

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: P219766

Luminaire Tested: **MRZ-1-REC-X-1H-L40-97-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219766
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-1H-L40-97-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1
Light Source: (1) 4000K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 429.5 lumens
Efficiency: N/A
Efficacy: 63.2 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

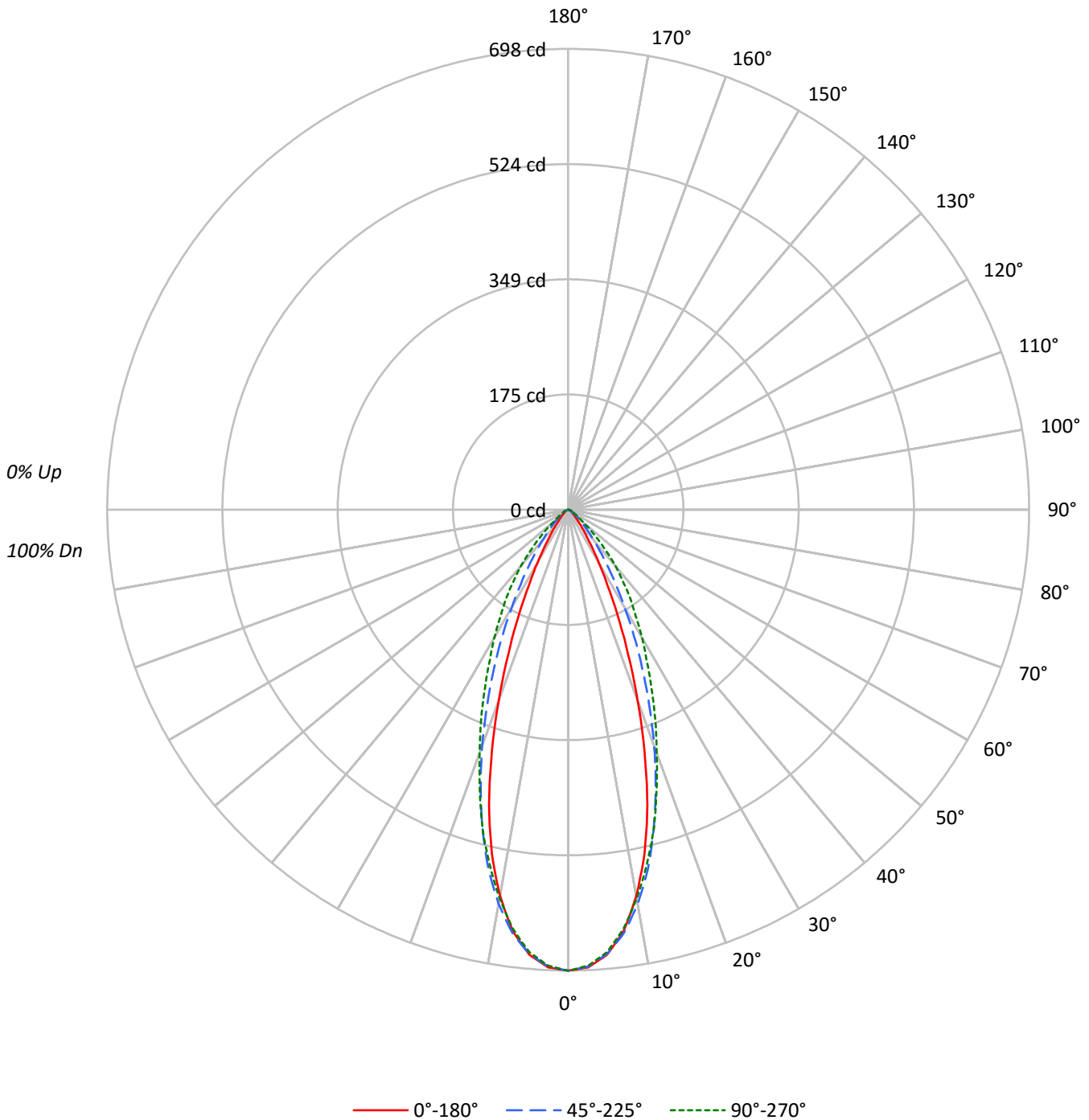
Input Watts (W): 6.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	344478	344478	344478
5°	335096	334501	333214
10°	297588	303650	299492
15°	236595	255699	255699
20°	161451	199832	205817
25°	96519	144588	162553
30°	53211	97021	127044
35°	27947	62399	98356
40°	15973	38064	72006
45°	10187	24351	44795
50°	7292	16119	23411
55°	6021	9290	14795
60°	5032	5625	9374
65°	4436	4436	7472
70°	3606	3606	10098
75°	3622	2478	6100
80°	1705	1705	3694
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	62.1	14.4
10°-20°	134.9	31.4
20°-30°	116.7	27.2
30°-40°	67.4	15.7
40°-50°	30.5	7.1
50°-60°	10.8	2.5
60°-70°	4.8	1.1
70°-80°	2.3	0.5
80°-90°	0.2	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°	313.6	73.0
0°-40°	381.0	88.7
0°-60°	422.3	98.3
0°-90°	429.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	429.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	698	698	698	698	698	
5°	677	676	675	673	673	62
15°	463	477	501	505	501	126
25°	177	204	266	304	299	83
35°	46	60	104	154	163	31
45°	15	18	35	61	64	12
55°	7	7	11	14	17	6
65°	4	4	4	6	6	4
75°	2	2	1	2	3	2
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°	698.2	698.2	698.2	698.2	698.2	698.2	698.2	698.2	698.2	698.2	698.2
2.5°	693.8	692.5	692.5	692.5	693.1	693.1	692.5	692.5	692.5	692.5	692.5
5°	676.6	675.4	675.4	676.0	675.4	676.0	675.4	676.6	676.0	675.4	675.4
7.5°	643.6	643.6	643.6	644.2	644.9	644.9	644.9	646.1	646.1	647.4	646.8
10°	594.0	595.3	595.3	597.2	599.1	597.8	598.5	602.3	603.6	604.8	606.1
12.5°	533.7	535.6	536.8	538.1	540.0	541.9	542.6	548.9	550.8	553.4	557.8
15°	463.2	462.5	466.3	468.2	474.0	477.1	479.0	485.4	491.7	495.6	500.6
17.5°	383.7	385.6	387.5	392.6	399.6	404.1	406.6	414.2	424.4	432.7	440.3
20°	307.5	311.3	313.2	318.9	325.9	328.5	335.5	345.6	359.0	370.4	380.6
22.5°	237.0	238.9	244.0	250.3	257.9	263.7	270.6	280.8	294.8	306.2	320.2
25°	177.3	177.9	184.2	190.0	198.2	203.9	207.8	221.1	235.7	250.3	265.6
27.5°	129.0	130.2	134.1	139.8	148.7	152.5	158.8	170.3	184.2	200.1	216.0
30°	93.4	93.4	95.9	102.3	108.6	113.7	118.2	129.0	142.3	155.7	170.3
32.5°	65.4	66.1	68.6	73.1	79.4	83.2	86.4	96.6	107.4	120.7	133.4
35°	46.4	47.0	49.6	52.1	57.2	60.4	62.9	70.5	80.1	91.5	103.6
37.5°	33.7	34.3	35.6	37.5	41.3	43.2	45.7	52.1	59.7	68.6	79.4
40°	24.8	25.4	26.0	28.0	30.5	31.8	33.7	38.1	43.8	51.5	59.1
42.5°	19.1	19.1	19.7	21.0	22.2	23.5	24.8	28.0	32.4	38.1	45.1
45°	14.6	14.6	15.2	16.5	17.2	17.8	19.1	21.0	24.1	28.6	34.9
47.5°	12.1	12.1	12.1	12.7	13.3	14.0	14.6	16.5	18.4	22.9	26.7
50°	9.5	9.5	10.2	10.2	10.8	10.8	11.4	12.7	15.2	18.4	21.0
52.5°	8.3	8.3	8.3	8.3	8.3	8.9	8.9	10.2	12.7	14.0	15.2
55°	7.0	7.0	7.0	7.0	7.0	7.0	7.6	8.9	10.2	11.4	10.8
57.5°	5.7	5.7	5.7	5.7	5.7	6.4	6.4	7.6	8.3	7.6	7.6
60°	5.1	5.1	4.4	4.4	5.1	5.1	5.7	6.4	6.4	5.7	5.7
62.5°	4.4	3.8	3.8	3.8	4.4	5.1	5.1	5.1	4.4	4.4	4.4
65°	3.8	3.2	3.2	3.8	3.8	4.4	4.4	3.8	3.8	3.8	3.8
67.5°	3.2	3.2	3.2	3.2	3.8	3.8	3.8	3.2	3.2	3.2	3.2
70°	2.5	2.5	2.5	2.5	3.2	3.2	2.5	2.5	2.5	2.5	2.5
72.5°	1.9	1.9	1.9	2.5	2.5	2.5	1.9	1.9	1.9	2.5	1.9
75°	1.9	1.9	1.9	1.9	1.9	1.9	1.3	1.3	1.9	1.9	1.3
77.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
80°	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6
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°	698.2	698.2	698.2	698.2	698.2	698.2	698.2	698.2	698.2	698.2
2.5°	691.9	691.9	691.2	691.9	691.9	691.9	691.9	691.2	691.9	691.2
5°	674.7	674.7	674.7	673.4	672.8	673.4	672.8	672.2	672.2	672.8
7.5°	645.5	645.5	644.9	643.6	643.6	642.9	641.7	641.0	640.4	640.4
10°	607.4	606.7	604.8	604.2	604.2	602.3	599.7	599.7	597.2	597.8
12.5°	559.7	558.5	557.8	557.8	555.3	555.3	553.4	552.7	551.5	550.2
15°	502.5	504.4	505.7	505.1	505.1	503.2	502.5	501.3	499.4	500.6
17.5°	446.0	450.4	451.7	453.6	454.3	453.0	451.1	447.9	446.0	444.7
20°	390.1	396.4	400.9	402.2	402.2	401.5	400.9	395.8	395.2	392.0
22.5°	332.3	341.2	348.8	351.3	352.0	352.6	350.1	346.3	345.0	344.3
25°	278.3	290.3	298.0	303.1	304.3	306.2	305.0	303.1	299.2	298.6
27.5°	229.4	242.1	252.2	258.6	261.8	263.0	264.3	261.1	259.8	257.3
30°	185.5	200.1	210.9	219.8	221.7	224.3	224.9	225.5	223.0	223.0
32.5°	148.0	160.1	173.4	182.3	186.2	188.1	191.2	190.6	190.6	190.0
35°	116.3	128.3	140.4	149.9	154.4	156.9	160.7	162.6	163.3	163.3
37.5°	89.6	101.7	112.5	123.9	128.3	131.5	134.1	134.7	135.3	134.7
40°	68.6	80.1	90.9	98.5	101.7	104.2	107.4	109.9	111.2	111.8
42.5°	54.0	62.3	69.3	76.9	82.0	85.8	86.4	85.8	85.8	85.1
45°	40.7	47.0	57.8	59.7	61.0	61.6	63.5	64.2	64.2	64.2
47.5°	32.4	39.4	39.4	41.9	43.2	45.1	45.7	45.7	45.7	45.7
50°	24.1	25.4	27.3	29.2	29.9	29.9	30.5	30.5	30.5	30.5
52.5°	15.9	17.8	18.4	19.1	19.7	20.3	21.6	22.2	21.6	21.6
55°	11.4	12.1	12.7	14.0	14.0	14.6	17.2	17.2	17.2	17.2
57.5°	7.6	8.3	9.5	11.4	11.4	12.1	12.7	12.7	13.3	13.3
60°	6.4	7.0	7.6	8.3	8.9	10.2	11.4	9.5	9.5	9.5
62.5°	5.1	5.7	6.4	7.0	6.4	7.0	7.6	7.6	7.6	7.6
65°	4.4	5.1	4.4	5.1	5.7	5.7	5.1	5.7	5.7	6.4
67.5°	3.8	3.8	3.8	3.8	3.8	4.4	5.7	6.4	7.0	7.0
70°	2.5	2.5	2.5	3.8	3.8	4.4	5.1	6.4	6.4	7.0
72.5°	1.9	1.9	2.5	3.2	3.8	3.8	4.4	4.4	5.1	5.1
75°	1.9	1.9	2.5	2.5	2.5	2.5	3.2	3.2	3.2	3.2
77.5°	1.3	1.3	1.3	1.3	1.9	1.9	1.9	2.5	2.5	2.5
80°	0.6	0.6	0.6	0.6	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	0.6	0.6	0.6	0.6	0.6	0.0	0.0	0.6	0.6	0.6
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)