

Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P687850

Luminaire Tested: FLR-HA-24-45-40-CA08

Issue Date: 5/22/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P687850  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2303-938-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 5/22/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FLR-HA-24-45-40-CA08  
Description: Fail-Safe - FLR Fully Luminous Recessed 2X4 4000K Luminaire for High Abuse  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

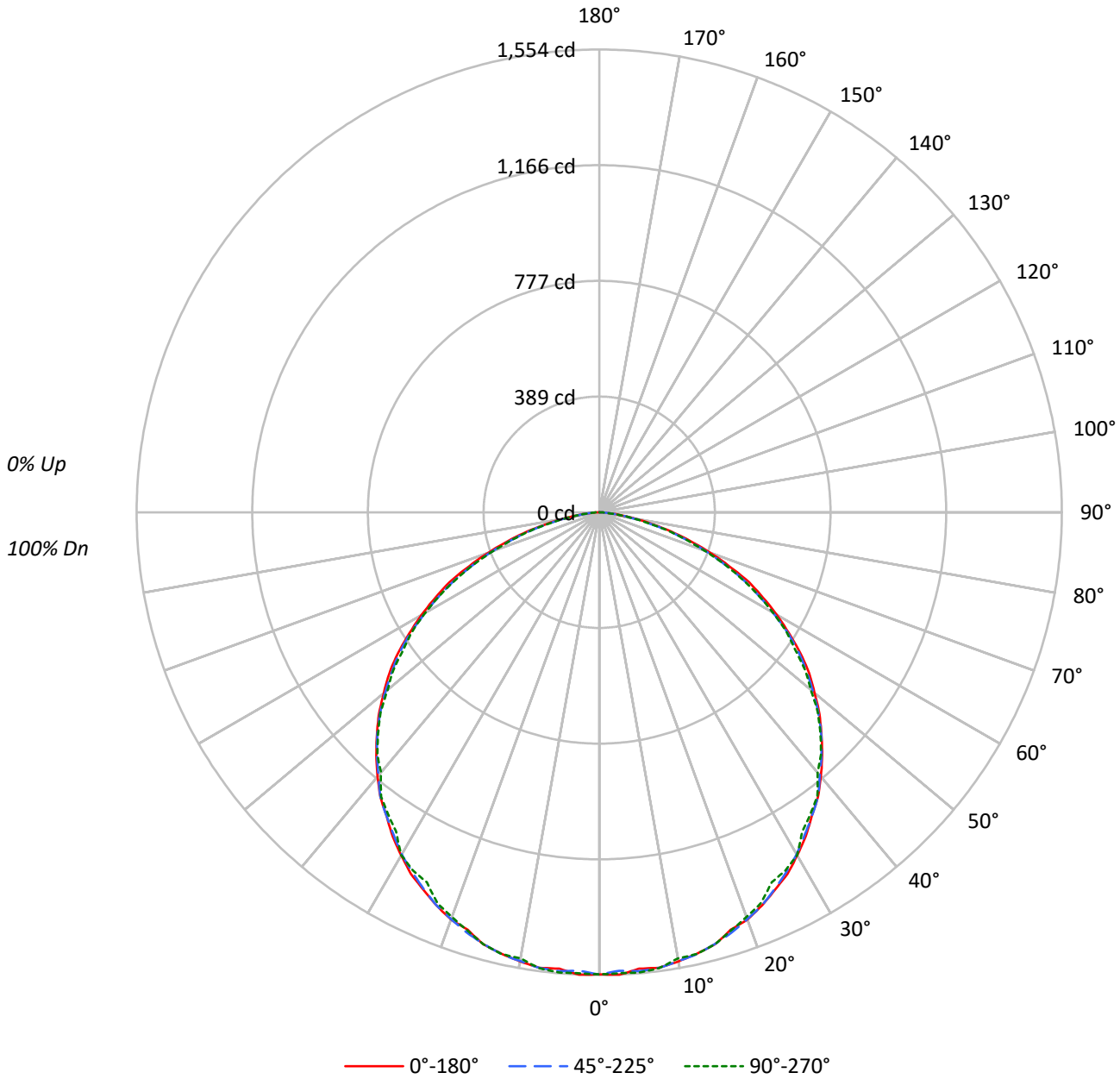
Lumens per Lamp: N/A  
Luminaire Lumens: 4359.1 lumens  
Efficiency: N/A  
Efficacy: 112.3 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.26 / 1.39  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.8  
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: 24 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	109	105	101	97	107	102	99	95	98	95	92	94	92	89	91	89	87	85
2	99	91	85	79	97	90	83	78	86	81	76	83	78	75	80	76	73	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	70	66	62	60
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	57	51	46	44
6	70	57	48	42	69	56	48	42	54	47	41	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	34
8	61	47	39	33	59	47	38	33	45	38	33	44	37	32	43	37	32	30
9	57	43	35	30	55	43	35	30	42	34	29	41	34	29	40	34	29	27
10	53	40	32	27	52	39	32	27	38	31	27	38	31	27	37	31	26	25

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	2088	2088	2088
5°	2078	2089	2095
10°	2092	2090	2078
15°	2093	2091	2092
20°	2084	2082	2071
25°	2076	2071	2035
30°	2067	2061	2065
35°	2045	2046	2032
40°	2035	2025	2003
45°	2009	2006	1999
50°	1978	1963	1941
55°	1937	1919	1882
60°	1853	1813	1813
65°	1768	1696	1678
70°	1556	1495	1476
75°	1299	1234	1246
80°	929	874	868
85°	483	448	472

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 2014 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.1	3.4
10°-20°	422.9	9.7
20°-30°	643.4	14.8
30°-40°	779.5	17.9
40°-50°	811.7	18.6
50°-60°	726.7	16.7
60°-70°	527.6	12.1
70°-80°	256.2	5.9
80°-90°	44.1	1.0
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°	1213.3	27.8
0°-40°	1992.8	45.7
0°-60°	3531.2	81.0
0°-90°	4359.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4359.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1552	1552	1552	1552	1552	
5°	1539	1548	1546	1543	1551	147
15°	1502	1499	1501	1490	1502	423
25°	1398	1402	1395	1393	1371	645
35°	1245	1252	1246	1250	1237	781
45°	1056	1058	1054	1049	1050	815
55°	826	819	818	808	802	735
65°	555	540	533	531	527	542
75°	250	244	237	238	240	266
85°	31	32	29	29	31	46
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1551.9	1551.9	1551.9	1551.9	1551.9
2.5°	1554.2	1553.5	1540.9	1546.4	1549.5
5°	1538.6	1548.0	1546.4	1543.3	1551.1
7.5°	1542.5	1538.6	1543.3	1542.5	1544.1
10°	1531.5	1527.6	1530.0	1530.7	1521.3
12.5°	1518.2	1515.8	1519.8	1522.9	1519.0
15°	1502.5	1499.4	1501.0	1490.0	1501.7
17.5°	1469.6	1477.5	1479.8	1473.5	1472.8
20°	1455.5	1453.2	1454.0	1451.6	1446.1
22.5°	1428.9	1438.3	1428.9	1424.2	1420.3
25°	1398.3	1401.5	1395.2	1392.9	1370.9
27.5°	1369.4	1368.6	1361.5	1361.5	1355.3
30°	1330.2	1324.7	1326.3	1320.0	1329.4
32.5°	1291.0	1291.8	1284.8	1287.1	1269.9
35°	1244.8	1251.8	1245.6	1249.5	1237.0
37.5°	1207.2	1202.5	1207.2	1200.9	1203.3
40°	1158.6	1157.1	1153.1	1154.7	1140.6
42.5°	1108.5	1106.1	1105.4	1102.2	1103.0
45°	1056.0	1058.4	1054.4	1049.0	1050.5
47.5°	1003.5	1005.9	998.8	991.8	996.5
50°	944.8	946.3	937.7	935.4	927.5
52.5°	889.1	882.1	877.4	873.5	872.7
55°	825.7	819.4	817.9	808.5	802.2
57.5°	755.2	753.6	748.9	741.9	745.0
60°	688.6	682.3	673.7	672.1	673.7
62.5°	620.4	613.4	602.4	605.6	602.4
65°	555.4	540.5	532.7	531.1	527.2
67.5°	472.4	461.4	455.1	452.8	454.4
70°	395.6	394.8	379.9	377.6	375.2
72.5°	321.2	314.9	306.3	305.5	304.7
75°	249.9	244.4	237.4	238.1	239.7
77.5°	180.2	174.7	168.4	170.8	167.6
80°	119.9	118.3	112.8	112.0	112.0
82.5°	71.3	68.2	65.0	65.0	65.8
85°	31.3	32.1	29.0	29.0	30.6
87.5°	7.8	8.6	7.8	7.8	7.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)