

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: P687838

Luminaire Tested: FLR-HA-22-35-40-CA08

Issue Date: 5/22/2023

**Test Information**

Test Method: LM-79-2019  
Report Number: P687838  
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-22-35-40-CA08  
Description: Fail-Safe - FLR Fully Luminous Recessed 2X2 4000K Luminaire for High Abuse  
Light Source: 4000K CCT, 80 CRI LEDS  
Ballast/Driver: -

**Summary**

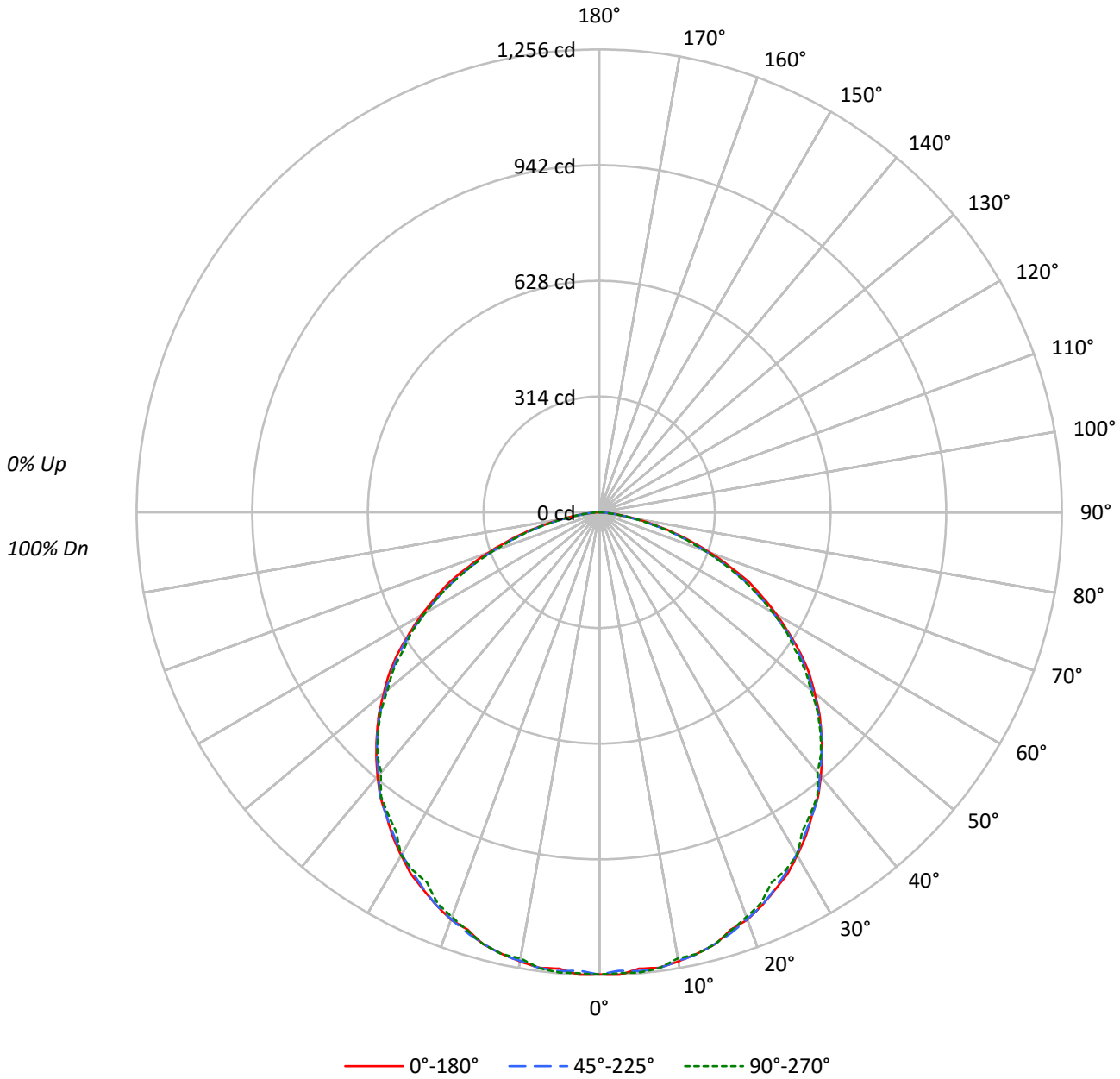
Lumens per Lamp: N/A  
Luminaire Lumens: 3523.2 lumens  
Efficiency: N/A  
Efficacy: 112.2 lumens/watt  
Spacing Criteria (0/90/45): 1.27 / 1.26 / 1.39  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct

Input Watts (W): 31.4  
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: 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	100
1	109	105	101	97	107	102	99	95	98	95	92	94	92	89	91	89	87	85	85	85
2	99	91	85	79	97	90	83	78	86	81	76	83	78	75	80	76	73	71	71	71
3	91	80	72	66	88	79	71	65	76	69	64	73	68	63	70	66	62	60	60	60
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	58	53	51	51	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	57	51	46	44	44	44
6	70	57	48	42	69	56	48	42	54	47	41	53	46	41	51	45	41	39	39	39
7	65	52	43	37	64	51	43	37	49	42	37	48	41	36	47	41	36	34	34	34
8	61	47	39	33	59	47	38	33	45	38	33	44	37	32	43	37	32	30	30	30
9	57	43	35	30	55	43	35	30	42	34	29	41	34	29	40	34	29	27	27	27
10	53	40	32	27	52	39	32	27	38	31	27	38	31	27	37	31	26	25	25	25

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

	0°	45°	90°
0°	3375	3375	3375
5°	3359	3376	3386
10°	3382	3379	3360
15°	3383	3380	3381
20°	3369	3365	3347
25°	3356	3348	3290
30°	3341	3331	3338
35°	3305	3307	3284
40°	3289	3274	3238
45°	3248	3243	3231
50°	3197	3173	3138
55°	3131	3101	3042
60°	2995	2930	2930
65°	2858	2741	2713
70°	2515	2416	2386
75°	2100	1994	2014
80°	1502	1413	1402
85°	781	722	763

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 22.5°  
 Vertical Angle: 45°  
 Luminance: 3255 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	118.9	3.4
10°-20°	341.8	9.7
20°-30°	520.0	14.8
30°-40°	630.0	17.9
40°-50°	656.0	18.6
50°-60°	587.4	16.7
60°-70°	426.4	12.1
70°-80°	207.1	5.9
80°-90°	35.7	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°	980.6	27.8
0°-40°	1610.6	45.7
0°-60°	2854.0	81.0
0°-90°	3523.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3523.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1254	1254	1254	1254	1254	
5°	1244	1251	1250	1247	1254	119
15°	1214	1212	1213	1204	1214	342
25°	1130	1133	1128	1126	1108	521
35°	1006	1012	1007	1010	1000	631
45°	854	855	852	848	849	659
55°	667	662	661	653	648	594
65°	449	437	430	429	426	438
75°	202	198	192	192	194	215
85°	25	26	23	23	25	37
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1254.3	1254.3	1254.3	1254.3	1254.3
2.5°	1256.2	1255.5	1245.4	1249.8	1252.4
5°	1243.5	1251.1	1249.8	1247.3	1253.6
7.5°	1246.7	1243.5	1247.3	1246.7	1247.9
10°	1237.8	1234.6	1236.5	1237.2	1229.6
12.5°	1227.0	1225.1	1228.3	1230.8	1227.7
15°	1214.4	1211.8	1213.1	1204.2	1213.7
17.5°	1187.8	1194.1	1196.0	1190.9	1190.3
20°	1176.4	1174.5	1175.1	1173.2	1168.8
22.5°	1154.9	1162.4	1154.9	1151.1	1147.9
25°	1130.2	1132.7	1127.6	1125.7	1108.0
27.5°	1106.7	1106.1	1100.4	1100.4	1095.3
30°	1075.1	1070.6	1071.9	1066.8	1074.4
32.5°	1043.4	1044.1	1038.4	1040.3	1026.3
35°	1006.1	1011.8	1006.7	1009.9	999.7
37.5°	975.7	971.9	975.7	970.6	972.5
40°	936.4	935.2	932.0	933.3	921.9
42.5°	895.9	894.0	893.4	890.8	891.5
45°	853.5	855.4	852.2	847.8	849.0
47.5°	811.1	813.0	807.3	801.6	805.4
50°	763.6	764.8	757.9	756.0	749.6
52.5°	718.6	712.9	709.1	706.0	705.3
55°	667.3	662.3	661.0	653.4	648.3
57.5°	610.3	609.1	605.3	599.6	602.1
60°	556.5	551.5	544.5	543.2	544.5
62.5°	501.4	495.8	486.9	489.4	486.9
65°	448.9	436.9	430.5	429.3	426.1
67.5°	381.8	372.9	367.9	366.0	367.2
70°	319.7	319.1	307.1	305.2	303.3
72.5°	259.6	254.5	247.6	246.9	246.3
75°	202.0	197.5	191.8	192.5	193.7
77.5°	145.6	141.2	136.1	138.0	135.5
80°	96.9	95.6	91.2	90.5	90.5
82.5°	57.6	55.1	52.6	52.6	53.2
85°	25.3	26.0	23.4	23.4	24.7
87.5°	6.3	7.0	6.3	6.3	6.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)