

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: P560771

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-81-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560771  
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-35-UNV-81-85-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

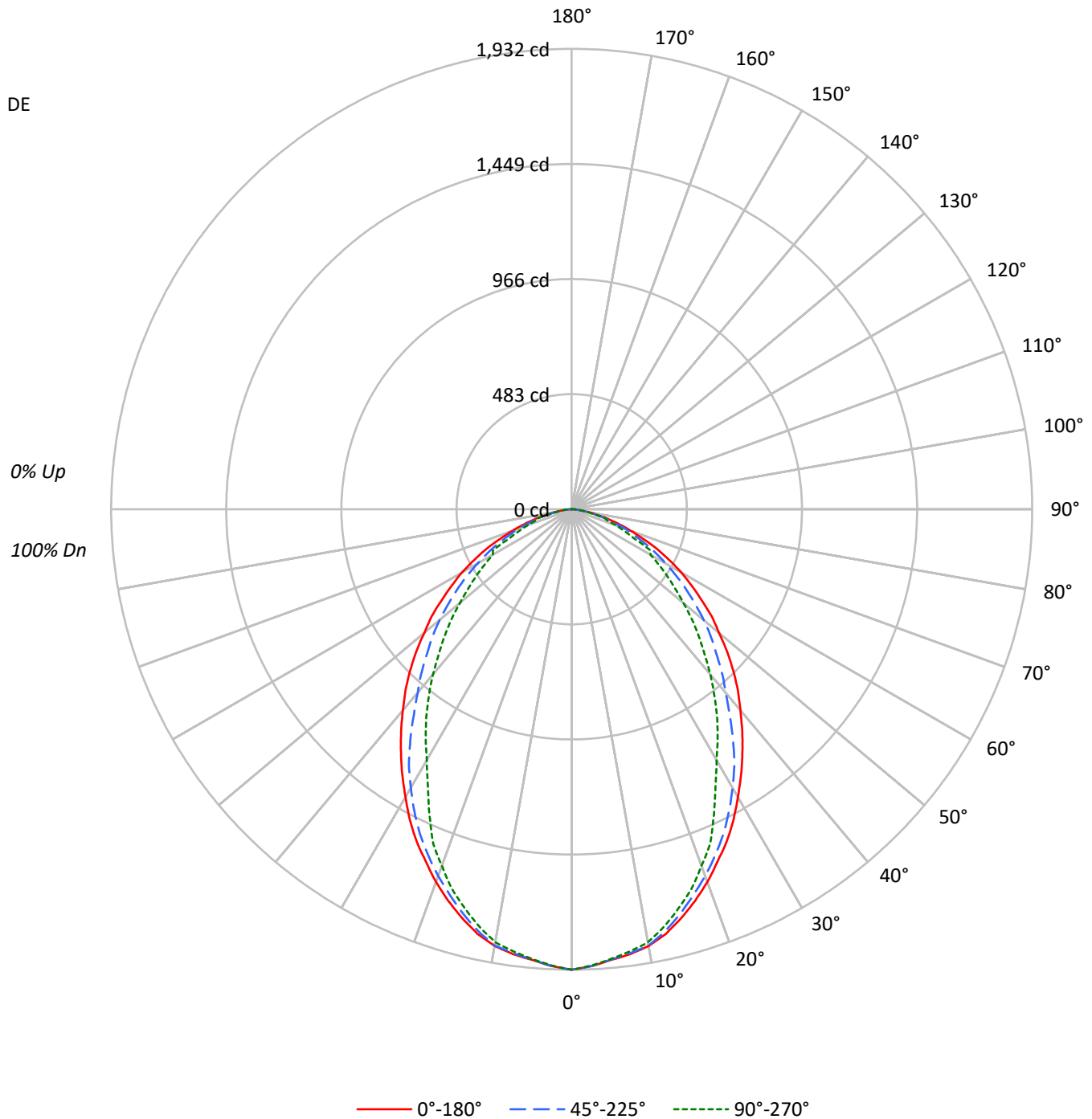
Lumens per Lamp: N/A  
Luminaire Lumens: 3793.0 lumens  
Efficiency: N/A  
Efficacy: 87.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5199	5199	5199
5°	5129	5123	5116
10°	5084	5078	5041
15°	4947	4897	4829
20°	4765	4689	4561
25°	4570	4470	4192
30°	4331	4192	3776
35°	4102	3874	3493
40°	3868	3531	3178
45°	3647	3264	2873
50°	3376	3030	2562
55°	3123	2746	2295
60°	2861	2453	2056
65°	2518	2148	1820
70°	2074	1880	1547
75°	1649	1440	1510
80°	1108	1038	969
85°	689	827	966

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3647 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	179.9	4.7
10°-20°	493.6	13.0
20°-30°	683.3	18.0
30°-40°	728.6	19.2
40°-50°	664.7	17.5
50°-60°	520.8	13.7
60°-70°	339.4	8.9
70°-80°	150.4	4.0
80°-90°	32.3	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°	1356.8	35.8
0°-40°	2085.4	55.0
0°-60°	3270.9	86.2
0°-90°	3793.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3793.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1932	1932	1932	1932	1932	
5°	1899	1896	1896	1894	1894	180
15°	1776	1776	1758	1740	1733	499
25°	1539	1530	1506	1452	1412	707
35°	1249	1240	1179	1090	1063	781
45°	958	938	858	786	755	738
55°	666	646	585	516	489	597
65°	395	373	337	344	286	390
75°	159	147	138	132	145	170
85°	22	25	27	29	31	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1932.1	1932.1	1932.1	1932.1	1932.1
2.5°	1918.7	1918.7	1918.7	1916.5	1916.5
5°	1898.6	1896.4	1896.4	1894.1	1894.1
7.5°	1883.0	1880.7	1878.5	1876.3	1871.8
10°	1860.6	1860.6	1858.4	1847.2	1845.0
12.5°	1824.9	1822.7	1813.7	1798.1	1793.6
15°	1775.7	1775.7	1757.9	1740.0	1733.3
17.5°	1722.1	1719.9	1697.6	1679.7	1670.8
20°	1664.1	1659.6	1637.3	1608.2	1592.6
22.5°	1599.3	1599.3	1572.5	1534.5	1518.9
25°	1539.0	1530.0	1505.5	1451.9	1411.7
27.5°	1469.7	1456.3	1429.5	1353.6	1306.7
30°	1393.8	1387.1	1349.1	1250.8	1215.1
32.5°	1322.3	1311.2	1270.9	1168.2	1139.2
35°	1248.6	1239.7	1179.4	1090.0	1063.2
37.5°	1174.9	1163.7	1087.8	1016.3	982.8
40°	1101.2	1087.8	1005.1	940.4	904.6
42.5°	1031.9	1014.1	933.7	864.4	824.2
45°	958.2	938.1	857.7	786.2	755.0
47.5°	884.5	866.7	792.9	719.2	683.5
50°	806.3	790.7	723.7	650.0	612.0
52.5°	741.6	717.0	652.2	578.5	547.2
55°	665.6	645.5	585.2	516.0	489.2
57.5°	596.4	576.3	520.4	455.7	433.3
60°	531.6	502.6	455.7	399.8	382.0
62.5°	460.1	437.8	397.6	350.7	373.0
65°	395.4	373.0	337.3	344.0	285.9
67.5°	323.9	312.7	281.4	250.2	241.2
70°	263.6	250.2	239.0	205.5	196.6
72.5°	210.0	196.6	180.9	163.1	156.4
75°	158.6	147.4	138.5	131.8	145.2
77.5°	109.4	105.0	98.3	91.6	89.3
80°	71.5	69.2	67.0	64.8	62.5
82.5°	42.4	42.4	42.4	42.4	42.4
85°	22.3	24.6	26.8	29.0	31.3
87.5°	13.4	13.4	15.6	17.9	20.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)