

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: P562469

Luminaire Tested: FSR-24-4-LD4-1STD-50-UNV-93-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562469  
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-24-4-LD4-1STD-50-UNV-93-86-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

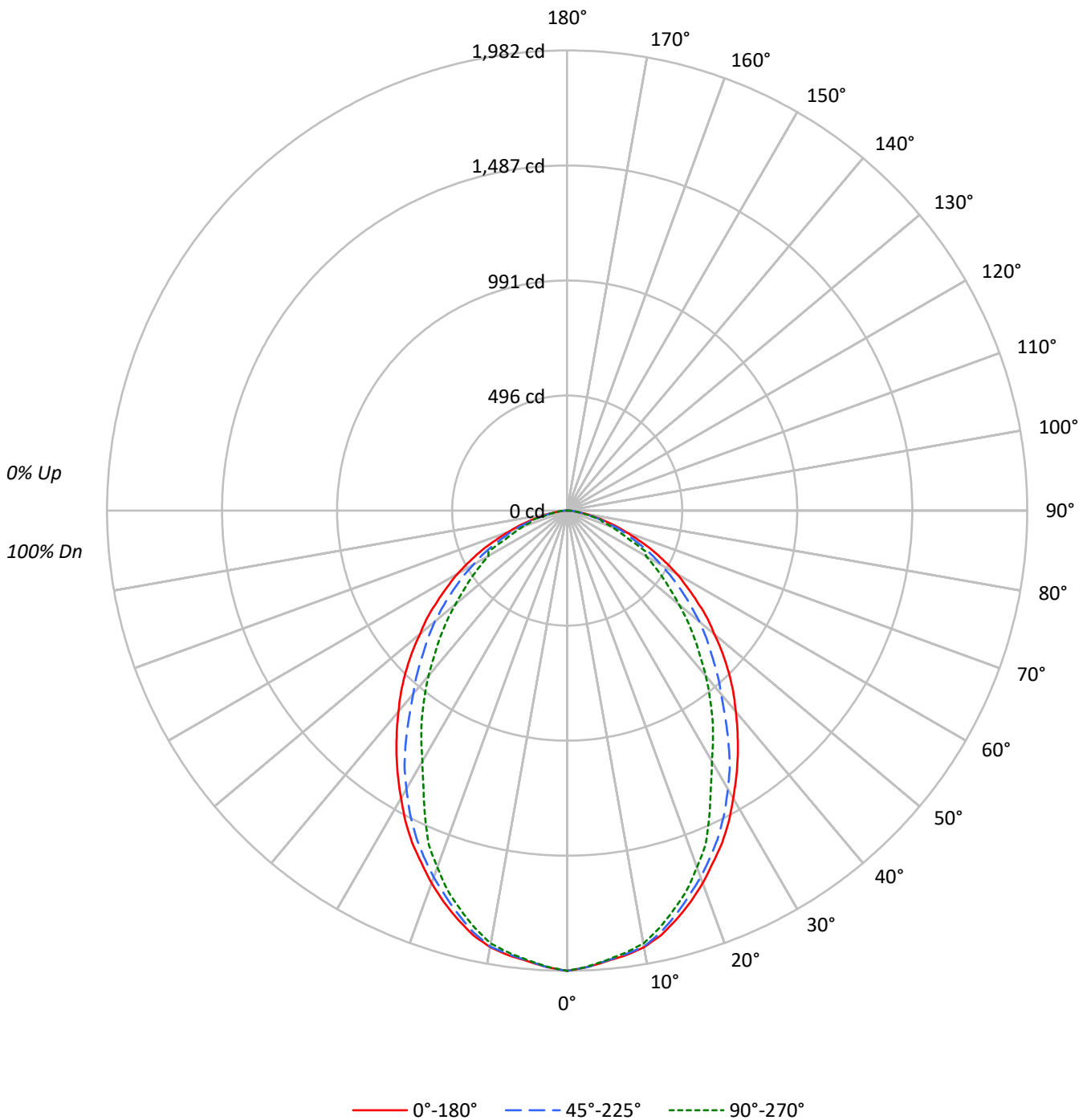
Lumens per Lamp: N/A  
Luminaire Lumens: 3892.0 lumens  
Efficiency: N/A  
Efficacy: 116.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2667	2667	2667
5°	2631	2628	2625
10°	2608	2605	2586
15°	2538	2513	2477
20°	2445	2405	2340
25°	2344	2293	2150
30°	2222	2151	1937
35°	2104	1988	1792
40°	1985	1812	1630
45°	1871	1675	1474
50°	1732	1554	1315
55°	1602	1409	1177
60°	1468	1258	1055
65°	1292	1102	934
70°	1064	965	793
75°	846	739	775
80°	568	533	497
85°	354	425	496

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1871 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	184.5	4.7
10°-20°	506.5	13.0
20°-30°	701.2	18.0
30°-40°	747.7	19.2
40°-50°	682.1	17.5
50°-60°	534.4	13.7
60°-70°	348.3	8.9
70°-80°	154.3	4.0
80°-90°	33.1	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°	1392.2	35.8
0°-40°	2139.9	55.0
0°-60°	3356.3	86.2
0°-90°	3892.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3892.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1982	1982	1982	1982	1982	
5°	1948	1946	1946	1944	1944	185
15°	1822	1822	1804	1785	1778	512
25°	1579	1570	1545	1490	1448	725
35°	1281	1272	1210	1118	1091	801
45°	983	963	880	807	775	757
55°	683	662	600	529	502	613
65°	406	383	346	353	293	400
75°	163	151	142	135	149	174
85°	23	25	28	30	32	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1982.5	1982.5	1982.5	1982.5	1982.5
2.5°	1968.8	1968.8	1968.8	1966.5	1966.5
5°	1948.2	1945.9	1945.9	1943.6	1943.6
7.5°	1932.1	1929.8	1927.5	1925.2	1920.7
10°	1909.2	1909.2	1906.9	1895.4	1893.1
12.5°	1872.5	1870.2	1861.1	1845.0	1840.4
15°	1822.1	1822.1	1803.8	1785.4	1778.5
17.5°	1767.1	1764.8	1741.9	1723.5	1714.4
20°	1707.5	1702.9	1680.0	1650.2	1634.2
22.5°	1641.0	1641.0	1613.5	1574.6	1558.5
25°	1579.2	1570.0	1544.8	1489.8	1448.5
27.5°	1508.1	1494.3	1466.8	1388.9	1340.8
30°	1430.2	1423.3	1384.3	1283.5	1246.8
32.5°	1356.8	1345.4	1304.1	1198.7	1168.9
35°	1281.2	1272.0	1210.1	1118.5	1091.0
37.5°	1205.6	1194.1	1116.2	1042.8	1008.5
40°	1129.9	1116.2	1031.4	964.9	928.2
42.5°	1058.9	1040.5	958.0	887.0	845.7
45°	983.2	962.6	880.1	806.8	774.7
47.5°	907.6	889.3	813.6	738.0	701.3
50°	827.4	811.3	742.6	667.0	628.0
52.5°	760.9	735.7	669.2	593.6	561.5
55°	683.0	662.4	600.5	529.4	501.9
57.5°	611.9	591.3	534.0	467.6	444.6
60°	545.5	515.7	467.6	410.3	391.9
62.5°	472.1	449.2	408.0	359.8	382.8
65°	405.7	382.8	346.1	353.0	293.4
67.5°	332.3	320.9	288.8	256.7	247.5
70°	270.4	256.7	245.2	210.9	201.7
72.5°	215.4	201.7	185.6	167.3	160.4
75°	162.7	151.3	142.1	135.2	149.0
77.5°	112.3	107.7	100.8	94.0	91.7
80°	73.3	71.1	68.8	66.5	64.2
82.5°	43.5	43.5	43.5	43.5	43.5
85°	22.9	25.2	27.5	29.8	32.1
87.5°	13.8	13.8	16.0	18.3	20.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)