

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: P219606

Luminaire Tested: **MRZ-1-REC-X-1H-L35-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219606
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-1H-L35-80-NFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 1
Light Source: (1) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 568.6 lumens
Efficiency: N/A
Efficacy: 83.6 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

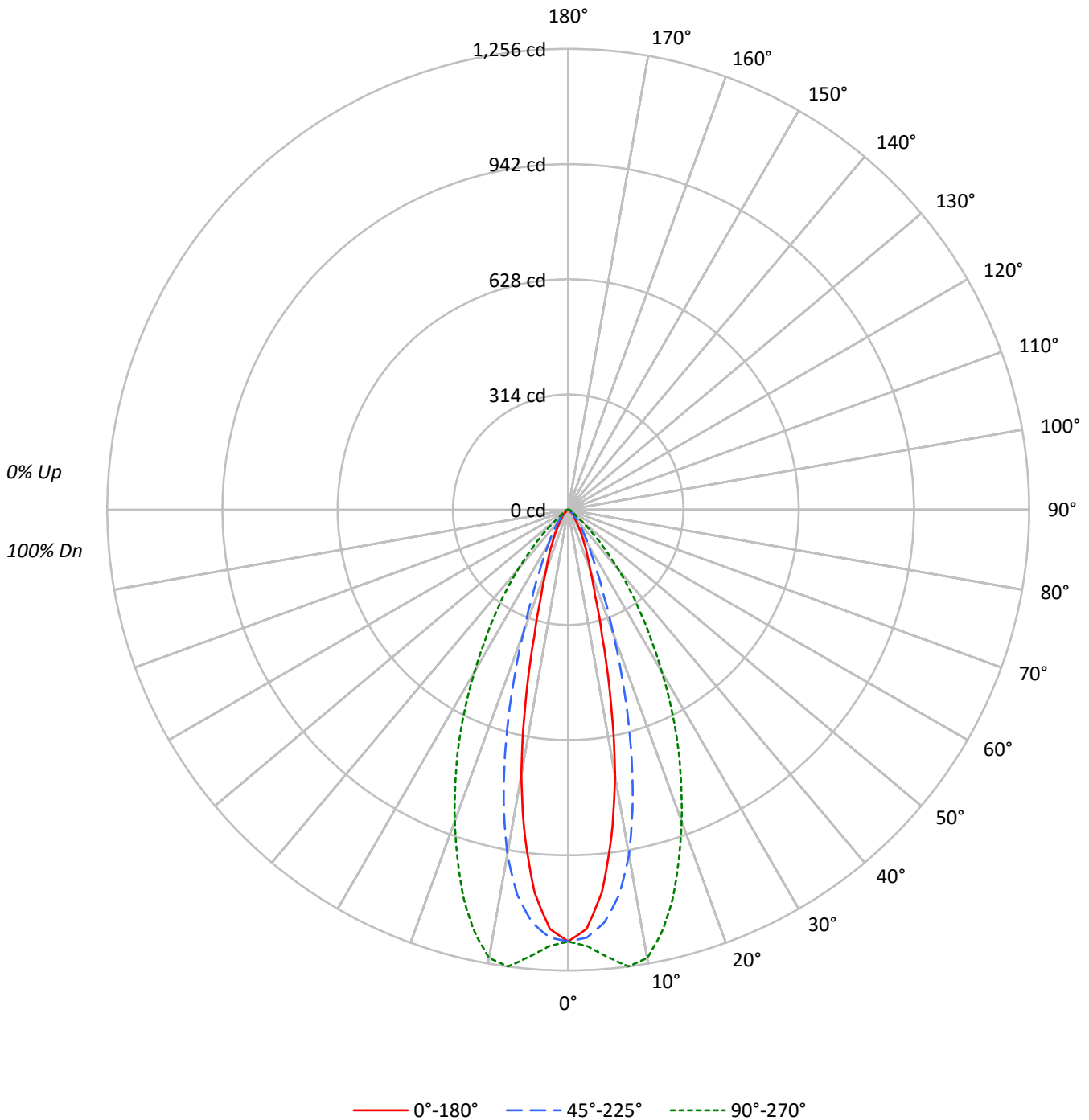
Input Watts (W): 6.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	580560	580560	580560
5°	518740	559302	605857
10°	368629	478045	621329
15°	182146	334768	561250
20°	93195	186390	474429
25°	58576	100112	384771
30°	35208	61300	290607
35°	22767	39692	207554
40°	16037	25891	137121
45°	12350	17932	76752
50°	7369	12358	32698
55°	5505	8258	17290
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°	103.1	18.1
10°-20°	192.2	33.8
20°-30°	144.3	25.4
30°-40°	79.3	14.0
40°-50°	32.2	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°	439.5	77.3
0°-40°	518.9	91.3
0°-60°	561.3	98.7
0°-90°	568.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	568.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1177	1177	1177	1177	1177	
5°	1047	1072	1129	1196	1223	90
15°	357	419	655	975	1099	105
25°	108	120	184	537	707	50
35°	38	45	66	199	345	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°	1176.7	1176.7	1176.7	1176.7	1176.7	1176.7	1176.7	1176.7	1176.7	1176.7	1176.7
2.5°	1143.8	1143.8	1143.0	1145.4	1150.2	1150.2	1152.6	1155.0	1157.5	1162.3	1167.1
5°	1047.4	1049.0	1048.2	1057.1	1063.5	1071.5	1073.9	1087.6	1098.0	1114.1	1129.3
7.5°	901.2	902.0	909.3	919.7	935.8	944.6	956.6	975.9	999.2	1029.7	1059.5
10°	735.8	735.8	747.0	762.3	775.1	792.8	801.6	833.0	866.7	909.3	954.2
12.5°	535.8	535.8	555.0	566.3	589.6	604.8	617.7	653.8	698.0	752.6	812.1
15°	356.6	363.1	370.3	385.6	406.4	419.3	428.1	465.1	517.3	578.3	655.4
17.5°	242.6	246.6	251.4	263.5	273.9	280.3	288.4	319.7	357.4	416.9	498.0
20°	177.5	181.5	185.5	191.2	197.6	200.8	206.4	222.5	249.8	291.6	355.0
22.5°	137.4	140.6	143.8	147.0	151.8	154.2	157.4	167.9	182.3	208.8	254.6
25°	107.6	107.6	111.6	114.1	118.1	120.5	124.5	131.7	143.0	158.2	183.9
27.5°	81.9	82.7	85.1	88.4	91.6	94.0	98.0	104.4	111.6	122.1	138.2
30°	61.8	63.5	65.1	67.5	71.5	73.9	76.3	81.9	88.4	96.4	107.6
32.5°	47.4	49.0	49.8	52.2	55.4	57.0	59.4	64.3	69.9	77.9	85.1
35°	37.8	37.8	39.4	40.2	43.4	45.0	46.6	49.8	55.4	60.2	65.9
37.5°	29.7	30.5	31.3	32.1	34.5	35.3	36.1	38.6	41.8	46.6	51.4
40°	24.9	25.7	25.7	25.7	26.5	26.5	27.3	28.9	32.1	35.3	40.2
42.5°	20.9	20.9	20.9	20.9	20.9	20.9	21.7	22.5	24.9	28.1	32.1
45°	17.7	16.9	16.9	16.9	16.9	16.9	16.9	18.5	20.1	22.5	25.7
47.5°	12.9	13.7	13.7	13.7	13.7	13.7	14.5	14.5	16.1	18.5	20.1
50°	9.6	10.4	10.4	11.2	11.2	11.2	11.2	12.0	13.7	15.3	16.1
52.5°	8.0	8.0	8.0	8.8	8.8	8.8	8.8	9.6	11.2	12.0	12.9
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°	1176.7	1176.7	1176.7	1176.7	1176.7	1176.7	1176.7	1176.7	1176.7	1176.7
2.5°	1171.1	1174.3	1178.3	1182.4	1184.0	1185.6	1188.0	1189.6	1190.4	1190.4
5°	1145.4	1161.5	1176.7	1189.6	1196.0	1201.6	1211.3	1217.7	1223.3	1223.3
7.5°	1090.8	1124.5	1155.8	1183.2	1195.2	1208.1	1228.1	1243.4	1251.4	1255.5
10°	1001.6	1052.2	1099.6	1141.4	1160.7	1176.7	1205.6	1225.7	1235.4	1240.2
12.5°	880.3	947.0	1007.3	1059.5	1082.8	1102.0	1131.8	1158.3	1171.9	1179.1
15°	739.0	817.7	889.2	948.6	975.1	999.2	1038.6	1070.7	1090.0	1098.8
17.5°	589.6	686.8	767.9	836.2	860.3	886.8	932.6	969.5	995.2	1001.6
20°	451.4	556.6	649.0	719.7	747.8	774.3	825.7	865.1	893.2	903.6
22.5°	328.5	430.5	532.5	608.0	640.2	669.1	720.5	763.1	792.8	803.2
25°	234.5	317.3	418.5	504.4	536.6	565.5	616.9	660.3	690.8	706.8
27.5°	171.1	227.3	316.5	404.8	439.4	469.9	517.3	562.3	591.2	606.4
30°	125.3	162.3	228.9	314.9	352.6	382.3	432.9	470.7	502.0	510.1
32.5°	95.6	116.5	162.3	232.1	270.7	302.0	351.0	387.2	412.1	420.9
35°	73.1	85.9	113.3	166.3	199.2	231.3	277.9	314.9	336.6	344.6
37.5°	57.0	65.9	81.9	117.3	143.0	171.1	216.9	247.4	265.1	275.5
40°	45.8	52.2	62.7	83.5	101.2	122.1	160.6	189.6	207.2	212.9
42.5°	36.9	41.8	47.4	59.4	71.5	86.7	118.1	138.2	152.6	155.8
45°	28.9	32.1	38.6	44.2	49.0	57.0	78.7	97.2	106.0	110.0
47.5°	23.3	27.3	27.3	30.5	33.7	39.4	53.0	63.5	69.9	71.5
50°	17.7	18.5	20.1	21.7	23.3	24.9	32.1	38.6	42.6	42.6
52.5°	12.9	13.7	13.7	14.5	15.3	16.9	20.9	24.1	26.5	27.3
55°	9.6	9.6	10.4	11.2	12.0	12.9	15.3	18.5	19.3	20.1
57.5°	7.2	7.2	8.0	8.8	9.6	9.6	12.0	13.7	15.3	16.9
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)