

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: P563144

Luminaire Tested: FSR-24-4-LD4-3HI-40-UNV-81-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563144  
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-LD4-3HI-40-UNV-81-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

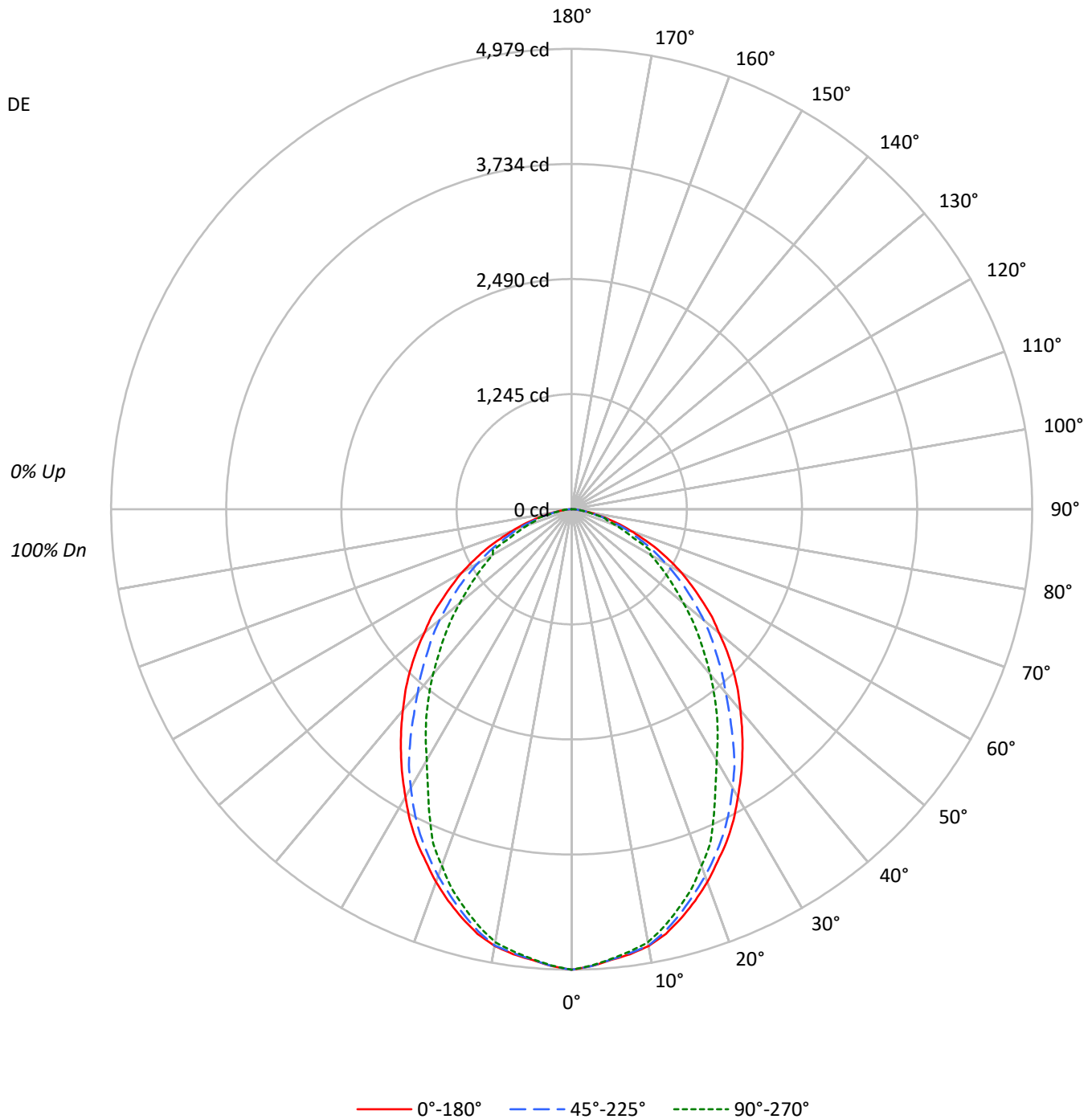
Lumens per Lamp: N/A  
Luminaire Lumens: 9775.0 lumens  
Efficiency: N/A  
Efficacy: 75.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P563144

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-81-88-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P563144

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-81-88-EDD-90

**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	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°	6700	6700	6700
5°	6608	6601	6593
10°	6551	6543	6496
15°	6375	6310	6222
20°	6140	6042	5877
25°	5888	5760	5401
30°	5581	5402	4865
35°	5285	4992	4501
40°	4985	4550	4095
45°	4699	4206	3702
50°	4350	3904	3301
55°	4024	3538	2957
60°	3687	3160	2649
65°	3244	2767	2346
70°	2672	2423	1993
75°	2125	1855	1945
80°	1427	1338	1249
85°	889	1067	1244

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4699 cd/sqm



TEST NUMBER: P563144

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-81-88-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	463.5	4.7
10°-20°	1272.0	13.0
20°-30°	1761.1	18.0
30°-40°	1877.8	19.2
40°-50°	1713.1	17.5
50°-60°	1342.1	13.7
60°-70°	874.7	8.9
70°-80°	387.5	4.0
80°-90°	83.2	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°	3496.6	35.8
0°-40°	5374.4	55.0
0°-60°	8429.6	86.2
0°-90°	9775.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9775.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4979	4979	4979	4979	4979	
5°	4893	4887	4887	4881	4881	464
15°	4576	4576	4530	4484	4467	1287
25°	3966	3943	3880	3742	3638	1821
35°	3218	3195	3039	2809	2740	2012
45°	2470	2418	2210	2026	1946	1902
55°	1715	1664	1508	1330	1261	1539
65°	1019	961	869	886	737	1004
75°	409	380	357	340	374	438
85°	58	63	69	75	81	80
90°	0	0	0	0	0	



TEST NUMBER: P563144

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-81-88-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4979.3	4979.3	4979.3	4979.3	4979.3
2.5°	4944.7	4944.7	4944.7	4939.0	4939.0
5°	4892.9	4887.2	4887.2	4881.4	4881.4
7.5°	4852.6	4846.9	4841.1	4835.3	4823.8
10°	4795.1	4795.1	4789.3	4760.5	4754.8
12.5°	4702.9	4697.2	4674.2	4633.9	4622.4
15°	4576.3	4576.3	4530.3	4484.2	4466.9
17.5°	4438.2	4432.4	4374.8	4328.8	4305.8
20°	4288.5	4277.0	4219.4	4144.6	4104.3
22.5°	4121.6	4121.6	4052.5	3954.6	3914.3
25°	3966.1	3943.1	3879.8	3741.6	3638.0
27.5°	3787.7	3753.1	3684.1	3488.4	3367.5
30°	3592.0	3574.7	3476.8	3223.6	3131.5
32.5°	3407.8	3379.0	3275.4	3010.6	2935.7
35°	3217.8	3194.8	3039.4	2809.1	2740.0
37.5°	3027.8	2999.1	2803.3	2619.1	2532.8
40°	2837.9	2803.3	2590.4	2423.4	2331.3
42.5°	2659.4	2613.4	2406.2	2227.7	2124.1
45°	2469.5	2417.7	2210.4	2026.2	1945.7
47.5°	2279.5	2233.5	2043.5	1853.5	1761.4
50°	2078.0	2037.8	1865.1	1675.1	1577.2
52.5°	1911.1	1847.8	1680.9	1490.9	1410.3
55°	1715.4	1663.6	1508.2	1329.7	1260.6
57.5°	1536.9	1485.1	1341.2	1174.3	1116.7
60°	1370.0	1295.2	1174.3	1030.4	984.3
62.5°	1185.8	1128.2	1024.6	903.7	961.3
65°	1018.9	961.3	869.2	886.5	736.8
67.5°	834.7	805.9	725.3	644.7	621.7
70°	679.3	644.7	615.9	529.6	506.6
72.5°	541.1	506.6	466.3	420.2	402.9
75°	408.7	379.9	356.9	339.6	374.2
77.5°	282.1	270.5	253.3	236.0	230.3
80°	184.2	178.4	172.7	166.9	161.2
82.5°	109.4	109.4	109.4	109.4	109.4
85°	57.6	63.3	69.1	74.8	80.6
87.5°	34.5	34.5	40.3	46.1	51.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)