

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: P226163

Luminaire Tested: **MRZ-1-REC-X-1-L35-97-NFL-UNV-X-STD-SNT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226163
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P14874)
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-1-L35-97-NFL-UNV-X-STD-SNT
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH SNOOT, LIGHT LEVEL 1
Light Source: (1) 3500K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 447.6 lumens
Efficiency: N/A
Efficacy: 82.9 lumens/watt
Spacing Criteria (0/90/45): 0.42 / 0.41 / 0.38
Luminous Opening: Circular (Dia: 0.17' x H: 0')
CIE Type: Direct

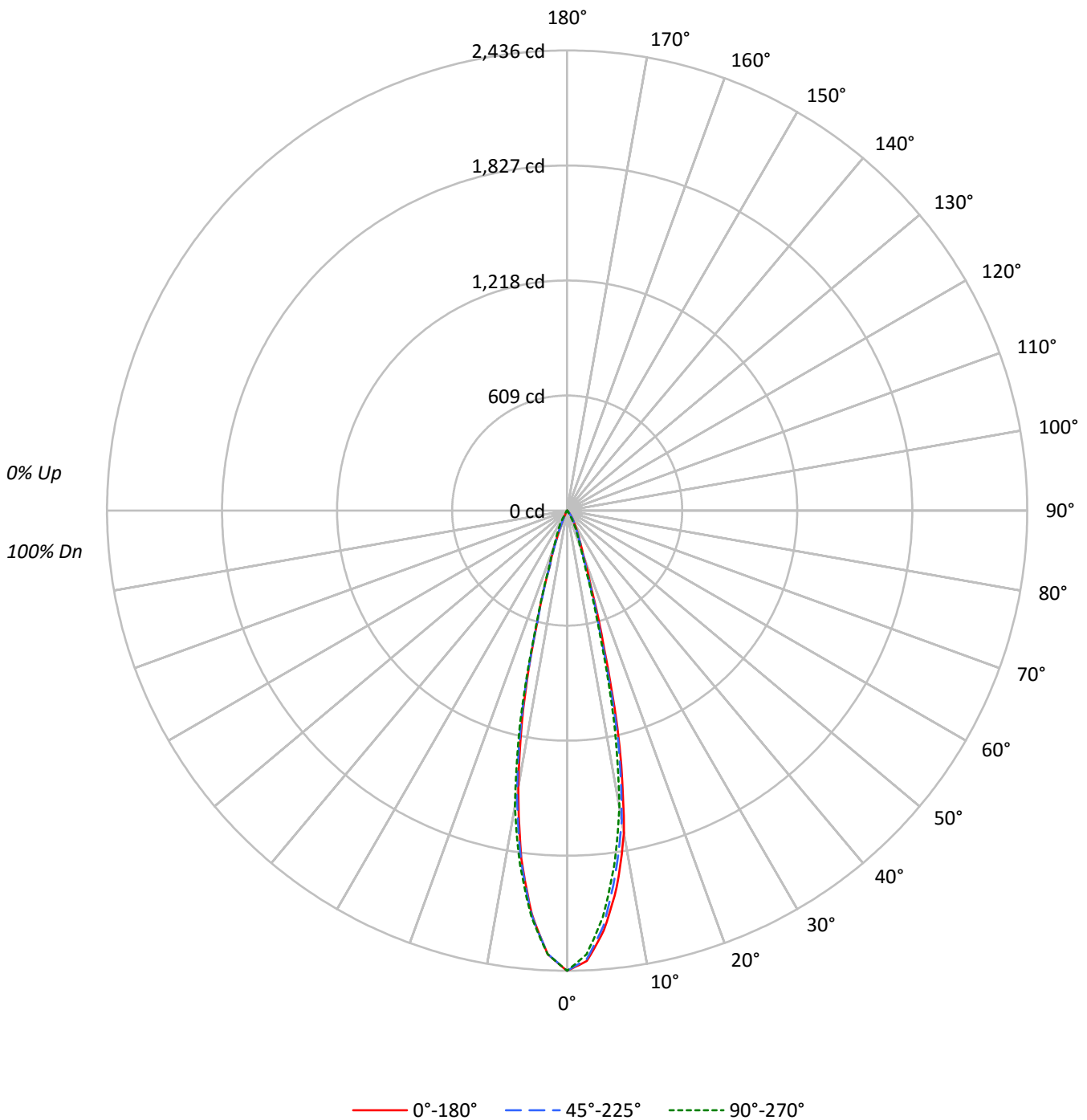
Input Watts (W): 5.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	100	100	100	100	100		
1	115	113	111	110	113	111	110	108	107	106	105	104	103	102	100	99	99	97	97	97	97	97	97	97		
2	112	108	105	103	110	107	104	102	104	102	100	101	99	98	98	97	96	94	94	94	94	94	94	94		
3	108	104	101	98	107	103	100	97	100	98	96	98	96	94	96	94	93	92	92	92	92	92	92	92		
4	105	100	97	94	104	99	96	93	97	95	92	96	93	91	94	92	90	89	89	89	89	89	89	89		
5	103	97	93	90	101	96	93	90	95	92	89	93	91	89	92	90	88	87	87	87	87	87	87	87		
6	100	94	90	88	99	94	90	87	92	89	87	91	88	86	90	88	86	85	85	85	85	85	85	85		
7	98	92	88	85	97	91	87	85	90	87	84	89	86	84	88	86	84	83	83	83	83	83	83	83		
8	95	89	85	83	94	89	85	83	88	85	82	87	84	82	86	84	82	81	81	81	81	81	81	81		
9	93	87	83	81	92	86	83	80	86	83	80	85	82	80	84	82	80	79	79	79	79	79	79	79		
10	91	85	81	79	90	84	81	79	84	81	78	83	80	78	83	80	78	77	77	77	77	77	77	77		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	1201922	1201922	1201922
5°	1104835	1070514	1061896
10°	867716	797928	745424
15°	385029	327617	313111
20°	128111	104326	94035
25°	70988	59719	19652
30°	41019	21478	6210
35°	23309	6264	2289
40°	12302	3478	1353
45°	6070	2303	349
50°	3377	1228	0
55°	2409	946	0
60°	1579	493	0
65°	1284	584	0
70°	721	0	0
75°	953	0	0
80°	0	0	0
85°	0	0	0



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	189.1	42.3
10°-20°	195.4	43.6
20°-30°	44.8	10.0
30°-40°	12.9	2.9
40°-50°	3.6	0.8
50°-60°	1.1	0.2
60°-70°	0.4	0.1
70°-80°	0.2	0.0
80°-90°	0.0	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°	429.3	95.9
0°-40°	442.3	98.8
0°-60°	447.0	99.9
0°-90°	447.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	447.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2436	2436	2436	2436	2436	
5°	2231	2206	2162	2151	2144	197
15°	754	687	641	606	613	220
25°	130	126	110	40	36	63
35°	39	36	10	4	4	25
45°	9	8	3	1	0	8
55°	3	2	1	0	0	2
65°	1	1	0	0	0	1
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	2436.1	2436.1	2436.1	2436.1	2436.1	2436.1	2436.1	2436.1	2436.1
2.5°	2387.0	2386.4	2376.1	2365.2	2351.0	2352.0	2349.8	2353.1	2351.5
5°	2230.8	2218.9	2205.7	2181.7	2161.5	2152.8	2150.7	2143.5	2144.1
7.5°	2010.9	1985.2	1948.1	1916.4	1899.5	1877.7	1868.4	1848.8	1857.0
10°	1732.0	1698.7	1665.4	1626.0	1592.7	1556.8	1528.9	1510.9	1487.9
12.5°	1286.0	1259.2	1245.7	1194.3	1154.4	1126.7	1111.3	1067.7	1068.2
15°	753.8	720.5	687.2	661.0	641.4	631.0	606.4	600.4	613.0
17.5°	402.9	388.1	366.3	342.3	328.6	318.8	310.6	307.4	302.4
20°	244.0	239.6	227.1	211.2	198.7	190.0	181.8	179.6	179.1
22.5°	176.3	174.2	166.0	154.4	142.5	122.3	97.7	92.8	94.4
25°	130.4	128.8	125.5	116.9	109.7	60.6	40.3	38.7	36.1
27.5°	97.7	96.6	92.8	86.8	73.6	26.8	22.4	20.7	20.7
30°	72.0	71.5	69.4	63.3	37.7	15.3	12.6	11.4	10.9
32.5°	52.9	52.9	50.8	45.3	17.0	9.8	7.7	7.1	6.5
35°	38.7	38.7	36.1	31.2	10.4	6.5	4.4	4.4	3.8
37.5°	27.9	27.3	25.6	19.6	7.7	4.4	3.3	3.3	2.8
40°	19.1	19.1	17.5	12.1	5.4	3.3	2.8	2.1	2.1
42.5°	13.1	13.1	12.1	7.7	4.4	2.8	1.6	1.6	1.6
45°	8.7	8.7	8.2	5.4	3.3	1.6	1.1	1.1	0.5
47.5°	6.0	6.0	5.4	3.8	2.1	1.1	0.5	0.5	0.5
50°	4.4	4.4	3.8	2.8	1.6	1.1	0.5	0.5	0.0
52.5°	3.3	3.3	3.3	2.1	1.1	0.5	0.0	0.0	0.0
55°	2.8	2.8	2.1	1.6	1.1	0.5	0.0	0.0	0.0
57.5°	2.1	2.1	1.6	1.1	0.5	0.5	0.0	0.0	0.0
60°	1.6	1.6	1.6	1.1	0.5	0.0	0.0	0.0	0.0
62.5°	1.1	1.1	1.1	0.5	0.5	0.0	0.0	0.0	0.0
65°	1.1	1.1	1.1	0.5	0.5	0.0	0.0	0.0	0.0
67.5°	0.5	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0
70°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
72.5°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
75°	0.5	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
77.5°	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	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
87.5°	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

(END OF REPORT)