

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: P687849

Luminaire Tested: FLR-HA-24-45-35-CA08

Issue Date: 5/22/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P687849  
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-24-45-35-CA08  
Description: Fail-Safe - FLR Fully Luminous Recessed 2X4 3500K Luminaire for High Abuse  
Light Source: 3500K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

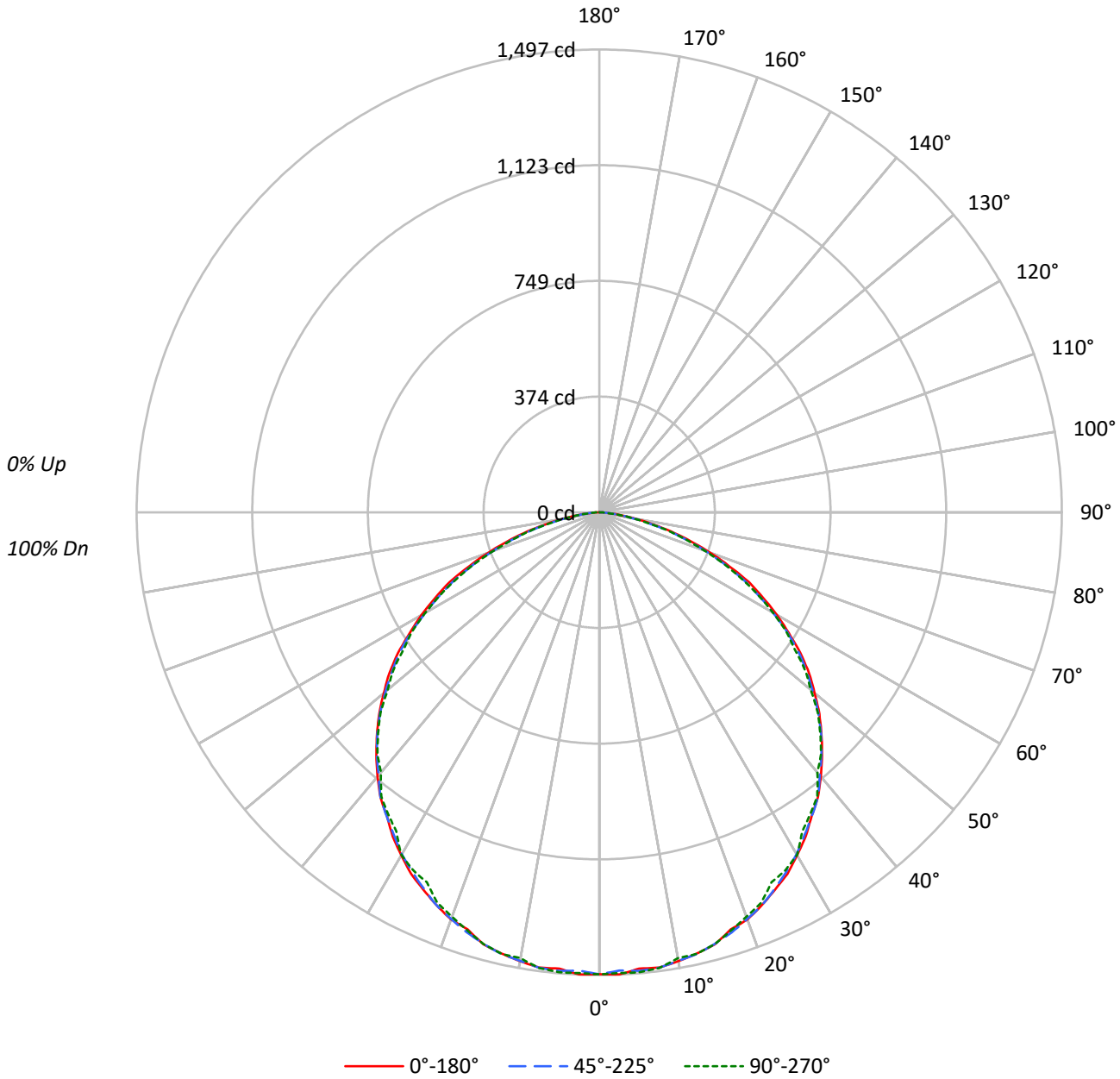
Lumens per Lamp: N/A  
Luminaire Lumens: 4197.8 lumens  
Efficiency: N/A  
Efficacy: 108.2 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.26 / 1.39  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	
1	109	105	101	97	107	102	99	95	98	95	92	94	92	89	91	89	87	85	85	
2	99	91	85	79	97	90	83	78	86	81	76	83	78	75	80	76	73	71	71	
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	70	66	62	60	60	
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	51	51	
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	57	51	46	44	44	
6	70	57	48	42	69	56	48	42	54	47	41	53	46	41	51	45	41	39	39	
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	34	34	
8	61	47	39	33	59	47	38	33	45	38	33	44	37	32	43	37	32	30	30	
9	57	43	35	30	55	43	35	30	42	34	29	41	34	29	40	34	29	27	27	
10	53	40	32	27	52	39	32	27	38	31	27	38	31	27	37	31	26	25	25	

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

	0°	45°	90°
0°	2011	2011	2011
5°	2001	2011	2017
10°	2015	2013	2002
15°	2015	2013	2014
20°	2007	2005	1994
25°	1999	1995	1960
30°	1990	1984	1989
35°	1969	1970	1957
40°	1960	1950	1929
45°	1935	1932	1925
50°	1904	1890	1870
55°	1865	1848	1812
60°	1784	1746	1746
65°	1703	1633	1616
70°	1499	1439	1422
75°	1251	1188	1200
80°	894	841	836
85°	466	431	454

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 1939 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	141.7	3.4
10°-20°	407.2	9.7
20°-30°	619.5	14.8
30°-40°	750.6	17.9
40°-50°	781.6	18.6
50°-60°	699.8	16.7
60°-70°	508.1	12.1
70°-80°	246.7	5.9
80°-90°	42.5	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°	1168.4	27.8
0°-40°	1919.0	45.7
0°-60°	3400.5	81.0
0°-90°	4197.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4197.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1494	1494	1494	1494	1494	
5°	1482	1491	1489	1486	1494	142
15°	1447	1444	1445	1435	1446	407
25°	1347	1350	1344	1341	1320	621
35°	1199	1206	1200	1203	1191	752
45°	1017	1019	1015	1010	1012	785
55°	795	789	788	778	772	708
65°	535	520	513	512	508	522
75°	241	235	229	229	231	256
85°	30	31	28	28	29	45
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1494.5	1494.5	1494.5	1494.5	1494.5
2.5°	1496.7	1496.0	1483.9	1489.2	1492.2
5°	1481.6	1490.7	1489.2	1486.2	1493.7
7.5°	1485.4	1481.6	1486.2	1485.4	1486.9
10°	1474.8	1471.1	1473.3	1474.1	1465.0
12.5°	1462.0	1459.8	1463.5	1466.5	1462.8
15°	1446.9	1443.9	1445.4	1434.9	1446.2
17.5°	1415.2	1422.8	1425.1	1419.0	1418.3
20°	1401.7	1399.4	1400.2	1397.9	1392.6
22.5°	1376.0	1385.1	1376.0	1371.5	1367.7
25°	1346.6	1349.6	1343.6	1341.3	1320.2
27.5°	1318.7	1317.9	1311.1	1311.1	1305.1
30°	1281.0	1275.7	1277.2	1271.2	1280.2
32.5°	1243.2	1244.0	1237.2	1239.5	1222.9
35°	1198.7	1205.5	1199.5	1203.3	1191.2
37.5°	1162.5	1158.0	1162.5	1156.5	1158.8
40°	1115.8	1114.2	1110.5	1112.0	1098.4
42.5°	1067.5	1065.2	1064.5	1061.4	1062.2
45°	1016.9	1019.2	1015.4	1010.1	1011.6
47.5°	966.4	968.6	961.9	955.1	959.6
50°	909.8	911.3	903.0	900.7	893.2
52.5°	856.2	849.5	844.9	841.2	840.4
55°	795.1	789.1	787.6	778.5	772.5
57.5°	727.2	725.7	721.2	714.4	717.4
60°	663.1	657.1	648.8	647.3	648.8
62.5°	597.5	590.7	580.1	583.1	580.1
65°	534.9	520.5	513.0	511.5	507.7
67.5°	454.9	444.3	438.3	436.0	437.6
70°	381.0	380.2	365.9	363.6	361.4
72.5°	309.3	303.3	295.0	294.2	293.5
75°	240.7	235.4	228.6	229.3	230.8
77.5°	173.5	168.2	162.2	164.5	161.4
80°	115.4	113.9	108.6	107.9	107.9
82.5°	68.7	65.6	62.6	62.6	63.4
85°	30.2	30.9	27.9	27.9	29.4
87.5°	7.5	8.3	7.5	7.5	7.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)