

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: P562337

Luminaire Tested: FSR-24-4-LD4-1STD-35-UNV-93-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562337  
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-35-UNV-93-84-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

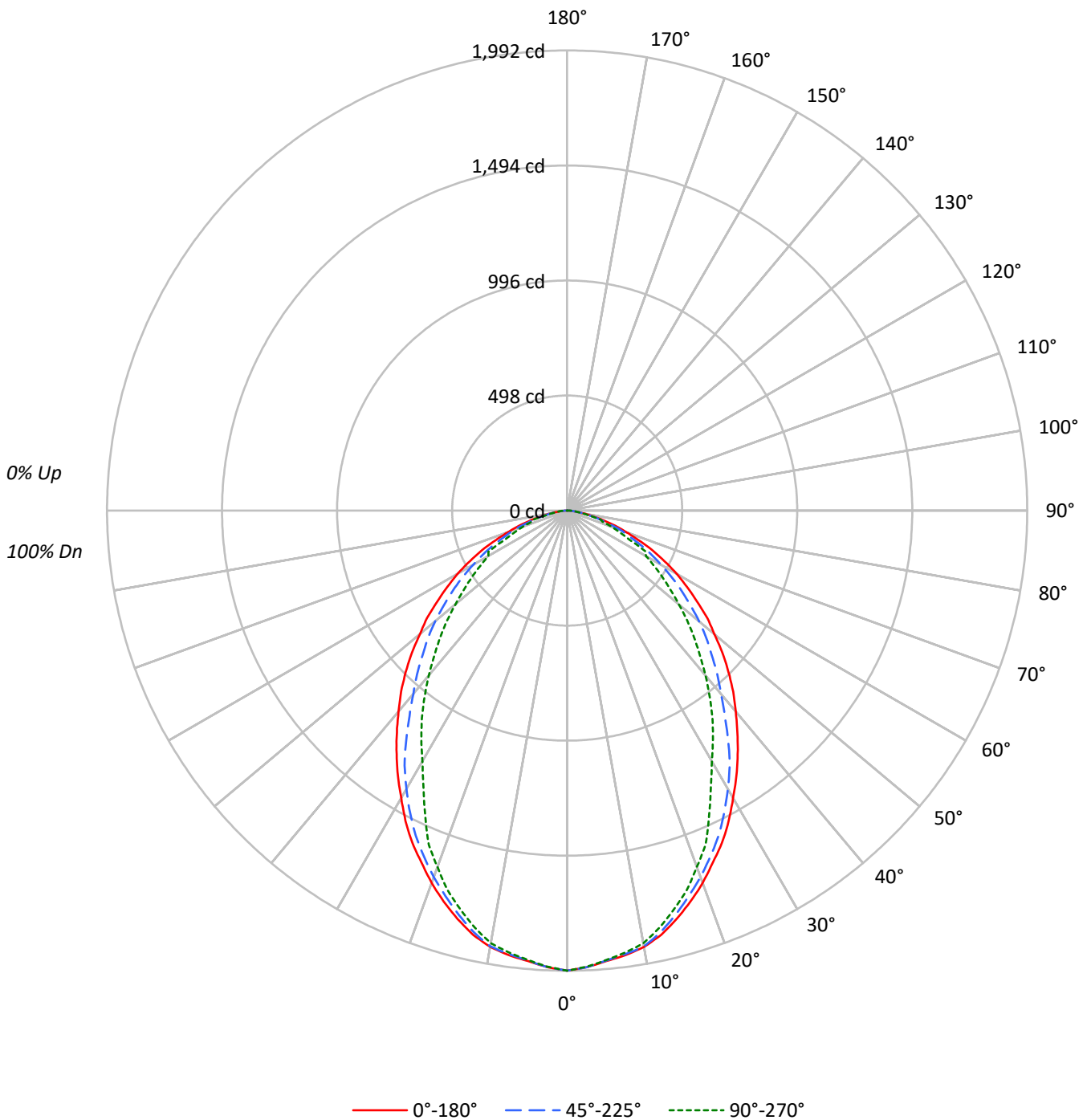
Lumens per Lamp: N/A  
Luminaire Lumens: 3910.0 lumens  
Efficiency: N/A  
Efficacy: 117.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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																		
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	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°	2680	2680	2680
5°	2643	2640	2637
10°	2620	2617	2598
15°	2550	2524	2489
20°	2456	2417	2351
25°	2355	2304	2160
30°	2232	2161	1946
35°	2114	1997	1800
40°	1994	1820	1638
45°	1880	1682	1481
50°	1740	1562	1321
55°	1610	1415	1183
60°	1475	1264	1059
65°	1298	1107	938
70°	1069	969	797
75°	850	742	778
80°	571	535	500
85°	355	426	497

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1880 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	185.4	4.7
10°-20°	508.8	13.0
20°-30°	704.4	18.0
30°-40°	751.1	19.2
40°-50°	685.2	17.5
50°-60°	536.8	13.7
60°-70°	349.9	8.9
70°-80°	155.0	4.0
80°-90°	33.3	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°	1398.6	35.8
0°-40°	2149.7	55.0
0°-60°	3371.8	86.2
0°-90°	3910.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3910.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1992	1992	1992	1992	1992	
5°	1957	1955	1955	1953	1953	186
15°	1830	1830	1812	1794	1787	515
25°	1586	1577	1552	1497	1455	728
35°	1287	1278	1216	1124	1096	805
45°	988	967	884	810	778	761
55°	686	665	603	532	504	615
65°	408	384	348	355	295	402
75°	164	152	143	136	150	175
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°	1991.7	1991.7	1991.7	1991.7	1991.7
2.5°	1977.9	1977.9	1977.9	1975.6	1975.6
5°	1957.2	1954.9	1954.9	1952.6	1952.6
7.5°	1941.0	1938.7	1936.4	1934.1	1929.5
10°	1918.0	1918.0	1915.7	1904.2	1901.9
12.5°	1881.2	1878.9	1869.7	1853.5	1848.9
15°	1830.5	1830.5	1812.1	1793.7	1786.8
17.5°	1775.3	1773.0	1749.9	1731.5	1722.3
20°	1715.4	1710.8	1687.8	1657.8	1641.7
22.5°	1648.6	1648.6	1621.0	1581.8	1565.7
25°	1586.5	1577.2	1551.9	1496.7	1455.2
27.5°	1515.1	1501.3	1473.6	1395.3	1347.0
30°	1436.8	1429.9	1390.7	1289.4	1252.6
32.5°	1363.1	1351.6	1310.1	1204.2	1174.3
35°	1287.1	1277.9	1215.7	1123.6	1096.0
37.5°	1211.1	1199.6	1121.3	1047.7	1013.1
40°	1135.2	1121.3	1036.1	969.4	932.5
42.5°	1063.8	1045.4	962.5	891.1	849.6
45°	987.8	967.1	884.2	810.5	778.3
47.5°	911.8	893.4	817.4	741.4	704.6
50°	831.2	815.1	746.0	670.0	630.9
52.5°	764.4	739.1	672.3	596.4	564.1
55°	686.2	665.4	603.3	531.9	504.3
57.5°	614.8	594.1	536.5	469.7	446.7
60°	548.0	518.1	469.7	412.2	393.7
62.5°	474.3	451.3	409.9	361.5	384.5
65°	407.6	384.5	347.7	354.6	294.7
67.5°	333.9	322.4	290.1	257.9	248.7
70°	271.7	257.9	246.4	211.8	202.6
72.5°	216.4	202.6	186.5	168.1	161.2
75°	163.5	152.0	142.8	135.9	149.7
77.5°	112.8	108.2	101.3	94.4	92.1
80°	73.7	71.4	69.1	66.8	64.5
82.5°	43.7	43.7	43.7	43.7	43.7
85°	23.0	25.3	27.6	29.9	32.2
87.5°	13.8	13.8	16.1	18.4	20.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)