

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: P219621

Luminaire Tested: **MRZ-1-REC-X-3-L30-80-NFL-UNV-X-STD-LSL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P219621
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-L30-80-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, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1008.2 lumens
Efficiency: N/A
Efficacy: 84.7 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

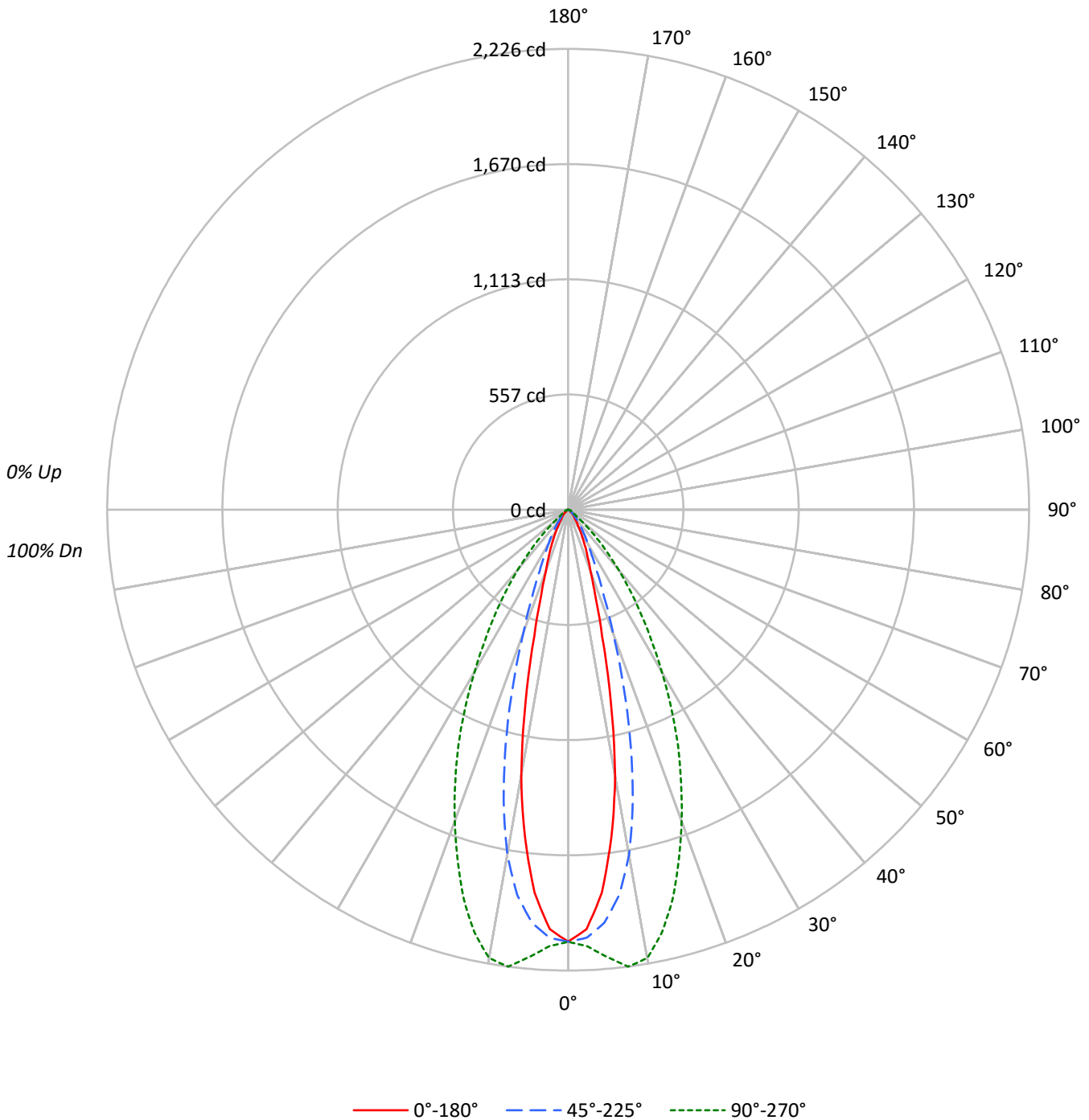
Input Watts (W): 11.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	1029436	1029436	1029436
5°	919805	991767	1074327
10°	653592	847676	1101729
15°	323020	593633	995212
20°	165284	330515	841277
25°	103923	177578	682331
30°	62497	108757	515242
35°	40294	70349	368008
40°	28468	45857	243069
45°	21839	31817	136130
50°	13125	21876	57951
55°	9806	14709	30622
60°	8387	9868	19637
65°	8289	8289	16578
70°	8223	6203	22648
75°	8197	5338	16203
80°	3978	3978	7956
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	182.8	18.1
10°-20°	340.7	33.8
20°-30°	255.9	25.4
30°-40°	140.7	14.0
40°-50°	57.1	5.7
50°-60°	18.2	1.8
60°-70°	8.6	0.9
70°-80°	4.2	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°	779.4	77.3
0°-40°	920.0	91.2
0°-60°	995.2	98.7
0°-90°	1008.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1008.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2086	2086	2086	2086	2086	
5°	1857	1900	2002	2121	2169	159
15°	632	744	1162	1729	1948	185
25°	191	214	326	951	1253	89
35°	67	80	117	353	611	43
45°	31	30	46	87	195	23
55°	11	13	17	21	36	11
65°	7	8	7	8	14	7
75°	4	3	3	3	8	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°	2086.5	2086.5	2086.5	2086.5	2086.5	2086.5	2086.5	2086.5	2086.5	2086.5	2086.5
2.5°	2028.2	2028.2	2026.7	2031.0	2039.5	2039.5	2043.8	2048.1	2052.4	2060.9	2069.5
5°	1857.2	1860.1	1858.7	1874.3	1885.7	1900.0	1904.2	1928.5	1947.0	1975.5	2002.5
7.5°	1598.0	1599.5	1612.3	1630.8	1659.3	1674.9	1696.3	1730.5	1771.8	1825.9	1878.6
10°	1304.6	1304.6	1324.6	1351.6	1374.4	1405.8	1421.4	1477.0	1536.8	1612.3	1692.0
12.5°	950.0	950.0	984.2	1004.1	1045.4	1072.5	1095.3	1159.4	1237.7	1334.5	1439.9
15°	632.4	643.8	656.6	683.6	720.7	743.5	759.1	824.6	917.2	1025.5	1162.2
17.5°	430.1	437.2	445.8	467.2	485.7	497.1	511.3	566.9	633.8	739.2	883.0
20°	314.8	321.9	329.0	339.0	350.4	356.1	366.0	394.5	442.9	517.0	629.5
22.5°	243.5	249.2	254.9	260.6	269.2	273.5	279.2	297.7	323.3	370.3	451.5
25°	190.9	190.9	198.0	202.2	209.4	213.6	220.8	233.6	253.5	280.6	326.2
27.5°	145.3	146.7	151.0	156.7	162.4	166.6	173.8	185.2	198.0	216.5	245.0
30°	109.7	112.5	115.4	119.6	126.8	131.0	135.3	145.3	156.7	170.9	190.9
32.5°	84.0	86.9	88.3	92.6	98.3	101.1	105.4	113.9	123.9	138.2	151.0
35°	66.9	66.9	69.8	71.2	76.9	79.8	82.6	88.3	98.3	106.8	116.8
37.5°	52.7	54.1	55.5	57.0	61.2	62.7	64.1	68.4	74.1	82.6	91.2
40°	44.2	45.6	45.6	45.6	47.0	47.0	48.4	51.3	57.0	62.7	71.2
42.5°	37.0	37.0	37.0	37.0	37.0	37.0	38.5	39.9	44.2	49.8	57.0
45°	31.3	29.9	29.9	29.9	29.9	29.9	29.9	32.8	35.6	39.9	45.6
47.5°	22.8	24.2	24.2	24.2	24.2	24.2	25.6	25.6	28.5	32.8	35.6
50°	17.1	18.5	18.5	19.9	19.9	19.9	19.9	21.4	24.2	27.1	28.5
52.5°	14.2	14.2	14.2	15.7	15.7	15.7	15.7	17.1	19.9	21.4	22.8
55°	11.4	11.4	11.4	11.4	12.8	12.8	14.2	15.7	17.1	17.1	17.1
57.5°	10.0	10.0	10.0	10.0	10.0	11.4	11.4	12.8	14.2	12.8	12.8
60°	8.5	8.5	8.5	8.5	8.5	10.0	10.0	11.4	10.0	10.0	10.0
62.5°	8.5	8.5	7.1	7.1	8.5	8.5	8.5	8.5	8.5	8.5	7.1
65°	7.1	7.1	7.1	7.1	7.1	8.5	8.5	7.1	7.1	5.7	7.1
67.5°	7.1	7.1	5.7	7.1	7.1	7.1	7.1	5.7	5.7	5.7	5.7
70°	5.7	5.7	5.7	5.7	5.7	5.7	5.7	4.3	4.3	4.3	4.3
72.5°	4.3	4.3	4.3	5.7	4.3	4.3	4.3	4.3	4.3	4.3	4.3
75°	4.3	4.3	4.3	4.3	4.3	2.8	2.8	2.8	2.8	2.8	2.8
77.5°	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	1.4	1.4
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	1.4	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°	2086.5	2086.5	2086.5	2086.5	2086.5	2086.5	2086.5	2086.5	2086.5	2086.5
2.5°	2076.6	2082.3	2089.4	2096.5	2099.4	2102.2	2106.5	2109.3	2110.8	2110.8
5°	2031.0	2059.5	2086.5	2109.3	2120.7	2130.7	2147.8	2159.2	2169.2	2169.2
7.5°	1934.2	1994.0	2049.5	2097.9	2119.3	2142.1	2177.7	2204.8	2219.0	2226.1
10°	1776.1	1865.8	1949.8	2023.9	2058.1	2086.5	2137.8	2173.4	2190.5	2199.1
12.5°	1561.0	1679.2	1786.0	1878.6	1919.9	1954.1	2006.8	2053.8	2078.0	2090.8
15°	1310.3	1449.9	1576.7	1682.1	1729.1	1771.8	1841.6	1898.5	1932.7	1948.4
17.5°	1045.4	1217.7	1361.6	1482.7	1525.4	1572.4	1653.6	1719.1	1764.7	1776.1
20°	800.4	987.0	1150.8	1276.1	1326.0	1373.0	1464.1	1533.9	1583.8	1602.3
22.5°	582.5	763.4	944.3	1078.2	1135.1	1186.4	1277.6	1353.1	1405.8	1424.3
25°	415.9	562.6	742.0	894.4	951.4	1002.7	1093.8	1170.7	1224.9	1253.4
27.5°	303.4	403.1	561.2	717.8	779.1	833.2	917.2	997.0	1048.3	1075.3
30°	222.2	287.7	405.9	558.3	625.3	678.0	767.7	834.6	890.2	904.4
32.5°	169.5	206.5	287.7	411.6	480.0	535.5	622.4	686.5	730.6	746.3
35°	129.6	152.4	200.8	294.8	353.2	410.2	492.8	558.3	596.8	611.0
37.5°	101.1	116.8	145.3	207.9	253.5	303.4	384.6	438.7	470.0	488.5
40°	81.2	92.6	111.1	148.1	179.5	216.5	284.9	336.1	367.5	377.4
42.5°	65.5	74.1	84.0	105.4	126.8	153.8	209.4	245.0	270.6	276.3
45°	51.3	57.0	68.4	78.3	86.9	101.1	139.6	172.3	188.0	195.1
47.5°	41.3	48.4	48.4	54.1	59.8	69.8	94.0	112.5	123.9	126.8
50°	31.3	32.8	35.6	38.5	41.3	44.2	57.0	68.4	75.5	75.5
52.5°	22.8	24.2	24.2	25.6	27.1	29.9	37.0	42.7	47.0	48.4
55°	17.1	17.1	18.5	19.9	21.4	22.8	27.1	32.8	34.2	35.6
57.5°	12.8	12.8	14.2	15.7	17.1	17.1	21.4	24.2	27.1	29.9
60°	10.0	10.0	11.4	11.4	12.8	14.2	18.5	19.9	19.9	19.9
62.5°	8.5	8.5	8.5	10.0	10.0	10.0	12.8	17.1	18.5	18.5
65°	7.1	7.1	7.1	7.1	8.5	8.5	10.0	11.4	14.2	14.2
67.5°	5.7	5.7	5.7	5.7	7.1	7.1	10.0	11.4	14.2	15.7
70°	4.3	4.3	4.3	5.7	5.7	7.1	8.5	11.4	14.2	15.7
72.5°	2.8	2.8	4.3	4.3	4.3	5.7	7.1	8.5	10.0	10.0
75°	2.8	2.8	2.8	2.8	2.8	2.8	4.3	7.1	7.1	8.5
77.5°	2.8	2.8	1.4	2.8	2.8	2.8	2.8	4.3	5.7	5.7
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	2.8
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)