

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: P219772

Luminaire Tested: **MRZ-1-REC-X-2-L30-97-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219772
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-L30-97-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL2
Light Source: (1) 3000K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 540.8 lumens
Efficiency: N/A
Efficacy: 61.5 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

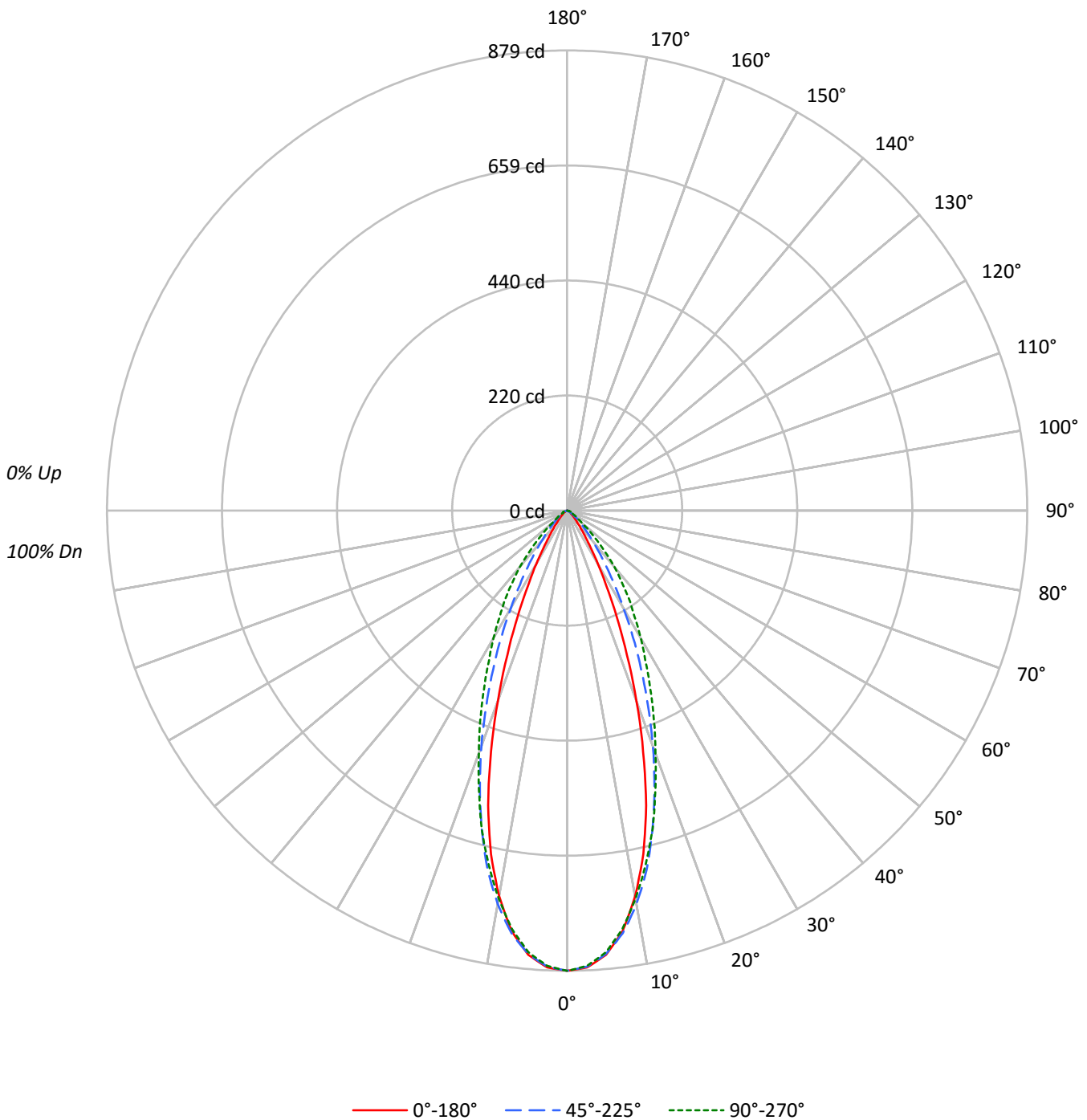
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93					93			
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	92	90	89	87					87			
3	103	96	91	87	101	95	90	87	92	88	85	90	87	84	88	85	83	81					81			
4	98	90	85	81	96	89	84	80	87	83	79	85	81	78	83	80	77	76					76			
5	93	85	79	75	91	84	78	74	82	77	74	80	76	73	79	75	72	71					71			
6	88	80	74	70	87	79	74	70	78	73	69	76	72	69	75	71	68	67					67			
7	84	75	70	65	83	75	69	65	73	68	65	72	68	65	71	67	64	63					63			
8	81	71	66	62	79	71	65	61	70	65	61	69	64	61	68	64	61	59					59			
9	77	68	62	58	76	67	62	58	66	61	58	65	61	58	65	61	57	56					56			
10	74	64	59	55	73	64	59	55	63	58	55	62	58	55	62	58	55	53					53			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	433730	433730	433730
5°	421916	421123	419538
10°	374691	382306	377096
15°	297838	321947	321947
20°	203244	251548	259109
25°	121507	182042	204634
30°	66997	122145	159973
35°	35175	78541	123834
40°	20095	47918	90684
45°	12838	30701	56378
50°	9211	20264	29474
55°	7570	11698	18580
60°	6315	7105	11841
65°	5604	5604	9339
70°	4616	4616	12694
75°	4575	3050	7625
80°	2273	2273	4546
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.1	14.4
10°-20°	169.8	31.4
20°-30°	146.9	27.2
30°-40°	84.9	15.7
40°-50°	38.4	7.1
50°-60°	13.6	2.5
60°-70°	6.0	1.1
70°-80°	2.9	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°	394.8	73.0
0°-40°	479.7	88.7
0°-60°	531.7	98.3
0°-90°	540.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	540.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	879	879	879	879	879	
5°	852	851	850	847	847	78
15°	583	601	630	636	630	158
25°	223	257	334	383	376	105
35°	58	76	130	194	206	39
45°	18	22	44	77	81	15
55°	9	9	14	18	22	8
65°	5	6	5	7	8	5
75°	2	2	2	3	4	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°	879.1	879.1	879.1	879.1	879.1	879.1	879.1	879.1	879.1	879.1	879.1
2.5°	873.5	871.9	871.9	871.9	872.7	872.7	871.9	871.9	871.9	871.9	871.9
5°	851.9	850.3	850.3	851.1	850.3	851.1	850.3	851.9	851.1	850.3	850.3
7.5°	810.3	810.3	810.3	811.1	811.9	811.9	811.9	813.5	813.5	815.1	814.3
10°	747.9	749.5	749.5	751.9	754.3	752.7	753.5	758.3	759.9	761.5	763.1
12.5°	671.9	674.3	675.9	677.5	679.9	682.3	683.1	691.1	693.5	696.7	702.3
15°	583.1	582.3	587.1	589.5	596.7	600.7	603.1	611.1	619.1	623.9	630.3
17.5°	483.1	485.5	487.9	494.3	503.1	508.7	511.9	521.5	534.3	544.7	554.3
20°	387.1	391.9	394.3	401.5	410.3	413.5	422.3	435.1	451.9	466.3	479.1
22.5°	298.4	300.8	307.2	315.2	324.8	332.0	340.8	353.5	371.1	385.5	403.1
25°	223.2	224.0	232.0	239.2	249.6	256.8	261.6	278.4	296.8	315.2	334.4
27.5°	162.4	164.0	168.8	176.0	187.2	192.0	200.0	214.4	232.0	252.0	272.0
30°	117.6	117.6	120.8	128.8	136.8	143.2	148.8	162.4	179.2	196.0	214.4
32.5°	82.4	83.2	86.4	92.0	100.0	104.8	108.8	121.6	135.2	152.0	168.0
35°	58.4	59.2	62.4	65.6	72.0	76.0	79.2	88.8	100.8	115.2	130.4
37.5°	42.4	43.2	44.8	47.2	52.0	54.4	57.6	65.6	75.2	86.4	100.0
40°	31.2	32.0	32.8	35.2	38.4	40.0	42.4	48.0	55.2	64.8	74.4
42.5°	24.0	24.0	24.8	26.4	28.0	29.6	31.2	35.2	40.8	48.0	56.8
45°	18.4	18.4	19.2	20.8	21.6	22.4	24.0	26.4	30.4	36.0	44.0
47.5°	15.2	15.2	15.2	16.0	16.8	17.6	18.4	20.8	23.2	28.8	33.6
50°	12.0	12.0	12.8	12.8	13.6	13.6	14.4	16.0	19.2	23.2	26.4
52.5°	10.4	10.4	10.4	10.4	10.4	11.2	11.2	12.8	16.0	17.6	19.2
55°	8.8	8.8	8.8	8.8	8.8	8.8	9.6	11.2	12.8	14.4	13.6
57.5°	7.2	7.2	7.2	7.2	7.2	8.0	8.0	9.6	10.4	9.6	9.6
60°	6.4	6.4	5.6	5.6	6.4	6.4	7.2	8.0	8.0	7.2	7.2
62.5°	5.6	4.8	4.8	4.8	5.6	6.4	6.4	6.4	5.6	5.6	5.6
65°	4.8	4.0	4.0	4.8	4.8	5.6	5.6	4.8	4.8	4.8	4.8
67.5°	4.0	4.0	4.0	4.0	4.8	4.8	4.8	4.0	4.0	4.0	4.0
70°	3.2	3.2	3.2	3.2	4.0	4.0	3.2	3.2	3.2	3.2	3.2
72.5°	2.4	2.4	2.4	3.2	3.2	3.2	2.4	2.4	2.4	3.2	2.4
75°	2.4	2.4	2.4	2.4	2.4	2.4	1.6	1.6	2.4	2.4	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
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°	879.1	879.1	879.1	879.1	879.1	879.1	879.1	879.1	879.1	879.1
2.5°	871.1	871.1	870.3	871.1	871.1	871.1	871.1	870.3	871.1	870.3
5°	849.5	849.5	849.5	847.9	847.1	847.9	847.1	846.3	846.3	847.1
7.5°	812.7	812.7	811.9	810.3	810.3	809.5	807.9	807.1	806.3	806.3
10°	764.7	763.9	761.5	760.7	760.7	758.3	755.1	755.1	751.9	752.7
12.5°	704.7	703.1	702.3	702.3	699.1	699.1	696.7	695.9	694.3	692.7
15°	632.7	635.1	636.7	635.9	635.9	633.5	632.7	631.1	628.7	630.3
17.5°	561.5	567.1	568.7	571.1	571.9	570.3	567.9	563.9	561.5	559.9
20°	491.1	499.1	504.7	506.3	506.3	505.5	504.7	498.3	497.5	493.5
22.5°	418.3	429.5	439.1	442.3	443.1	443.9	440.7	435.9	434.3	433.5
25°	350.3	365.5	375.1	381.5	383.1	385.5	383.9	381.5	376.7	375.9
27.5°	288.8	304.8	317.6	325.6	329.6	331.2	332.8	328.8	327.2	324.0
30°	233.6	252.0	265.6	276.8	279.2	282.4	283.2	284.0	280.8	280.8
32.5°	186.4	201.6	218.4	229.6	234.4	236.8	240.8	240.0	240.0	239.2
35°	146.4	161.6	176.8	188.8	194.4	197.6	202.4	204.8	205.6	205.6
37.5°	112.8	128.0	141.6	156.0	161.6	165.6	168.8	169.6	170.4	169.6
40°	86.4	100.8	114.4	124.0	128.0	131.2	135.2	138.4	140.0	140.8
42.5°	68.0	78.4	87.2	96.8	103.2	108.0	108.8	108.0	108.0	107.2
45°	51.2	59.2	72.8	75.2	76.8	77.6	80.0	80.8	80.8	80.8
47.5°	40.8	49.6	49.6	52.8	54.4	56.8	57.6	57.6	57.6	57.6
50°	30.4	32.0	34.4	36.8	37.6	37.6	38.4	38.4	38.4	38.4
52.5°	20.0	22.4	23.2	24.0	24.8	25.6	27.2	28.0	27.2	27.2
55°	14.4	15.2	16.0	17.6	17.6	18.4	21.6	21.6	21.6	21.6
57.5°	9.6	10.4	12.0	14.4	14.4	15.2	16.0	16.0	16.8	16.8
60°	8.0	8.8	9.6	10.4	11.2	12.8	14.4	12.0	12.0	12.0
62.5°	6.4	7.2	8.0	8.8	8.0	8.8	9.6	9.6	9.6	9.6
65°	5.6	6.4	5.6	6.4	7.2	7.2	6.4	7.2	7.2	8.0
67.5°	4.8	4.8	4.8	4.8	4.8	5.6	7.2	8.0	8.8	8.8
70°	3.2	3.2	3.2	4.8	4.8	5.6	6.4	8.0	8.0	8.8
72.5°	2.4	2.4	3.2	4.0	4.8	4.8	5.6	5.6	6.4	6.4
75°	2.4	2.4	3.2	3.2	3.2	3.2	4.0	4.0	4.0	4.0
77.5°	1.6	1.6	1.6	1.6	2.4	2.4	2.4	3.2	3.2	3.2
80°	0.8	0.8	0.8	0.8	1.6	1.6	1.6	1.6	1.6	1.6
82.5°	0.8	0.8	0.8	0.8	0.8	0.0	0.0	0.8	0.8	0.8
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)