

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: P688210

Luminaire Tested: FLR-HA-24-45-40-CP187

Issue Date: 5/22/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P688210  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2207-724-13)  
Test Lab: INNOVATION CENTER  
Issue Date: 5/22/2023  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FLR-HA-24-45-40-CP187  
Description: Fail-Safe - FLR Fully Luminous Recessed 2X4 4000K Luminaire for High Abuse  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

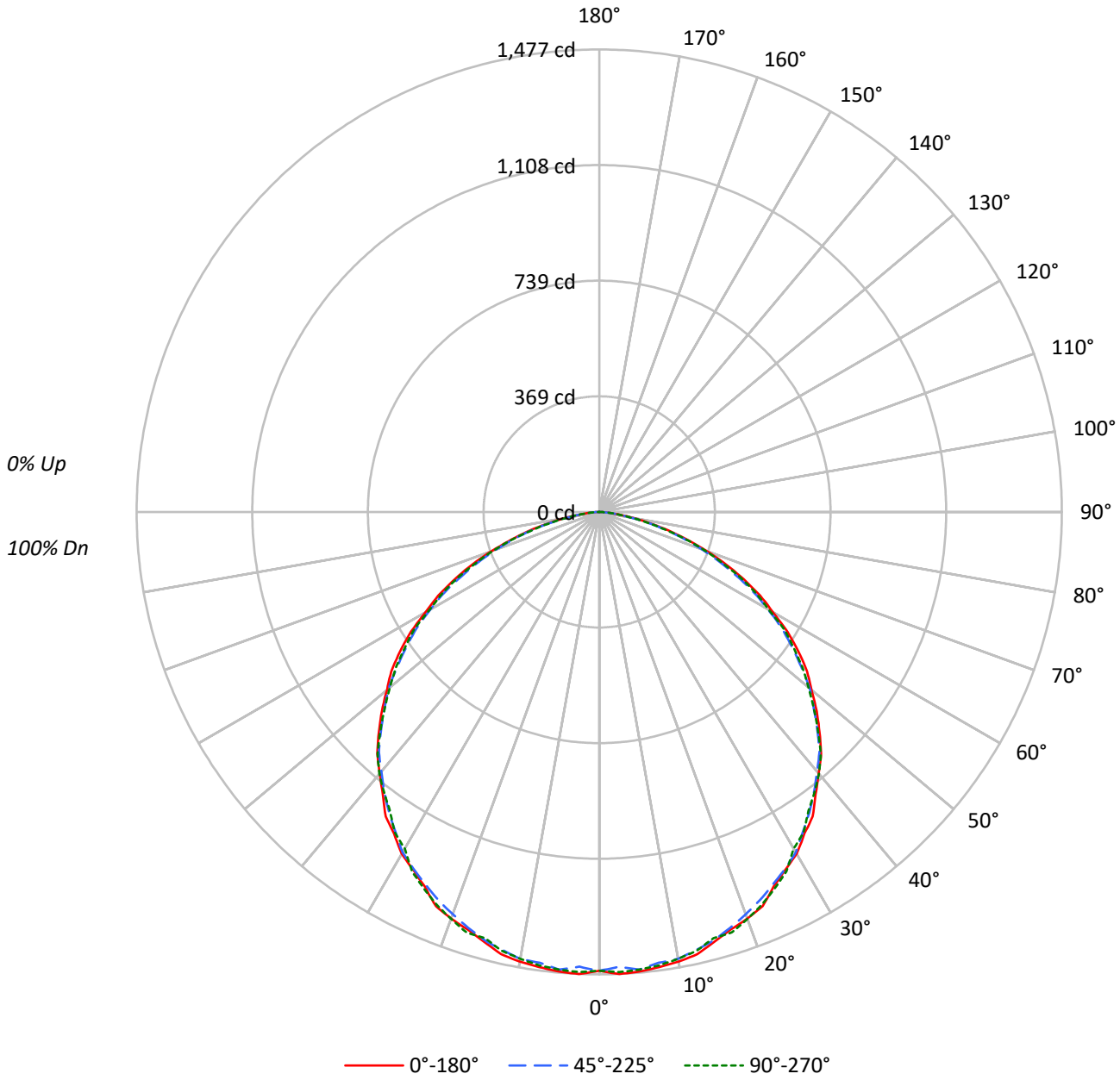
Lumens per Lamp: N/A  
Luminaire Lumens: 4067.7 lumens  
Efficiency: N/A  
Efficacy: 104.8 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.27 / 1.38  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct

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



TEST NUMBER: P688210  
CATALOG NUMBER: FLR-HA-24-45-40-CP187

### Luminous Intensity Polar Plot



TEST NUMBER: P688210

CATALOG NUMBER: FLR-HA-24-45-40-CP187

**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	103	99	95	98	95	92	94	92	90	91	89	87	85
2	100	92	85	79	97	90	84	79	86	81	77	83	79	75	80	76	73	71
3	91	81	73	66	88	79	72	66	76	70	64	73	68	63	71	66	62	60
4	83	71	63	56	81	70	62	56	68	61	55	65	59	54	63	58	54	51
5	77	64	55	48	74	63	54	48	61	53	48	59	52	47	57	51	47	44
6	71	57	49	42	69	57	48	42	55	47	42	53	46	41	51	46	41	39
7	66	52	43	37	64	51	43	37	50	42	37	48	42	37	47	41	36	34
8	61	48	39	33	59	47	39	33	45	38	33	44	38	33	43	37	33	31
9	57	44	35	30	56	43	35	30	42	35	30	41	34	29	40	34	29	28
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

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

	0°	45°	90°
0°	1972	1972	1972
5°	1990	1982	1982
10°	1993	1981	1980
15°	1979	1973	1963
20°	1980	1958	1981
25°	1958	1949	1969
30°	1959	1951	1929
35°	1952	1922	1913
40°	1915	1900	1918
45°	1893	1874	1879
50°	1851	1838	1825
55°	1821	1762	1779
60°	1720	1674	1682
65°	1618	1541	1588
70°	1433	1365	1408
75°	1181	1128	1124
80°	844	783	783
85°	411	398	411

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1893 cd/sqm

TEST NUMBER: P688210  
 CATALOG NUMBER: FLR-HA-24-45-40-CP187

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	139.2	3.4
10°-20°	399.3	9.8
20°-30°	606.8	14.9
30°-40°	733.5	18.0
40°-50°	760.1	18.7
50°-60°	675.6	16.6
60°-70°	484.4	11.9
70°-80°	230.6	5.7
80°-90°	38.2	0.9
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°	1145.3	28.2
0°-40°	1878.8	46.2
0°-60°	3314.5	81.5
0°-90°	4067.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4067.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1466	1466	1466	1466	1466	
5°	1473	1466	1467	1460	1467	140
15°	1421	1416	1416	1408	1409	402
25°	1319	1316	1313	1312	1326	610
35°	1188	1169	1170	1171	1165	739
45°	995	984	985	981	988	767
55°	776	753	751	755	758	690
65°	508	481	484	490	499	502
75°	227	205	217	218	216	242
85°	27	24	26	26	27	40
90°	0	0	0	0	0	

TEST NUMBER: P688210

CATALOG NUMBER: FLR-HA-24-45-40-CP187

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1465.5	1465.5	1465.5	1465.5	1465.5
2.5°	1477.3	1469.4	1453.8	1463.9	1471.0
5°	1473.3	1466.3	1467.1	1460.0	1467.1
7.5°	1466.3	1459.2	1452.2	1449.8	1460.8
10°	1458.5	1445.1	1449.8	1444.4	1449.1
12.5°	1446.7	1435.7	1432.6	1425.6	1435.7
15°	1420.9	1416.2	1416.2	1408.3	1409.1
17.5°	1398.2	1388.8	1391.9	1388.0	1408.3
20°	1382.5	1367.6	1367.6	1365.3	1383.3
22.5°	1362.9	1345.7	1341.8	1343.3	1357.4
25°	1319.0	1315.9	1312.8	1312.0	1326.1
27.5°	1287.7	1279.1	1284.6	1282.2	1294.0
30°	1261.1	1246.2	1255.6	1247.0	1241.5
32.5°	1218.8	1213.3	1210.9	1211.7	1214.1
35°	1188.2	1169.4	1170.2	1171.0	1164.7
37.5°	1135.0	1137.3	1127.1	1127.1	1128.7
40°	1090.3	1087.2	1081.7	1081.7	1091.9
42.5°	1048.8	1034.7	1041.0	1031.6	1047.2
45°	994.8	983.8	984.6	980.7	987.7
47.5°	941.5	932.1	929.0	932.1	929.0
50°	884.3	878.1	878.1	874.9	871.8
52.5°	836.5	814.6	813.0	817.7	818.5
55°	776.2	752.7	751.2	755.1	758.2
57.5°	712.8	685.4	690.9	697.1	701.0
60°	639.2	619.6	621.9	632.1	625.1
62.5°	579.6	553.0	556.9	565.5	565.5
65°	508.3	480.9	484.1	490.3	498.9
67.5°	439.4	410.4	415.1	422.2	424.5
70°	364.2	333.7	347.0	354.0	358.0
72.5°	292.2	268.7	280.4	284.3	287.5
75°	227.2	205.2	217.0	218.5	216.2
77.5°	161.4	145.7	155.1	158.2	155.9
80°	108.9	93.2	101.0	103.4	101.0
82.5°	59.5	54.8	58.0	58.7	57.2
85°	26.6	23.5	25.8	25.8	26.6
87.5°	7.8	7.0	7.0	7.8	7.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)