

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: P564153

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-80-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564153  
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-LD4-4STD-50-UNV-80-88-EDD  
Description: 2X4 FSR TROFFER WITH .125 PRISMATIC ACRYLIC FIXTURE SIDE AND .500 CLEAR PC ENVIRON  
SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

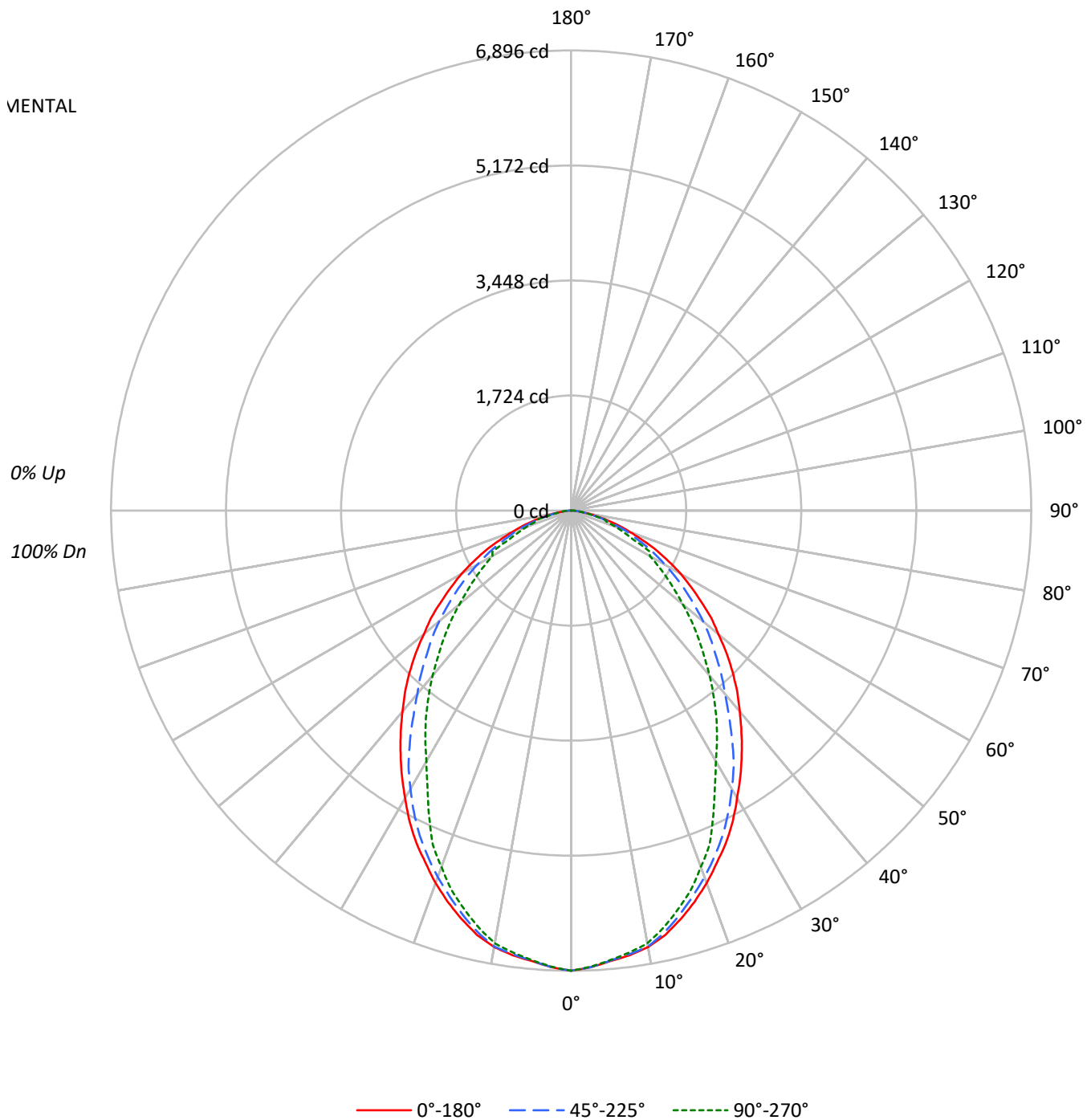
Lumens per Lamp: N/A  
Luminaire Lumens: 13538.0 lumens  
Efficiency: N/A  
Efficacy: 101.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P564153

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-88-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P564153

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-88-EDD

**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																												
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

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

	0°	45°	90°
0°	9279	9279	9279
5°	9153	9142	9131
10°	9073	9062	8997
15°	8829	8740	8618
20°	8504	8367	8139
25°	8155	7977	7480
30°	7729	7481	6738
35°	7320	6914	6233
40°	6903	6301	5671
45°	6508	5825	5128
50°	6024	5407	4572
55°	5573	4900	4096
60°	5106	4377	3669
65°	4493	3833	3249
70°	3701	3356	2760
75°	2942	2570	2694
80°	1977	1853	1729
85°	1230	1477	1723

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6508 cd/sqm



TEST NUMBER: P564153

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-88-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	641.9	4.7
10°-20°	1761.7	13.0
20°-30°	2439.0	18.0
30°-40°	2600.7	19.2
40°-50°	2372.6	17.5
50°-60°	1858.7	13.7
60°-70°	1211.4	8.9
70°-80°	536.7	4.0
80°-90°	115.2	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°	4842.7	35.8
0°-40°	7443.3	55.0
0°-60°	11674.6	86.2
0°-90°	13538.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	13538.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6896	6896	6896	6896	6896	
5°	6776	6768	6768	6760	6760	643
15°	6338	6338	6274	6210	6186	1782
25°	5493	5461	5373	5182	5038	2522
35°	4456	4425	4209	3890	3795	2786
45°	3420	3348	3061	2806	2695	2634
55°	2376	2304	2089	1842	1746	2131
65°	1411	1331	1204	1228	1020	1391
75°	566	526	494	470	518	607
85°	80	88	96	104	112	111
90°	0	0	0	0	0	



TEST NUMBER: P564153

CATALOG NUMBER: FSR-24-4-LD4-4STD-50-UNV-80-88-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6896.1	6896.1	6896.1	6896.1	6896.1
2.5°	6848.2	6848.2	6848.2	6840.3	6840.3
5°	6776.5	6768.5	6768.5	6760.5	6760.5
7.5°	6720.7	6712.7	6704.7	6696.8	6680.8
10°	6641.0	6641.0	6633.0	6593.1	6585.2
12.5°	6513.4	6505.4	6473.5	6417.7	6401.8
15°	6338.0	6338.0	6274.2	6210.5	6186.5
17.5°	6146.7	6138.7	6059.0	5995.2	5963.3
20°	5939.4	5923.5	5843.7	5740.1	5684.3
22.5°	5708.2	5708.2	5612.5	5477.0	5421.2
25°	5492.9	5461.1	5373.4	5182.0	5038.5
27.5°	5245.8	5198.0	5102.3	4831.2	4663.8
30°	4974.7	4950.8	4815.3	4464.5	4337.0
32.5°	4719.6	4679.8	4536.3	4169.5	4065.9
35°	4456.5	4424.7	4209.4	3890.5	3794.8
37.5°	4193.5	4153.6	3882.5	3627.4	3507.8
40°	3930.4	3882.5	3587.6	3356.4	3228.8
42.5°	3683.2	3619.4	3332.4	3085.3	2941.8
45°	3420.1	3348.4	3061.4	2806.3	2694.7
47.5°	3157.0	3093.3	2830.2	2567.1	2439.5
50°	2878.0	2822.2	2583.0	2320.0	2184.4
52.5°	2646.8	2559.1	2327.9	2064.8	1953.2
55°	2375.8	2304.0	2088.8	1841.6	1745.9
57.5°	2128.6	2056.9	1857.6	1626.4	1546.6
60°	1897.4	1793.8	1626.4	1427.0	1363.3
62.5°	1642.3	1562.6	1419.1	1251.7	1331.4
65°	1411.1	1331.4	1203.8	1227.7	1020.5
67.5°	1156.0	1116.1	1004.5	892.9	861.0
70°	940.7	892.9	853.0	733.5	701.6
72.5°	749.4	701.6	645.8	582.0	558.1
75°	566.0	526.2	494.3	470.4	518.2
77.5°	390.6	374.7	350.8	326.9	318.9
80°	255.1	247.1	239.2	231.2	223.2
82.5°	151.5	151.5	151.5	151.5	151.5
85°	79.7	87.7	95.7	103.6	111.6
87.5°	47.8	47.8	55.8	63.8	71.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)