

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: P563166

Luminaire Tested: FSR-24-4-LD4-3HI-40-UNV-82-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563166  
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-82-97-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

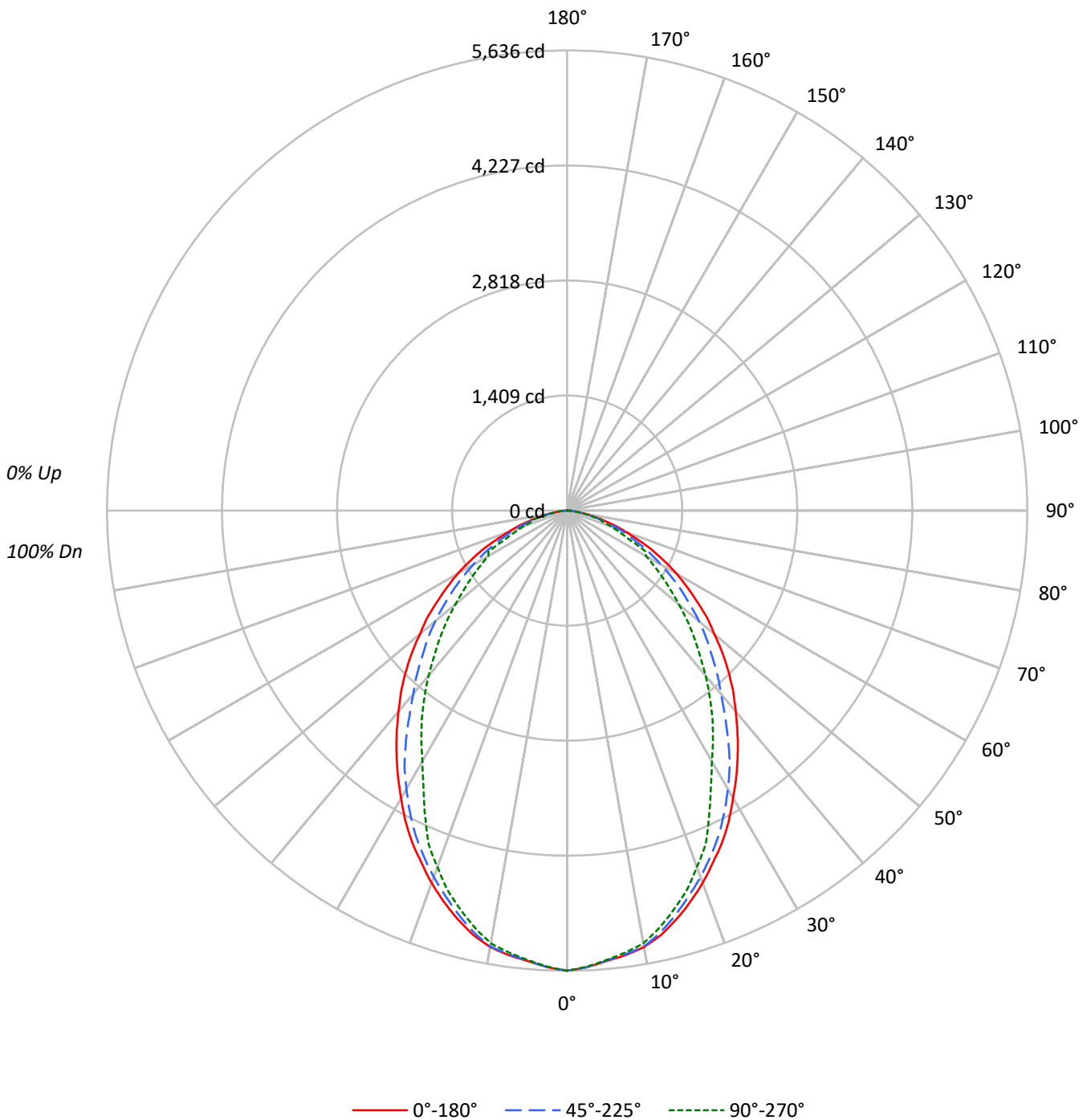
Lumens per Lamp: N/A  
Luminaire Lumens: 11064.0 lumens  
Efficiency: N/A  
Efficacy: 85.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 129.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P563166

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-82-97-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P563166

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-82-97-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	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°	7583	7583	7583
5°	7480	7471	7462
10°	7415	7406	7353
15°	7215	7143	7043
20°	6950	6838	6652
25°	6664	6519	6113
30°	6316	6114	5507
35°	5982	5651	5094
40°	5642	5150	4635
45°	5319	4761	4190
50°	4923	4419	3737
55°	4555	4004	3347
60°	4173	3577	2998
65°	3671	3132	2655
70°	3024	2743	2256
75°	2405	2100	2202
80°	1616	1515	1413
85°	1007	1207	1408

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5319 cd/sqm



TEST NUMBER: P563166

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-82-97-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	524.6	4.7
10°-20°	1439.8	13.0
20°-30°	1993.3	18.0
30°-40°	2125.4	19.2
40°-50°	1939.0	17.5
50°-60°	1519.1	13.7
60°-70°	990.0	8.9
70°-80°	438.6	4.0
80°-90°	94.2	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°	3957.7	35.8
0°-40°	6083.1	55.0
0°-60°	9541.2	86.2
0°-90°	11064.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11064.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5636	5636	5636	5636	5636	
5°	5538	5532	5532	5525	5525	526
15°	5180	5180	5128	5076	5056	1456
25°	4489	4463	4391	4235	4118	2061
35°	3642	3616	3440	3180	3101	2277
45°	2795	2736	2502	2293	2202	2153
55°	1942	1883	1707	1505	1427	1741
65°	1153	1088	984	1003	834	1136
75°	463	430	404	384	424	496
85°	65	72	78	85	91	90
90°	0	0	0	0	0	



TEST NUMBER: P563166

CATALOG NUMBER: FSR-24-4-LD4-3HI-40-UNV-82-97-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5635.9	5635.9	5635.9	5635.9	5635.9
2.5°	5596.8	5596.8	5596.8	5590.2	5590.2
5°	5538.1	5531.6	5531.6	5525.1	5525.1
7.5°	5492.5	5486.0	5479.5	5473.0	5459.9
10°	5427.4	5427.4	5420.8	5388.3	5381.8
12.5°	5323.1	5316.6	5290.5	5244.9	5231.9
15°	5179.8	5179.8	5127.6	5075.5	5056.0
17.5°	5023.4	5016.9	4951.7	4899.6	4873.5
20°	4854.0	4841.0	4775.8	4691.1	4645.5
22.5°	4665.1	4665.1	4586.9	4476.1	4430.5
25°	4489.1	4463.1	4391.4	4235.0	4117.8
27.5°	4287.2	4248.1	4169.9	3948.4	3811.5
30°	4065.6	4046.1	3935.3	3648.6	3544.4
32.5°	3857.1	3824.6	3707.3	3407.6	3322.9
35°	3642.1	3616.1	3440.2	3179.5	3101.3
37.5°	3427.1	3394.5	3173.0	2964.5	2866.8
40°	3212.1	3173.0	2931.9	2743.0	2638.8
42.5°	3010.1	2958.0	2723.5	2521.5	2404.2
45°	2795.1	2736.5	2501.9	2293.4	2202.2
47.5°	2580.1	2528.0	2313.0	2098.0	1993.7
50°	2352.1	2306.5	2111.0	1896.0	1785.2
52.5°	2163.1	2091.5	1902.5	1687.5	1596.3
55°	1941.6	1883.0	1707.0	1505.1	1426.9
57.5°	1739.6	1681.0	1518.1	1329.1	1264.0
60°	1550.7	1466.0	1329.1	1166.3	1114.1
62.5°	1342.2	1277.0	1159.7	1022.9	1088.1
65°	1153.2	1088.1	983.8	1003.4	834.0
67.5°	944.7	912.2	820.9	729.7	703.7
70°	768.8	729.7	697.2	599.4	573.4
72.5°	612.5	573.4	527.8	475.6	456.1
75°	462.6	430.0	404.0	384.4	423.5
77.5°	319.3	306.2	286.7	267.1	260.6
80°	208.5	202.0	195.5	188.9	182.4
82.5°	123.8	123.8	123.8	123.8	123.8
85°	65.2	71.7	78.2	84.7	91.2
87.5°	39.1	39.1	45.6	52.1	58.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)