

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: P561565

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-82-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561565  
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-35-UNV-82-96-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

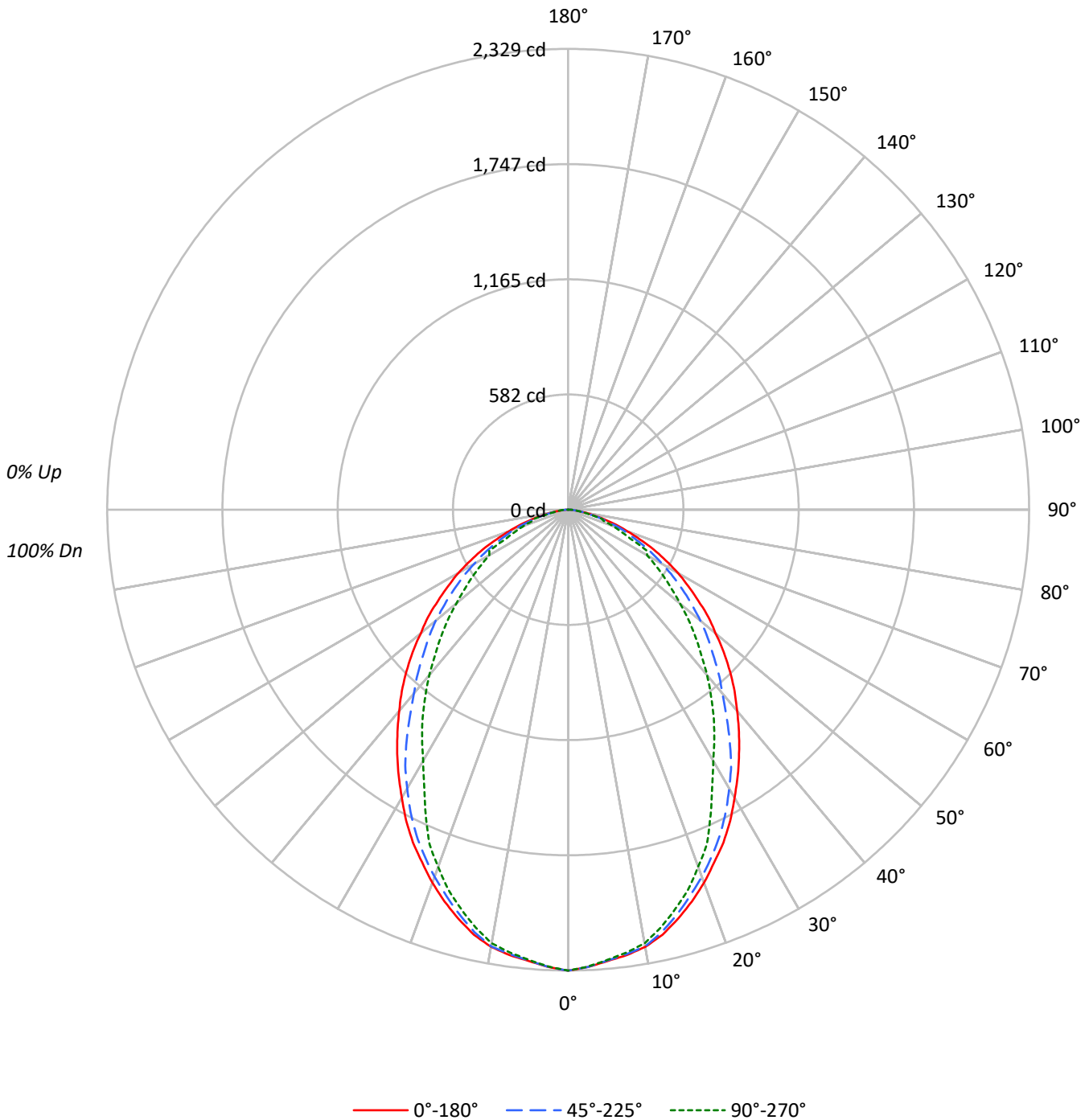
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4573.0 lumens  
Efficiency: N/A  
Efficacy: 97.7 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	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°	6268	6268	6268
5°	6183	6176	6169
10°	6130	6122	6078
15°	5964	5904	5822
20°	5745	5653	5499
25°	5509	5389	5054
30°	5221	5054	4552
35°	4945	4671	4211
40°	4664	4257	3831
45°	4397	3935	3464
50°	4070	3653	3089
55°	3765	3310	2767
60°	3449	2957	2478
65°	3035	2589	2195
70°	2500	2267	1865
75°	1988	1736	1820
80°	1336	1252	1168
85°	831	997	1164

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4397 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	216.8	4.7
10°-20°	595.1	13.0
20°-30°	823.9	18.0
30°-40°	878.5	19.2
40°-50°	801.4	17.5
50°-60°	627.9	13.7
60°-70°	409.2	8.9
70°-80°	181.3	4.0
80°-90°	38.9	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°	1635.8	35.8
0°-40°	2514.3	55.0
0°-60°	3943.6	86.2
0°-90°	4573.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4573.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2329	2329	2329	2329	2329	
5°	2289	2286	2286	2284	2284	217
15°	2141	2141	2119	2098	2090	602
25°	1856	1845	1815	1750	1702	852
35°	1505	1495	1422	1314	1282	941
45°	1155	1131	1034	948	910	890
55°	802	778	706	622	590	720
65°	477	450	407	415	345	470
75°	191	178	167	159	175	205
85°	27	30	32	35	38	37
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2329.4	2329.4	2329.4	2329.4	2329.4
2.5°	2313.3	2313.3	2313.3	2310.6	2310.6
5°	2289.0	2286.3	2286.3	2283.6	2283.6
7.5°	2270.2	2267.5	2264.8	2262.1	2256.7
10°	2243.2	2243.2	2240.6	2227.1	2224.4
12.5°	2200.2	2197.5	2186.7	2167.8	2162.5
15°	2140.9	2140.9	2119.4	2097.8	2089.8
17.5°	2076.3	2073.6	2046.7	2025.1	2014.3
20°	2006.3	2000.9	1974.0	1938.9	1920.1
22.5°	1928.2	1928.2	1895.9	1850.1	1831.2
25°	1855.5	1844.7	1815.1	1750.4	1702.0
27.5°	1772.0	1755.8	1723.5	1631.9	1575.4
30°	1680.4	1672.3	1626.6	1508.1	1465.0
32.5°	1594.2	1580.8	1532.3	1408.4	1373.4
35°	1505.4	1494.6	1421.9	1314.2	1281.9
37.5°	1416.5	1403.0	1311.5	1225.3	1184.9
40°	1327.6	1311.5	1211.8	1133.7	1090.7
42.5°	1244.2	1222.6	1125.7	1042.2	993.7
45°	1155.3	1131.1	1034.1	947.9	910.2
47.5°	1066.4	1044.9	956.0	867.1	824.1
50°	972.2	953.3	872.5	783.7	737.9
52.5°	894.1	864.4	786.3	697.5	659.8
55°	802.5	778.3	705.6	622.1	589.8
57.5°	719.0	694.8	627.5	549.4	522.4
60°	640.9	605.9	549.4	482.0	460.5
62.5°	554.8	527.8	479.3	422.8	449.7
65°	476.7	449.7	406.6	414.7	344.7
67.5°	390.5	377.0	339.3	301.6	290.8
70°	317.8	301.6	288.1	247.8	237.0
72.5°	253.1	237.0	218.1	196.6	188.5
75°	191.2	177.7	167.0	158.9	175.0
77.5°	132.0	126.6	118.5	110.4	107.7
80°	86.2	83.5	80.8	78.1	75.4
82.5°	51.2	51.2	51.2	51.2	51.2
85°	26.9	29.6	32.3	35.0	37.7
87.5°	16.2	16.2	18.9	21.5	24.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)