

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: P219624

Luminaire Tested: **MRZ-1-REC-X-3-L30-97-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219624
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-3-L30-97-NFL-UNV-X-STD-LSL
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH LINEAR SPREAD LENS, LIGHT LEVEL 3
Light Source: (1) 3000K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 774.0 lumens
Efficiency: N/A
Efficacy: 64.0 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

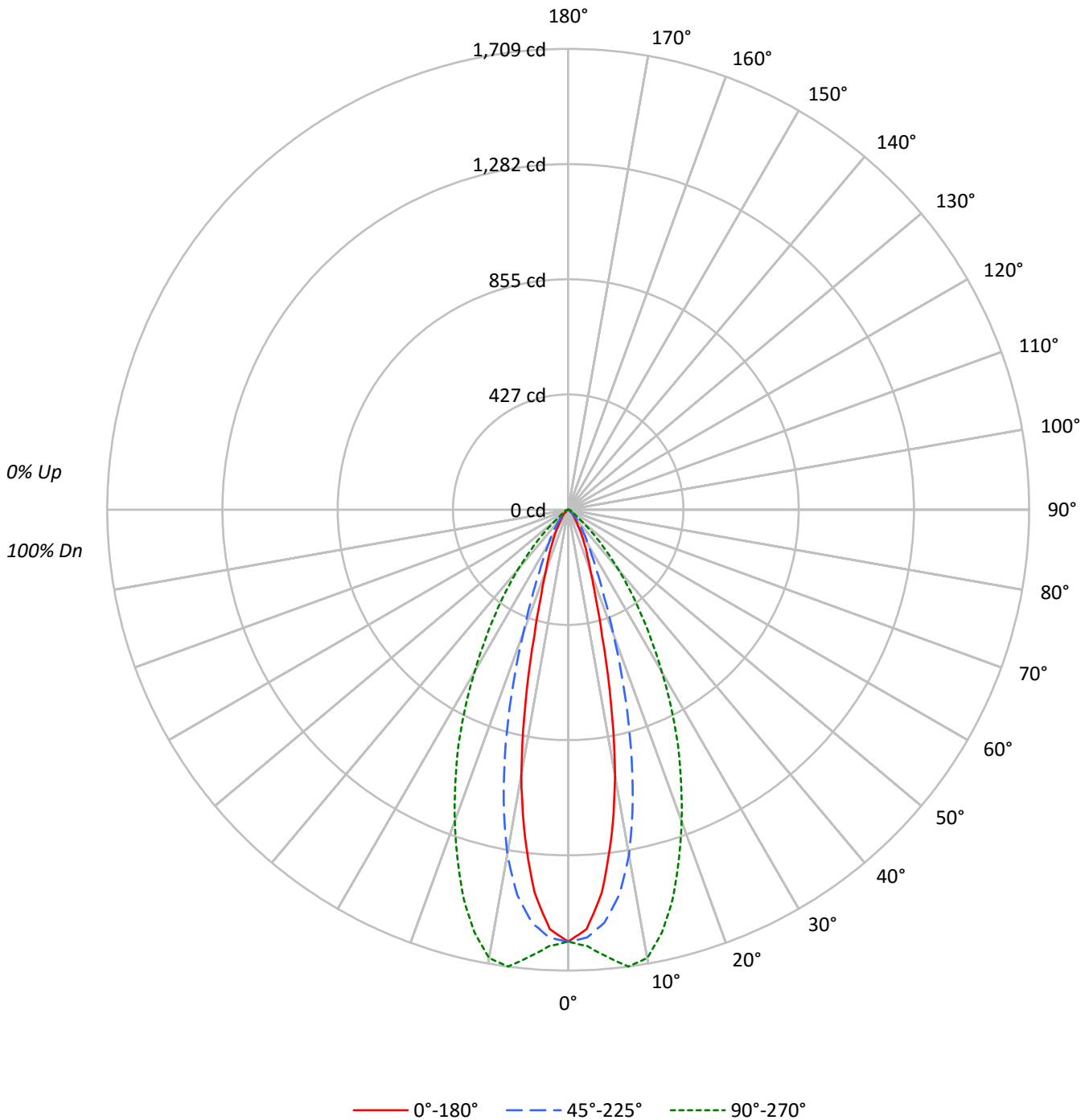
Input Watts (W): 12.1
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	94
2	109	104	100	97	106	102	99	96	99	96	94	96	94	92	93	92	90	88
3	104	98	93	89	102	96	92	88	94	90	87	91	88	86	89	87	84	83
4	99	92	87	83	97	91	86	82	89	85	81	87	83	80	85	82	80	78
5	95	87	81	77	93	86	81	77	84	80	76	82	79	76	81	78	75	74
6	90	82	77	73	89	81	76	72	80	75	72	79	75	72	77	74	71	70
7	87	78	72	69	85	77	72	68	76	71	68	75	71	68	74	70	67	66
8	83	74	69	65	82	74	68	65	73	68	65	72	67	64	71	67	64	63
9	80	71	65	62	79	70	65	62	69	65	61	69	64	61	68	64	61	60
10	77	68	62	59	76	67	62	59	66	62	59	66	61	58	65	61	58	57

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	790246	790246	790246
5°	706049	761320	824664
10°	501692	650687	845672
15°	247935	455670	763929
20°	126851	253701	645751
25°	79752	136314	523752
30°	47969	83462	395490
35°	30958	53967	282481
40°	21834	35230	186585
45°	16816	24421	104522
50°	10055	16810	44442
55°	7484	11268	23483
60°	6513	7598	15097
65°	6421	6421	12725
70°	6347	4760	17311
75°	6291	4194	12581
80°	3125	3125	6251
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.3	18.1
10°-20°	261.6	33.8
20°-30°	196.4	25.4
30°-40°	108.0	14.0
40°-50°	43.8	5.7
50°-60°	13.9	1.8
60°-70°	6.6	0.9
70°-80°	3.2	0.4
80°-90°	0.2	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°	598.2	77.3
0°-40°	706.2	91.2
0°-60°	764.0	98.7
0°-90°	774.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	774.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1602	1602	1602	1602	1602	
5°	1426	1458	1537	1628	1665	122
15°	485	571	892	1327	1496	142
25°	146	164	250	730	962	68
35°	51	61	90	271	469	33
45°	24	23	35	67	150	18
55°	9	10	13	16	27	8
65°	6	7	6	7	11	6
75°	3	2	2	2	7	3
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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CATALOG NUMBER: MRZ-1-REC-X-3-L30-97-NFL-UNV-X-STD-LSL

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	1601.7	1601.7	1601.7	1601.7	1601.7	1601.7	1601.7	1601.7	1601.7	1601.7	1601.7
2.5°	1556.8	1556.8	1555.7	1559.0	1565.6	1565.6	1568.9	1572.1	1575.4	1582.0	1588.5
5°	1425.6	1427.8	1426.7	1438.8	1447.5	1458.4	1461.7	1480.3	1494.5	1516.4	1537.2
7.5°	1226.7	1227.8	1237.6	1251.8	1273.7	1285.7	1302.1	1328.3	1360.0	1401.6	1442.0
10°	1001.4	1001.4	1016.8	1037.5	1055.0	1079.1	1091.1	1133.7	1179.6	1237.6	1298.8
12.5°	729.2	729.2	755.5	770.8	802.5	823.2	840.7	889.9	950.1	1024.4	1105.3
15°	485.4	494.2	504.0	524.8	553.2	570.7	582.7	633.0	704.1	787.2	892.1
17.5°	330.2	335.6	342.2	358.6	372.8	381.6	392.5	435.1	486.5	567.4	677.8
20°	241.6	247.1	252.5	260.2	268.9	273.3	281.0	302.8	340.0	396.9	483.2
22.5°	187.0	191.3	195.7	200.1	206.6	209.9	214.3	228.5	248.2	284.3	346.6
25°	146.5	146.5	152.0	155.2	160.7	164.0	169.5	179.3	194.6	215.4	250.4
27.5°	111.5	112.6	115.9	120.3	124.6	127.9	133.4	142.1	152.0	166.2	188.0
30°	84.2	86.4	88.6	91.8	97.3	100.6	103.9	111.5	120.3	131.2	146.5
32.5°	64.5	66.7	67.8	71.1	75.4	77.6	80.9	87.5	95.1	106.0	115.9
35°	51.4	51.4	53.6	54.7	59.0	61.2	63.4	67.8	75.4	82.0	89.6
37.5°	40.5	41.5	42.6	43.7	47.0	48.1	49.2	52.5	56.9	63.4	70.0
40°	33.9	35.0	35.0	35.0	36.1	36.1	37.2	39.4	43.7	48.1	54.7
42.5°	28.4	28.4	28.4	28.4	28.4	28.4	29.5	30.6	33.9	38.3	43.7
45°	24.1	23.0	23.0	23.0	23.0	23.0	23.0	25.1	27.3	30.6	35.0
47.5°	17.5	18.6	18.6	18.6	18.6	18.6	19.7	19.7	21.9	25.1	27.3
50°	13.1	14.2	14.2	15.3	15.3	15.3	15.3	16.4	18.6	20.8	21.9
52.5°	10.9	10.9	10.9	12.0	12.0	12.0	12.0	13.1	15.3	16.4	17.5
55°	8.7	8.7	8.7	8.7	9.8	9.8	10.9	12.0	13.1	13.1	13.1
57.5°	7.7	7.7	7.7	7.7	7.7	8.7	8.7	9.8	10.9	9.8	9.8
60°	6.6	6.6	6.6	6.6	6.6	7.7	7.7	8.7	7.7	7.7	7.7
62.5°	6.6	6.6	5.5	5.5	6.6	6.6	6.6	6.6	6.6	6.6	5.5
65°	5.5	5.5	5.5	5.5	5.5	6.6	6.6	5.5	5.5	4.4	5.5
67.5°	5.5	5.5	4.4	5.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4
70°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	3.3	3.3	3.3	3.3
72.5°	3.3	3.3	3.3	4.4	3.3	3.3	3.3	3.3	3.3	3.3	3.3
75°	3.3	3.3	3.3	3.3	3.3	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2	1.1	1.1
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	1.1	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°	1601.7	1601.7	1601.7	1601.7	1601.7	1601.7	1601.7	1601.7	1601.7	1601.7
2.5°	1594.0	1598.4	1603.8	1609.3	1611.5	1613.7	1617.0	1619.1	1620.2	1620.2
5°	1559.0	1580.9	1601.7	1619.1	1627.9	1635.5	1648.7	1657.4	1665.1	1665.1
7.5°	1484.7	1530.6	1573.2	1610.4	1626.8	1644.3	1671.6	1692.4	1703.3	1708.8
10°	1363.3	1432.2	1496.7	1553.6	1579.8	1601.7	1641.0	1668.3	1681.5	1688.0
12.5°	1198.2	1289.0	1371.0	1442.0	1473.7	1500.0	1540.4	1576.5	1595.1	1604.9
15°	1005.8	1113.0	1210.3	1291.2	1327.2	1360.0	1413.6	1457.3	1483.6	1495.6
17.5°	802.5	934.8	1045.2	1138.1	1170.9	1207.0	1269.3	1319.6	1354.6	1363.3
20°	614.4	757.6	883.4	979.6	1017.8	1053.9	1123.9	1177.5	1215.7	1229.9
22.5°	447.2	586.0	724.8	827.6	871.3	910.7	980.7	1038.6	1079.1	1093.3
25°	319.2	431.8	569.6	686.6	730.3	769.7	839.6	898.7	940.2	962.1
27.5°	232.9	309.4	430.8	551.0	598.0	639.6	704.1	765.3	804.7	825.4
30°	170.6	220.8	311.6	428.6	479.9	520.4	589.3	640.7	683.3	694.2
32.5°	130.1	158.5	220.8	316.0	368.4	411.1	477.8	527.0	560.9	572.9
35°	99.5	117.0	154.2	226.3	271.1	314.9	378.3	428.6	458.1	469.0
37.5°	77.6	89.6	111.5	159.6	194.6	232.9	295.2	336.7	360.8	375.0
40°	62.3	71.1	85.3	113.7	137.8	166.2	218.7	258.0	282.1	289.7
42.5°	50.3	56.9	64.5	80.9	97.3	118.1	160.7	188.0	207.7	212.1
45°	39.4	43.7	52.5	60.1	66.7	77.6	107.1	132.3	144.3	149.8
47.5°	31.7	37.2	37.2	41.5	45.9	53.6	72.2	86.4	95.1	97.3
50°	24.1	25.1	27.3	29.5	31.7	33.9	43.7	52.5	57.9	57.9
52.5°	17.5	18.6	18.6	19.7	20.8	23.0	28.4	32.8	36.1	37.2
55°	13.1	13.1	14.2	15.3	16.4	17.5	20.8	25.1	26.2	27.3
57.5°	9.8	9.8	10.9	12.0	13.1	13.1	16.4	18.6	20.8	23.0
60°	7.7	7.7	8.7	8.7	9.8	10.9	14.2	15.3	15.3	15.3
62.5°	6.6	6.6	6.6	7.7	7.7	7.7	9.8	13.1	14.2	14.2
65°	5.5	5.5	5.5	5.5	6.6	6.6	7.7	8.7	10.9	10.9
67.5°	4.4	4.4	4.4	4.4	5.5	5.5	7.7	8.7	10.9	12.0
70°	3.3	3.3	3.3	4.4	4.4	5.5	6.6	8.7	10.9	12.0
72.5°	2.2	2.2	3.3	3.3	3.3	4.4	5.5	6.6	7.7	7.7
75°	2.2	2.2	2.2	2.2	2.2	2.2	3.3	5.5	5.5	6.6
77.5°	2.2	2.2	1.1	2.2	2.2	2.2	2.2	3.3	4.4	4.4
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	2.2
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)