

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: P226135

Luminaire Tested: **MRZ-1-REC-X-1-L30-97-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226135
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14872)
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-1-L30-97-NFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1
Light Source: (1) 3000K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 369.7 lumens
Efficiency: N/A
Efficacy: 68.5 lumens/watt
Spacing Criteria (0/90/45): 0.4 / 0.87 / 0.54
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

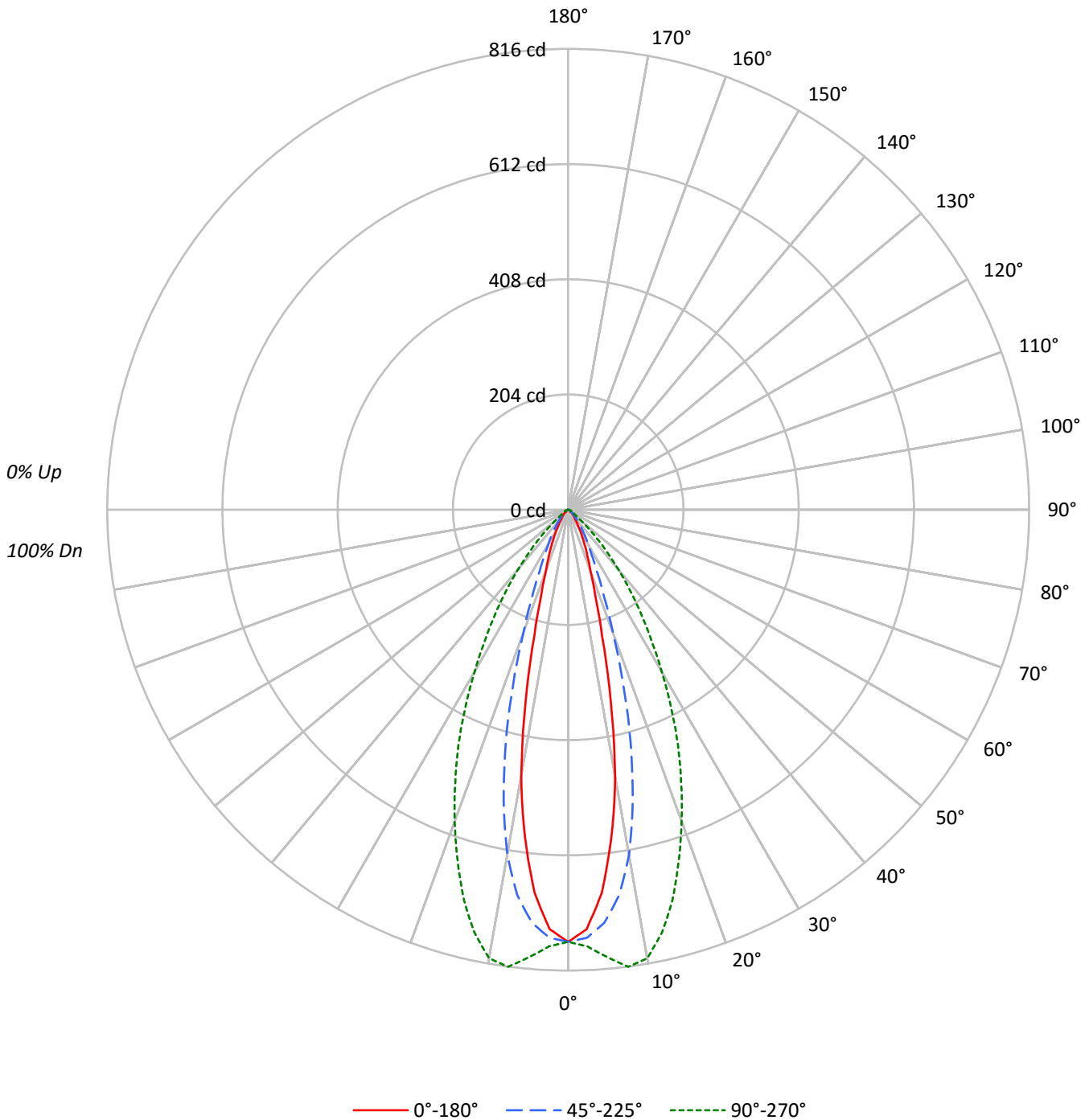
Input Watts (W): 5.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88
3	104	98	93	89	102	96	92	88	94	90	87	91	88	86	89	87	84	83
4	99	92	87	83	97	91	86	82	89	85	81	87	83	80	85	82	80	78
5	95	87	81	77	93	86	81	77	84	80	76	82	79	76	81	78	75	74
6	90	82	77	73	89	81	76	72	80	75	72	79	75	72	77	74	71	70
7	87	78	72	69	85	77	72	68	76	71	68	75	71	68	74	70	67	66
8	83	74	69	65	82	74	68	65	73	68	65	72	67	64	71	67	64	63
9	80	71	65	62	79	70	65	62	69	65	61	69	64	61	68	64	61	60
10	77	68	62	59	76	67	62	59	66	62	59	66	61	58	65	61	58	57

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	377435	377435	377435
5°	337225	363623	393933
10°	239674	310815	403949
15°	118400	217696	364904
20°	60590	121180	308463
25°	38107	65108	250199
30°	22902	39879	188914
35°	14756	25779	134977
40°	10434	16874	89138
45°	8024	11652	49889
50°	4759	7983	21261
55°	3613	5333	11182
60°	3059	3651	7203
65°	3035	3035	6187
70°	3029	2308	8223
75°	3050	2097	5909
80°	1421	1421	3125
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	67.0	18.1
10°-20°	124.9	33.8
20°-30°	93.8	25.4
30°-40°	51.6	13.9
40°-50°	20.9	5.7
50°-60°	6.7	1.8
60°-70°	3.2	0.9
70°-80°	1.6	0.4
80°-90°	0.1	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°	285.8	77.3
0°-40°	337.3	91.2
0°-60°	364.9	98.7
0°-90°	369.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	369.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	765	765	765	765	765	
5°	681	697	734	778	795	58
15°	232	273	426	634	714	68
25°	70	78	120	349	460	33
35°	24	29	43	130	224	16
45°	12	11	17	32	72	9
55°	4	5	6	8	13	4
65°	3	3	3	3	5	3
75°	2	1	1	1	3	1
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°	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0
2.5°	743.6	743.6	743.2	744.7	747.8	747.8	749.4	750.9	752.5	755.7	758.8
5°	680.9	682.0	681.5	687.3	691.4	696.7	698.2	707.1	713.9	724.3	734.2
7.5°	586.0	586.5	591.1	597.9	608.4	614.2	621.9	634.5	649.6	669.5	688.8
10°	478.4	478.4	485.7	495.6	503.9	515.4	521.2	541.5	563.5	591.1	620.4
12.5°	348.3	348.3	360.8	368.1	383.3	393.2	401.6	425.1	453.8	489.3	527.9
15°	231.8	236.0	240.8	250.7	264.2	272.6	278.3	302.4	336.3	376.0	426.2
17.5°	157.7	160.3	163.5	171.3	178.1	182.3	187.5	207.8	232.4	271.0	323.8
20°	115.4	118.0	120.6	124.3	128.5	130.6	134.2	144.6	162.4	189.6	230.8
22.5°	89.3	91.4	93.5	95.6	98.7	100.2	102.4	109.2	118.5	135.8	165.5
25°	70.0	70.0	72.6	74.2	76.8	78.4	81.0	85.6	92.9	102.8	119.6
27.5°	53.3	53.8	55.3	57.5	59.5	61.1	63.7	67.9	72.6	79.4	89.8
30°	40.2	41.2	42.3	43.8	46.5	48.0	49.6	53.3	57.5	62.7	70.0
32.5°	30.8	31.9	32.4	33.9	36.1	37.0	38.7	41.8	45.4	50.6	55.3
35°	24.5	24.5	25.6	26.2	28.2	29.3	30.3	32.4	36.1	39.2	42.8
37.5°	19.3	19.8	20.4	20.9	22.5	22.9	23.5	25.1	27.1	30.3	33.4
40°	16.2	16.7	16.7	16.7	17.2	17.2	17.8	18.8	20.9	22.9	26.2
42.5°	13.6	13.6	13.6	13.6	13.6	13.6	14.1	14.6	16.2	18.3	20.9
45°	11.5	11.0	11.0	11.0	11.0	11.0	11.0	12.1	13.0	14.6	16.7
47.5°	8.4	8.8	8.8	8.8	8.8	8.8	9.4	9.4	10.4	12.1	13.0
50°	6.2	6.8	6.8	7.3	7.3	7.3	7.3	7.9	8.8	9.9	10.4
52.5°	5.3	5.3	5.3	5.7	5.7	5.7	5.7	6.2	7.3	7.9	8.4
55°	4.2	4.2	4.2	4.2	4.7	4.7	5.3	5.7	6.2	6.2	6.2
57.5°	3.7	3.7	3.7	3.7	3.7	4.2	4.2	4.7	5.3	4.7	4.7
60°	3.1	3.1	3.1	3.1	3.1	3.7	3.7	4.2	3.7	3.7	3.7
62.5°	3.1	3.1	2.6	2.6	3.1	3.1	3.1	3.1	3.1	3.1	2.6
65°	2.6	2.6	2.6	2.6	2.6	3.1	3.1	2.6	2.6	2.1	2.6
67.5°	2.6	2.6	2.1	2.6	2.6	2.6	2.6	2.1	2.1	2.1	2.1
70°	2.1	2.1	2.1	2.1	2.1	2.1	2.1	1.6	1.6	1.6	1.6
72.5°	1.6	1.6	1.6	2.1	1.6	1.6	1.6	1.6	1.6	1.6	1.6
75°	1.6	1.6	1.6	1.6	1.6	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.5	0.5
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
82.5°	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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°	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0	765.0
2.5°	761.4	763.5	766.1	768.7	769.8	770.8	772.4	773.4	774.0	774.0
5°	744.7	755.1	765.0	773.4	777.6	781.3	787.5	791.7	795.4	795.4
7.5°	709.1	731.1	751.5	769.2	777.1	785.4	798.5	808.4	813.6	816.3
10°	651.2	684.2	715.0	742.1	754.6	765.0	783.9	796.9	803.1	806.3
12.5°	572.4	615.7	654.9	688.8	704.0	716.5	735.8	753.1	761.9	766.6
15°	480.4	531.6	578.1	616.8	634.0	649.6	675.2	696.1	708.6	714.4
17.5°	383.3	446.5	499.3	543.6	559.3	576.5	606.3	630.3	647.0	651.2
20°	293.5	361.9	422.0	467.9	486.2	503.4	536.9	562.4	580.7	587.5
22.5°	213.6	279.9	346.3	395.3	416.2	435.0	468.4	496.2	515.4	522.2
25°	152.5	206.3	272.1	328.0	348.9	367.6	401.1	429.3	449.1	459.6
27.5°	111.2	147.8	205.8	263.2	285.7	305.5	336.3	365.6	384.4	394.3
30°	81.5	105.5	148.8	204.7	229.2	248.6	281.5	306.0	326.4	331.6
32.5°	62.1	75.7	105.5	151.0	175.9	196.4	228.2	251.7	267.9	273.6
35°	47.5	55.9	73.6	108.1	129.5	150.4	180.7	204.7	218.8	224.1
37.5°	37.0	42.8	53.3	76.2	92.9	111.2	141.0	160.9	172.4	179.2
40°	29.7	33.9	40.7	54.3	65.8	79.4	104.4	123.3	134.7	138.4
42.5°	24.0	27.1	30.8	38.7	46.5	56.4	76.8	89.8	99.3	101.3
45°	18.8	20.9	25.1	28.7	31.9	37.0	51.2	63.2	68.9	71.5
47.5°	15.2	17.8	17.8	19.8	22.0	25.6	34.5	41.2	45.4	46.5
50°	11.5	12.1	13.0	14.1	15.2	16.2	20.9	25.1	27.7	27.7
52.5°	8.4	8.8	8.8	9.4	9.9	11.0	13.6	15.7	17.2	17.8
55°	6.2	6.2	6.8	7.3	7.9	8.4	9.9	12.1	12.5	13.0
57.5°	4.7	4.7	5.3	5.7	6.2	6.2	7.9	8.8	9.9	11.0
60°	3.7	3.7	4.2	4.2	4.7	5.3	6.8	7.3	7.3	7.3
62.5°	3.1	3.1	3.1	3.7	3.7	3.7	4.7	6.2	6.8	6.8
65°	2.6	2.6	2.6	2.6	3.1	3.1	3.7	4.2	5.3	5.3
67.5°	2.1	2.1	2.1	2.1	2.6	2.6	3.7	4.2	5.3	5.7
70°	1.6	1.6	1.6	2.1	2.1	2.6	3.1	4.2	5.3	5.7
72.5°	1.1	1.1	1.6	1.6	1.6	2.1	2.6	3.1	3.7	3.7
75°	1.1	1.1	1.1	1.1	1.1	1.1	1.6	2.6	2.6	3.1
77.5°	1.1	1.1	0.5	1.1	1.1	1.1	1.1	1.6	2.1	2.1
80°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	1.1
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)