

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: P562333

Luminaire Tested: FSR-24-4-LD4-1STD-35-UNV-82-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562333  
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-82-96-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

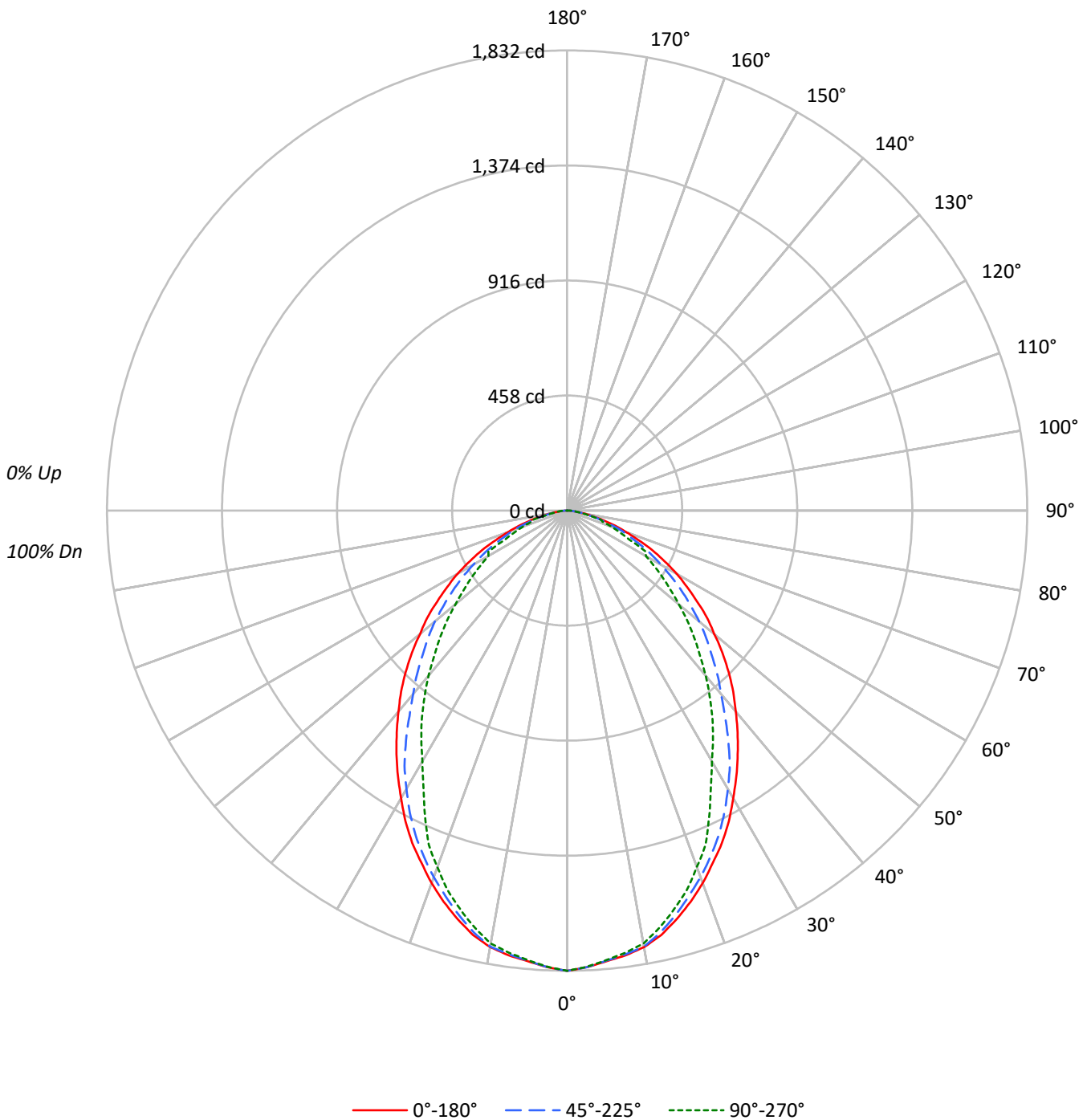
Lumens per Lamp: N/A  
Luminaire Lumens: 3597.0 lumens  
Efficiency: N/A  
Efficacy: 108.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2465	2465	2465
5°	2432	2429	2426
10°	2411	2408	2391
15°	2346	2322	2290
20°	2260	2223	2163
25°	2167	2120	1987
30°	2054	1988	1790
35°	1945	1837	1656
40°	1834	1674	1507
45°	1729	1548	1362
50°	1601	1437	1215
55°	1481	1302	1088
60°	1357	1163	975
65°	1194	1018	863
70°	983	891	733
75°	782	683	716
80°	525	492	459
85°	327	392	459

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1729 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	170.6	4.7
10°-20°	468.1	13.0
20°-30°	648.0	18.0
30°-40°	691.0	19.2
40°-50°	630.4	17.5
50°-60°	493.9	13.7
60°-70°	321.9	8.9
70°-80°	142.6	4.0
80°-90°	30.6	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°	1286.7	35.8
0°-40°	1977.7	55.0
0°-60°	3101.9	86.2
0°-90°	3597.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3597.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1832	1832	1832	1832	1832	
5°	1800	1798	1798	1796	1796	171
15°	1684	1684	1667	1650	1644	473
25°	1460	1451	1428	1377	1339	670
35°	1184	1176	1118	1034	1008	740
45°	909	890	813	746	716	700
55°	631	612	555	489	464	566
65°	375	354	320	326	271	369
75°	150	140	131	125	138	161
85°	21	23	25	28	30	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1832.3	1832.3	1832.3	1832.3	1832.3
2.5°	1819.6	1819.6	1819.6	1817.4	1817.4
5°	1800.5	1798.4	1798.4	1796.3	1796.3
7.5°	1785.7	1783.5	1781.4	1779.3	1775.1
10°	1764.5	1764.5	1762.4	1751.8	1749.7
12.5°	1730.6	1728.5	1720.0	1705.2	1700.9
15°	1684.0	1684.0	1667.0	1650.1	1643.7
17.5°	1633.2	1631.0	1609.9	1592.9	1584.4
20°	1578.1	1573.8	1552.7	1525.1	1510.3
22.5°	1516.6	1516.6	1491.2	1455.2	1440.4
25°	1459.5	1451.0	1427.7	1376.8	1338.7
27.5°	1393.8	1381.1	1355.7	1283.6	1239.2
30°	1321.8	1315.4	1279.4	1186.2	1152.3
32.5°	1254.0	1243.4	1205.3	1107.8	1080.3
35°	1184.1	1175.6	1118.4	1033.7	1008.3
37.5°	1114.2	1103.6	1031.6	963.8	932.0
40°	1044.3	1031.6	953.2	891.8	857.9
42.5°	978.6	961.7	885.4	819.8	781.6
45°	908.7	889.7	813.4	745.6	716.0
47.5°	838.8	821.9	752.0	682.1	648.2
50°	764.7	749.9	686.3	616.4	580.4
52.5°	703.3	679.9	618.5	548.6	519.0
55°	631.2	612.2	555.0	489.3	463.9
57.5°	565.6	546.5	493.5	432.1	410.9
60°	504.1	476.6	432.1	379.2	362.2
62.5°	436.4	415.2	377.0	332.6	353.7
65°	374.9	353.7	319.9	326.2	271.1
67.5°	307.1	296.6	266.9	237.2	228.8
70°	250.0	237.2	226.6	194.9	186.4
72.5°	199.1	186.4	171.6	154.6	148.3
75°	150.4	139.8	131.3	125.0	137.7
77.5°	103.8	99.6	93.2	86.8	84.7
80°	67.8	65.7	63.5	61.4	59.3
82.5°	40.2	40.2	40.2	40.2	40.2
85°	21.2	23.3	25.4	27.5	29.7
87.5°	12.7	12.7	14.8	16.9	19.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)