

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: P562443

Luminaire Tested: FSR-24-4-LD4-1STD-50-UNV-81-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562443  
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-81-94-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

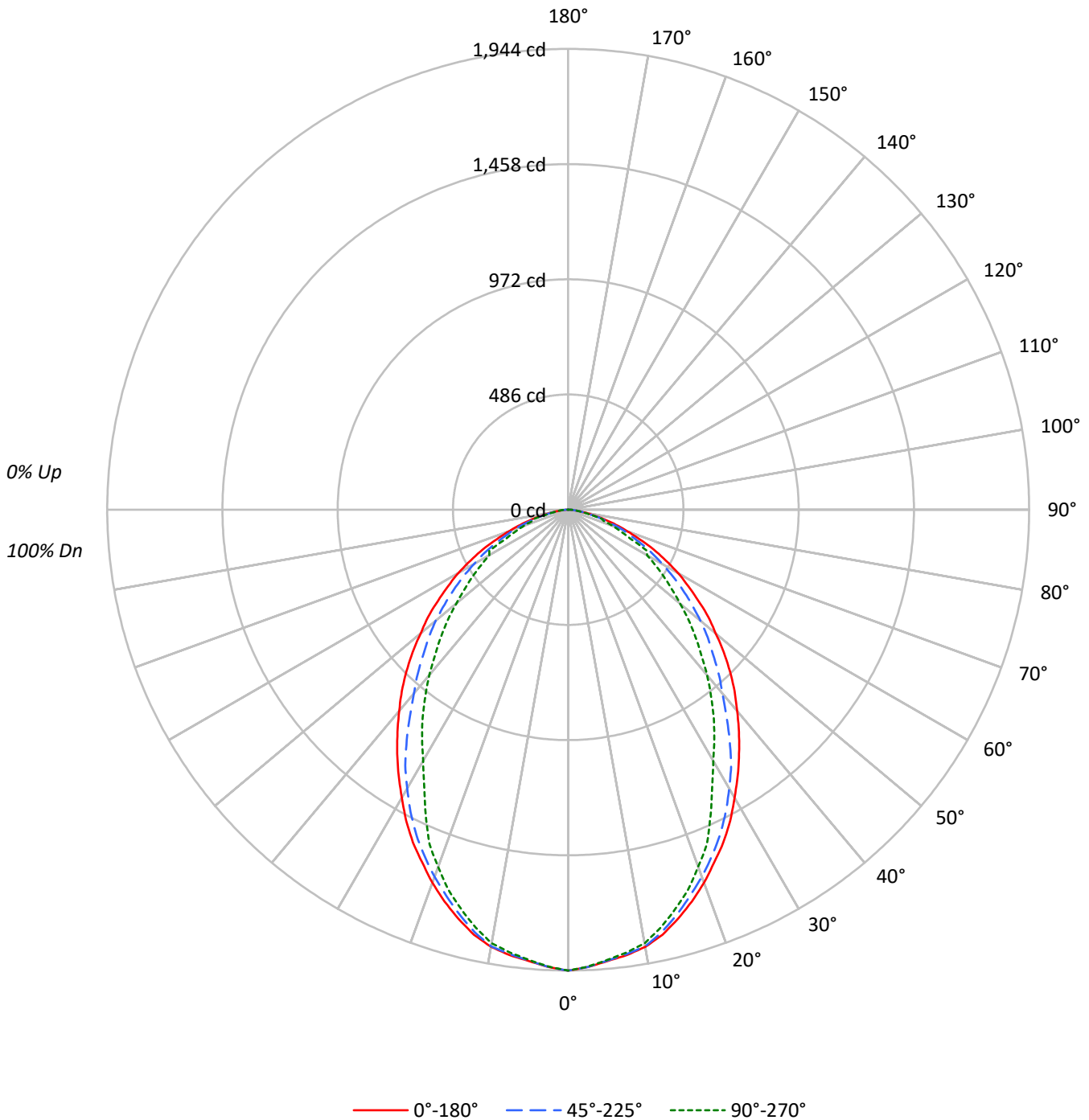
Lumens per Lamp: N/A  
Luminaire Lumens: 3817.0 lumens  
Efficiency: N/A  
Efficacy: 114.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																												
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°	2616	2616	2616
5°	2581	2578	2574
10°	2558	2555	2537
15°	2489	2464	2430
20°	2398	2359	2295
25°	2299	2249	2109
30°	2179	2109	1900
35°	2064	1949	1757
40°	1946	1777	1599
45°	1835	1642	1446
50°	1698	1524	1289
55°	1571	1381	1155
60°	1440	1234	1034
65°	1267	1081	916
70°	1043	946	778
75°	830	725	760
80°	557	522	487
85°	347	417	486

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1835 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	181.0	4.7
10°-20°	496.7	13.0
20°-30°	687.7	18.0
30°-40°	733.3	19.2
40°-50°	668.9	17.5
50°-60°	524.1	13.7
60°-70°	341.6	8.9
70°-80°	151.3	4.0
80°-90°	32.5	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°	1365.4	35.8
0°-40°	2098.6	55.0
0°-60°	3291.6	86.2
0°-90°	3817.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3817.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1944	1944	1944	1944	1944	
5°	1911	1908	1908	1906	1906	181
15°	1787	1787	1769	1751	1744	502
25°	1549	1540	1515	1461	1421	711
35°	1256	1248	1187	1097	1070	786
45°	964	944	863	791	760	743
55°	670	650	589	519	492	601
65°	398	375	339	346	288	392
75°	160	148	139	133	146	171
85°	22	25	27	29	32	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1944.3	1944.3	1944.3	1944.3	1944.3
2.5°	1930.8	1930.8	1930.8	1928.6	1928.6
5°	1910.6	1908.4	1908.4	1906.1	1906.1
7.5°	1894.9	1892.6	1890.4	1888.1	1883.6
10°	1872.4	1872.4	1870.2	1858.9	1856.7
12.5°	1836.4	1834.2	1825.2	1809.5	1805.0
15°	1787.0	1787.0	1769.0	1751.0	1744.3
17.5°	1733.0	1730.8	1708.3	1690.3	1681.3
20°	1674.6	1670.1	1647.6	1618.4	1602.7
22.5°	1609.4	1609.4	1582.4	1544.2	1528.5
25°	1548.7	1539.7	1515.0	1461.1	1420.6
27.5°	1479.0	1465.6	1438.6	1362.2	1315.0
30°	1402.6	1395.9	1357.7	1258.8	1222.8
32.5°	1330.7	1319.4	1279.0	1175.6	1146.4
35°	1256.5	1247.5	1186.8	1096.9	1069.9
37.5°	1182.3	1171.1	1094.7	1022.7	989.0
40°	1108.2	1094.7	1011.5	946.3	910.4
42.5°	1038.5	1020.5	939.6	869.9	829.4
45°	964.3	944.1	863.1	791.2	759.7
47.5°	890.1	872.1	798.0	723.8	687.8
50°	811.4	795.7	728.3	654.1	615.9
52.5°	746.3	721.5	656.4	582.2	550.7
55°	669.8	649.6	588.9	519.2	492.3
57.5°	600.2	579.9	523.7	458.5	436.1
60°	535.0	505.8	458.5	402.4	384.4
62.5°	463.0	440.6	400.1	352.9	375.4
65°	397.9	375.4	339.4	346.2	287.7
67.5°	325.9	314.7	283.2	251.8	242.8
70°	265.2	251.8	240.5	206.8	197.8
72.5°	211.3	197.8	182.1	164.1	157.3
75°	159.6	148.4	139.4	132.6	146.1
77.5°	110.1	105.6	98.9	92.2	89.9
80°	71.9	69.7	67.4	65.2	62.9
82.5°	42.7	42.7	42.7	42.7	42.7
85°	22.5	24.7	27.0	29.2	31.5
87.5°	13.5	13.5	15.7	18.0	20.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)