

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: P226189

Luminaire Tested: **MRZ-1-REC-X-1-L40-97-NFL-UNV-X-STD-SNT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226189
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-L40-97-NFL-UNV-X-STD-SNT
Description: MRZ INTEGRAL LED DOWNLIGHT
25 DEGREE NARROW FLOOD OPTIC WITH SNOOT, LIGHT LEVEL 1
Light Source: (1) 4000K CCT, 97 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 465.0 lumens
Efficiency: N/A
Efficacy: 86.1 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

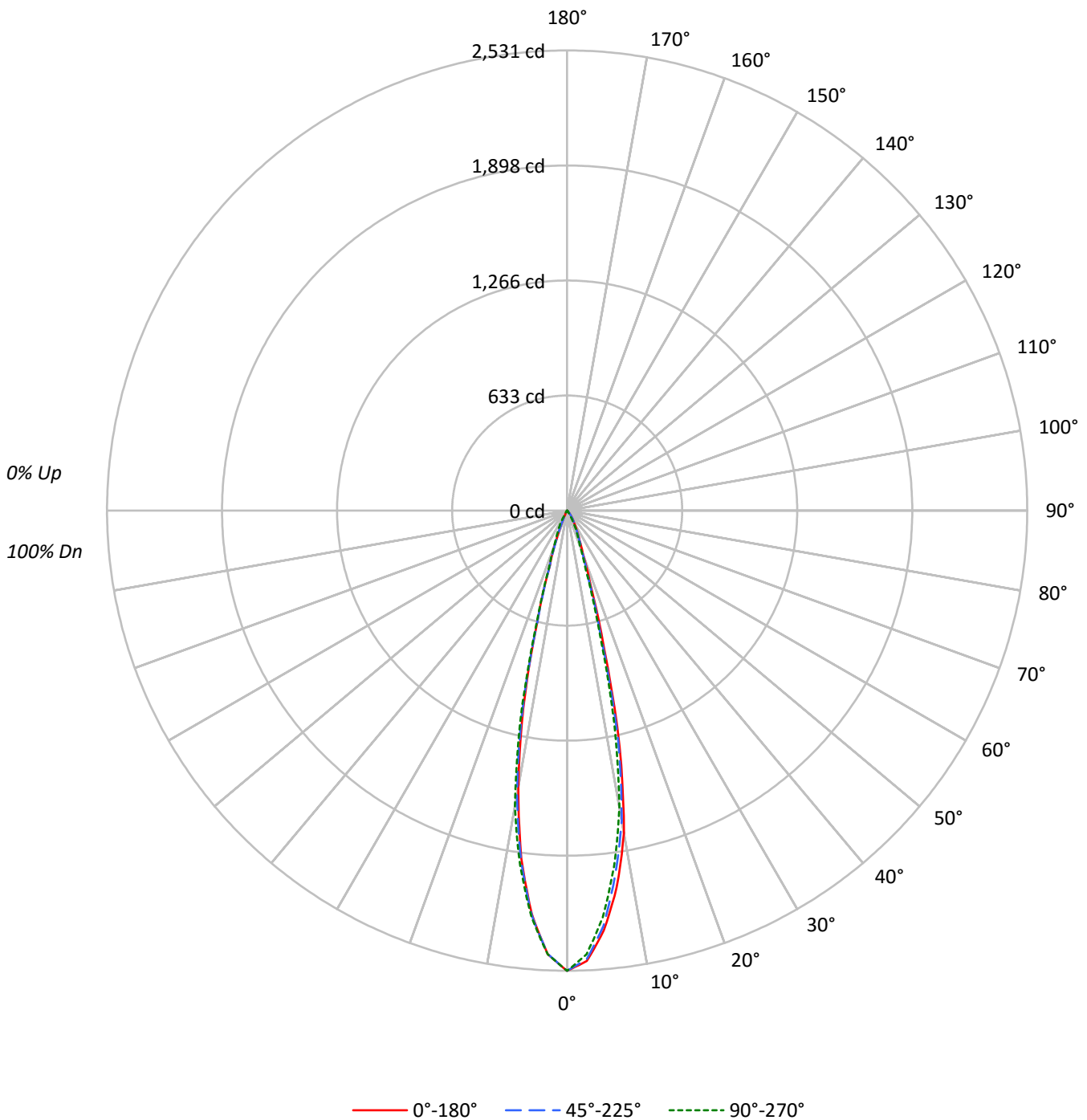
Input Watts (W): 5.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0	
RCR																						
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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	
2	112	108	105	103	110	107	104	102	104	102	100	101	99	98	98	97	96	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	
4	105	100	97	94	104	99	96	93	97	95	92	96	93	91	94	92	90	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	
6	100	94	90	88	99	94	90	87	92	89	87	91	88	86	90	88	86	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	
8	95	89	85	83	94	89	85	83	88	85	82	87	84	82	86	84	82	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	
10	91	85	81	79	90	84	81	79	84	81	78	83	80	78	83	80	78	77	77	77	77	

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	1248842	1248842	1248842
5°	1147973	1112314	1103350
10°	901583	829140	774532
15°	400046	340387	325318
20°	133099	108421	97658
25°	73764	62060	20360
30°	42671	22275	6438
35°	24273	6505	2349
40°	12752	3671	1417
45°	6349	2372	349
50°	3531	1305	0
55°	2495	1032	0
60°	1677	493	0
65°	1401	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°	196.5	42.3
10°-20°	203.0	43.6
20°-30°	46.6	10.0
30°-40°	13.4	2.9
40°-50°	3.8	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°	446.1	95.9
0°-40°	459.5	98.8
0°-60°	464.4	99.9
0°-90°	465.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	465.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	2531	2531	2531	2531	2531	
5°	2318	2292	2246	2235	2228	205
15°	783	714	666	630	637	229
25°	136	130	114	42	37	65
35°	40	37	11	5	4	26
45°	9	8	3	1	0	8
55°	3	2	1	0	0	3
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°	2531.2	2531.2	2531.2	2531.2	2531.2	2531.2	2531.2	2531.2	2531.2
2.5°	2480.1	2479.5	2468.8	2457.5	2442.7	2443.8	2441.6	2445.0	2443.3
5°	2317.9	2305.5	2291.9	2266.9	2245.9	2236.8	2234.6	2227.2	2227.8
7.5°	2089.3	2062.7	2024.2	1991.2	1973.6	1951.0	1941.3	1920.9	1929.5
10°	1799.6	1764.9	1730.4	1689.5	1655.0	1617.5	1588.5	1569.9	1546.0
12.5°	1336.2	1308.4	1294.2	1240.9	1199.5	1170.6	1154.7	1109.3	1109.9
15°	783.2	748.6	714.1	686.8	666.4	655.6	630.1	623.9	636.9
17.5°	418.6	403.2	380.6	355.6	341.5	331.2	322.7	319.3	314.2
20°	253.5	249.0	235.9	219.5	206.5	197.4	188.9	186.6	186.0
22.5°	183.2	180.9	172.4	160.5	148.0	127.0	101.5	96.4	98.1
25°	135.5	133.8	130.4	121.4	114.0	62.9	42.0	40.3	37.4
27.5°	101.5	100.4	96.4	90.2	76.6	27.8	23.2	21.5	21.5
30°	74.9	74.3	72.0	65.8	39.1	15.9	13.0	11.9	11.3
32.5°	55.0	55.0	52.8	47.0	17.6	10.2	7.9	7.4	6.8
35°	40.3	40.3	37.4	32.3	10.8	6.8	4.6	4.6	3.9
37.5°	28.9	28.4	26.7	20.4	7.9	4.6	3.4	3.4	2.9
40°	19.8	19.8	18.1	12.5	5.7	3.4	2.9	2.2	2.2
42.5°	13.6	13.6	12.5	7.9	4.6	2.9	1.7	1.7	1.7
45°	9.1	9.1	8.5	5.7	3.4	1.7	1.2	1.2	0.5
47.5°	6.2	6.2	5.7	3.9	2.2	1.2	0.5	0.5	0.5
50°	4.6	4.6	3.9	2.9	1.7	1.2	0.5	0.5	0.0
52.5°	3.4	3.4	3.4	2.2	1.2	0.5	0.0	0.0	0.0
55°	2.9	2.9	2.2	1.7	1.2	0.5	0.0	0.0	0.0
57.5°	2.2	2.2	1.7	1.2	0.5	0.5	0.0	0.0	0.0
60°	1.7	1.7	1.7	1.2	0.5	0.0	0.0	0.0	0.0
62.5°	1.2	1.2	1.2	0.5	0.5	0.0	0.0	0.0	0.0
65°	1.2	1.2	1.2	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)