

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: P219618

Luminaire Tested: **MRZ-1-REC-X-2-L35-97-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219618
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-L35-97-NFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL2
Light Source: (1) 3500K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 591.9 lumens
Efficiency: N/A
Efficacy: 67.3 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

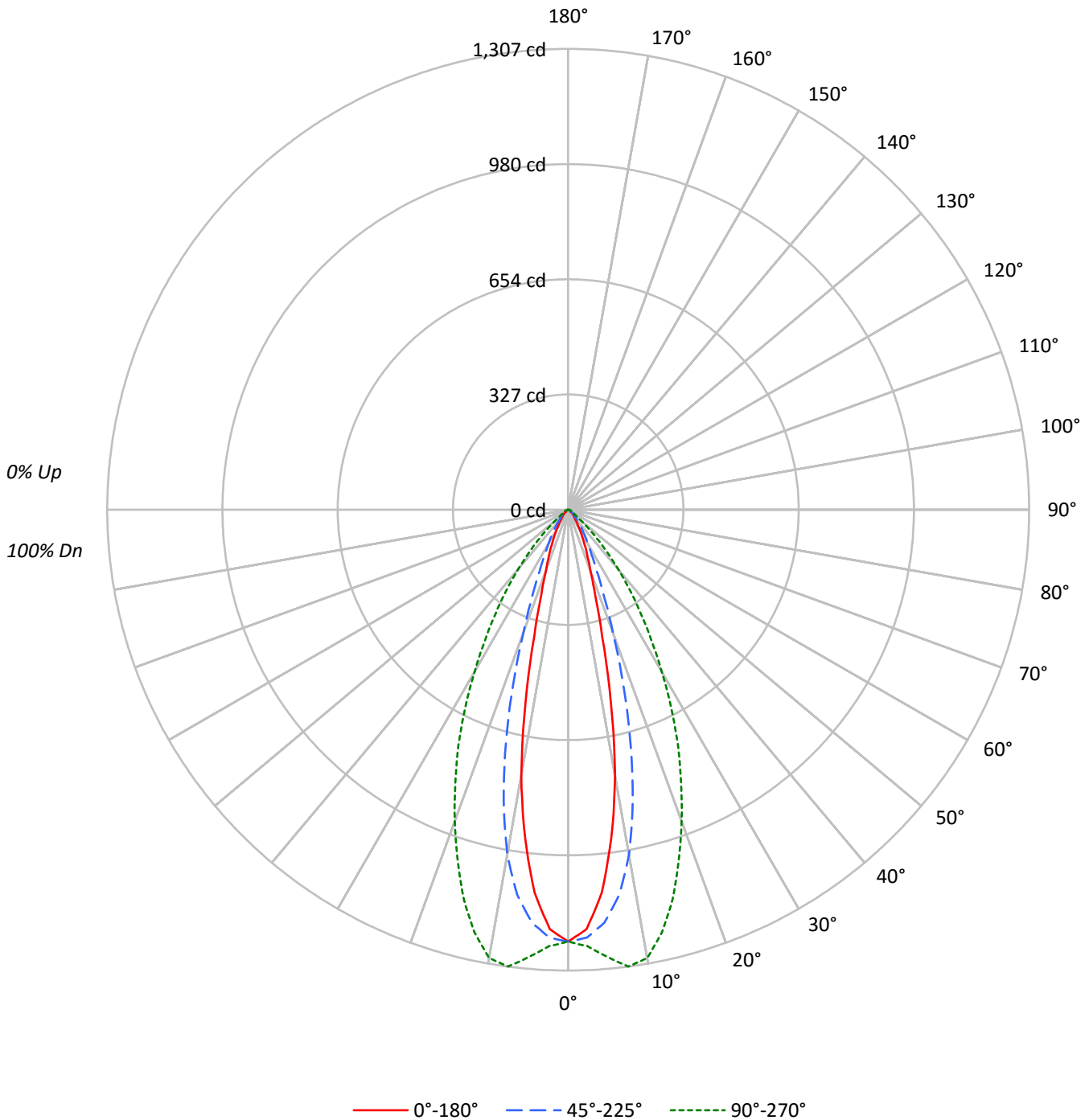
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	604291	604291	604291
5°	539937	582183	630620
10°	383659	497634	646729
15°	189603	348457	584235
20°	97028	194004	493856
25°	60971	104250	400503
30°	36689	63807	302457
35°	23671	41318	216047
40°	16681	26922	142724
45°	12838	18700	79892
50°	7676	12818	34003
55°	5763	8602	17978
60°	4934	5822	11545
65°	4903	4903	9806
70°	4760	3606	13271
75°	4766	3241	9531
80°	2273	2273	4830
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.3	18.1
10°-20°	200.0	33.8
20°-30°	150.2	25.4
30°-40°	82.6	14.0
40°-50°	33.5	5.7
50°-60°	10.7	1.8
60°-70°	5.1	0.9
70°-80°	2.5	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°	457.5	77.3
0°-40°	540.1	91.2
0°-60°	584.2	98.7
0°-90°	591.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	591.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1225	1225	1225	1225	1225	
5°	1090	1115	1176	1245	1273	93
15°	371	436	682	1015	1144	109
25°	112	125	192	558	736	52
35°	39	47	69	207	359	25
45°	18	18	27	51	114	14
55°	7	8	10	12	21	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°	1224.8	1224.8	1224.8	1224.8	1224.8	1224.8	1224.8	1224.8	1224.8	1224.8	1224.8
2.5°	1190.6	1190.6	1189.7	1192.2	1197.3	1197.3	1199.8	1202.3	1204.8	1209.8	1214.8
5°	1090.2	1091.9	1091.1	1100.3	1107.0	1115.3	1117.8	1132.0	1142.9	1159.6	1175.5
7.5°	938.1	938.9	946.4	957.3	974.0	983.2	995.8	1015.8	1040.1	1071.8	1102.8
10°	765.8	765.8	777.5	793.4	806.8	825.2	834.4	867.0	902.1	946.4	993.3
12.5°	557.7	557.7	577.7	589.4	613.7	629.6	642.9	680.6	726.5	783.4	845.3
15°	371.2	377.9	385.4	401.3	423.1	436.4	445.6	484.1	538.4	602.0	682.2
17.5°	252.5	256.7	261.7	274.2	285.1	291.8	300.2	332.8	372.1	433.9	518.4
20°	184.8	189.0	193.1	199.0	205.7	209.0	214.9	231.6	260.0	303.5	369.5
22.5°	143.0	146.3	149.7	153.0	158.0	160.5	163.9	174.7	189.8	217.4	265.0
25°	112.0	112.0	116.2	118.7	122.9	125.4	129.6	137.1	148.8	164.7	191.5
27.5°	85.3	86.1	88.6	92.0	95.3	97.8	102.0	108.7	116.2	127.1	143.8
30°	64.4	66.0	67.7	70.2	74.4	76.9	79.4	85.3	92.0	100.3	112.0
32.5°	49.3	51.0	51.8	54.3	57.7	59.4	61.9	66.9	72.7	81.1	88.6
35°	39.3	39.3	41.0	41.8	45.1	46.8	48.5	51.8	57.7	62.7	68.6
37.5°	30.9	31.8	32.6	33.4	36.0	36.8	37.6	40.1	43.5	48.5	53.5
40°	25.9	26.8	26.8	26.8	27.6	27.6	28.4	30.1	33.4	36.8	41.8
42.5°	21.7	21.7	21.7	21.7	21.7	21.7	22.6	23.4	25.9	29.3	33.4
45°	18.4	17.6	17.6	17.6	17.6	17.6	17.6	19.2	20.9	23.4	26.8
47.5°	13.4	14.2	14.2	14.2	14.2	14.2	15.0	15.0	16.7	19.2	20.9
50°	10.0	10.9	10.9	11.7	11.7	11.7	11.7	12.5	14.2	15.9	16.7
52.5°	8.4	8.4	8.4	9.2	9.2	9.2	9.2	10.0	11.7	12.5	13.4
55°	6.7	6.7	6.7	6.7	7.5	7.5	8.4	9.2	10.0	10.0	10.0
57.5°	5.9	5.9	5.9	5.9	5.9	6.7	6.7	7.5	8.4	7.5	7.5
60°	5.0	5.0	5.0	5.0	5.0	5.9	5.9	6.7	5.9	5.9	5.9
62.5°	5.0	5.0	4.2	4.2	5.0	5.0	5.0	5.0	5.0	5.0	4.2
65°	4.2	4.2	4.2	4.2	4.2	5.0	5.0	4.2	4.2	3.3	4.2
67.5°	4.2	4.2	3.3	4.2	4.2	4.2	4.2	3.3	3.3	3.3	3.3
70°	3.3	3.3	3.3	3.3	3.3	3.3	3.3	2.5	2.5	2.5	2.5
72.5°	2.5	2.5	2.5	3.3	2.5	2.5	2.5	2.5	2.5	2.5	2.5
75°	2.5	2.5	2.5	2.5	2.5	1.7	1.7	1.7	1.7	1.7	1.7
77.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	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°	1224.8	1224.8	1224.8	1224.8	1224.8	1224.8	1224.8	1224.8	1224.8	1224.8
2.5°	1219.0	1222.3	1226.5	1230.7	1232.4	1234.0	1236.6	1238.2	1239.1	1239.1
5°	1192.2	1209.0	1224.8	1238.2	1244.9	1250.8	1260.8	1267.5	1273.3	1273.3
7.5°	1135.4	1170.5	1203.1	1231.5	1244.1	1257.5	1278.4	1294.2	1302.6	1306.8
10°	1042.6	1095.3	1144.6	1188.1	1208.1	1224.8	1254.9	1275.9	1285.9	1290.9
12.5°	916.3	985.7	1048.4	1102.8	1127.0	1147.1	1178.0	1205.6	1219.8	1227.4
15°	769.2	851.1	925.5	987.4	1015.0	1040.1	1081.0	1114.5	1134.6	1143.8
17.5°	613.7	714.8	799.3	870.4	895.4	923.0	970.7	1009.1	1035.9	1042.6
20°	469.9	579.4	675.5	749.1	778.4	806.0	859.5	900.5	929.7	940.6
22.5°	342.0	448.1	554.3	632.9	666.4	696.5	750.0	794.3	825.2	836.1
25°	244.1	330.2	435.6	525.1	558.5	588.6	642.1	687.3	719.0	735.7
27.5°	178.1	236.6	329.4	421.4	457.3	489.1	538.4	585.3	615.4	631.2
30°	130.4	168.9	238.3	327.7	367.0	398.0	450.6	489.9	522.5	530.9
32.5°	99.5	121.2	168.9	241.6	281.8	314.4	365.4	403.0	428.9	438.1
35°	76.1	89.5	117.9	173.1	207.3	240.8	289.3	327.7	350.3	358.7
37.5°	59.4	68.6	85.3	122.1	148.8	178.1	225.7	257.5	275.9	286.8
40°	47.7	54.3	65.2	87.0	105.3	127.1	167.2	197.3	215.7	221.6
42.5°	38.5	43.5	49.3	61.9	74.4	90.3	122.9	143.8	158.9	162.2
45°	30.1	33.4	40.1	46.0	51.0	59.4	81.9	101.2	110.4	114.5
47.5°	24.2	28.4	28.4	31.8	35.1	41.0	55.2	66.0	72.7	74.4
50°	18.4	19.2	20.9	22.6	24.2	25.9	33.4	40.1	44.3	44.3
52.5°	13.4	14.2	14.2	15.0	15.9	17.6	21.7	25.1	27.6	28.4
55°	10.0	10.0	10.9	11.7	12.5	13.4	15.9	19.2	20.1	20.9
57.5°	7.5	7.5	8.4	9.2	10.0	10.0	12.5	14.2	15.9	17.6
60°	5.9	5.9	6.7	6.7	7.5	8.4	10.9	11.7	11.7	11.7
62.5°	5.0	5.0	5.0	5.9	5.9	5.9	7.5	10.0	10.9	10.9
65°	4.2	4.2	4.2	4.2	5.0	5.0	5.9	6.7	8.4	8.4
67.5°	3.3	3.3	3.3	3.3	4.2	4.2	5.9	6.7	8.4	9.2
70°	2.5	2.5	2.5	3.3	3.3	4.2	5.0	6.7	8.4	9.2
72.5°	1.7	1.7	2.5	2.5	2.5	3.3	4.2	5.0	5.9	5.9
75°	1.7	1.7	1.7	1.7	1.7	1.7	2.5	4.2	4.2	5.0
77.5°	1.7	1.7	0.8	1.7	1.7	1.7	1.7	2.5	3.3	3.3
80°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	1.7
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)