

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: P561685

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-82-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561685  
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-50-UNV-82-86-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

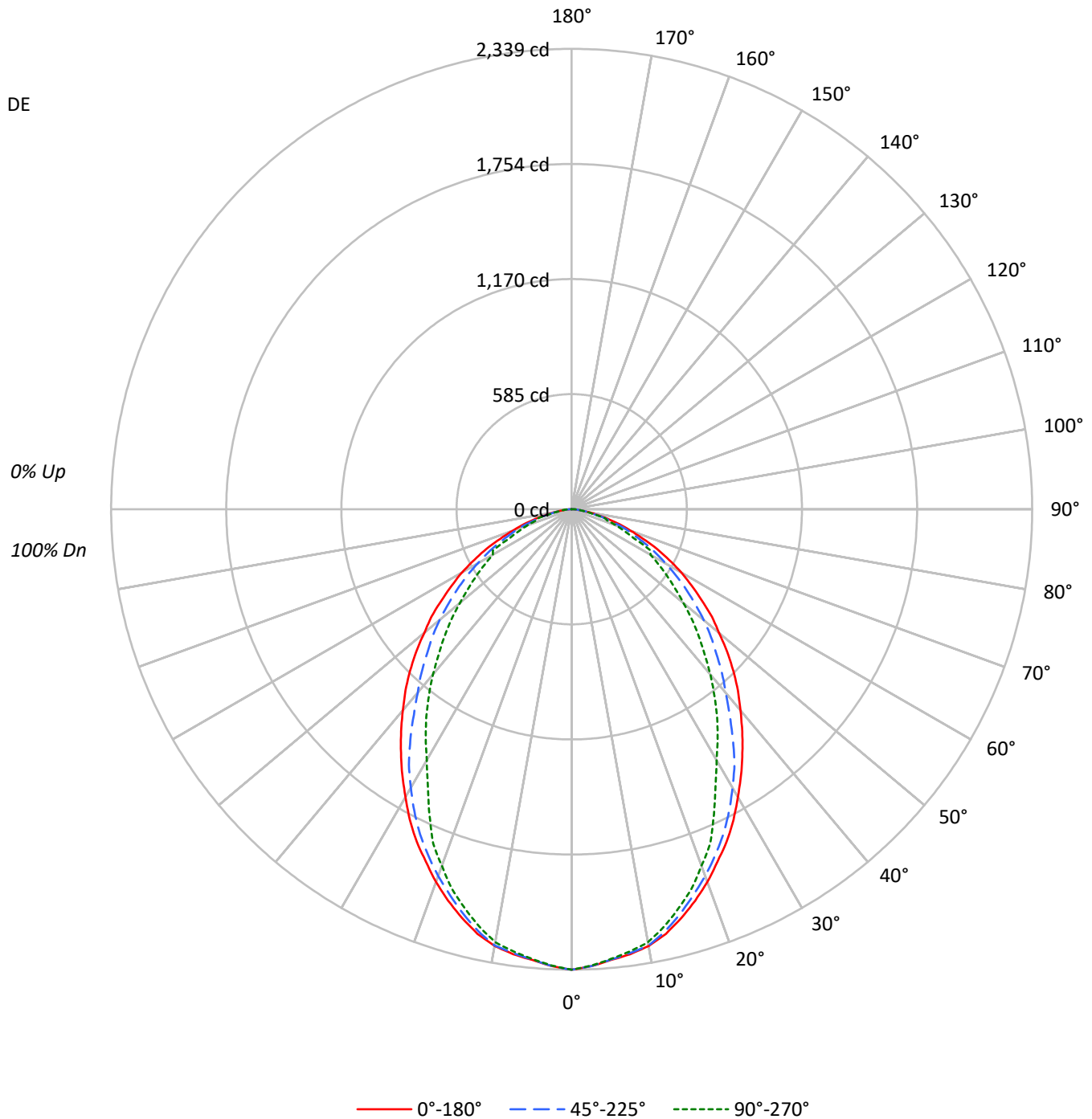
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4592.0 lumens  
Efficiency: N/A  
Efficacy: 98.1 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): 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	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°	6294	6294	6294
5°	6209	6202	6194
10°	6155	6148	6103
15°	5989	5929	5846
20°	5769	5676	5521
25°	5532	5412	5074
30°	5243	5075	4571
35°	4966	4690	4229
40°	4683	4275	3847
45°	4415	3952	3478
50°	4087	3668	3102
55°	3780	3324	2778
60°	3464	2969	2489
65°	3047	2600	2204
70°	2511	2276	1873
75°	1996	1744	1828
80°	1340	1257	1173
85°	834	1000	1170

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4415 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	217.7	4.7
10°-20°	597.6	13.0
20°-30°	827.3	18.0
30°-40°	882.1	19.2
40°-50°	804.8	17.5
50°-60°	630.5	13.7
60°-70°	410.9	8.9
70°-80°	182.1	4.0
80°-90°	39.1	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°	1642.6	35.8
0°-40°	2524.7	55.0
0°-60°	3959.9	86.2
0°-90°	4592.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4592.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2339	2339	2339	2339	2339	
5°	2298	2296	2296	2293	2293	218
15°	2150	2150	2128	2106	2098	604
25°	1863	1852	1823	1758	1709	855
35°	1512	1501	1428	1320	1287	945
45°	1160	1136	1038	952	914	894
55°	806	782	708	625	592	723
65°	479	452	408	416	346	472
75°	192	178	168	160	176	206
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°	2339.1	2339.1	2339.1	2339.1	2339.1
2.5°	2322.9	2322.9	2322.9	2320.2	2320.2
5°	2298.5	2295.8	2295.8	2293.1	2293.1
7.5°	2279.6	2276.9	2274.2	2271.5	2266.1
10°	2252.6	2252.6	2249.9	2236.3	2233.6
12.5°	2209.3	2206.6	2195.8	2176.9	2171.4
15°	2149.8	2149.8	2128.2	2106.5	2098.4
17.5°	2084.9	2082.2	2055.2	2033.5	2022.7
20°	2014.6	2009.2	1982.2	1947.0	1928.1
22.5°	1936.2	1936.2	1903.7	1857.8	1838.8
25°	1863.2	1852.4	1822.6	1757.7	1709.0
27.5°	1779.3	1763.1	1730.7	1638.7	1581.9
30°	1687.4	1679.3	1633.3	1514.3	1471.1
32.5°	1600.9	1587.3	1538.7	1414.3	1379.1
35°	1511.6	1500.8	1427.8	1319.6	1287.2
37.5°	1422.4	1408.9	1316.9	1230.4	1189.8
40°	1333.2	1316.9	1216.9	1138.5	1095.2
42.5°	1249.3	1227.7	1130.3	1046.5	997.8
45°	1160.1	1135.7	1038.4	951.9	914.0
47.5°	1070.8	1049.2	960.0	870.7	827.5
50°	976.2	957.3	876.1	786.9	740.9
52.5°	897.8	868.0	789.6	700.4	662.5
55°	805.8	781.5	708.5	624.7	592.2
57.5°	722.0	697.7	630.1	551.6	524.6
60°	643.6	608.4	551.6	484.0	462.4
62.5°	557.1	530.0	481.3	424.6	451.6
65°	478.6	451.6	408.3	416.4	346.1
67.5°	392.1	378.6	340.7	302.9	292.0
70°	319.1	302.9	289.3	248.8	238.0
72.5°	254.2	238.0	219.0	197.4	189.3
75°	192.0	178.5	167.7	159.5	175.8
77.5°	132.5	127.1	119.0	110.9	108.2
80°	86.5	83.8	81.1	78.4	75.7
82.5°	51.4	51.4	51.4	51.4	51.4
85°	27.0	29.7	32.4	35.2	37.9
87.5°	16.2	16.2	18.9	21.6	24.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)