

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: P562414

Luminaire Tested: FSR-24-4-LD4-1STD-40-UNV-93-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562414  
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-40-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 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

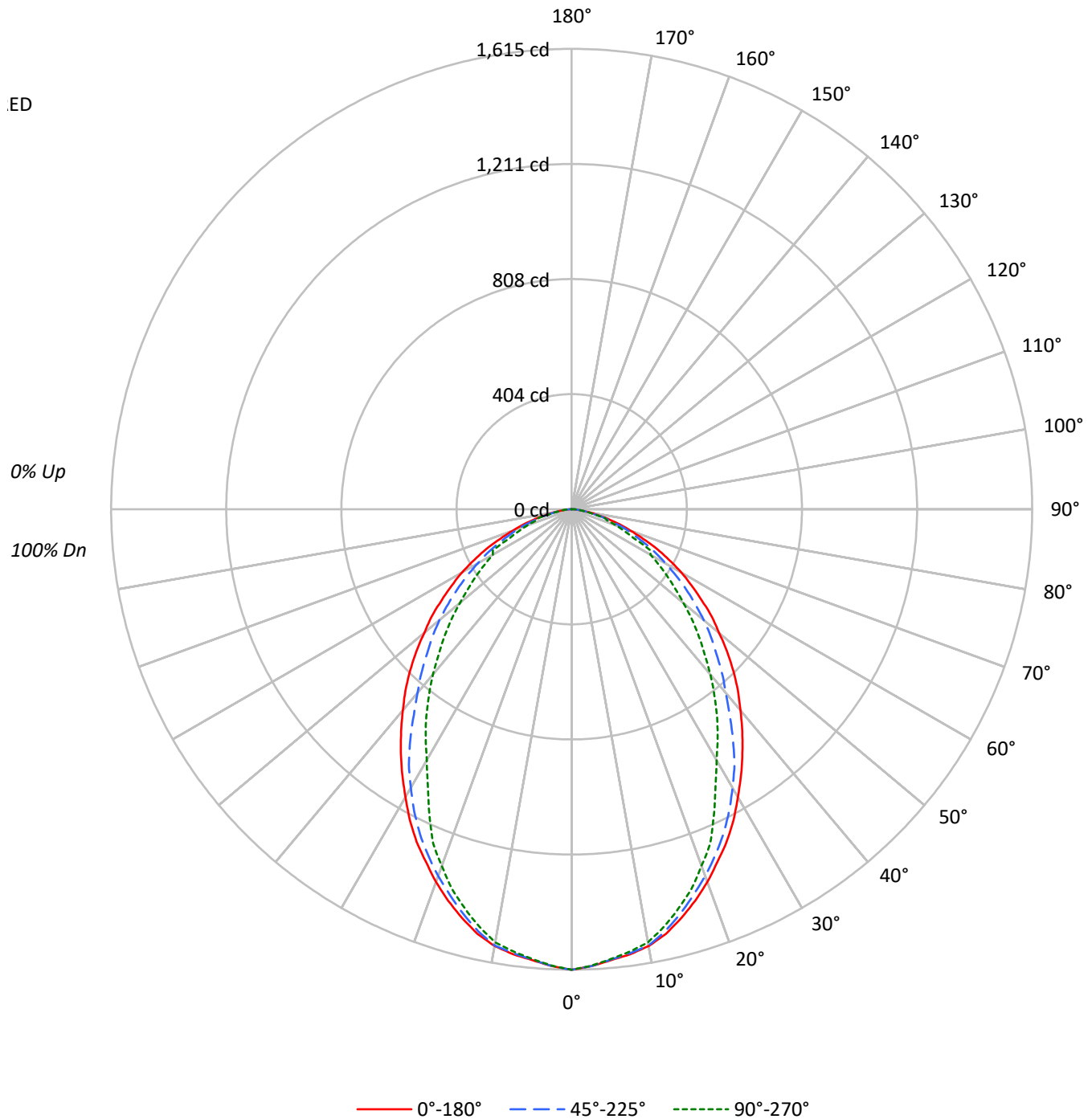
Lumens per Lamp: N/A  
Luminaire Lumens: 3171.0 lumens  
Efficiency: N/A  
Efficacy: 95.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2173	2173	2173
5°	2144	2141	2139
10°	2125	2123	2107
15°	2068	2047	2019
20°	1992	1960	1906
25°	1910	1868	1752
30°	1810	1752	1578
35°	1715	1620	1460
40°	1617	1476	1328
45°	1524	1365	1201
50°	1411	1266	1071
55°	1305	1148	959
60°	1196	1025	859
65°	1052	898	761
70°	867	786	646
75°	689	602	631
80°	463	434	405
85°	289	346	403

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1524 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	150.4	4.7
10°-20°	412.6	13.0
20°-30°	571.3	18.0
30°-40°	609.2	19.2
40°-50°	555.7	17.5
50°-60°	435.4	13.7
60°-70°	283.7	8.9
70°-80°	125.7	4.0
80°-90°	27.0	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°	1134.3	35.8
0°-40°	1743.4	55.0
0°-60°	2734.5	86.2
0°-90°	3171.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3171.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1615	1615	1615	1615	1615	
5°	1587	1585	1585	1584	1584	151
15°	1484	1484	1470	1455	1449	417
25°	1287	1279	1259	1214	1180	591
35°	1044	1036	986	911	889	653
45°	801	784	717	657	631	617
55°	556	540	489	431	409	499
65°	330	312	282	288	239	326
75°	133	123	116	110	121	142
85°	19	20	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1615.3	1615.3	1615.3	1615.3	1615.3
2.5°	1604.1	1604.1	1604.1	1602.2	1602.2
5°	1587.3	1585.4	1585.4	1583.5	1583.5
7.5°	1574.2	1572.3	1570.4	1568.6	1564.8
10°	1555.5	1555.5	1553.6	1544.3	1542.4
12.5°	1525.6	1523.8	1516.3	1503.2	1499.5
15°	1484.5	1484.5	1469.6	1454.7	1449.1
17.5°	1439.7	1437.9	1419.2	1404.3	1396.8
20°	1391.2	1387.4	1368.8	1344.5	1331.4
22.5°	1337.0	1337.0	1314.6	1282.9	1269.8
25°	1286.6	1279.1	1258.6	1213.8	1180.2
27.5°	1228.7	1217.5	1195.1	1131.6	1092.4
30°	1165.2	1159.6	1127.9	1045.7	1015.8
32.5°	1105.5	1096.1	1062.5	976.6	952.4
35°	1043.9	1036.4	986.0	911.3	888.9
37.5°	982.2	972.9	909.4	849.6	821.6
40°	920.6	909.4	840.3	786.2	756.3
42.5°	862.7	847.8	780.6	722.7	689.1
45°	801.1	784.3	717.1	657.3	631.2
47.5°	739.5	724.5	662.9	601.3	571.4
50°	674.1	661.0	605.0	543.4	511.7
52.5°	620.0	599.4	545.3	483.6	457.5
55°	556.5	539.7	489.2	431.4	409.0
57.5°	498.6	481.8	435.1	380.9	362.3
60°	444.4	420.2	380.9	334.3	319.3
62.5°	384.7	366.0	332.4	293.2	311.8
65°	330.5	311.8	282.0	287.6	239.0
67.5°	270.8	261.4	235.3	209.1	201.7
70°	220.3	209.1	199.8	171.8	164.3
72.5°	175.5	164.3	151.3	136.3	130.7
75°	132.6	123.2	115.8	110.2	121.4
77.5°	91.5	87.8	82.2	76.6	74.7
80°	59.8	57.9	56.0	54.2	52.3
82.5°	35.5	35.5	35.5	35.5	35.5
85°	18.7	20.5	22.4	24.3	26.1
87.5°	11.2	11.2	13.1	14.9	16.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)