

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: P219909

Luminaire Tested: **MRZ-1-REC-X-4-L40-80-WFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219909
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-L40-80-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) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1186.6 lumens
Efficiency: N/A
Efficacy: 75.1 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

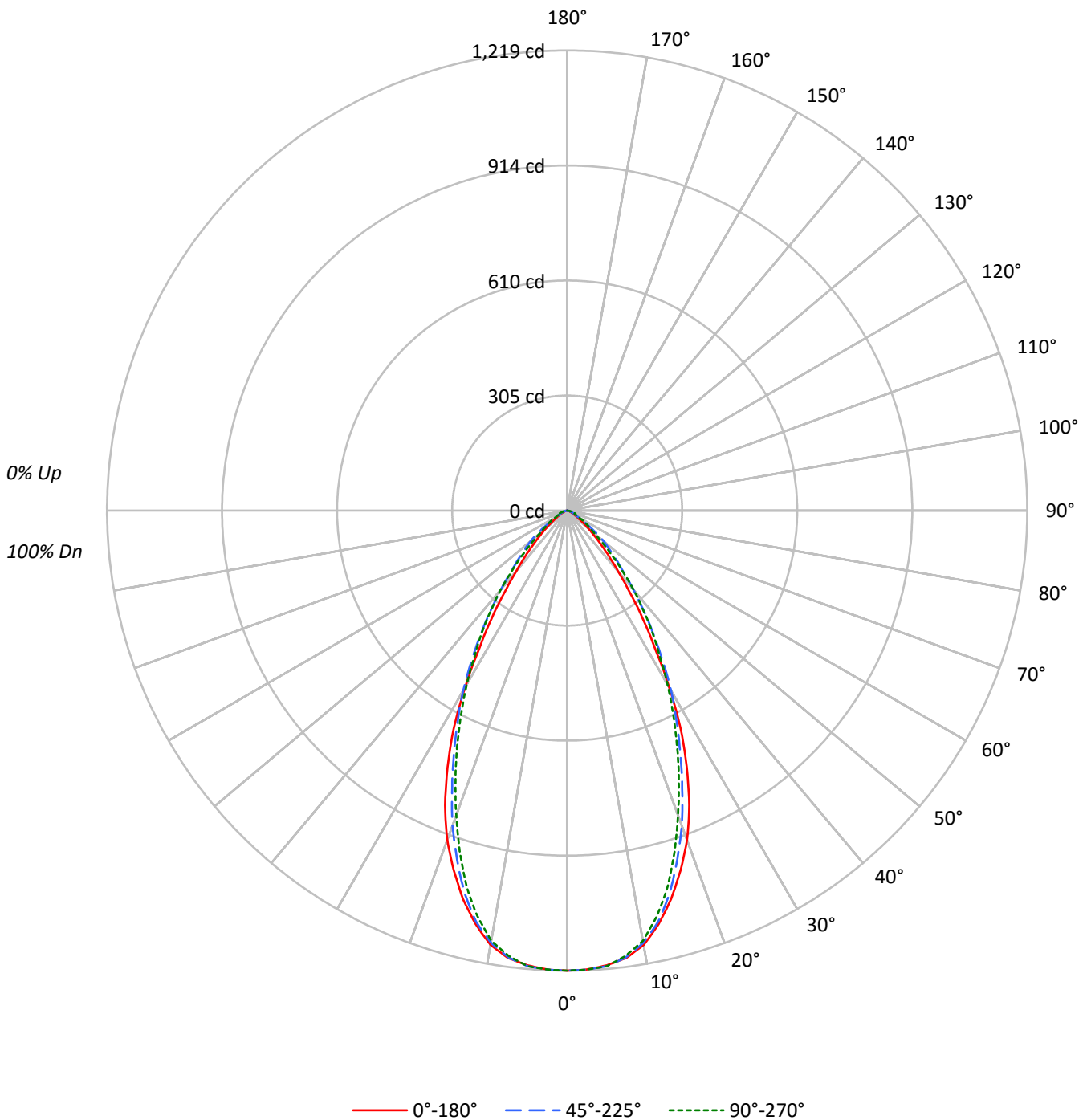
Input Watts (W): 15.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P219909

CATALOG NUMBER: MRZ-1-REC-X-4-L40-80-WFL-UNV-X-STD-LSL

Luminous Intensity Polar Plot





TEST NUMBER: P219909

CATALOG NUMBER: MRZ-1-REC-X-4-L40-80-WFL-UNV-X-STD-LSL

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	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	84	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°	601380	601380	601380
5°	598873	599864	599864
10°	585307	582402	579446
15°	544036	536068	526159
20°	487660	466186	450855
25°	408125	385859	375244
30°	308382	313965	302856
35°	209903	239236	236887
40°	135446	175571	176859
45°	86939	127687	118198
50°	55264	97173	73225
55°	33461	55310	53589
60°	21117	30787	34537
65°	15877	22765	24983
70°	13993	19619	33756
75°	11056	14869	22303
80°	5398	11081	16479
85°	0	0	0



TEST NUMBER: P219909

CATALOG NUMBER: MRZ-1-REC-X-4-L40-80-WFL-UNV-X-STD-LSL

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	114.0	9.6
10°-20°	290.6	24.5
20°-30°	327.2	27.6
30°-40°	242.0	20.4
40°-50°	129.0	10.9
50°-60°	53.0	4.5
60°-70°	20.7	1.7
70°-80°	9.2	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°	731.8	61.7
0°-40°	973.8	82.1
0°-60°	1155.8	97.4
0°-90°	1186.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1186.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1219	1219	1219	1219	1219	
5°	1209	1209	1211	1211	1211	114
15°	1065	1055	1050	1036	1030	297
25°	750	740	709	695	689	340
35°	348	382	397	393	393	220
45°	125	140	183	181	169	100
55°	39	47	64	60	62	37
65°	14	20	20	23	21	14
75°	6	6	8	12	12	6
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



TEST NUMBER: P219909

CATALOG NUMBER: MRZ-1-REC-X-4-L40-80-WFL-UNV-X-STD-LSL

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1218.9	1218.9	1218.9	1218.9	1218.9	1218.9	1218.9	1218.9	1218.9	1218.9	1218.9
2.5°	1217.0	1217.0	1217.0	1217.0	1217.0	1217.0	1217.0	1217.0	1217.0	1217.0	1217.0
5°	1209.2	1209.2	1209.2	1209.2	1209.2	1209.2	1209.2	1211.2	1209.2	1211.2	1211.2
7.5°	1195.6	1193.6	1193.6	1193.6	1193.6	1193.6	1193.6	1193.6	1193.6	1193.6	1193.6
10°	1168.3	1166.4	1166.4	1162.5	1164.4	1162.5	1162.5	1162.5	1162.5	1162.5	1162.5
12.5°	1121.6	1121.6	1119.6	1117.7	1115.7	1115.7	1115.7	1115.7	1115.7	1115.7	1115.7
15°	1065.1	1065.1	1063.2	1059.3	1057.3	1055.4	1053.4	1053.4	1051.5	1051.5	1049.5
17.5°	998.9	998.9	995.0	991.1	987.2	985.3	981.4	977.5	975.5	973.6	969.7
20°	928.8	928.8	923.0	921.0	913.2	911.3	905.4	899.6	891.8	889.9	887.9
22.5°	845.1	841.2	839.2	839.2	833.4	829.5	825.6	817.8	806.1	802.2	796.4
25°	749.7	747.7	747.7	745.8	743.8	739.9	741.9	736.0	726.3	718.5	708.8
27.5°	650.4	648.4	646.5	648.4	652.3	652.3	650.4	646.5	642.6	632.8	627.0
30°	541.3	541.3	545.2	551.1	556.9	558.8	560.8	558.8	556.9	551.1	551.1
32.5°	434.2	438.1	442.0	455.6	461.5	465.4	467.3	473.2	473.2	473.2	469.3
35°	348.5	348.5	356.3	366.1	373.9	381.7	383.6	391.4	397.2	397.2	397.2
37.5°	270.7	272.6	280.4	288.2	297.9	301.8	305.7	317.4	325.2	329.1	331.0
40°	210.3	214.2	218.1	225.9	235.6	237.6	241.5	251.2	260.9	268.7	272.6
42.5°	163.6	163.6	167.5	173.3	179.1	185.0	188.9	194.7	206.4	212.2	220.0
45°	124.6	126.6	128.5	132.4	138.3	140.2	144.1	151.9	159.7	167.5	183.0
47.5°	95.4	95.4	97.4	99.3	105.1	107.1	109.0	116.8	124.6	140.2	151.9
50°	72.0	72.0	72.0	74.0	77.9	81.8	83.7	89.6	105.1	116.8	126.6
52.5°	52.6	52.6	52.6	56.5	58.4	60.4	62.3	70.1	89.6	91.5	95.4
55°	38.9	38.9	38.9	40.9	44.8	46.7	48.7	62.3	66.2	72.0	64.3
57.5°	29.2	29.2	29.2	31.2	33.1	35.0	38.9	48.7	54.5	46.7	44.8
60°	21.4	21.4	21.4	23.4	27.3	29.2	33.1	37.0	37.0	33.1	31.2
62.5°	17.5	17.5	17.5	17.5	21.4	25.3	25.3	29.2	25.3	23.4	23.4
65°	13.6	13.6	13.6	15.6	17.5	19.5	21.4	19.5	17.5	17.5	19.5
67.5°	11.7	11.7	11.7	11.7	15.6	15.6	15.6	13.6	13.6	13.6	15.6
70°	9.7	9.7	9.7	9.7	11.7	11.7	11.7	9.7	9.7	11.7	13.6
72.5°	7.8	7.8	7.8	9.7	9.7	9.7	7.8	7.8	7.8	9.7	9.7
75°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	7.8	7.8	7.8
77.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	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	3.9
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



TEST NUMBER: P219909

CATALOG NUMBER: MRZ-1-REC-X-4-L40-80-WFL-UNV-X-STD-LSL

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°
0°	1218.9	1218.9	1218.9	1218.9	1218.9	1218.9	1218.9	1218.9	1218.9	1218.9
2.5°	1217.0	1217.0	1218.9	1217.0	1217.0	1217.0	1217.0	1217.0	1217.0	1217.0
5°	1211.2	1211.2	1211.2	1211.2	1211.2	1211.2	1211.2	1211.2	1211.2	1211.2
7.5°	1193.6	1193.6	1193.6	1191.7	1191.7	1191.7	1191.7	1191.7	1191.7	1189.7
10°	1162.5	1162.5	1160.5	1158.6	1160.5	1156.6	1156.6	1154.7	1154.7	1156.6
12.5°	1113.8	1111.9	1108.0	1108.0	1106.0	1104.1	1102.1	1102.1	1100.2	1100.2
15°	1049.5	1045.6	1041.8	1039.8	1035.9	1037.9	1035.9	1032.0	1032.0	1030.1
17.5°	971.7	967.8	961.9	956.1	956.1	954.1	954.1	950.2	948.3	946.3
20°	882.1	880.1	878.2	872.3	870.4	866.5	862.6	862.6	856.8	858.7
22.5°	792.5	790.6	786.7	784.7	780.8	780.8	776.9	776.9	773.0	773.0
25°	706.8	704.9	701.0	699.0	695.2	695.2	691.3	693.2	689.3	689.3
27.5°	621.2	619.2	615.3	617.3	613.4	611.4	609.5	609.5	607.5	607.5
30°	543.3	537.4	537.4	535.5	533.5	533.5	533.5	529.6	529.6	531.6
32.5°	467.3	463.4	461.5	461.5	463.4	461.5	459.5	459.5	457.6	455.6
35°	397.2	395.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3	393.3
37.5°	331.0	333.0	331.0	333.0	334.9	333.0	331.0	329.1	329.1	329.1
40°	274.6	278.4	280.4	276.5	274.6	274.6	272.6	274.6	272.6	274.6
42.5°	229.8	231.7	227.8	229.8	231.7	231.7	227.8	222.0	218.1	216.1
45°	186.9	190.8	200.6	186.9	181.1	179.1	173.3	171.4	169.4	169.4
47.5°	159.7	167.5	148.0	142.1	138.3	138.3	134.4	130.5	130.5	128.5
50°	130.5	114.9	111.0	107.1	103.2	101.3	99.3	97.4	97.4	95.4
52.5°	87.6	83.7	79.8	77.9	75.9	75.9	75.9	75.9	75.9	75.9
55°	62.3	60.4	58.4	60.4	60.4	62.3	64.3	64.3	64.3	62.3
57.5°	42.8	42.8	46.7	50.6	50.6	50.6	50.6	48.7	48.7	48.7
60°	33.1	35.0	38.9	38.9	38.9	40.9	38.9	37.0	35.0	35.0
62.5°	25.3	29.2	31.2	31.2	29.2	29.2	27.3	27.3	27.3	27.3
65°	21.4	23.4	23.4	23.4	23.4	21.4	19.5	19.5	21.4	21.4
67.5°	17.5	17.5	17.5	15.6	15.6	17.5	19.5	21.4	21.4	23.4
70°	13.6	13.6	13.6	15.6	17.5	17.5	21.4	21.4	23.4	23.4
72.5°	9.7	9.7	13.6	15.6	17.5	17.5	17.5	15.6	15.6	15.6
75°	7.8	9.7	13.6	11.7	11.7	11.7	11.7	11.7	11.7	11.7
77.5°	5.8	7.8	7.8	5.8	7.8	7.8	7.8	9.7	9.7	11.7
80°	3.9	3.9	3.9	3.9	3.9	3.9	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)