

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: P562786

Luminaire Tested: FSR-24-4-LD4-2LO-40-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562786  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-2LO-40-UNV-93-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

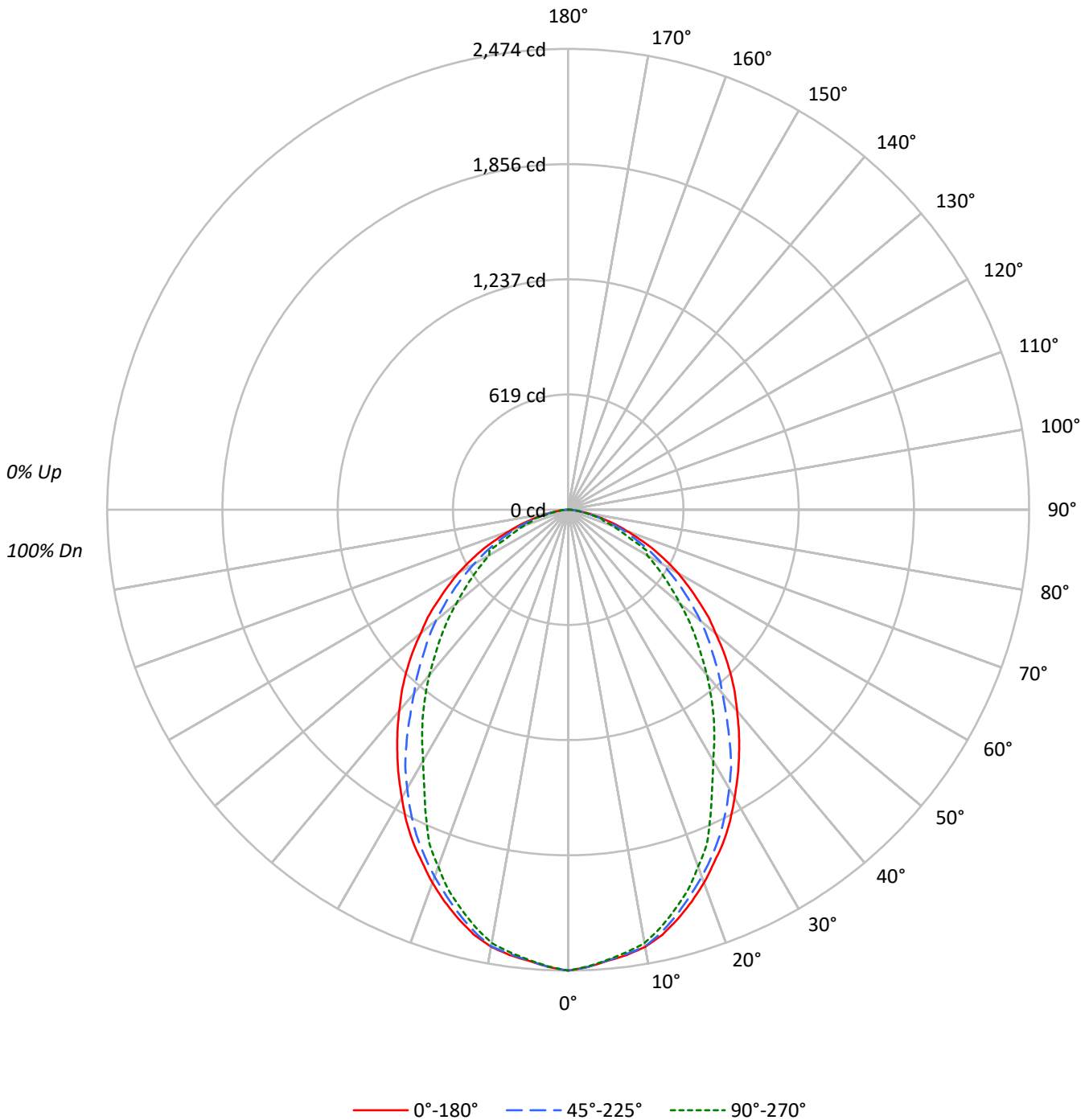
Lumens per Lamp: N/A  
Luminaire Lumens: 4857.0 lumens  
Efficiency: N/A  
Efficacy: 103.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87									87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75									75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65									65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56									56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50									50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44									44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40									40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36									36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33									33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30									30																			

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

	0°	45°	90°
0°	3329	3329	3329
5°	3284	3280	3276
10°	3255	3251	3228
15°	3167	3136	3092
20°	3051	3002	2920
25°	2926	2862	2684
30°	2773	2684	2417
35°	2626	2481	2236
40°	2477	2261	2035
45°	2335	2090	1840
50°	2161	1940	1640
55°	1999	1758	1469
60°	1832	1570	1316
65°	1612	1375	1166
70°	1328	1204	990
75°	1056	922	966
80°	709	665	621
85°	442	530	618

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2335 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	230.3	4.7
10°-20°	632.1	13.0
20°-30°	875.0	18.0
30°-40°	933.0	19.2
40°-50°	851.2	17.5
50°-60°	666.8	13.7
60°-70°	434.6	8.9
70°-80°	192.6	4.0
80°-90°	41.3	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°	1737.4	35.8
0°-40°	2670.4	55.0
0°-60°	4188.5	86.2
0°-90°	4857.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4857.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2474	2474	2474	2474	2474	
5°	2431	2428	2428	2426	2426	231
15°	2274	2274	2251	2228	2220	639
25°	1971	1959	1928	1859	1808	905
35°	1599	1587	1510	1396	1362	1000
45°	1227	1201	1098	1007	967	945
55°	852	827	749	661	626	764
65°	506	478	432	440	366	499
75°	203	189	177	169	186	218
85°	29	32	34	37	40	40
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2474.1	2474.1	2474.1	2474.1	2474.1
2.5°	2456.9	2456.9	2456.9	2454.1	2454.1
5°	2431.2	2428.3	2428.3	2425.5	2425.5
7.5°	2411.2	2408.3	2405.4	2402.6	2396.9
10°	2382.6	2382.6	2379.7	2365.4	2362.5
12.5°	2336.8	2333.9	2322.5	2302.5	2296.8
15°	2273.9	2273.9	2251.0	2228.1	2219.5
17.5°	2205.2	2202.4	2173.8	2150.9	2139.4
20°	2130.9	2125.1	2096.5	2059.4	2039.3
22.5°	2047.9	2047.9	2013.6	1965.0	1945.0
25°	1970.7	1959.3	1927.8	1859.1	1807.7
27.5°	1882.0	1864.9	1830.5	1733.3	1673.2
30°	1784.8	1776.2	1727.6	1601.7	1556.0
32.5°	1693.3	1678.9	1627.5	1495.9	1458.7
35°	1598.9	1587.4	1510.2	1395.8	1361.5
37.5°	1504.5	1490.2	1392.9	1301.4	1258.5
40°	1410.1	1392.9	1287.1	1204.2	1158.4
42.5°	1321.4	1298.5	1195.6	1106.9	1055.4
45°	1227.0	1201.3	1098.3	1006.8	966.8
47.5°	1132.6	1109.8	1015.4	921.0	875.2
50°	1032.5	1012.5	926.7	832.3	783.7
52.5°	949.6	918.1	835.2	740.8	700.8
55°	852.3	826.6	749.4	660.7	626.4
57.5°	763.7	737.9	666.4	583.5	554.9
60°	680.7	643.5	583.5	512.0	489.1
62.5°	589.2	560.6	509.1	449.1	477.7
65°	506.3	477.7	431.9	440.5	366.1
67.5°	414.7	400.4	360.4	320.3	308.9
70°	337.5	320.3	306.0	263.1	251.7
72.5°	268.9	251.7	231.7	208.8	200.2
75°	203.1	188.8	177.3	168.8	185.9
77.5°	140.2	134.4	125.8	117.3	114.4
80°	91.5	88.7	85.8	82.9	80.1
82.5°	54.3	54.3	54.3	54.3	54.3
85°	28.6	31.5	34.3	37.2	40.0
87.5°	17.2	17.2	20.0	22.9	25.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)