

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: P560874

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-93-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560874  
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-LD4-1HI-40-UNV-93-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

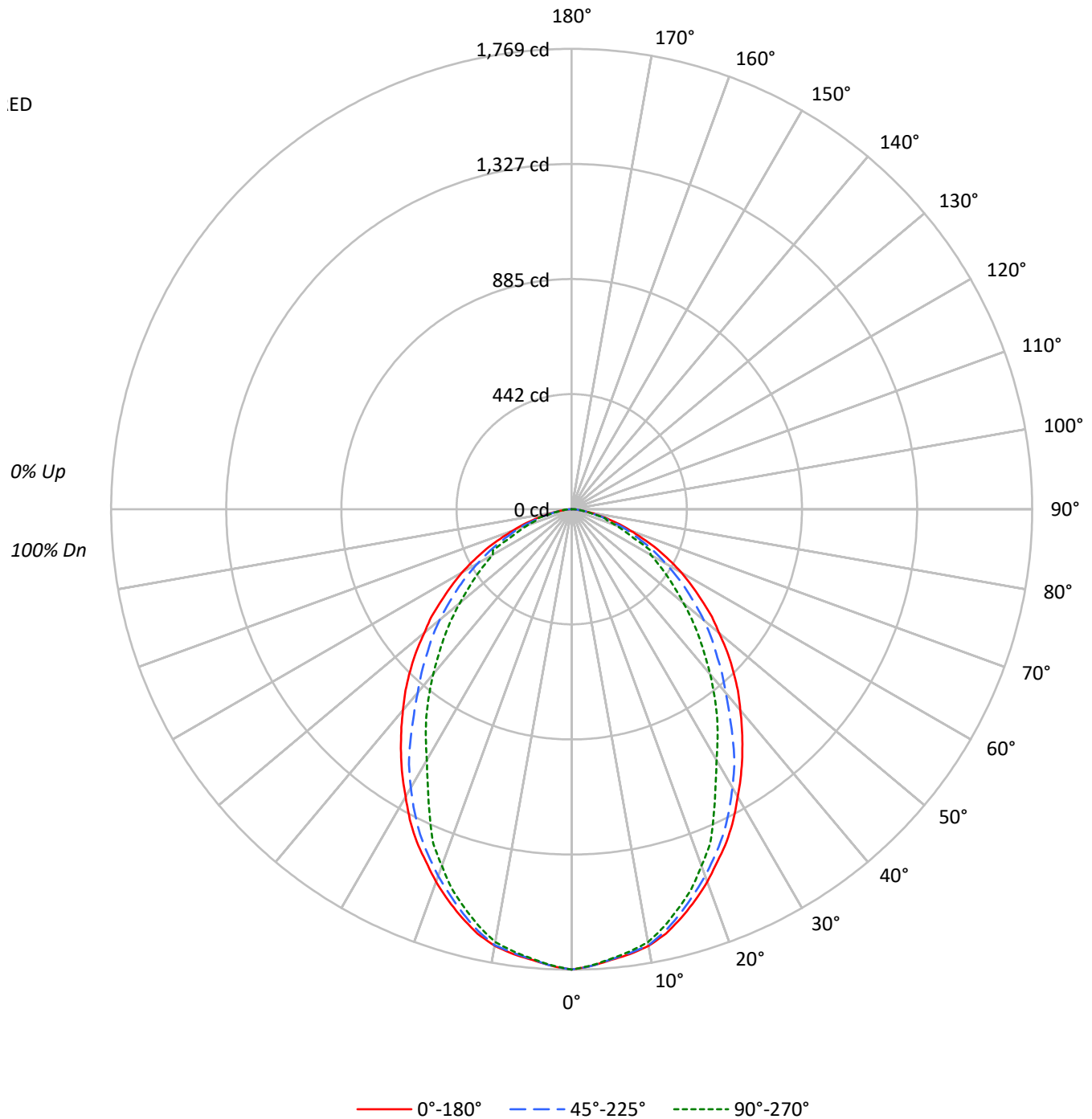
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3472.0 lumens  
Efficiency: N/A  
Efficacy: 80.4 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): 43.2  
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



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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°	4759	4759	4759
5°	4695	4689	4683
10°	4654	4648	4615
15°	4528	4483	4420
20°	4362	4292	4175
25°	4183	4092	3837
30°	3964	3837	3456
35°	3755	3547	3197
40°	3541	3232	2909
45°	3338	2988	2630
50°	3090	2774	2345
55°	2859	2513	2101
60°	2619	2245	1882
65°	2304	1966	1666
70°	1899	1721	1415
75°	1510	1318	1382
80°	1013	950	886
85°	630	756	883

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3338 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.6	4.7
10°-20°	451.8	13.0
20°-30°	625.5	18.0
30°-40°	667.0	19.2
40°-50°	608.5	17.5
50°-60°	476.7	13.7
60°-70°	310.7	8.9
70°-80°	137.6	4.0
80°-90°	29.5	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°	1242.0	35.8
0°-40°	1908.9	55.0
0°-60°	2994.1	86.2
0°-90°	3472.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3472.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1769	1769	1769	1769	1769	
5°	1738	1736	1736	1734	1734	165
15°	1626	1626	1609	1593	1587	457
25°	1409	1401	1378	1329	1292	647
35°	1143	1135	1080	998	973	715
45°	877	859	785	720	691	676
55°	609	591	536	472	448	546
65°	362	342	309	315	262	357
75°	145	135	127	121	133	156
85°	20	22	24	27	29	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1768.6	1768.6	1768.6	1768.6	1768.6
2.5°	1756.3	1756.3	1756.3	1754.3	1754.3
5°	1737.9	1735.9	1735.9	1733.8	1733.8
7.5°	1723.6	1721.6	1719.5	1717.5	1713.4
10°	1703.2	1703.2	1701.1	1690.9	1688.9
12.5°	1670.4	1668.4	1660.2	1645.9	1641.8
15°	1625.5	1625.5	1609.1	1592.8	1586.6
17.5°	1576.4	1574.4	1553.9	1537.5	1529.4
20°	1523.2	1519.1	1498.7	1472.1	1457.8
22.5°	1463.9	1463.9	1439.4	1404.6	1390.3
25°	1408.7	1400.6	1378.1	1329.0	1292.2
27.5°	1345.4	1333.1	1308.6	1239.0	1196.1
30°	1275.8	1269.7	1234.9	1145.0	1112.3
32.5°	1210.4	1200.2	1163.4	1069.3	1042.8
35°	1142.9	1134.8	1079.6	997.8	973.2
37.5°	1075.5	1065.2	995.7	930.3	899.6
40°	1008.0	995.7	920.1	860.8	828.1
42.5°	944.6	928.3	854.6	791.3	754.5
45°	877.1	858.7	785.1	719.7	691.1
47.5°	809.7	793.3	725.8	658.4	625.7
50°	738.1	723.8	662.5	595.0	560.2
52.5°	678.8	656.3	597.0	529.6	500.9
55°	609.3	590.9	535.7	472.3	447.8
57.5°	545.9	527.5	476.4	417.1	396.7
60°	486.6	460.0	417.1	366.0	349.6
62.5°	421.2	400.7	363.9	321.0	341.5
65°	361.9	341.5	308.7	314.9	261.7
67.5°	296.5	286.2	257.6	229.0	220.8
70°	241.3	229.0	218.8	188.1	179.9
72.5°	192.2	179.9	165.6	149.3	143.1
75°	145.2	134.9	126.8	120.6	132.9
77.5°	100.2	96.1	90.0	83.8	81.8
80°	65.4	63.4	61.3	59.3	57.2
82.5°	38.8	38.8	38.8	38.8	38.8
85°	20.4	22.5	24.5	26.6	28.6
87.5°	12.3	12.3	14.3	16.4	18.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)