

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: P219787

Luminaire Tested: **MRZ-1-REC-X-4-L30-97-FL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P219787  
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-4-L30-97-FL-UNV-X-STD-LSL  
Description: MRZ INTEGRAL LED DOWNLIGHT  
40 DEGREE FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 4  
Light Source: (1) 3000K CCT, 97 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 945.3 lumens  
Efficiency: N/A  
Efficacy: 59.8 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

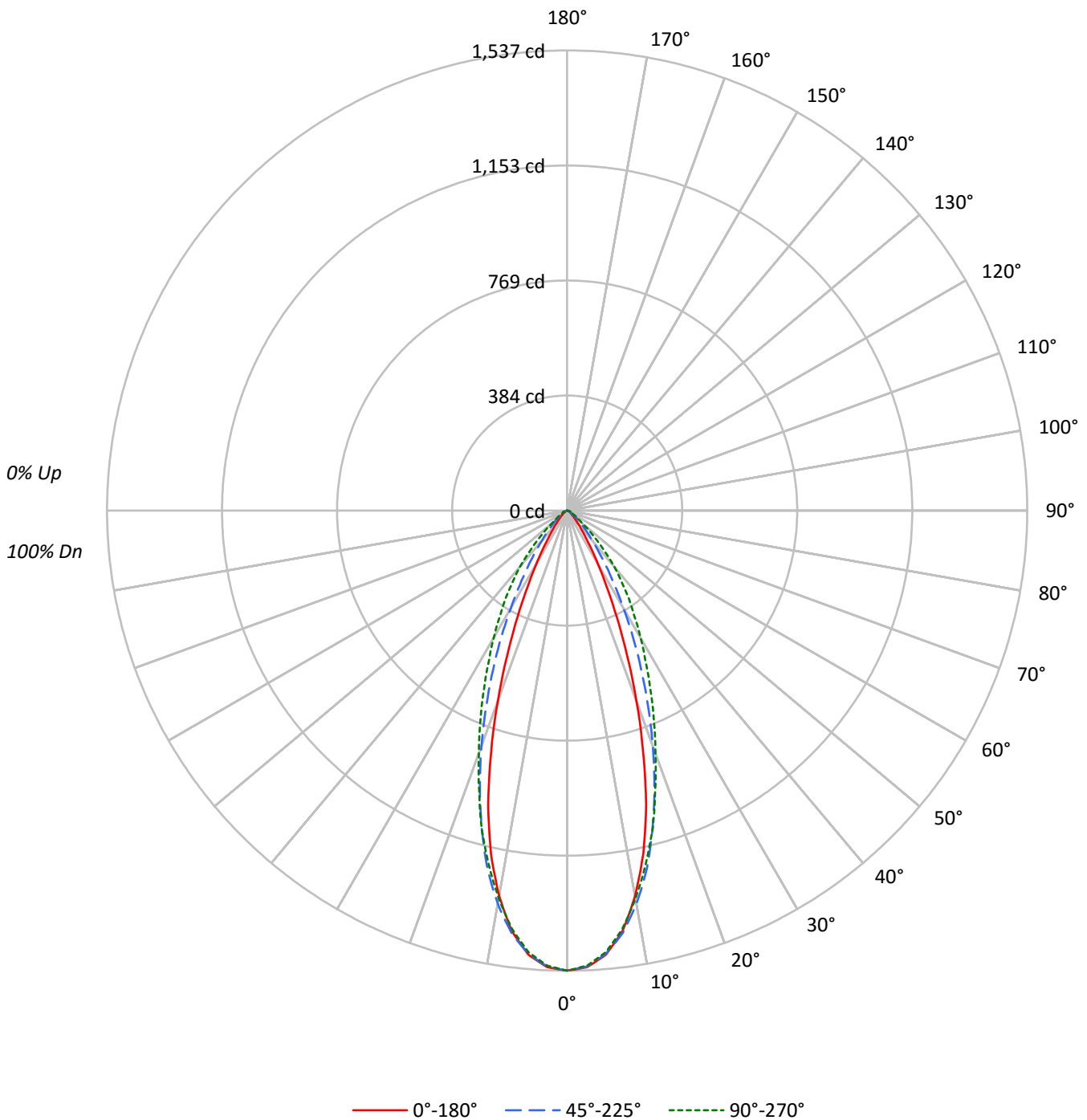
Input Watts (W): 15.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	758127	758127	758127
5°	737448	736111	733338
10°	654945	668272	659153
15°	520642	562782	562782
20°	355297	439724	452955
25°	212364	318138	357715
30°	117075	213469	279612
35°	61495	137265	216408
40°	35101	83728	158503
45°	22467	53657	98521
50°	16119	35385	51503
55°	13247	20472	32515
60°	11052	12433	20722
65°	9806	9806	16344
70°	8078	8078	22215
75°	8006	5338	13344
80°	3978	3978	7956
85°	0	0	0



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.6	14.4
10°-20°	296.8	31.4
20°-30°	256.7	27.2
30°-40°	148.3	15.7
40°-50°	67.2	7.1
50°-60°	23.8	2.5
60°-70°	10.5	1.1
70°-80°	5.0	0.5
80°-90°	0.4	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°	690.1	73.0
0°-40°	838.4	88.7
0°-60°	929.4	98.3
0°-90°	945.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	945.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1537	1537	1537	1537	1537	
5°	1489	1488	1486	1481	1481	136
15°	1019	1050	1102	1112	1102	276
25°	390	449	584	670	657	183
35°	102	133	228	340	359	69
45°	32	39	77	134	141	26
55°	15	15	24	31	38	14
65°	8	10	8	13	14	8
75°	4	4	3	6	7	4
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°	1536.6	1536.6	1536.6	1536.6	1536.6	1536.6	1536.6	1536.6	1536.6	1536.6	1536.6
2.5°	1526.8	1524.0	1524.0	1524.0	1525.4	1525.4	1524.0	1524.0	1524.0	1524.0	1524.0
5°	1489.0	1486.3	1486.3	1487.7	1486.3	1487.7	1486.3	1489.0	1487.7	1486.3	1486.3
7.5°	1416.3	1416.3	1416.3	1417.7	1419.1	1419.1	1419.1	1421.9	1421.9	1424.7	1423.3
10°	1307.3	1310.1	1310.1	1314.3	1318.5	1315.7	1317.1	1325.5	1328.3	1331.1	1333.9
12.5°	1174.5	1178.7	1181.5	1184.2	1188.4	1192.6	1194.0	1208.0	1212.2	1217.8	1227.6
15°	1019.3	1017.9	1026.3	1030.4	1043.0	1050.0	1054.2	1068.2	1082.2	1090.6	1101.8
17.5°	844.5	848.7	852.9	864.1	879.4	889.2	894.8	911.6	934.0	952.2	968.9
20°	676.7	685.1	689.3	701.9	717.3	722.9	738.2	760.6	790.0	815.1	837.5
22.5°	521.5	525.7	536.9	550.9	567.7	580.2	595.6	618.0	648.7	673.9	704.7
25°	390.1	391.5	405.5	418.1	436.2	448.8	457.2	486.6	518.7	550.9	584.4
27.5°	283.8	286.6	295.0	307.6	327.2	335.6	349.5	374.7	405.5	440.4	475.4
30°	205.5	205.5	211.1	225.1	239.1	250.3	260.1	283.8	313.2	342.6	374.7
32.5°	144.0	145.4	151.0	160.8	174.8	183.2	190.2	212.5	236.3	265.7	293.6
35°	102.1	103.5	109.1	114.6	125.8	132.8	138.4	155.2	176.2	201.3	227.9
37.5°	74.1	75.5	78.3	82.5	90.9	95.1	100.7	114.6	131.4	151.0	174.8
40°	54.5	55.9	57.3	61.5	67.1	69.9	74.1	83.9	96.5	113.3	130.0
42.5°	41.9	41.9	43.3	46.1	48.9	51.7	54.5	61.5	71.3	83.9	99.3
45°	32.2	32.2	33.6	36.4	37.8	39.1	41.9	46.1	53.1	62.9	76.9
47.5°	26.6	26.6	26.6	28.0	29.4	30.8	32.2	36.4	40.5	50.3	58.7
50°	21.0	21.0	22.4	22.4	23.8	23.8	25.2	28.0	33.6	40.5	46.1
52.5°	18.2	18.2	18.2	18.2	18.2	19.6	19.6	22.4	28.0	30.8	33.6
55°	15.4	15.4	15.4	15.4	15.4	15.4	16.8	19.6	22.4	25.2	23.8
57.5°	12.6	12.6	12.6	12.6	12.6	14.0	14.0	16.8	18.2	16.8	16.8
60°	11.2	11.2	9.8	9.8	11.2	11.2	12.6	14.0	14.0	12.6	12.6
62.5°	9.8	8.4	8.4	8.4	9.8	11.2	11.2	11.2	9.8	9.8	9.8
65°	8.4	7.0	7.0	8.4	8.4	9.8	9.8	8.4	8.4	8.4	8.4
67.5°	7.0	7.0	7.0	7.0	8.4	8.4	8.4	7.0	7.0	7.0	7.0
70°	5.6	5.6	5.6	5.6	7.0	7.0	5.6	5.6	5.6	5.6	5.6
72.5°	4.2	4.2	4.2	5.6	5.6	5.6	4.2	4.2	4.2	5.6	4.2
75°	4.2	4.2	4.2	4.2	4.2	4.2	2.8	2.8	4.2	4.2	2.8
77.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4
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°	1536.6	1536.6	1536.6	1536.6	1536.6	1536.6	1536.6	1536.6	1536.6	1536.6
2.5°	1522.6	1522.6	1521.2	1522.6	1522.6	1522.6	1522.6	1521.2	1522.6	1521.2
5°	1484.9	1484.9	1484.9	1482.1	1480.7	1482.1	1480.7	1479.3	1479.3	1480.7
7.5°	1420.5	1420.5	1419.1	1416.3	1416.3	1414.9	1412.1	1410.8	1409.4	1409.4
10°	1336.6	1335.3	1331.1	1329.7	1329.7	1325.5	1319.9	1319.9	1314.3	1315.7
12.5°	1231.8	1229.0	1227.6	1227.6	1222.0	1222.0	1217.8	1216.4	1213.6	1210.8
15°	1106.0	1110.1	1112.9	1111.5	1111.5	1107.3	1106.0	1103.2	1099.0	1101.8
17.5°	981.5	991.3	994.1	998.3	999.7	996.9	992.7	985.7	981.5	978.7
20°	858.5	872.5	882.2	885.0	885.0	883.6	882.2	871.1	869.7	862.7
22.5°	731.2	750.8	767.6	773.2	774.6	776.0	770.4	762.0	759.2	757.8
25°	612.4	639.0	655.7	666.9	669.7	673.9	671.1	666.9	658.5	657.1
27.5°	504.7	532.7	555.1	569.1	576.0	578.8	581.6	574.6	571.9	566.3
30°	408.3	440.4	464.2	483.8	488.0	493.6	495.0	496.3	490.8	490.8
32.5°	325.8	352.3	381.7	401.3	409.7	413.9	420.8	419.5	419.5	418.1
35°	255.9	282.4	309.0	330.0	339.8	345.3	353.7	357.9	359.3	359.3
37.5°	197.1	223.7	247.5	272.6	282.4	289.4	295.0	296.4	297.8	296.4
40°	151.0	176.2	199.9	216.7	223.7	229.3	236.3	241.9	244.7	246.1
42.5°	118.8	137.0	152.4	169.2	180.4	188.8	190.2	188.8	188.8	187.4
45°	89.5	103.5	127.2	131.4	134.2	135.6	139.8	141.2	141.2	141.2
47.5°	71.3	86.7	86.7	92.3	95.1	99.3	100.7	100.7	100.7	100.7
50°	53.1	55.9	60.1	64.3	65.7	65.7	67.1	67.1	67.1	67.1
52.5°	35.0	39.1	40.5	41.9	43.3	44.7	47.5	48.9	47.5	47.5
55°	25.2	26.6	28.0	30.8	30.8	32.2	37.8	37.8	37.8	37.8
57.5°	16.8	18.2	21.0	25.2	25.2	26.6	28.0	28.0	29.4	29.4
60°	14.0	15.4	16.8	18.2	19.6	22.4	25.2	21.0	21.0	21.0
62.5°	11.2	12.6	14.0	15.4	14.0	15.4	16.8	16.8	16.8	16.8
65°	9.8	11.2	9.8	11.2	12.6	12.6	11.2	12.6	12.6	14.0
67.5°	8.4	8.4	8.4	8.4	8.4	9.8	12.6	14.0	15.4	15.4
70°	5.6	5.6	5.6	8.4	8.4	9.8	11.2	14.0	14.0	15.4
72.5°	4.2	4.2	5.6	7.0	8.4	8.4	9.8	9.8	11.2	11.2
75°	4.2	4.2	5.6	5.6	5.6	5.6	7.0	7.0	7.0	7.0
77.5°	2.8	2.8	2.8	2.8	4.2	4.2	4.2	5.6	5.6	5.6
80°	1.4	1.4	1.4	1.4	2.8	2.8	2.8	2.8	2.8	2.8
82.5°	1.4	1.4	1.4	1.4	1.4	0.0	0.0	1.4	1.4	1.4
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)