

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: P219617

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219617
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-2-L30-97-NFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW 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: 566.3 lumens
Efficiency: N/A
Efficacy: 64.3 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

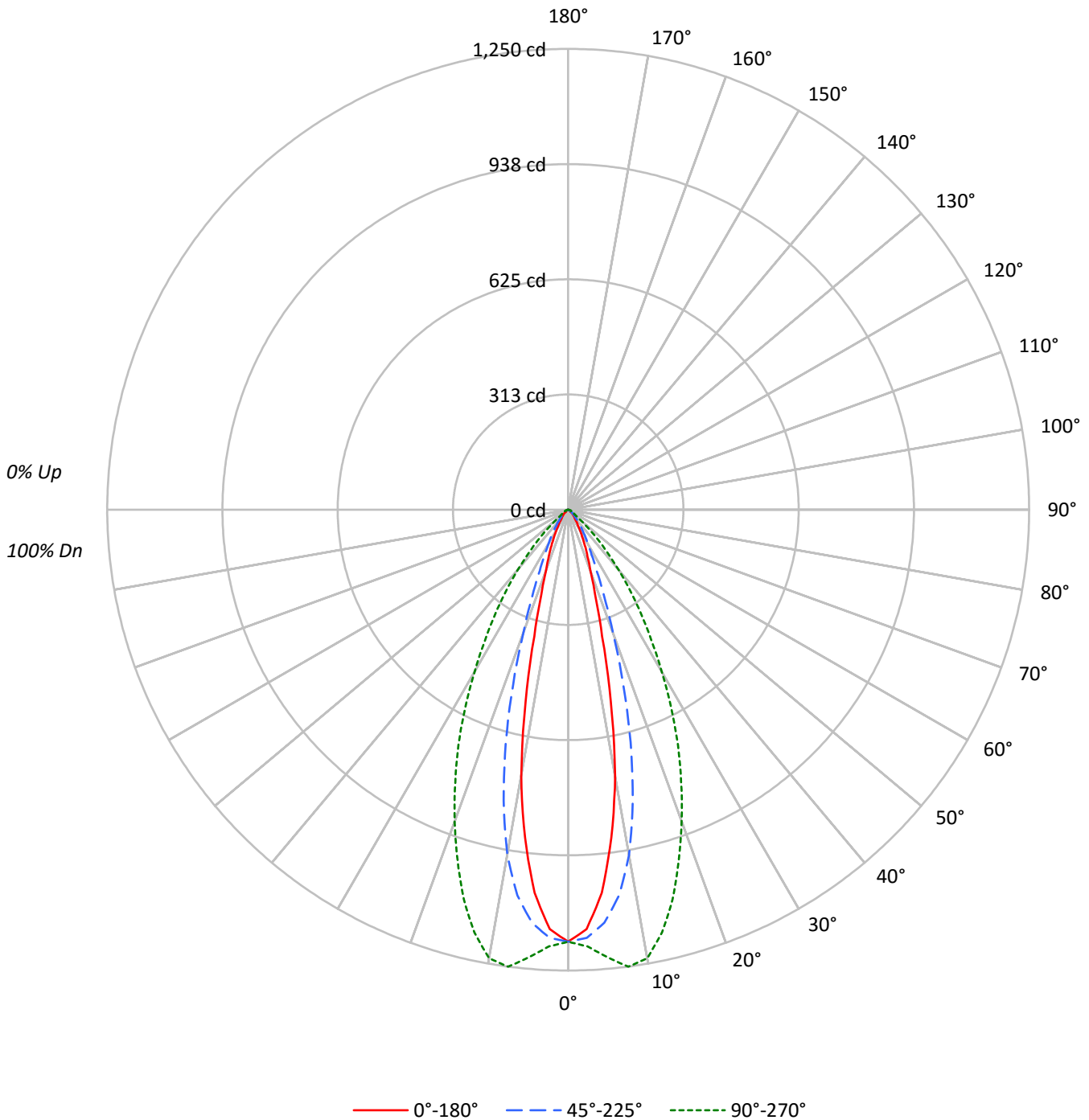
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	578142	578142	578142
5°	516610	556974	603331
10°	367076	476091	618724
15°	181431	333389	558900
20°	92828	185655	472487
25°	58358	99731	383192
30°	35094	61072	289353
35°	22647	39511	206711
40°	15973	25762	136541
45°	12280	17862	76473
50°	7369	12281	32545
55°	5505	8258	17204
60°	4736	5526	11052
65°	4670	4670	9339
70°	4616	3462	12694
75°	4575	3050	9150
80°	2273	2273	4546
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.6	18.1
10°-20°	191.4	33.8
20°-30°	143.7	25.4
30°-40°	79.0	14.0
40°-50°	32.0	5.7
50°-60°	10.2	1.8
60°-70°	4.8	0.9
70°-80°	2.4	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°	437.7	77.3
0°-40°	516.7	91.2
0°-60°	559.0	98.7
0°-90°	566.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	566.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1172	1172	1172	1172	1172	
5°	1043	1067	1125	1191	1218	89
15°	355	418	653	971	1094	104
25°	107	120	183	534	704	50
35°	38	45	66	198	343	24
45°	18	17	26	49	110	13
55°	6	7	10	12	20	6
65°	4	5	4	5	8	4
75°	2	2	2	2	5	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°	1171.8	1171.8	1171.8	1171.8	1171.8	1171.8	1171.8	1171.8	1171.8	1171.8	1171.8
2.5°	1139.0	1139.0	1138.2	1140.6	1145.4	1145.4	1147.8	1150.2	1152.6	1157.4	1162.2
5°	1043.1	1044.7	1043.9	1052.7	1059.1	1067.1	1069.5	1083.1	1093.5	1109.4	1124.6
7.5°	897.5	898.3	905.5	915.9	931.9	940.7	952.7	971.9	995.1	1025.5	1055.1
10°	732.7	732.7	743.9	759.1	771.9	789.5	798.3	829.5	863.1	905.5	950.3
12.5°	533.5	533.5	552.7	563.9	587.1	602.3	615.1	651.1	695.1	749.5	808.7
15°	355.2	361.6	368.7	383.9	404.7	417.5	426.3	463.1	515.1	575.9	652.7
17.5°	241.6	245.6	250.4	262.4	272.8	279.2	287.2	318.4	356.0	415.1	495.9
20°	176.8	180.8	184.8	190.4	196.8	200.0	205.6	221.6	248.8	290.4	353.6
22.5°	136.8	140.0	143.2	146.4	151.2	153.6	156.8	167.2	181.6	208.0	253.6
25°	107.2	107.2	111.2	113.6	117.6	120.0	124.0	131.2	142.4	157.6	183.2
27.5°	81.6	82.4	84.8	88.0	91.2	93.6	97.6	104.0	111.2	121.6	137.6
30°	61.6	63.2	64.8	67.2	71.2	73.6	76.0	81.6	88.0	96.0	107.2
32.5°	47.2	48.8	49.6	52.0	55.2	56.8	59.2	64.0	69.6	77.6	84.8
35°	37.6	37.6	39.2	40.0	43.2	44.8	46.4	49.6	55.2	60.0	65.6
37.5°	29.6	30.4	31.2	32.0	34.4	35.2	36.0	38.4	41.6	46.4	51.2
40°	24.8	25.6	25.6	25.6	26.4	26.4	27.2	28.8	32.0	35.2	40.0
42.5°	20.8	20.8	20.8	20.8	20.8	20.8	21.6	22.4	24.8	28.0	32.0
45°	17.6	16.8	16.8	16.8	16.8	16.8	16.8	18.4	20.0	22.4	25.6
47.5°	12.8	13.6	13.6	13.6	13.6	13.6	14.4	14.4	16.0	18.4	20.0
50°	9.6	10.4	10.4	11.2	11.2	11.2	11.2	12.0	13.6	15.2	16.0
52.5°	8.0	8.0	8.0	8.8	8.8	8.8	8.8	9.6	11.2	12.0	12.8
55°	6.4	6.4	6.4	6.4	7.2	7.2	8.0	8.8	9.6	9.6	9.6
57.5°	5.6	5.6	5.6	5.6	5.6	6.4	6.4	7.2	8.0	7.2	7.2
60°	4.8	4.8	4.8	4.8	4.8	5.6	5.6	6.4	5.6	5.6	5.6
62.5°	4.8	4.8	4.0	4.0	4.8	4.8	4.8	4.8	4.8	4.8	4.0
65°	4.0	4.0	4.0	4.0	4.0	4.8	4.8	4.0	4.0	3.2	4.0
67.5°	4.0	4.0	3.2	4.0	4.0	4.0	4.0	3.2	3.2	3.2	3.2
70°	3.2	3.2	3.2	3.2	3.2	3.2	3.2	2.4	2.4	2.4	2.4
72.5°	2.4	2.4	2.4	3.2	2.4	2.4	2.4	2.4	2.4	2.4	2.4
75°	2.4	2.4	2.4	2.4	2.4	1.6	1.6	1.6	1.6	1.6	1.6
77.5°	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.6	0.8	0.8
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	0.8	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°	1171.8	1171.8	1171.8	1171.8	1171.8	1171.8	1171.8	1171.8	1171.8	1171.8
2.5°	1166.2	1169.4	1173.4	1177.4	1179.0	1180.6	1183.0	1184.6	1185.4	1185.4
5°	1140.6	1156.6	1171.8	1184.6	1191.0	1196.6	1206.2	1212.6	1218.2	1218.2
7.5°	1086.3	1119.8	1151.0	1178.2	1190.2	1203.0	1223.0	1238.2	1246.2	1250.2
10°	997.5	1047.9	1095.0	1136.6	1155.8	1171.8	1200.6	1220.6	1230.2	1235.0
12.5°	876.7	943.1	1003.1	1055.1	1078.3	1097.4	1127.0	1153.4	1167.0	1174.2
15°	735.9	814.3	885.5	944.7	971.1	995.1	1034.3	1066.3	1085.5	1094.2
17.5°	587.1	683.9	764.7	832.7	856.7	883.1	928.7	965.5	991.1	997.5
20°	449.5	554.3	646.3	716.7	744.7	771.1	822.3	861.5	889.5	899.9
22.5°	327.2	428.7	530.3	605.5	637.5	666.3	717.5	759.9	789.5	799.9
25°	233.6	316.0	416.7	502.3	534.3	563.1	614.3	657.5	687.9	703.9
27.5°	170.4	226.4	315.2	403.1	437.5	467.9	515.1	559.9	588.7	603.9
30°	124.8	161.6	228.0	313.6	351.2	380.7	431.1	468.7	499.9	507.9
32.5°	95.2	116.0	161.6	231.2	269.6	300.8	349.6	385.5	410.3	419.1
35°	72.8	85.6	112.8	165.6	198.4	230.4	276.8	313.6	335.2	343.2
37.5°	56.8	65.6	81.6	116.8	142.4	170.4	216.0	246.4	264.0	274.4
40°	45.6	52.0	62.4	83.2	100.8	121.6	160.0	188.8	206.4	212.0
42.5°	36.8	41.6	47.2	59.2	71.2	86.4	117.6	137.6	152.0	155.2
45°	28.8	32.0	38.4	44.0	48.8	56.8	78.4	96.8	105.6	109.6
47.5°	23.2	27.2	27.2	30.4	33.6	39.2	52.8	63.2	69.6	71.2
50°	17.6	18.4	20.0	21.6	23.2	24.8	32.0	38.4	42.4	42.4
52.5°	12.8	13.6	13.6	14.4	15.2	16.8	20.8	24.0	26.4	27.2
55°	9.6	9.6	10.4	11.2	12.0	12.8	15.2	18.4	19.2	20.0
57.5°	7.2	7.2	8.0	8.8	9.6	9.6	12.0	13.6	15.2	16.8
60°	5.6	5.6	6.4	6.4	7.2	8.0	10.4	11.2	11.2	11.2
62.5°	4.8	4.8	4.8	5.6	5.6	5.6	7.2	9.6	10.4	10.4
65°	4.0	4.0	4.0	4.0	4.8	4.8	5.6	6.4	8.0	8.0
67.5°	3.2	3.2	3.2	3.2	4.0	4.0	5.6	6.4	8.0	8.8
70°	2.4	2.4	2.4	3.2	3.2	4.0	4.8	6.4	8.0	8.8
72.5°	1.6	1.6	2.4	2.4	2.4	3.2	4.0	4.8	5.6	5.6
75°	1.6	1.6	1.6	1.6	1.6	1.6	2.4	4.0	4.0	4.8
77.5°	1.6	1.6	0.8	1.6	1.6	1.6	1.6	2.4	3.2	3.2
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.6
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)