	90.8	88.2	85.7	85.7	84.4
50°	85.7	75.5	72.9	70.3	67.8	66.5	65.2	63.9	63.9	62.7
52.5°	57.6	55.0	52.4	51.2	49.9	49.9	49.9	49.9	49.9	49.9
55°	40.9	39.6	38.4	39.6	39.6	40.9	42.2	42.2	42.2	40.9
57.5°	28.1	28.1	30.7	33.3	33.3	33.3	33.3	32.0	32.0	32.0
60°	21.7	23.0	25.6	25.6	25.6	26.9	25.6	24.3	23.0	23.0
62.5°	16.6	19.2	20.5	20.5	19.2	19.2	17.9	17.9	17.9	17.9
65°	14.1	15.3	15.3	15.3	15.3	14.1	12.8	12.8	14.1	14.1
67.5°	11.5	11.5	11.5	10.2	10.2	11.5	12.8	14.1	14.1	15.3
70°	9.0	9.0	9.0	10.2	11.5	11.5	14.1	14.1	15.3	15.3
72.5°	6.4	6.4	9.0	10.2	11.5	11.5	11.5	10.2	10.2	10.2
75°	5.1	6.4	9.0	7.7	7.7	7.7	7.7	7.7	7.7	7.7
77.5°	3.8	5.1	5.1	3.8	5.1	5.1	5.1	6.4	6.4	7.7
80°	2.6	2.6	2.6	2.6	2.6	2.6	3.8	3.8	3.8	3.8
82.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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)