

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: P561669

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561669  
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-81-86-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

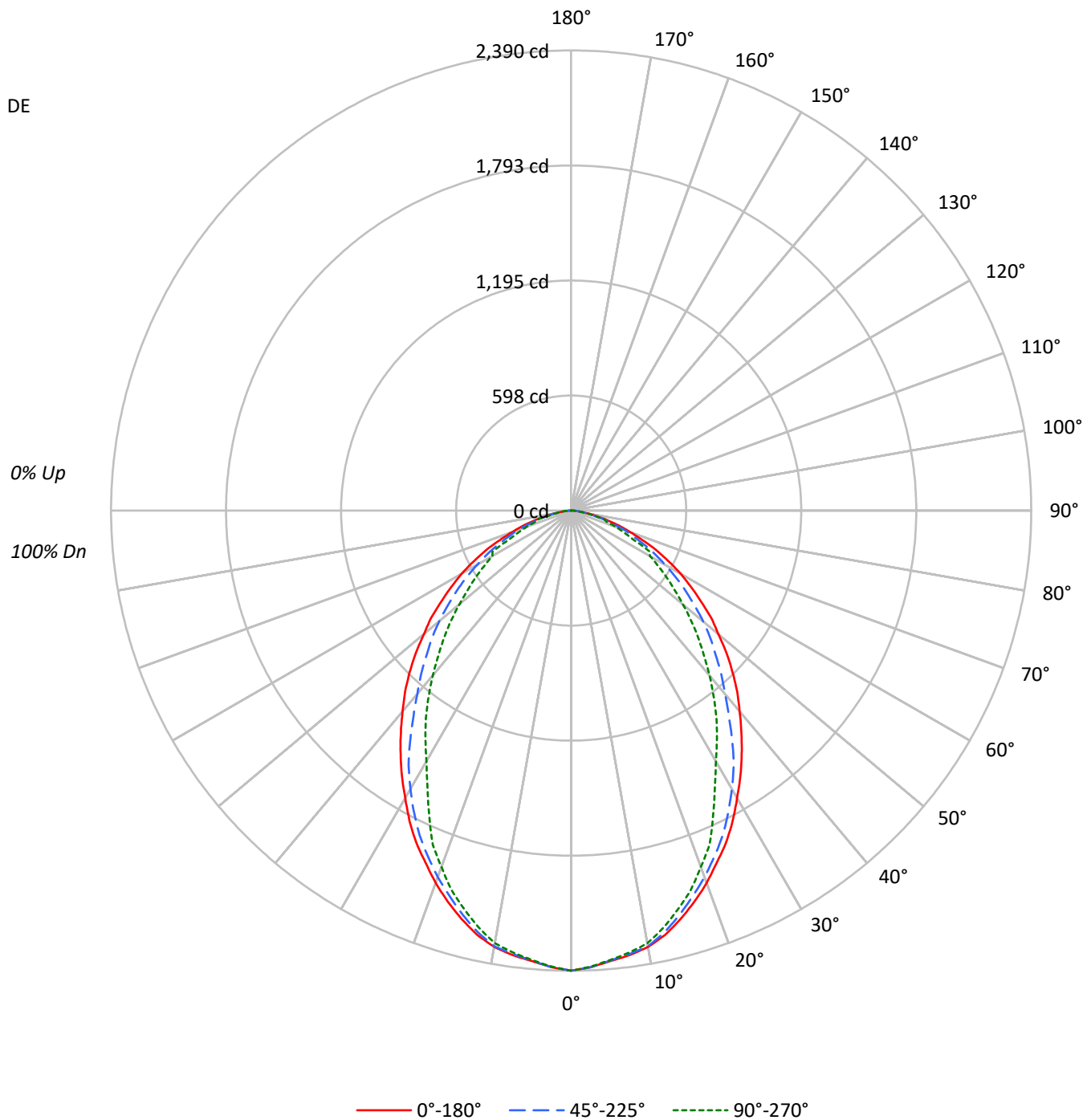
Lumens per Lamp: N/A  
Luminaire Lumens: 4691.0 lumens  
Efficiency: N/A  
Efficacy: 100.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6430	6430	6430
5°	6343	6335	6328
10°	6288	6280	6235
15°	6118	6057	5972
20°	5893	5799	5640
25°	5651	5528	5184
30°	5356	5184	4670
35°	5073	4792	4320
40°	4784	4367	3930
45°	4510	4037	3553
50°	4175	3747	3169
55°	3862	3396	2838
60°	3539	3033	2542
65°	3114	2656	2252
70°	2565	2326	1913
75°	2039	1781	1867
80°	1370	1285	1198
85°	852	1022	1195

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4510 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	222.4	4.7
10°-20°	610.5	13.0
20°-30°	845.1	18.0
30°-40°	901.2	19.2
40°-50°	822.1	17.5
50°-60°	644.1	13.7
60°-70°	419.8	8.9
70°-80°	186.0	4.0
80°-90°	39.9	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°	1678.0	35.8
0°-40°	2579.2	55.0
0°-60°	4045.3	86.2
0°-90°	4691.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4691.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2390	2390	2390	2390	2390	
5°	2348	2345	2345	2343	2343	223
15°	2196	2196	2174	2152	2144	617
25°	1903	1892	1862	1796	1746	874
35°	1544	1533	1459	1348	1315	965
45°	1185	1160	1061	972	934	913
55°	823	798	724	638	605	738
65°	489	461	417	425	354	482
75°	196	182	171	163	180	210
85°	28	30	33	36	39	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2389.5	2389.5	2389.5	2389.5	2389.5
2.5°	2373.0	2373.0	2373.0	2370.2	2370.2
5°	2348.1	2345.3	2345.3	2342.6	2342.6
7.5°	2328.8	2326.0	2323.2	2320.5	2314.9
10°	2301.1	2301.1	2298.4	2284.6	2281.8
12.5°	2256.9	2254.2	2243.1	2223.8	2218.3
15°	2196.2	2196.2	2174.1	2152.0	2143.7
17.5°	2129.9	2127.1	2099.5	2077.4	2066.3
20°	2058.0	2052.5	2024.9	1989.0	1969.6
22.5°	1977.9	1977.9	1944.8	1897.8	1878.5
25°	1903.3	1892.3	1861.9	1795.6	1745.9
27.5°	1817.7	1801.1	1768.0	1674.1	1616.0
30°	1723.8	1715.5	1668.5	1547.0	1502.8
32.5°	1635.4	1621.6	1571.8	1444.8	1408.9
35°	1544.2	1533.2	1458.6	1348.1	1314.9
37.5°	1453.1	1439.2	1345.3	1256.9	1215.5
40°	1361.9	1345.3	1243.1	1163.0	1118.8
42.5°	1276.3	1254.2	1154.7	1069.1	1019.3
45°	1185.1	1160.2	1060.8	972.4	933.7
47.5°	1093.9	1071.8	980.7	889.5	845.3
50°	997.3	977.9	895.0	803.9	756.9
52.5°	917.1	886.8	806.6	715.5	676.8
55°	823.2	798.4	723.8	638.1	605.0
57.5°	737.6	712.7	643.7	563.5	535.9
60°	657.5	621.6	563.5	494.5	472.4
62.5°	569.1	541.4	491.7	433.7	461.3
65°	489.0	461.3	417.1	425.4	353.6
67.5°	400.6	386.7	348.1	309.4	298.3
70°	326.0	309.4	295.6	254.1	243.1
72.5°	259.7	243.1	223.8	201.7	193.4
75°	196.1	182.3	171.3	163.0	179.6
77.5°	135.4	129.8	121.5	113.3	110.5
80°	88.4	85.6	82.9	80.1	77.3
82.5°	52.5	52.5	52.5	52.5	52.5
85°	27.6	30.4	33.1	35.9	38.7
87.5°	16.6	16.6	19.3	22.1	24.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)