

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: P226183

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226183
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-1-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: 383.4 lumens
Efficiency: N/A
Efficacy: 71.0 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

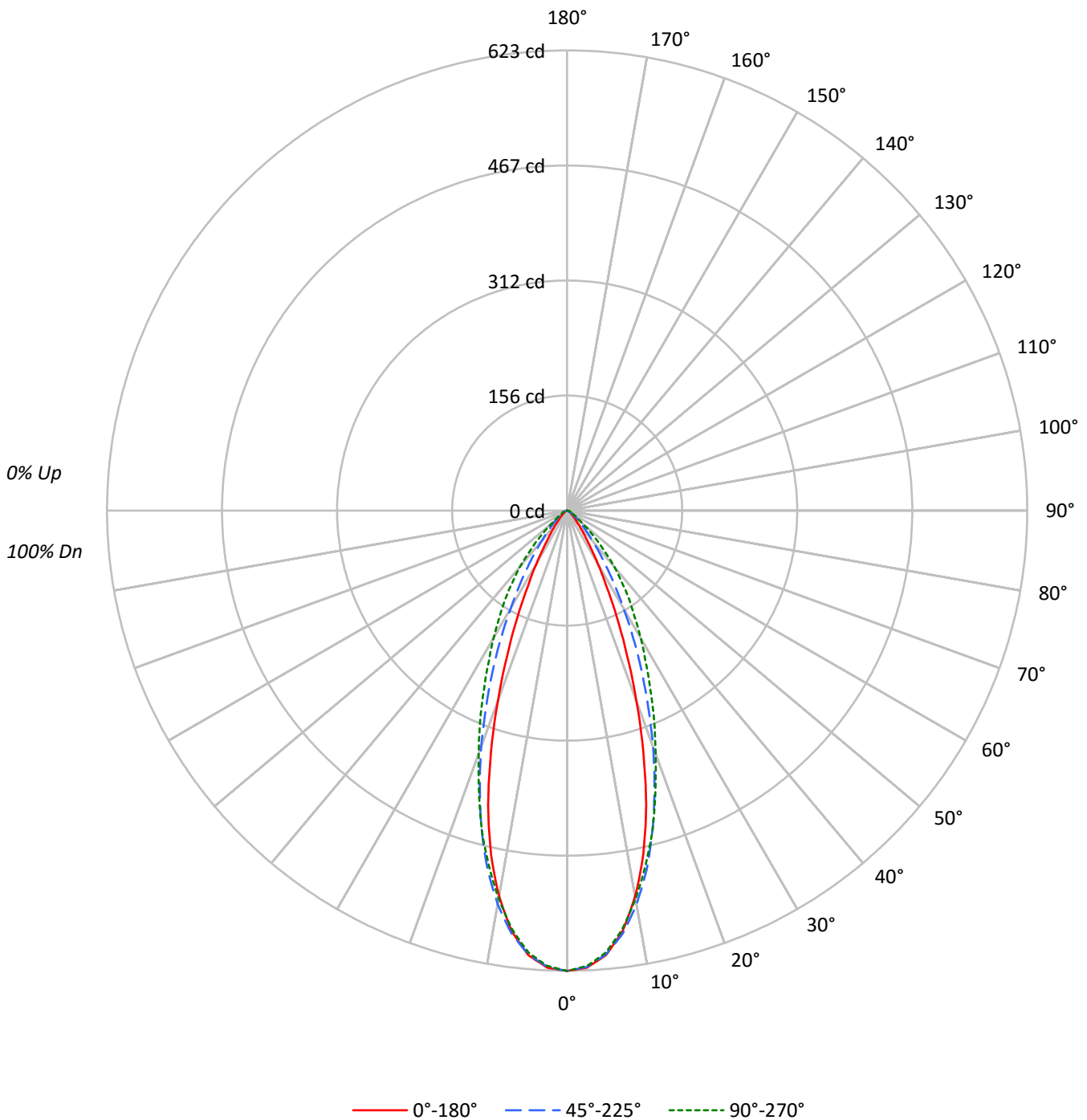
Input Watts (W): 5.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	307523	307523	307523
5°	299140	298595	297456
10°	265675	271086	267329
15°	211209	228269	228269
20°	144124	178410	183713
25°	86176	129073	145133
30°	47513	86595	113428
35°	24935	55713	87816
40°	14234	34006	64277
45°	9071	21770	39981
50°	6524	14353	20878
55°	5333	8258	13247
60°	4539	5032	8387
65°	3969	3969	6654
70°	3174	3174	8944
75°	3241	2288	5528
80°	1421	1421	3410
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.4	14.4
10°-20°	120.4	31.4
20°-30°	104.1	27.2
30°-40°	60.2	15.7
40°-50°	27.3	7.1
50°-60°	9.6	2.5
60°-70°	4.3	1.1
70°-80°	2.0	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°	279.9	73.0
0°-40°	340.1	88.7
0°-60°	377.0	98.3
0°-90°	383.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	383.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	623	623	623	623	623	
5°	604	604	603	601	601	55
15°	414	426	447	451	447	112
25°	158	182	237	272	267	74
35°	41	54	92	138	146	28
45°	13	16	31	54	57	11
55°	6	6	10	12	15	6
65°	3	4	3	5	6	3
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°	623.3	623.3	623.3	623.3	623.3	623.3	623.3	623.3	623.3	623.3	623.3
2.5°	619.3	618.2	618.2	618.2	618.7	618.7	618.2	618.2	618.2	618.2	618.2
5°	604.0	602.9	602.9	603.5	602.9	603.5	602.9	604.0	603.5	602.9	602.9
7.5°	574.5	574.5	574.5	575.1	575.7	575.7	575.7	576.8	576.8	577.9	577.4
10°	530.3	531.4	531.4	533.1	534.8	533.6	534.3	537.7	538.8	539.9	541.1
12.5°	476.4	478.1	479.2	480.4	482.1	483.7	484.4	490.0	491.7	494.0	497.9
15°	413.5	412.9	416.3	418.0	423.1	425.9	427.6	433.3	438.9	442.4	446.9
17.5°	342.5	344.2	345.9	350.5	356.7	360.7	363.0	369.8	378.9	386.3	393.0
20°	274.5	277.9	279.6	284.7	290.9	293.2	299.5	308.5	320.5	330.7	339.8
22.5°	211.6	213.3	217.8	223.4	230.2	235.4	241.6	250.7	263.2	273.3	285.8
25°	158.3	158.8	164.4	169.6	176.9	182.0	185.5	197.4	210.4	223.4	237.1
27.5°	115.2	116.2	119.7	124.8	132.7	136.1	141.8	152.0	164.4	178.6	192.8
30°	83.4	83.4	85.6	91.3	96.9	101.5	105.5	115.2	127.0	139.0	152.0
32.5°	58.4	59.0	61.2	65.3	70.9	74.3	77.1	86.2	95.9	107.7	119.1
35°	41.4	42.0	44.3	46.5	51.1	53.9	56.1	62.9	71.5	81.7	92.5
37.5°	30.1	30.6	31.8	33.5	36.9	38.6	40.8	46.5	53.3	61.2	70.9
40°	22.1	22.7	23.2	25.0	27.2	28.4	30.1	34.0	39.1	46.0	52.8
42.5°	17.1	17.1	17.6	18.7	19.8	21.0	22.1	25.0	28.9	34.0	40.3
45°	13.0	13.0	13.6	14.7	15.4	15.9	17.1	18.7	21.5	25.5	31.2
47.5°	10.8	10.8	10.8	11.3	11.9	12.5	13.0	14.7	16.4	20.4	23.8
50°	8.5	8.5	9.1	9.1	9.6	9.6	10.2	11.3	13.6	16.4	18.7
52.5°	7.4	7.4	7.4	7.4	7.4	7.9	7.9	9.1	11.3	12.5	13.6
55°	6.2	6.2	6.2	6.2	6.2	6.2	6.8	7.9	9.1	10.2	9.6
57.5°	5.1	5.1	5.1	5.1	5.1	5.7	5.7	6.8	7.4	6.8	6.8
60°	4.6	4.6	3.9	3.9	4.6	4.6	5.1	5.7	5.7	5.1	5.1
62.5°	3.9	3.4	3.4	3.4	3.9	4.6	4.6	4.6	3.9	3.9	3.9
65°	3.4	2.9	2.9	3.4	3.4	3.9	3.9	3.4	3.4	3.4	3.4
67.5°	2.9	2.9	2.9	2.9	3.4	3.4	3.4	2.9	2.9	2.9	2.9
70°	2.2	2.2	2.2	2.2	2.9	2.9	2.2	2.2	2.2	2.2	2.2
72.5°	1.7	1.7	1.7	2.2	2.2	2.2	1.7	1.7	1.7	2.2	1.7
75°	1.7	1.7	1.7	1.7	1.7	1.7	1.2	1.2	1.7	1.7	1.2
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
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°	623.3	623.3	623.3	623.3	623.3	623.3	623.3	623.3	623.3	623.3
2.5°	617.6	617.6	617.0	617.6	617.6	617.6	617.6	617.0	617.6	617.0
5°	602.3	602.3	602.3	601.1	600.6	601.1	600.6	600.1	600.1	600.6
7.5°	576.2	576.2	575.7	574.5	574.5	573.9	572.8	572.2	571.7	571.7
10°	542.2	541.6	539.9	539.4	539.4	537.7	535.3	535.3	533.1	533.6
12.5°	499.6	498.6	497.9	497.9	495.7	495.7	494.0	493.4	492.3	491.2
15°	448.6	450.3	451.4	450.9	450.9	449.2	448.6	447.5	445.8	446.9
17.5°	398.1	402.1	403.2	404.9	405.5	404.4	402.7	399.8	398.1	397.0
20°	348.2	353.9	357.9	359.0	359.0	358.4	357.9	353.3	352.8	349.9
22.5°	296.6	304.6	311.4	313.6	314.2	314.8	312.5	309.1	308.0	307.4
25°	248.4	259.1	266.0	270.6	271.6	273.3	272.3	270.6	267.1	266.6
27.5°	204.8	216.1	225.1	230.8	233.7	234.8	235.9	233.1	231.9	229.7
30°	165.6	178.6	188.3	196.2	197.9	200.2	200.8	201.3	199.1	199.1
32.5°	132.1	142.9	154.8	162.7	166.2	167.9	170.7	170.1	170.1	169.6
35°	103.8	114.5	125.3	133.8	137.8	140.1	143.5	145.2	145.8	145.8
37.5°	80.0	90.8	100.4	110.6	114.5	117.4	119.7	120.2	120.8	120.2
40°	61.2	71.5	81.1	87.9	90.8	93.0	95.9	98.1	99.3	99.8
42.5°	48.2	55.6	61.9	68.6	73.2	76.6	77.1	76.6	76.6	76.0
45°	36.3	42.0	51.6	53.3	54.5	55.0	56.7	57.3	57.3	57.3
47.5°	28.9	35.2	35.2	37.4	38.6	40.3	40.8	40.8	40.8	40.8
50°	21.5	22.7	24.4	26.1	26.7	26.7	27.2	27.2	27.2	27.2
52.5°	14.2	15.9	16.4	17.1	17.6	18.1	19.3	19.8	19.3	19.3
55°	10.2	10.8	11.3	12.5	12.5	13.0	15.4	15.4	15.4	15.4
57.5°	6.8	7.4	8.5	10.2	10.2	10.8	11.3	11.3	11.9	11.9
60°	5.7	6.2	6.8	7.4	7.9	9.1	10.2	8.5	8.5	8.5
62.5°	4.6	5.1	5.7	6.2	5.7	6.2	6.8	6.8	6.8	6.8
65°	3.9	4.6	3.9	4.6	5.1	5.1	4.6	5.1	5.1	5.7
67.5°	3.4	3.4	3.4	3.4	3.4	3.9	5.1	5.7	6.2	6.2
70°	2.2	2.2	2.2	3.4	3.4	3.9	4.6	5.7	5.7	6.2
72.5°	1.7	1.7	2.2	2.9	3.4	3.4	3.9	3.9	4.6	4.6
75°	1.7	1.7	2.2	2.2	2.2	2.2	2.9	2.9	2.9	2.9
77.5°	1.2	1.2	1.2	1.2	1.7	1.7	1.7	2.2	2.2	2.2
80°	0.5	0.5	0.5	0.5	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.5	0.5	0.5
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)