

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: P561354

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-81-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561354  
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-12-4-LD4-2HI-35-UNV-81-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

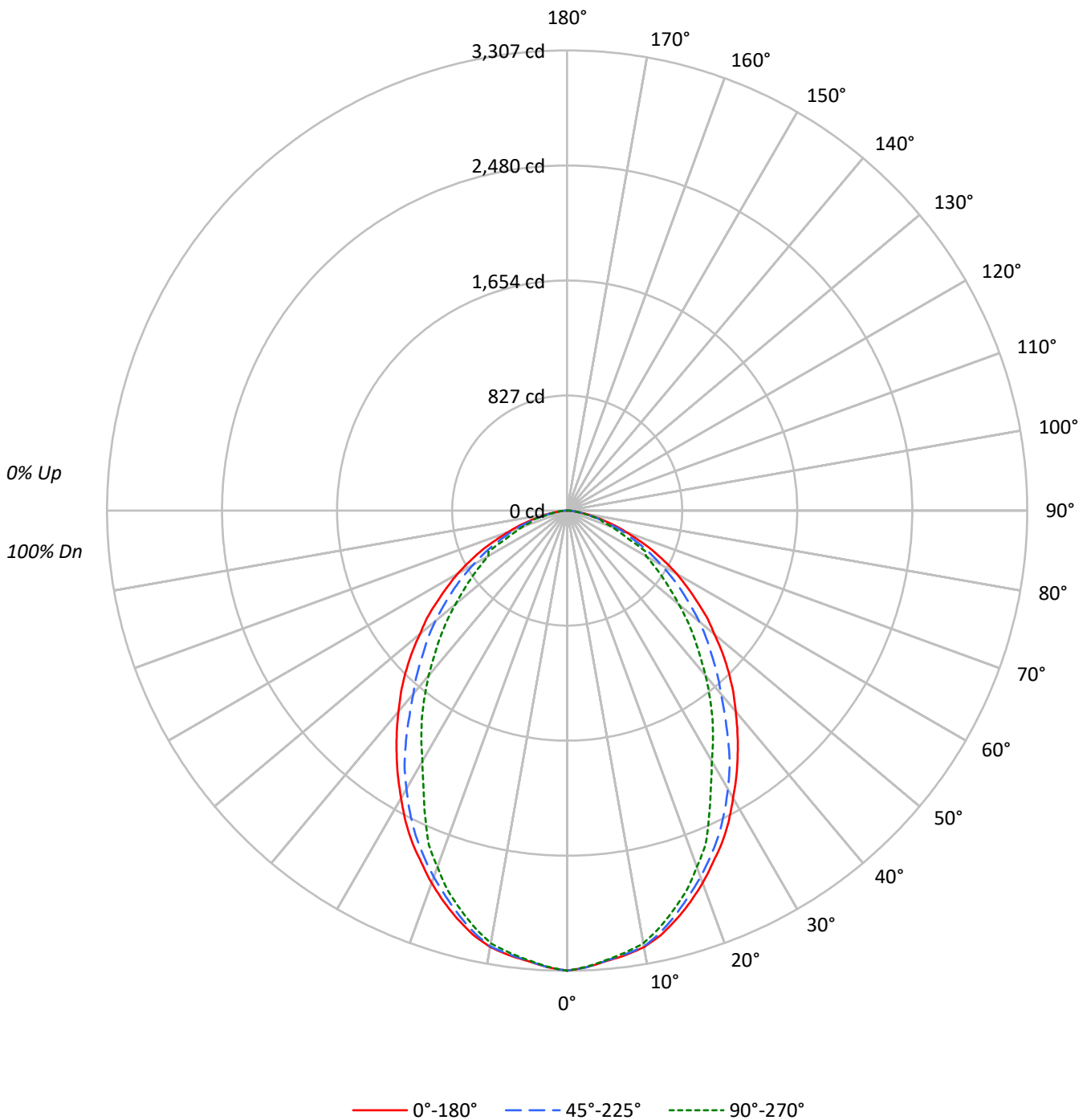
Lumens per Lamp: N/A  
Luminaire Lumens: 6492.0 lumens  
Efficiency: N/A  
Efficacy: 75.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

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

	0°	45°	90°
0°	8899	8899	8899
5°	8778	8768	8757
10°	8702	8692	8629
15°	8467	8382	8265
20°	8156	8025	7806
25°	7821	7651	7174
30°	7413	7175	6462
35°	7021	6631	5978
40°	6621	6043	5439
45°	6242	5587	4918
50°	5778	5186	4385
55°	5345	4699	3928
60°	4897	4197	3518
65°	4309	3676	3116
70°	3549	3219	2647
75°	2822	2464	2584
80°	1895	1777	1658
85°	1179	1417	1652

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6242 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	307.8	4.7
10°-20°	844.8	13.0
20°-30°	1169.6	18.0
30°-40°	1247.1	19.2
40°-50°	1137.7	17.5
50°-60°	891.3	13.7
60°-70°	580.9	8.9
70°-80°	257.4	4.0
80°-90°	55.3	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°	2322.2	35.8
0°-40°	3569.4	55.0
0°-60°	5598.4	86.2
0°-90°	6492.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	6492.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3307	3307	3307	3307	3307	
5°	3250	3246	3246	3242	3242	308
15°	3039	3039	3009	2978	2967	854
25°	2634	2619	2577	2485	2416	1209
35°	2137	2122	2019	1866	1820	1336
45°	1640	1606	1468	1346	1292	1263
55°	1139	1105	1002	883	837	1022
65°	677	638	577	589	489	667
75°	271	252	237	226	248	291
85°	38	42	46	50	54	53
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3306.9	3306.9	3306.9	3306.9	3306.9
2.5°	3284.0	3284.0	3284.0	3280.2	3280.2
5°	3249.6	3245.8	3245.8	3241.9	3241.9
7.5°	3222.8	3219.0	3215.2	3211.4	3203.7
10°	3184.6	3184.6	3180.8	3161.7	3157.8
12.5°	3123.4	3119.6	3104.3	3077.6	3069.9
15°	3039.3	3039.3	3008.7	2978.2	2966.7
17.5°	2947.6	2943.7	2905.5	2874.9	2859.6
20°	2848.2	2840.5	2802.3	2752.6	2725.8
22.5°	2737.3	2737.3	2691.4	2626.4	2599.7
25°	2634.1	2618.8	2576.7	2485.0	2416.2
27.5°	2515.6	2492.6	2446.8	2316.8	2236.5
30°	2385.6	2374.1	2309.1	2140.9	2079.7
32.5°	2263.2	2244.1	2175.3	1999.5	1949.8
35°	2137.1	2121.8	2018.6	1865.6	1819.8
37.5°	2010.9	1991.8	1861.8	1739.5	1682.1
40°	1884.8	1861.8	1720.4	1609.5	1548.3
42.5°	1766.2	1735.7	1598.0	1479.5	1410.7
45°	1640.1	1605.7	1468.1	1345.7	1292.2
47.5°	1513.9	1483.3	1357.2	1231.0	1169.9
50°	1380.1	1353.4	1238.7	1112.5	1047.5
52.5°	1269.3	1227.2	1116.3	990.2	936.6
55°	1139.3	1104.9	1001.6	883.1	837.2
57.5°	1020.8	986.3	890.8	779.9	741.7
60°	909.9	860.2	779.9	684.3	653.7
62.5°	787.5	749.3	680.5	600.2	638.4
65°	676.7	638.4	577.3	588.7	489.4
67.5°	554.3	535.2	481.7	428.2	412.9
70°	451.1	428.2	409.1	351.7	336.4
72.5°	359.4	336.4	309.7	279.1	267.6
75°	271.4	252.3	237.0	225.6	248.5
77.5°	187.3	179.7	168.2	156.7	152.9
80°	122.3	118.5	114.7	110.9	107.0
82.5°	72.6	72.6	72.6	72.6	72.6
85°	38.2	42.1	45.9	49.7	53.5
87.5°	22.9	22.9	26.8	30.6	34.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)