

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: P562478

Luminaire Tested: FSR-24-4-LD4-1STD-50-UNV-93-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562478  
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-93-97-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

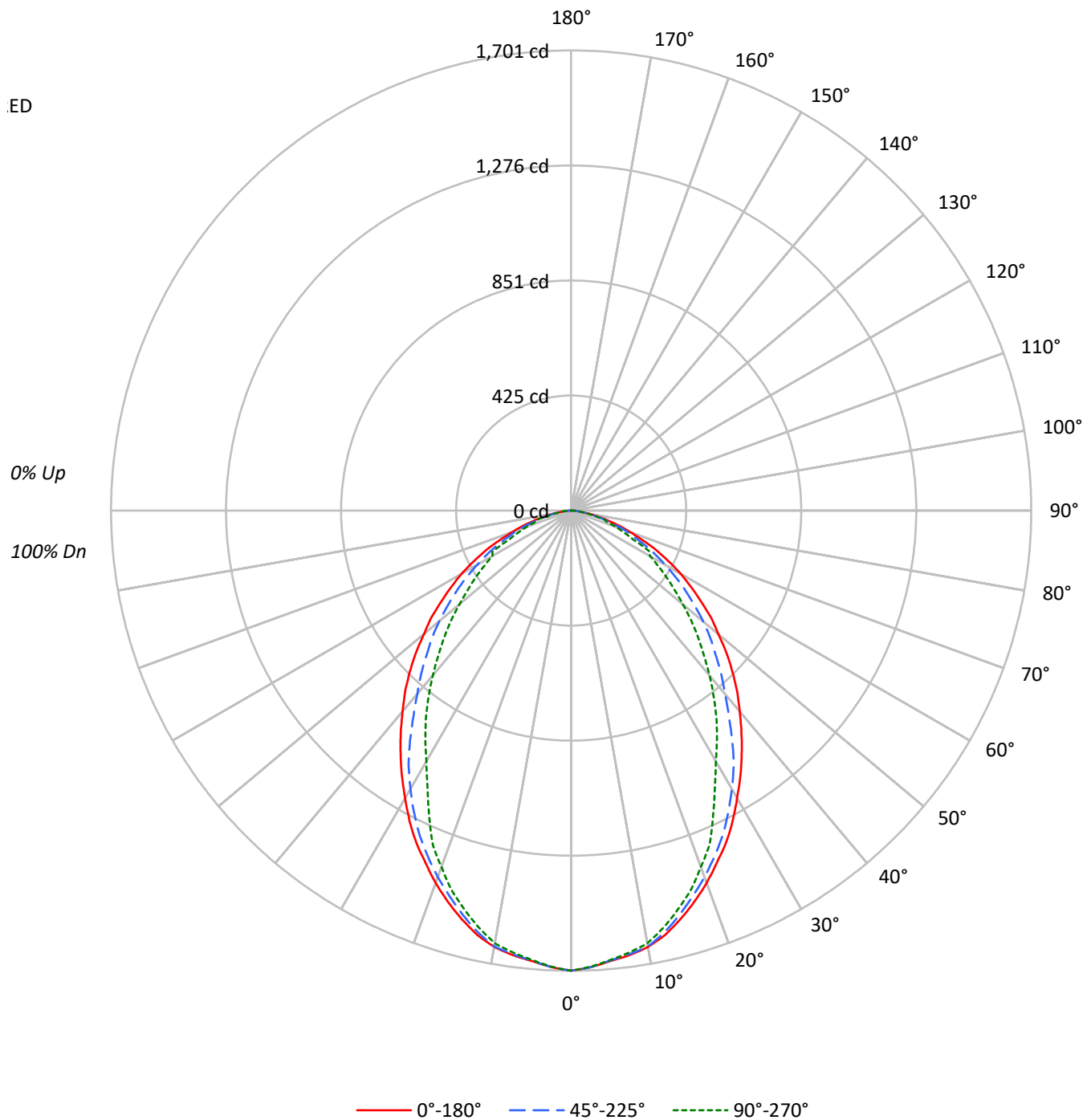
Lumens per Lamp: N/A  
Luminaire Lumens: 3339.0 lumens  
Efficiency: N/A  
Efficacy: 100.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2288	2288	2288
5°	2257	2255	2252
10°	2238	2235	2219
15°	2177	2156	2125
20°	2098	2064	2007
25°	2011	1968	1845
30°	1906	1845	1662
35°	1805	1705	1537
40°	1703	1554	1399
45°	1605	1437	1265
50°	1486	1334	1128
55°	1375	1209	1010
60°	1259	1079	905
65°	1108	945	801
70°	913	828	681
75°	726	634	664
80°	487	457	427
85°	304	364	425

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1605 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	158.3	4.7
10°-20°	434.5	13.0
20°-30°	601.6	18.0
30°-40°	641.4	19.2
40°-50°	585.2	17.5
50°-60°	458.4	13.7
60°-70°	298.8	8.9
70°-80°	132.4	4.0
80°-90°	28.4	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°	1194.4	35.8
0°-40°	1835.8	55.0
0°-60°	2879.4	86.2
0°-90°	3339.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3339.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1701	1701	1701	1701	1701	
5°	1671	1669	1669	1667	1667	159
15°	1563	1563	1548	1532	1526	439
25°	1355	1347	1325	1278	1243	622
35°	1099	1091	1038	960	936	687
45°	844	826	755	692	665	650
55°	586	568	515	454	431	526
65°	348	328	297	303	252	343
75°	140	130	122	116	128	150
85°	20	22	24	26	28	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1700.8	1700.8	1700.8	1700.8	1700.8
2.5°	1689.0	1689.0	1689.0	1687.1	1687.1
5°	1671.3	1669.4	1669.4	1667.4	1667.4
7.5°	1657.6	1655.6	1653.7	1651.7	1647.8
10°	1637.9	1637.9	1636.0	1626.1	1624.2
12.5°	1606.5	1604.5	1596.6	1582.9	1578.9
15°	1563.2	1563.2	1547.5	1531.7	1525.8
17.5°	1516.0	1514.0	1494.4	1478.7	1470.8
20°	1464.9	1461.0	1441.3	1415.7	1402.0
22.5°	1407.9	1407.9	1384.3	1350.8	1337.1
25°	1354.8	1346.9	1325.3	1278.1	1242.7
27.5°	1293.8	1282.0	1258.4	1191.6	1150.3
30°	1227.0	1221.1	1187.6	1101.1	1069.7
32.5°	1164.0	1154.2	1118.8	1028.4	1002.8
35°	1099.2	1091.3	1038.2	959.6	936.0
37.5°	1034.3	1024.4	957.6	894.7	865.2
40°	969.4	957.6	884.8	827.8	796.3
42.5°	908.4	892.7	821.9	761.0	725.6
45°	843.5	825.8	755.1	692.1	664.6
47.5°	778.7	762.9	698.0	633.1	601.7
50°	709.8	696.1	637.1	572.2	538.8
52.5°	652.8	631.2	574.2	509.3	481.7
55°	586.0	568.3	515.2	454.2	430.6
57.5°	525.0	507.3	458.1	401.1	381.5
60°	468.0	442.4	401.1	352.0	336.2
62.5°	405.1	385.4	350.0	308.7	328.4
65°	348.0	328.4	296.9	302.8	251.7
67.5°	285.1	275.3	247.8	220.2	212.4
70°	232.0	220.2	210.4	180.9	173.0
72.5°	184.8	173.0	159.3	143.5	137.6
75°	139.6	129.8	121.9	116.0	127.8
77.5°	96.3	92.4	86.5	80.6	78.7
80°	62.9	61.0	59.0	57.0	55.1
82.5°	37.4	37.4	37.4	37.4	37.4
85°	19.7	21.6	23.6	25.6	27.5
87.5°	11.8	11.8	13.8	15.7	17.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)