

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: P219605

Luminaire Tested: **MRZ-1-REC-X-1H-L30-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219605
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-L30-80-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) 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 539.5 lumens
Efficiency: N/A
Efficacy: 79.3 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

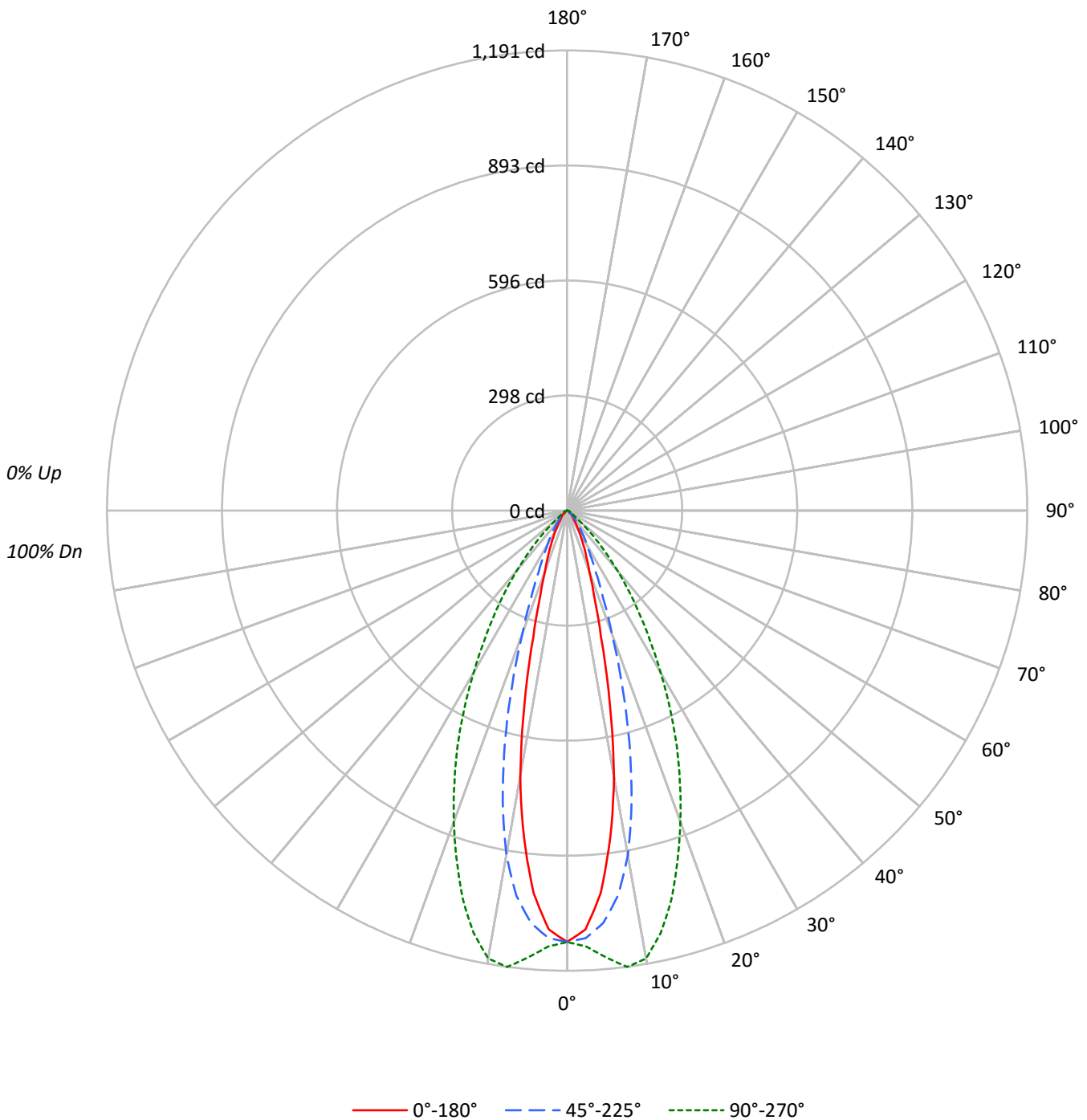
Input Watts (W): 6.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	73	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°	550858	550858	550858
5°	492194	530676	574853
10°	349742	453597	589516
15°	172849	317657	532543
20°	88417	176887	450172
25°	55582	94995	365118
30°	33442	58167	275681
35°	21563	37644	196894
40°	15200	24539	130100
45°	11722	17025	72844
50°	6985	11667	31010
55°	5247	7828	16429
60°	4539	5230	10558
65°	4436	4436	8873
70°	4328	3318	12117
75°	4384	2859	8769
80°	2273	2273	4262
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	97.8	18.1
10°-20°	182.3	33.8
20°-30°	136.9	25.4
30°-40°	75.3	14.0
40°-50°	30.5	5.7
50°-60°	9.7	1.8
60°-70°	4.6	0.9
70°-80°	2.2	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°	417.0	77.3
0°-40°	492.3	91.2
0°-60°	532.5	98.7
0°-90°	539.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	539.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1116	1116	1116	1116	1116	
5°	994	1017	1072	1135	1161	85
15°	338	398	622	925	1043	99
25°	102	114	174	509	671	48
35°	36	43	62	189	327	23
45°	17	16	24	46	104	12
55°	6	7	9	11	19	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°	1116.5	1116.5	1116.5	1116.5	1116.5	1116.5	1116.5	1116.5	1116.5	1116.5	1116.5
2.5°	1085.2	1085.2	1084.5	1086.8	1091.3	1091.3	1093.6	1095.9	1098.2	1102.8	1107.3
5°	993.8	995.3	994.6	1002.9	1009.0	1016.7	1018.9	1031.9	1041.8	1057.0	1071.5
7.5°	855.1	855.8	862.7	872.6	887.9	896.2	907.7	926.0	948.1	977.0	1005.2
10°	698.1	698.1	708.8	723.2	735.4	752.2	760.6	790.3	822.3	862.7	905.4
12.5°	508.3	508.3	526.6	537.3	559.4	573.9	586.1	620.4	662.3	714.1	770.5
15°	338.4	344.5	351.3	365.8	385.6	397.8	406.2	441.3	490.8	548.7	621.9
17.5°	230.2	234.0	238.5	250.0	259.9	266.0	273.6	303.3	339.1	395.5	472.5
20°	168.4	172.2	176.0	181.4	187.5	190.5	195.9	211.1	237.0	276.6	336.9
22.5°	130.3	133.4	136.4	139.5	144.0	146.3	149.4	159.3	173.0	198.1	241.6
25°	102.1	102.1	105.9	108.2	112.0	114.3	118.1	125.0	135.7	150.1	174.5
27.5°	77.7	78.5	80.8	83.8	86.9	89.2	93.0	99.1	105.9	115.8	131.1
30°	58.7	60.2	61.7	64.0	67.8	70.1	72.4	77.7	83.8	91.5	102.1
32.5°	45.0	46.5	47.3	49.5	52.6	54.1	56.4	61.0	66.3	73.9	80.8
35°	35.8	35.8	37.3	38.1	41.2	42.7	44.2	47.3	52.6	57.2	62.5
37.5°	28.2	29.0	29.7	30.5	32.8	33.5	34.3	36.6	39.6	44.2	48.8
40°	23.6	24.4	24.4	24.4	25.1	25.1	25.9	27.4	30.5	33.5	38.1
42.5°	19.8	19.8	19.8	19.8	19.8	19.8	20.6	21.3	23.6	26.7	30.5
45°	16.8	16.0	16.0	16.0	16.0	16.0	16.0	17.5	19.1	21.3	24.4
47.5°	12.2	13.0	13.0	13.0	13.0	13.0	13.7	13.7	15.2	17.5	19.1
50°	9.1	9.9	9.9	10.7	10.7	10.7	10.7	11.4	13.0	14.5	15.2
52.5°	7.6	7.6	7.6	8.4	8.4	8.4	8.4	9.1	10.7	11.4	12.2
55°	6.1	6.1	6.1	6.1	6.9	6.9	7.6	8.4	9.1	9.1	9.1
57.5°	5.3	5.3	5.3	5.3	5.3	6.1	6.1	6.9	7.6	6.9	6.9
60°	4.6	4.6	4.6	4.6	4.6	5.3	5.3	6.1	5.3	5.3	5.3
62.5°	4.6	4.6	3.8	3.8	4.6	4.6	4.6	4.6	4.6	4.6	3.8
65°	3.8	3.8	3.8	3.8	3.8	4.6	4.6	3.8	3.8	3.0	3.8
67.5°	3.8	3.8	3.0	3.8	3.8	3.8	3.8	3.0	3.0	3.0	3.0
70°	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.3	2.3	2.3	2.3
72.5°	2.3	2.3	2.3	3.0	2.3	2.3	2.3	2.3	2.3	2.3	2.3
75°	2.3	2.3	2.3	2.3	2.3	1.5	1.5	1.5	1.5	1.5	1.5
77.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	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°	1116.5	1116.5	1116.5	1116.5	1116.5	1116.5	1116.5	1116.5	1116.5	1116.5
2.5°	1111.2	1114.2	1118.0	1121.8	1123.3	1124.9	1127.2	1128.7	1129.4	1129.4
5°	1086.8	1102.0	1116.5	1128.7	1134.8	1140.1	1149.3	1155.4	1160.7	1160.7
7.5°	1034.9	1067.0	1096.7	1122.6	1134.0	1146.2	1165.3	1179.7	1187.4	1191.2
10°	950.3	998.4	1043.3	1083.0	1101.2	1116.5	1143.9	1163.0	1172.1	1176.7
12.5°	835.3	898.5	955.7	1005.2	1027.3	1045.6	1073.8	1099.0	1111.9	1118.8
15°	701.1	775.8	843.7	900.0	925.2	948.1	985.4	1015.9	1034.2	1042.6
17.5°	559.4	651.6	728.6	793.4	816.2	841.4	884.8	919.9	944.3	950.3
20°	428.3	528.1	615.8	682.8	709.5	734.7	783.4	820.8	847.5	857.4
22.5°	311.7	408.5	505.3	576.9	607.4	634.8	683.6	724.0	752.2	762.1
25°	222.5	301.0	397.1	478.6	509.1	536.5	585.3	626.5	655.4	670.7
27.5°	162.3	215.7	300.3	384.1	416.9	445.8	490.8	533.5	560.9	575.4
30°	118.9	153.9	217.2	298.7	334.6	362.8	410.8	446.6	476.3	483.9
32.5°	90.7	110.5	153.9	220.2	256.8	286.6	333.0	367.3	391.0	399.3
35°	69.4	81.5	107.5	157.8	189.0	219.5	263.7	298.7	319.3	326.9
37.5°	54.1	62.5	77.7	111.3	135.7	162.3	205.8	234.7	251.5	261.4
40°	43.4	49.5	59.4	79.3	96.0	115.8	152.4	179.9	196.6	202.0
42.5°	35.1	39.6	45.0	56.4	67.8	82.3	112.0	131.1	144.8	147.8
45°	27.4	30.5	36.6	41.9	46.5	54.1	74.7	92.2	100.6	104.4
47.5°	22.1	25.9	25.9	29.0	32.0	37.3	50.3	60.2	66.3	67.8
50°	16.8	17.5	19.1	20.6	22.1	23.6	30.5	36.6	40.4	40.4
52.5°	12.2	13.0	13.0	13.7	14.5	16.0	19.8	22.9	25.1	25.9
55°	9.1	9.1	9.9	10.7	11.4	12.2	14.5	17.5	18.3	19.1
57.5°	6.9	6.9	7.6	8.4	9.1	9.1	11.4	13.0	14.5	16.0
60°	5.3	5.3	6.1	6.1	6.9	7.6	9.9	10.7	10.7	10.7
62.5°	4.6	4.6	4.6	5.3	5.3	5.3	6.9	9.1	9.9	9.9
65°	3.8	3.8	3.8	3.8	4.6	4.6	5.3	6.1	7.6	7.6
67.5°	3.0	3.0	3.0	3.0	3.8	3.8	5.3	6.1	7.6	8.4
70°	2.3	2.3	2.3	3.0	3.0	3.8	4.6	6.1	7.6	8.4
72.5°	1.5	1.5	2.3	2.3	2.3	3.0	3.8	4.6	5.3	5.3
75°	1.5	1.5	1.5	1.5	1.5	1.5	2.3	3.8	3.8	4.6
77.5°	1.5	1.5	0.8	1.5	1.5	1.5	1.5	2.3	3.0	3.0
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.5
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)