

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: P219769

Luminaire Tested: **MRZ-1-REC-X-2-L35-80-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219769
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14877)
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-L35-80-FL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL2
Light Source: (1) 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 742.5 lumens
Efficiency: N/A
Efficacy: 84.4 lumens/watt
Spacing Criteria (0/90/45): 0.61 / 0.69 / 0.7
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

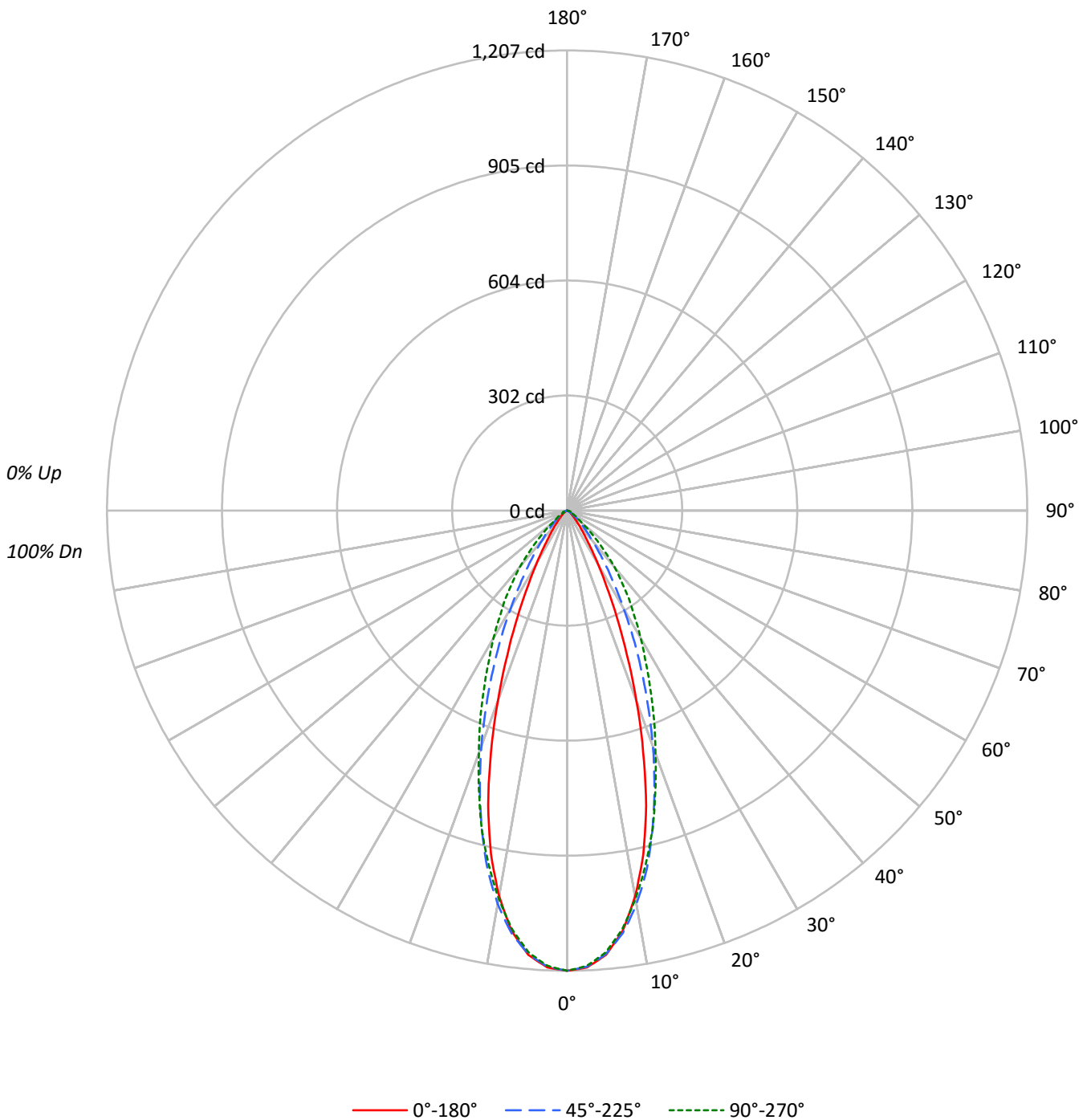
Input Watts (W): 8.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	108	106	111	109	106	104	105	103	101	101	99	98	97	96	95	93
2	108	103	99	96	106	101	98	95	98	95	93	95	93	91	92	90	89	87
3	103	96	91	87	101	95	90	87	92	88	85	90	87	84	88	85	83	81
4	98	90	85	81	96	89	84	80	87	83	79	85	81	78	83	80	77	76
5	93	85	79	75	91	84	78	74	82	77	74	80	76	73	79	75	72	71
6	88	80	74	70	87	79	74	70	78	73	69	76	72	69	75	71	68	67
7	84	75	70	65	83	75	69	65	73	68	65	72	68	65	71	67	64	63
8	81	71	66	62	79	71	65	61	70	65	61	69	64	61	68	64	61	59
9	77	68	62	58	76	67	62	58	66	61	58	65	61	58	65	61	57	56
10	74	64	59	55	73	64	59	55	63	58	55	62	58	55	62	58	55	53

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	595509	595509	595509
5°	579311	578221	576042
10°	514467	524938	517774
15°	408934	442033	442033
20°	279113	345426	355770
25°	166799	249927	281011
30°	91950	167664	219622
35°	48305	107813	170031
40°	27566	65759	124497
45°	17653	42144	77380
50°	12665	27786	40451
55°	10408	16085	25547
60°	8683	9769	16282
65°	7705	7705	12842
70°	6347	6347	17455
75°	6291	4194	10484
80°	3125	3125	6251
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.3	14.4
10°-20°	233.1	31.4
20°-30°	201.7	27.2
30°-40°	116.5	15.7
40°-50°	52.8	7.1
50°-60°	18.7	2.5
60°-70°	8.2	1.1
70°-80°	3.9	0.5
80°-90°	0.3	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°	542.1	73.0
0°-40°	658.6	88.7
0°-60°	730.0	98.3
0°-90°	742.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	742.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1207	1207	1207	1207	1207	
5°	1170	1169	1168	1163	1163	107
15°	801	825	865	873	865	217
25°	306	352	459	526	516	144
35°	80	104	179	267	282	54
45°	25	31	60	105	111	21
55°	12	12	19	24	30	11
65°	7	8	7	10	11	7
75°	3	3	2	4	6	3
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°	1207.0	1207.0	1207.0	1207.0	1207.0	1207.0	1207.0	1207.0	1207.0	1207.0	1207.0
2.5°	1199.3	1197.1	1197.1	1197.1	1198.2	1198.2	1197.1	1197.1	1197.1	1197.1	1197.1
5°	1169.7	1167.5	1167.5	1168.6	1167.5	1168.6	1167.5	1169.7	1168.6	1167.5	1167.5
7.5°	1112.6	1112.6	1112.6	1113.7	1114.7	1114.7	1114.7	1116.9	1116.9	1119.1	1118.0
10°	1026.9	1029.1	1029.1	1032.4	1035.7	1033.5	1034.6	1041.2	1043.4	1045.6	1047.8
12.5°	922.6	925.8	928.0	930.2	933.5	936.8	937.9	948.9	952.2	956.6	964.3
15°	800.6	799.5	806.1	809.4	819.3	824.8	828.1	839.1	850.1	856.7	865.4
17.5°	663.4	666.7	669.9	678.7	690.8	698.5	702.9	716.1	733.6	747.9	761.1
20°	531.6	538.2	541.4	551.3	563.4	567.8	579.9	597.5	620.5	640.3	657.9
22.5°	409.7	413.0	421.7	432.7	445.9	455.8	467.9	485.4	509.6	529.4	553.5
25°	306.4	307.5	318.5	328.4	342.7	352.5	359.1	382.2	407.5	432.7	459.1
27.5°	222.9	225.1	231.7	241.6	257.0	263.6	274.6	294.3	318.5	346.0	373.4
30°	161.4	161.4	165.8	176.8	187.8	196.6	204.3	222.9	246.0	269.1	294.3
32.5°	113.1	114.2	118.6	126.3	137.3	143.9	149.4	166.9	185.6	208.7	230.6
35°	80.2	81.3	85.7	90.1	98.8	104.3	108.7	121.9	138.4	158.2	179.0
37.5°	58.2	59.3	61.5	64.8	71.4	74.7	79.1	90.1	103.2	118.6	137.3
40°	42.8	43.9	45.0	48.3	52.7	54.9	58.2	65.9	75.8	89.0	102.1
42.5°	32.9	32.9	34.0	36.2	38.4	40.6	42.8	48.3	56.0	65.9	78.0
45°	25.3	25.3	26.4	28.6	29.7	30.8	32.9	36.2	41.7	49.4	60.4
47.5°	20.9	20.9	20.9	22.0	23.1	24.2	25.3	28.6	31.8	39.5	46.1
50°	16.5	16.5	17.6	17.6	18.7	18.7	19.8	22.0	26.4	31.8	36.2
52.5°	14.3	14.3	14.3	14.3	14.3	15.4	15.4	17.6	22.0	24.2	26.4
55°	12.1	12.1	12.1	12.1	12.1	12.1	13.2	15.4	17.6	19.8	18.7
57.5°	9.9	9.9	9.9	9.9	9.9	11.0	11.0	13.2	14.3	13.2	13.2
60°	8.8	8.8	7.7	7.7	8.8	8.8	9.9	11.0	11.0	9.9	9.9
62.5°	7.7	6.6	6.6	6.6	7.7	8.8	8.8	8.8	7.7	7.7	7.7
65°	6.6	5.5	5.5	6.6	6.6	7.7	7.7	6.6	6.6	6.6	6.6
67.5°	5.5	5.5	5.5	5.5	6.6	6.6	6.6	5.5	5.5	5.5	5.5
70°	4.4	4.4	4.4	4.4	5.5	5.5	4.4	4.4	4.4	4.4	4.4
72.5°	3.3	3.3	3.3	4.4	4.4	4.4	3.3	3.3	3.3	4.4	3.3
75°	3.3	3.3	3.3	3.3	3.3	3.3	2.2	2.2	3.3	3.3	2.2
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1
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°	1207.0	1207.0	1207.0	1207.0	1207.0	1207.0	1207.0	1207.0	1207.0	1207.0
2.5°	1196.0	1196.0	1194.9	1196.0	1196.0	1196.0	1196.0	1194.9	1196.0	1194.9
5°	1166.4	1166.4	1166.4	1164.2	1163.1	1164.2	1163.1	1162.0	1162.0	1163.1
7.5°	1115.8	1115.8	1114.7	1112.6	1112.6	1111.5	1109.3	1108.2	1107.1	1107.1
10°	1050.0	1048.9	1045.6	1044.5	1044.5	1041.2	1036.8	1036.8	1032.4	1033.5
12.5°	967.6	965.4	964.3	964.3	959.9	959.9	956.6	955.5	953.3	951.1
15°	868.7	872.0	874.2	873.1	873.1	869.8	868.7	866.5	863.2	865.4
17.5°	771.0	778.7	780.9	784.2	785.3	783.1	779.8	774.3	771.0	768.8
20°	674.3	685.3	693.0	695.2	695.2	694.1	693.0	684.2	683.1	677.6
22.5°	574.4	589.8	603.0	607.3	608.4	609.5	605.1	598.6	596.4	595.3
25°	481.0	501.9	515.1	523.9	526.1	529.4	527.2	523.9	517.3	516.2
27.5°	396.5	418.4	436.0	447.0	452.5	454.7	456.9	451.4	449.2	444.8
30°	320.7	346.0	364.6	380.0	383.3	387.7	388.8	389.9	385.5	385.5
32.5°	255.9	276.8	299.8	315.2	321.8	325.1	330.6	329.5	329.5	328.4
35°	201.0	221.9	242.7	259.2	266.9	271.3	277.9	281.2	282.3	282.3
37.5°	154.9	175.7	194.4	214.2	221.9	227.3	231.7	232.8	233.9	232.8
40°	118.6	138.4	157.1	170.2	175.7	180.1	185.6	190.0	192.2	193.3
42.5°	93.4	107.6	119.7	132.9	141.7	148.3	149.4	148.3	148.3	147.2
45°	70.3	81.3	99.9	103.2	105.4	106.5	109.8	110.9	110.9	110.9
47.5°	56.0	68.1	68.1	72.5	74.7	78.0	79.1	79.1	79.1	79.1
50°	41.7	43.9	47.2	50.5	51.6	51.6	52.7	52.7	52.7	52.7
52.5°	27.5	30.8	31.8	32.9	34.0	35.1	37.3	38.4	37.3	37.3
55°	19.8	20.9	22.0	24.2	24.2	25.3	29.7	29.7	29.7	29.7
57.5°	13.2	14.3	16.5	19.8	19.8	20.9	22.0	22.0	23.1	23.1
60°	11.0	12.1	13.2	14.3	15.4	17.6	19.8	16.5	16.5	16.5
62.5°	8.8	9.9	11.0	12.1	11.0	12.1	13.2	13.2	13.2	13.2
65°	7.7	8.8	7.7	8.8	9.9	9.9	8.8	9.9	9.9	11.0
67.5°	6.6	6.6	6.6	6.6	6.6	7.7	9.9	11.0	12.1	12.1
70°	4.4	4.4	4.4	6.6	6.6	7.7	8.8	11.0	11.0	12.1
72.5°	3.3	3.3	4.4	5.5	6.6	6.6	7.7	7.7	8.8	8.8
75°	3.3	3.3	4.4	4.4	4.4	4.4	5.5	5.5	5.5	5.5
77.5°	2.2	2.2	2.2	2.2	3.3	3.3	3.3	4.4	4.4	4.4
80°	1.1	1.1	1.1	1.1	2.2	2.2	2.2	2.2	2.2	2.2
82.5°	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.1	1.1	1.1
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)