

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: P219905

Luminaire Tested: **MRZ-1-REC-X-3-L40-97-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219905
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-3-L40-97-WFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
55 DEGREE WIDE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 3
Light Source: (1) 4000K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 723.6 lumens
Efficiency: N/A
Efficacy: 59.8 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

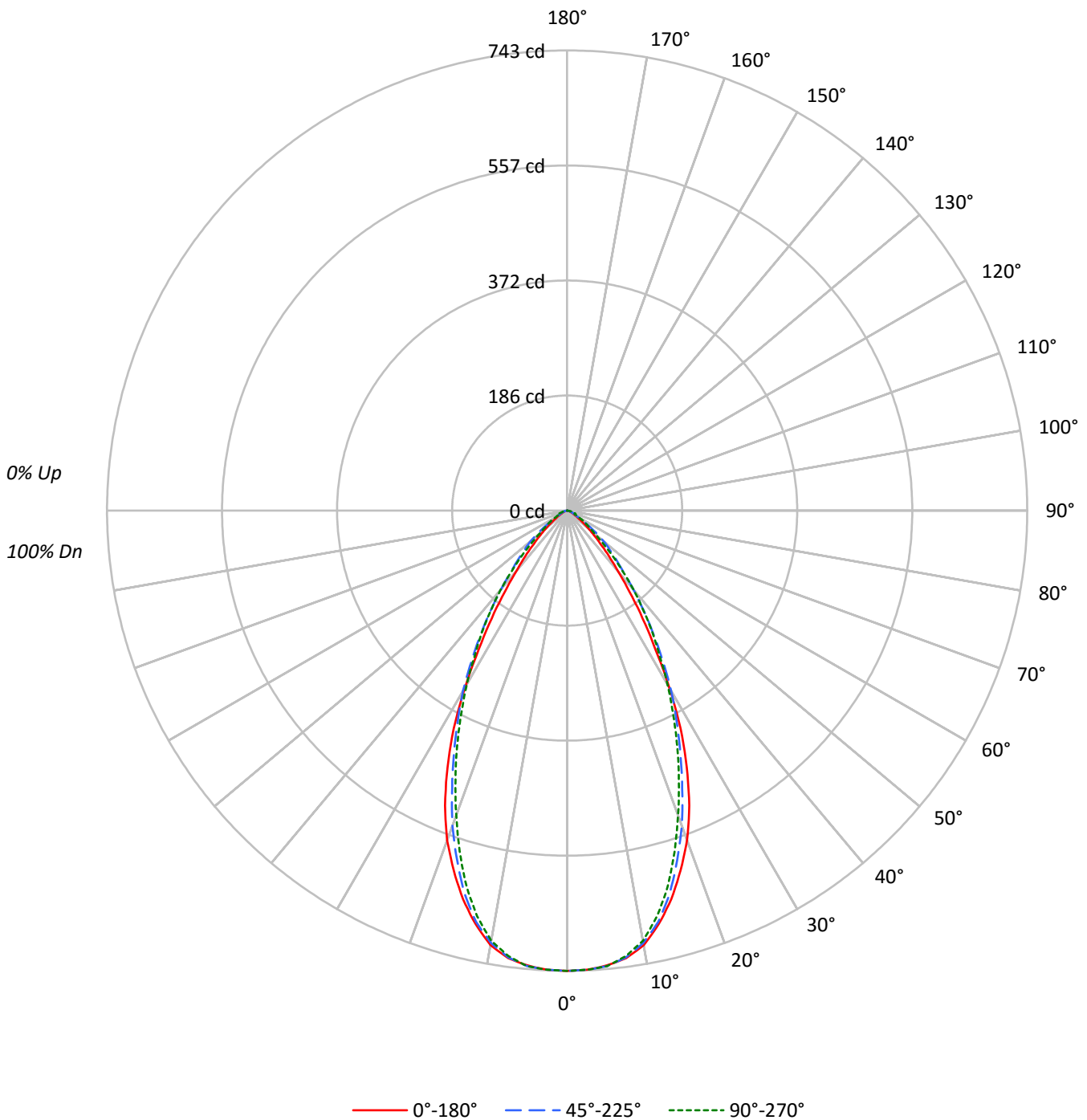
Input Watts (W): 12.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	366729	366729	366729
5°	365158	365753	365753
10°	356906	355102	353349
15°	331754	326902	320823
20°	297385	284259	274913
25°	248838	235283	228805
30°	188060	191421	184642
35°	127990	145878	144433
40°	82569	107043	107816
45°	53029	77868	72077
50°	33696	59256	44672
55°	20386	33719	32687
60°	12927	18748	21117
65°	9690	13892	15293
70°	8511	11973	20484
75°	6863	8959	13535
80°	3410	6819	10229
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.5	9.6
10°-20°	177.2	24.5
20°-30°	199.5	27.6
30°-40°	147.6	20.4
40°-50°	78.7	10.9
50°-60°	32.3	4.5
60°-70°	12.6	1.7
70°-80°	5.6	0.8
80°-90°	0.5	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°	446.2	61.7
0°-40°	593.8	82.1
0°-60°	704.8	97.4
0°-90°	723.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	723.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	743	743	743	743	743	
5°	737	737	738	738	738	70
15°	650	644	640	632	628	181
25°	457	451	432	424	420	207
35°	212	233	242	240	240	134
45°	76	86	112	110	103	61
55°	24	28	39	37	38	23
65°	8	12	12	14	13	9
75°	4	4	5	7	7	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°	743.3	743.3	743.3	743.3	743.3	743.3	743.3	743.3	743.3	743.3	743.3
2.5°	742.1	742.1	742.1	742.1	742.1	742.1	742.1	742.1	742.1	742.1	742.1
5°	737.3	737.3	737.3	737.3	737.3	737.3	737.3	738.5	737.3	738.5	738.5
7.5°	729.0	727.8	727.8	727.8	727.8	727.8	727.8	727.8	727.8	727.8	727.8
10°	712.4	711.2	711.2	708.8	710.0	708.8	708.8	708.8	708.8	708.8	708.8
12.5°	683.9	683.9	682.7	681.5	680.3	680.3	680.3	680.3	680.3	680.3	680.3
15°	649.5	649.5	648.3	645.9	644.7	643.5	642.4	642.4	641.2	641.2	640.0
17.5°	609.1	609.1	606.7	604.4	602.0	600.8	598.4	596.0	594.9	593.7	591.3
20°	566.4	566.4	562.8	561.6	556.9	555.7	552.1	548.6	543.8	542.6	541.4
22.5°	515.3	512.9	511.7	511.7	508.2	505.8	503.4	498.7	491.6	489.2	485.6
25°	457.1	455.9	455.9	454.8	453.6	451.2	452.4	448.8	442.9	438.1	432.2
27.5°	396.6	395.4	394.2	395.4	397.8	397.8	396.6	394.2	391.8	385.9	382.3
30°	330.1	330.1	332.5	336.0	339.6	340.8	342.0	340.8	339.6	336.0	336.0
32.5°	264.8	267.2	269.5	277.8	281.4	283.8	285.0	288.5	288.5	288.5	286.1
35°	212.5	212.5	217.3	223.2	228.0	232.7	233.9	238.7	242.2	242.2	242.2
37.5°	165.0	166.2	171.0	175.7	181.7	184.0	186.4	193.5	198.3	200.7	201.8
40°	128.2	130.6	133.0	137.7	143.7	144.9	147.2	153.2	159.1	163.9	166.2
42.5°	99.7	99.7	102.1	105.7	109.2	112.8	115.2	118.7	125.9	129.4	134.2
45°	76.0	77.2	78.4	80.7	84.3	85.5	87.9	92.6	97.4	102.1	111.6
47.5°	58.2	58.2	59.4	60.6	64.1	65.3	66.5	71.2	76.0	85.5	92.6
50°	43.9	43.9	43.9	45.1	47.5	49.9	51.1	54.6	64.1	71.2	77.2
52.5°	32.1	32.1	32.1	34.4	35.6	36.8	38.0	42.7	54.6	55.8	58.2
55°	23.7	23.7	23.7	24.9	27.3	28.5	29.7	38.0	40.4	43.9	39.2
57.5°	17.8	17.8	17.8	19.0	20.2	21.4	23.7	29.7	33.2	28.5	27.3
60°	13.1	13.1	13.1	14.2	16.6	17.8	20.2	22.6	22.6	20.2	19.0
62.5°	10.7	10.7	10.7	10.7	13.1	15.4	15.4	17.8	15.4	14.2	14.2
65°	8.3	8.3	8.3	9.5	10.7	11.9	13.1	11.9	10.7	10.7	11.9
67.5°	7.1	7.1	7.1	7.1	9.5	9.5	9.5	8.3	8.3	8.3	9.5
70°	5.9	5.9	5.9	5.9	7.1	7.1	7.1	5.9	5.9	7.1	8.3
72.5°	4.7	4.7	4.7	5.9	5.9	5.9	4.7	4.7	4.7	5.9	5.9
75°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	4.7	4.7	4.7
77.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	3.6	3.6	3.6
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	2.4
82.5°	0.0	1.2	1.2	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2
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°	743.3	743.3	743.3	743.3	743.3	743.3	743.3	743.3	743.3	743.3
2.5°	742.1	742.1	743.3	742.1	742.1	742.1	742.1	742.1	742.1	742.1
5°	738.5	738.5	738.5	738.5	738.5	738.5	738.5	738.5	738.5	738.5
7.5°	727.8	727.8	727.8	726.7	726.7	726.7	726.7	726.7	726.7	725.5
10°	708.8	708.8	707.7	706.5	707.7	705.3	705.3	704.1	704.1	705.3
12.5°	679.2	678.0	675.6	675.6	674.4	673.2	672.0	672.0	670.8	670.8
15°	640.0	637.6	635.2	634.0	631.7	632.9	631.7	629.3	629.3	628.1
17.5°	592.5	590.1	586.5	583.0	583.0	581.8	581.8	579.4	578.2	577.0
20°	537.9	536.7	535.5	531.9	530.7	528.4	526.0	526.0	522.4	523.6
22.5°	483.2	482.1	479.7	478.5	476.1	476.1	473.7	473.7	471.4	471.4
25°	431.0	429.8	427.4	426.3	423.9	423.9	421.5	422.7	420.3	420.3
27.5°	378.8	377.6	375.2	376.4	374.0	372.8	371.6	371.6	370.5	370.5
30°	331.3	327.7	327.7	326.5	325.3	325.3	325.3	323.0	323.0	324.1
32.5°	285.0	282.6	281.4	281.4	282.6	281.4	280.2	280.2	279.0	277.8
35°	242.2	241.0	239.8	239.8	239.8	239.8	239.8	239.8	239.8	239.8
37.5°	201.8	203.0	201.8	203.0	204.2	203.0	201.8	200.7	200.7	200.7
40°	167.4	169.8	171.0	168.6	167.4	167.4	166.2	167.4	166.2	167.4
42.5°	140.1	141.3	138.9	140.1	141.3	141.3	138.9	135.4	133.0	131.8
45°	114.0	116.4	122.3	114.0	110.4	109.2	105.7	104.5	103.3	103.3
47.5°	97.4	102.1	90.2	86.7	84.3	84.3	81.9	79.6	79.6	78.4
50°	79.6	70.1	67.7	65.3	62.9	61.7	60.6	59.4	59.4	58.2
52.5°	53.4	51.1	48.7	47.5	46.3	46.3	46.3	46.3	46.3	46.3
55°	38.0	36.8	35.6	36.8	36.8	38.0	39.2	39.2	39.2	38.0
57.5°	26.1	26.1	28.5	30.9	30.9	30.9	30.9	29.7	29.7	29.7
60°	20.2	21.4	23.7	23.7	23.7	24.9	23.7	22.6	21.4	21.4
62.5°	15.4	17.8	19.0	19.0	17.8	17.8	16.6	16.6	16.6	16.6
65°	13.1	14.2	14.2	14.2	14.2	13.1	11.9	11.9	13.1	13.1
67.5°	10.7	10.7	10.7	9.5	9.5	10.7	11.9	13.1	13.1	14.2
70°	8.3	8.3	8.3	9.5	10.7	10.7	13.1	13.1	14.2	14.2
72.5°	5.9	5.9	8.3	9.5	10.7	10.7	10.7	9.5	9.5	9.5
75°	4.7	5.9	8.3	7.1	7.1	7.1	7.1	7.1	7.1	7.1
77.5°	3.6	4.7	4.7	3.6	4.7	4.7	4.7	5.9	5.9	7.1
80°	2.4	2.4	2.4	2.4	2.4	2.4	3.6	3.6	3.6	3.6
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
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)