

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: P561600

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-81-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561600  
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-LD4-2LO-40-UNV-81-84-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

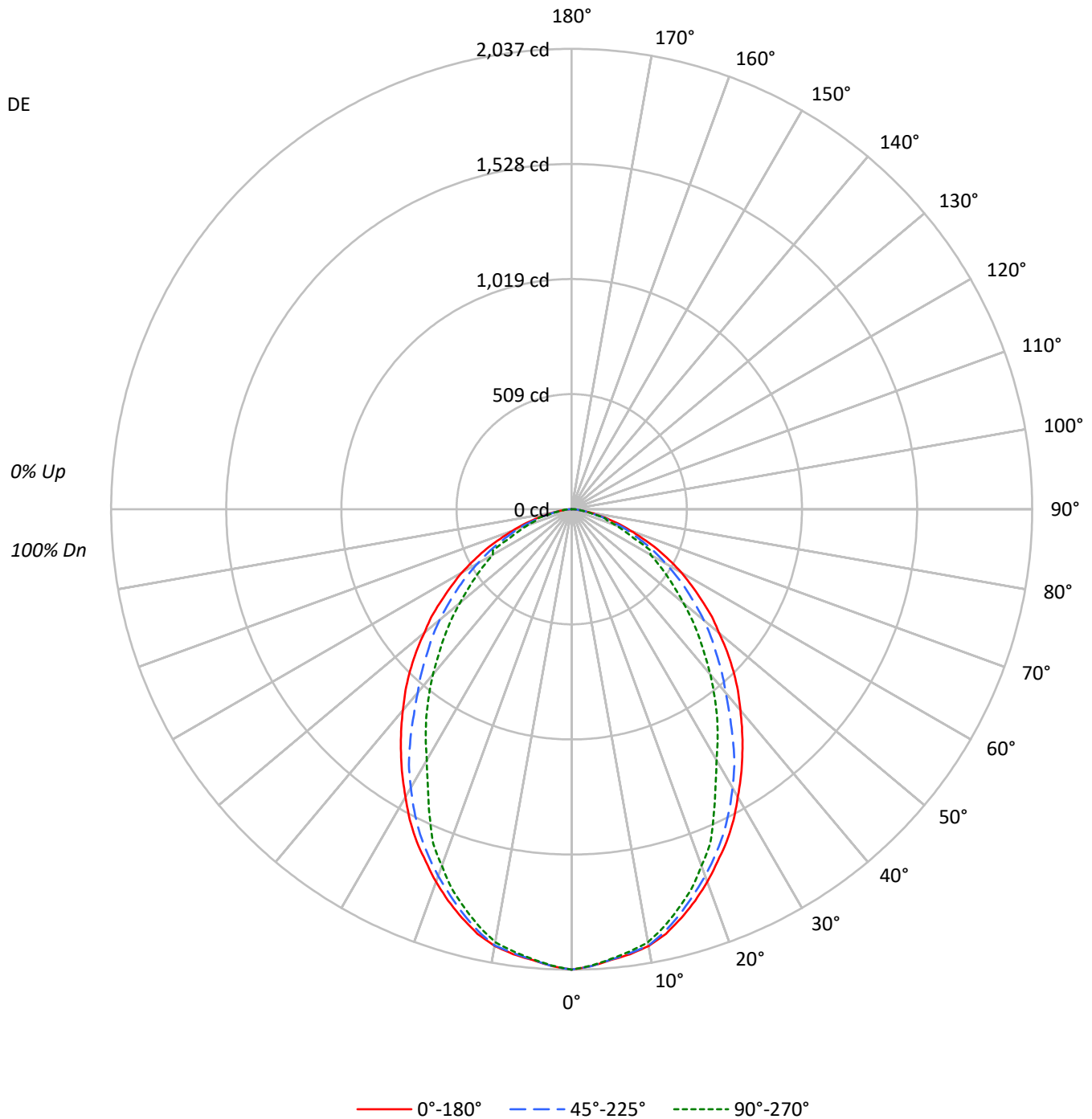
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3999.0 lumens  
Efficiency: N/A  
Efficacy: 85.4 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): 46.8  
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	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°	5482	5482	5482
5°	5407	5401	5394
10°	5360	5354	5315
15°	5216	5163	5091
20°	5024	4943	4808
25°	4818	4713	4419
30°	4566	4420	3981
35°	4324	4085	3683
40°	4078	3723	3351
45°	3845	3441	3029
50°	3559	3194	2701
55°	3293	2895	2419
60°	3017	2585	2167
65°	2654	2264	1919
70°	2186	1983	1630
75°	1738	1518	1592
80°	1168	1094	1021
85°	726	874	1019

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3845 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	189.6	4.7
10°-20°	520.4	13.0
20°-30°	720.5	18.0
30°-40°	768.2	19.2
40°-50°	700.8	17.5
50°-60°	549.0	13.7
60°-70°	357.9	8.9
70°-80°	158.5	4.0
80°-90°	34.0	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°	1430.5	35.8
0°-40°	2198.7	55.0
0°-60°	3448.6	86.2
0°-90°	3999.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3999.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2037	2037	2037	2037	2037	
5°	2002	1999	1999	1997	1997	190
15°	1872	1872	1853	1834	1827	526
25°	1623	1613	1587	1531	1488	745
35°	1316	1307	1243	1149	1121	823
45°	1010	989	904	829	796	778
55°	702	681	617	544	516	629
65°	417	393	356	363	301	411
75°	167	155	146	139	153	179
85°	24	26	28	31	33	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2037.0	2037.0	2037.0	2037.0	2037.0
2.5°	2022.9	2022.9	2022.9	2020.6	2020.6
5°	2001.7	1999.4	1999.4	1997.0	1997.0
7.5°	1985.2	1982.9	1980.5	1978.2	1973.5
10°	1961.7	1961.7	1959.3	1947.5	1945.2
12.5°	1924.0	1921.6	1912.2	1895.7	1891.0
15°	1872.2	1872.2	1853.4	1834.5	1827.4
17.5°	1815.7	1813.3	1789.8	1770.9	1761.5
20°	1754.4	1749.7	1726.2	1695.6	1679.1
22.5°	1686.1	1686.1	1657.9	1617.9	1601.4
25°	1622.6	1613.1	1587.2	1530.7	1488.3
27.5°	1549.6	1535.4	1507.2	1427.1	1377.6
30°	1469.5	1462.4	1422.4	1318.8	1281.1
32.5°	1394.1	1382.4	1340.0	1231.6	1201.0
35°	1316.4	1307.0	1243.4	1149.2	1121.0
37.5°	1238.7	1226.9	1146.9	1071.5	1036.2
40°	1161.0	1146.9	1059.7	991.4	953.8
42.5°	1088.0	1069.2	984.4	911.4	869.0
45°	1010.3	989.1	904.3	828.9	796.0
47.5°	932.6	913.7	836.0	758.3	720.6
50°	850.1	833.7	763.0	685.3	645.3
52.5°	781.8	755.9	687.6	609.9	577.0
55°	701.8	680.6	617.0	544.0	515.7
57.5°	628.8	607.6	548.7	480.4	456.9
60°	560.5	529.9	480.4	421.5	402.7
62.5°	485.1	461.6	419.2	369.7	393.3
65°	416.8	393.3	355.6	362.7	301.4
67.5°	341.5	329.7	296.7	263.8	254.3
70°	277.9	263.8	252.0	216.7	207.2
72.5°	221.4	207.2	190.8	171.9	164.8
75°	167.2	155.4	146.0	138.9	153.1
77.5°	115.4	110.7	103.6	96.6	94.2
80°	75.4	73.0	70.6	68.3	65.9
82.5°	44.7	44.7	44.7	44.7	44.7
85°	23.5	25.9	28.3	30.6	33.0
87.5°	14.1	14.1	16.5	18.8	21.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)