

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: P561538

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-81-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561538  
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-81-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

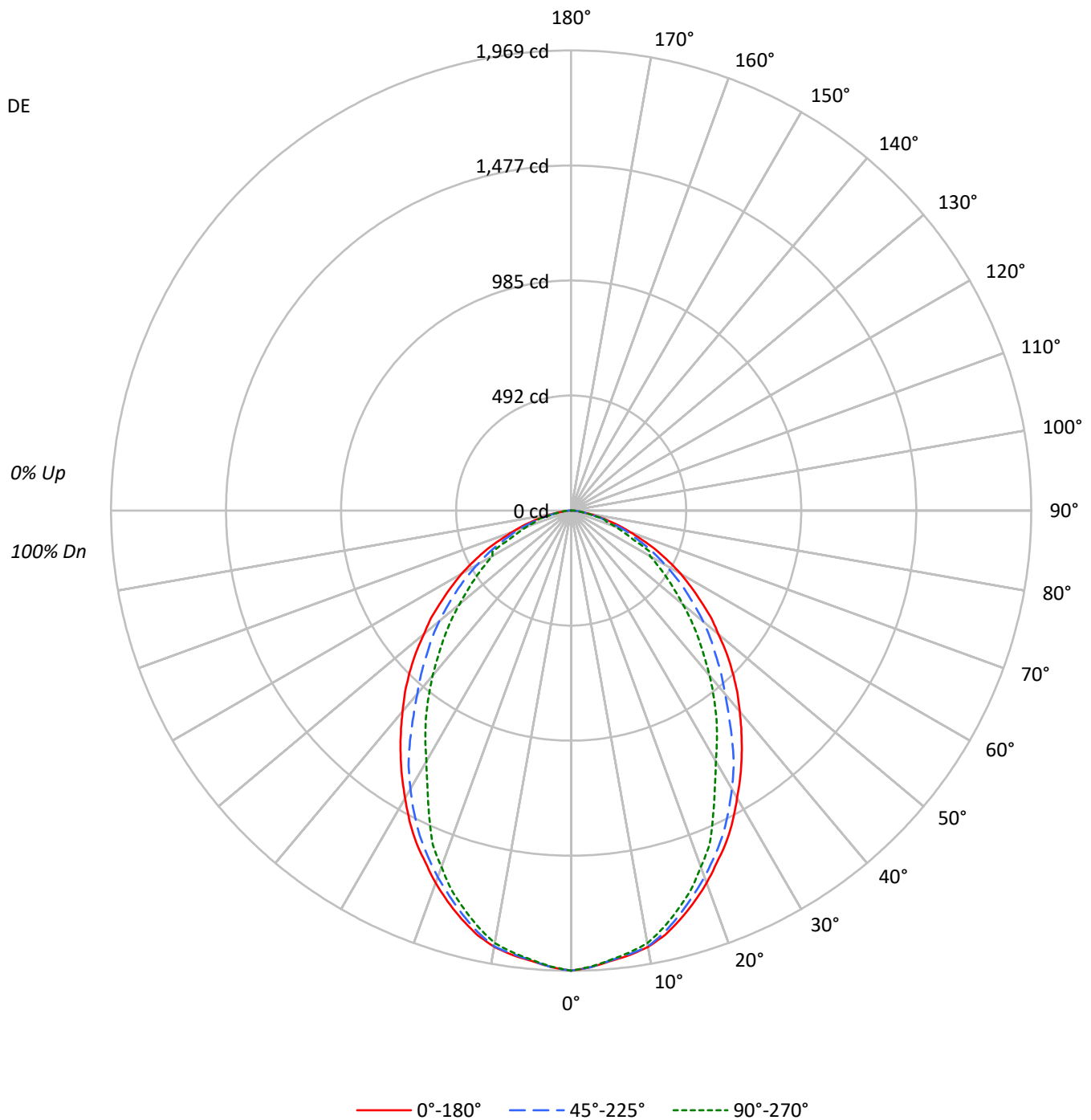
Lumens per Lamp: N/A  
Luminaire Lumens: 3865.0 lumens  
Efficiency: N/A  
Efficacy: 82.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5298	5298	5298
5°	5226	5220	5214
10°	5181	5175	5137
15°	5041	4990	4920
20°	4856	4777	4647
25°	4656	4555	4271
30°	4413	4272	3847
35°	4180	3948	3559
40°	3942	3598	3238
45°	3716	3326	2928
50°	3440	3087	2611
55°	3182	2798	2339
60°	2915	2499	2095
65°	2565	2188	1855
70°	2113	1916	1576
75°	1680	1467	1538
80°	1128	1058	987
85°	704	843	985

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3716 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	183.3	4.7
10°-20°	503.0	13.0
20°-30°	696.3	18.0
30°-40°	742.5	19.2
40°-50°	677.3	17.5
50°-60°	530.6	13.7
60°-70°	345.8	8.9
70°-80°	153.2	4.0
80°-90°	32.9	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°	1382.5	35.8
0°-40°	2125.0	55.0
0°-60°	3333.0	86.2
0°-90°	3865.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3865.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1969	1969	1969	1969	1969	
5°	1935	1932	1932	1930	1930	184
15°	1810	1810	1791	1773	1766	509
25°	1568	1559	1534	1479	1438	720
35°	1272	1263	1202	1111	1083	795
45°	976	956	874	801	769	752
55°	678	658	596	526	498	608
65°	403	380	344	350	291	397
75°	162	150	141	134	148	173
85°	23	25	27	30	32	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1968.8	1968.8	1968.8	1968.8	1968.8
2.5°	1955.1	1955.1	1955.1	1952.8	1952.8
5°	1934.6	1932.4	1932.4	1930.1	1930.1
7.5°	1918.7	1916.4	1914.2	1911.9	1907.3
10°	1895.9	1895.9	1893.7	1882.3	1880.0
12.5°	1859.5	1857.3	1848.1	1832.2	1827.7
15°	1809.5	1809.5	1791.2	1773.0	1766.2
17.5°	1754.8	1752.6	1729.8	1711.6	1702.5
20°	1695.7	1691.1	1668.3	1638.8	1622.8
22.5°	1629.6	1629.6	1602.3	1563.6	1547.7
25°	1568.2	1559.1	1534.1	1479.4	1438.5
27.5°	1497.6	1484.0	1456.7	1379.3	1331.5
30°	1420.3	1413.4	1374.7	1274.6	1238.2
32.5°	1347.4	1336.0	1295.1	1190.4	1160.8
35°	1272.3	1263.2	1201.8	1110.7	1083.4
37.5°	1197.2	1185.8	1108.4	1035.6	1001.5
40°	1122.1	1108.4	1024.2	958.2	921.8
42.5°	1051.5	1033.3	951.4	880.8	839.9
45°	976.4	955.9	874.0	801.2	769.3
47.5°	901.3	883.1	808.0	732.9	696.5
50°	821.7	805.7	737.4	662.3	623.6
52.5°	755.6	730.6	664.6	589.5	557.6
55°	678.3	657.8	596.3	525.8	498.5
57.5°	607.7	587.2	530.3	464.3	441.6
60°	541.7	512.1	464.3	407.4	389.2
62.5°	468.9	446.1	405.1	357.3	380.1
65°	402.9	380.1	343.7	350.5	291.3
67.5°	330.0	318.6	286.8	254.9	245.8
70°	268.6	254.9	243.5	209.4	200.3
72.5°	213.9	200.3	184.4	166.2	159.3
75°	161.6	150.2	141.1	134.3	147.9
77.5°	111.5	107.0	100.1	93.3	91.0
80°	72.8	70.6	68.3	66.0	63.7
82.5°	43.2	43.2	43.2	43.2	43.2
85°	22.8	25.0	27.3	29.6	31.9
87.5°	13.7	13.7	15.9	18.2	20.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)