

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: P219908

Luminaire Tested: **MRZ-1-REC-X-4-L35-80-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219908
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-4-L35-80-WFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
55 DEGREE WIDE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 4
Light Source: (1) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1169.9 lumens
Efficiency: N/A
Efficacy: 74.0 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

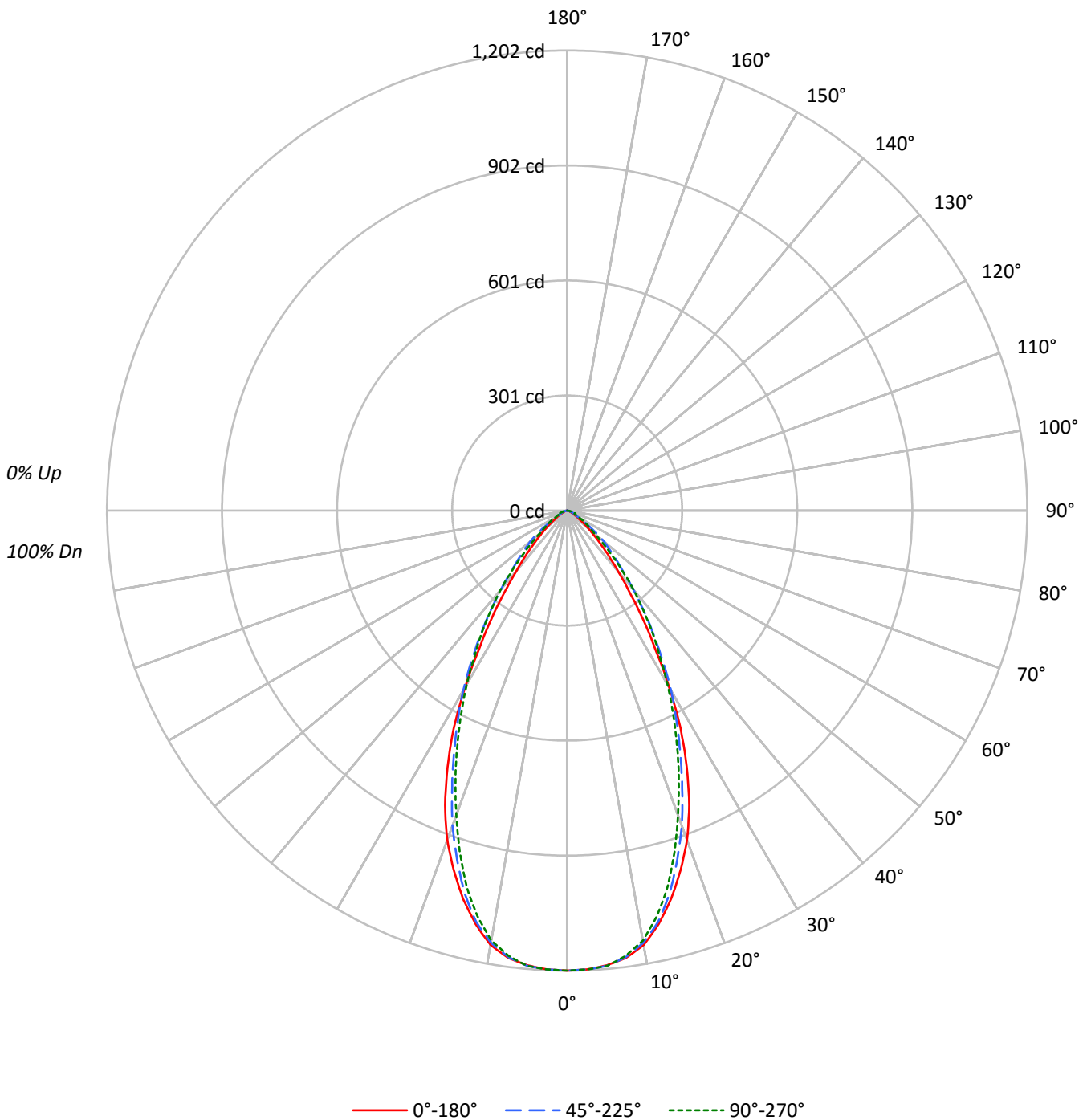
Input Watts (W): 15.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92
2	107	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84
3	100	93	88	83	98	92	87	83	89	85	81	87	83	80	84	81	79	77
4	95	86	80	76	93	85	80	75	83	78	74	81	77	73	79	76	73	71
5	89	80	74	69	88	79	73	69	77	72	68	76	71	68	74	70	67	65
6	85	75	68	64	83	74	68	63	72	67	63	71	66	63	70	65	62	61
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	66	61	58	56
8	76	66	59	55	75	65	59	55	64	58	54	63	58	54	62	57	54	52
9	72	62	55	51	71	61	55	51	60	55	51	59	54	51	58	54	50	49
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47	46

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	592944	592944	592944
5°	590454	591395	591395
10°	577091	574185	571280
15°	536374	528559	518752
20°	480782	459623	444502
25°	402354	380416	369963
30°	304052	309521	298583
35°	206952	235863	233574
40°	133514	173124	174347
45°	85753	125943	116523
50°	54497	95792	72228
55°	33031	54535	52815
60°	20821	30294	34142
65°	15644	22415	24633
70°	13848	19330	33179
75°	11056	14678	21922
80°	5398	10797	16479
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	112.4	9.6
10°-20°	286.5	24.5
20°-30°	322.6	27.6
30°-40°	238.6	20.4
40°-50°	127.2	10.9
50°-60°	52.3	4.5
60°-70°	20.4	1.7
70°-80°	9.1	0.8
80°-90°	0.9	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°	721.5	61.7
0°-40°	960.1	82.1
0°-60°	1139.6	97.4
0°-90°	1169.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1169.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1202	1202	1202	1202	1202	
5°	1192	1192	1194	1194	1194	113
15°	1050	1040	1035	1021	1016	292
25°	739	730	699	685	680	335
35°	344	376	392	388	388	217
45°	123	138	180	178	167	99
55°	38	46	63	60	61	37
65°	13	19	19	23	21	14
75°	6	6	8	12	12	6
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°	1201.8	1201.8	1201.8	1201.8	1201.8	1201.8	1201.8	1201.8	1201.8	1201.8	1201.8
2.5°	1199.9	1199.9	1199.9	1199.9	1199.9	1199.9	1199.9	1199.9	1199.9	1199.9	1199.9
5°	1192.2	1192.2	1192.2	1192.2	1192.2	1192.2	1192.2	1194.1	1192.2	1194.1	1194.1
7.5°	1178.7	1176.8	1176.8	1176.8	1176.8	1176.8	1176.8	1176.8	1176.8	1176.8	1176.8
10°	1151.9	1149.9	1149.9	1146.1	1148.0	1146.1	1146.1	1146.1	1146.1	1146.1	1146.1
12.5°	1105.8	1105.8	1103.9	1101.9	1100.0	1100.0	1100.0	1100.0	1100.0	1100.0	1100.0
15°	1050.1	1050.1	1048.2	1044.4	1042.4	1040.5	1038.6	1038.6	1036.7	1036.7	1034.8
17.5°	984.8	984.8	981.0	977.2	973.3	971.4	967.6	963.7	961.8	959.9	956.0
20°	915.7	915.7	910.0	908.0	900.4	898.5	892.7	886.9	879.3	877.3	875.4
22.5°	833.2	829.3	827.4	827.4	821.7	817.8	814.0	806.3	794.8	790.9	785.2
25°	739.1	737.2	737.2	735.3	733.4	729.5	731.4	725.7	716.1	708.4	698.8
27.5°	641.2	639.3	637.4	639.3	643.1	643.1	641.2	637.4	633.5	623.9	618.2
30°	533.7	533.7	537.5	543.3	549.1	551.0	552.9	551.0	549.1	543.3	543.3
32.5°	428.1	431.9	435.8	449.2	455.0	458.8	460.7	466.5	466.5	466.5	462.7
35°	343.6	343.6	351.3	360.9	368.6	376.3	378.2	385.9	391.6	391.6	391.6
37.5°	266.8	268.8	276.4	284.1	293.7	297.6	301.4	312.9	320.6	324.4	326.4
40°	207.3	211.2	215.0	222.7	232.3	234.2	238.1	247.6	257.2	264.9	268.8
42.5°	161.3	161.3	165.1	170.9	176.6	182.4	186.2	192.0	203.5	209.3	216.9
45°	122.9	124.8	126.7	130.5	136.3	138.2	142.1	149.7	157.4	165.1	180.5
47.5°	94.1	94.1	96.0	97.9	103.7	105.6	107.5	115.2	122.9	138.2	149.7
50°	71.0	71.0	71.0	73.0	76.8	80.6	82.5	88.3	103.7	115.2	124.8
52.5°	51.8	51.8	51.8	55.7	57.6	59.5	61.4	69.1	88.3	90.2	94.1
55°	38.4	38.4	38.4	40.3	44.2	46.1	48.0	61.4	65.3	71.0	63.4
57.5°	28.8	28.8	28.8	30.7	32.6	34.6	38.4	48.0	53.8	46.1	44.2
60°	21.1	21.1	21.1	23.0	26.9	28.8	32.6	36.5	36.5	32.6	30.7
62.5°	17.3	17.3	17.3	17.3	21.1	25.0	25.0	28.8	25.0	23.0	23.0
65°	13.4	13.4	13.4	15.4	17.3	19.2	21.1	19.2	17.3	17.3	19.2
67.5°	11.5	11.5	11.5	11.5	15.4	15.4	15.4	13.4	13.4	13.4	15.4
70°	9.6	9.6	9.6	9.6	11.5	11.5	11.5	9.6	9.6	11.5	13.4
72.5°	7.7	7.7	7.7	9.6	9.6	9.6	7.7	7.7	7.7	9.6	9.6
75°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	7.7	7.7	7.7
77.5°	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.8	5.8	5.8	5.8
80°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.8
82.5°	0.0	1.9	1.9	0.0	0.0	0.0	0.0	1.9	1.9	1.9	1.9
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°	1201.8	1201.8	1201.8	1201.8	1201.8	1201.8	1201.8	1201.8	1201.8	1201.8
2.5°	1199.9	1199.9	1201.8	1199.9	1199.9	1199.9	1199.9	1199.9	1199.9	1199.9
5°	1194.1	1194.1	1194.1	1194.1	1194.1	1194.1	1194.1	1194.1	1194.1	1194.1
7.5°	1176.8	1176.8	1176.8	1174.9	1174.9	1174.9	1174.9	1174.9	1174.9	1173.0
10°	1146.1	1146.1	1144.2	1142.3	1144.2	1140.3	1140.3	1138.4	1138.4	1140.3
12.5°	1098.1	1096.2	1092.3	1092.3	1090.4	1088.5	1086.6	1086.6	1084.7	1084.7
15°	1034.8	1030.9	1027.1	1025.2	1021.3	1023.2	1021.3	1017.5	1017.5	1015.6
17.5°	958.0	954.1	948.4	942.6	942.6	940.7	940.7	936.8	934.9	933.0
20°	869.7	867.7	865.8	860.1	858.1	854.3	850.5	850.5	844.7	846.6
22.5°	781.3	779.4	775.6	773.7	769.8	769.8	766.0	766.0	762.1	762.1
25°	696.9	695.0	691.1	689.2	685.4	685.4	681.5	683.4	679.6	679.6
27.5°	612.4	610.5	606.6	608.6	604.7	602.8	600.9	600.9	599.0	599.0
30°	535.6	529.9	529.9	527.9	526.0	526.0	526.0	522.2	522.2	524.1
32.5°	460.7	456.9	455.0	455.0	456.9	455.0	453.1	453.1	451.1	449.2
35°	391.6	389.7	387.8	387.8	387.8	387.8	387.8	387.8	387.8	387.8
37.5°	326.4	328.3	326.4	328.3	330.2	328.3	326.4	324.4	324.4	324.4
40°	270.7	274.5	276.4	272.6	270.7	270.7	268.8	270.7	268.8	270.7
42.5°	226.5	228.5	224.6	226.5	228.5	228.5	224.6	218.9	215.0	213.1
45°	184.3	188.1	197.7	184.3	178.5	176.6	170.9	168.9	167.0	167.0
47.5°	157.4	165.1	145.9	140.1	136.3	136.3	132.5	128.6	128.6	126.7
50°	128.6	113.3	109.4	105.6	101.7	99.8	97.9	96.0	96.0	94.1
52.5°	86.4	82.5	78.7	76.8	74.9	74.9	74.9	74.9	74.9	74.9
55°	61.4	59.5	57.6	59.5	59.5	61.4	63.4	63.4	63.4	61.4
57.5°	42.2	42.2	46.1	49.9	49.9	49.9	49.9	48.0	48.0	48.0
60°	32.6	34.6	38.4	38.4	38.4	40.3	38.4	36.5	34.6	34.6
62.5°	25.0	28.8	30.7	30.7	28.8	28.8	26.9	26.9	26.9	26.9
65°	21.1	23.0	23.0	23.0	23.0	21.1	19.2	19.2	21.1	21.1
67.5°	17.3	17.3	17.3	15.4	15.4	17.3	19.2	21.1	21.1	23.0
70°	13.4	13.4	13.4	15.4	17.3	17.3	21.1	21.1	23.0	23.0
72.5°	9.6	9.6	13.4	15.4	17.3	17.3	17.3	15.4	15.4	15.4
75°	7.7	9.6	13.4	11.5	11.5	11.5	11.5	11.5	11.5	11.5
77.5°	5.8	7.7	7.7	5.8	7.7	7.7	7.7	9.6	9.6	11.5
80°	3.8	3.8	3.8	3.8	3.8	3.8	5.8	5.8	5.8	5.8
82.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
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)