

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: P562279

Luminaire Tested: FSR-24-4-LD4-1LO-50-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562279  
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-LD4-1LO-50-UNV-93-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

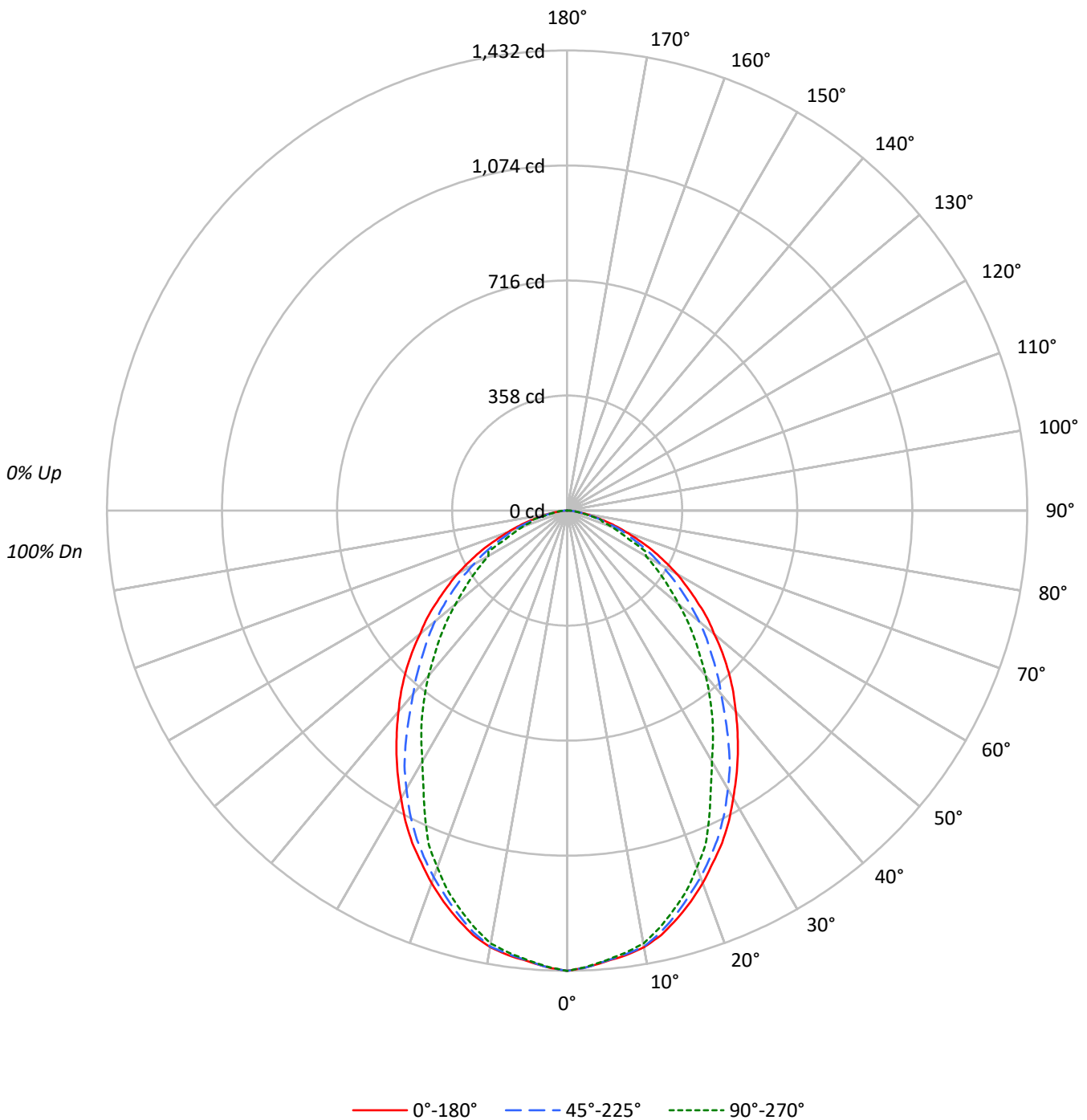
Lumens per Lamp: N/A  
Luminaire Lumens: 2812.0 lumens  
Efficiency: N/A  
Efficacy: 120.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	1927	1927	1927
5°	1901	1899	1897
10°	1885	1882	1869
15°	1834	1815	1790
20°	1766	1738	1691
25°	1694	1657	1554
30°	1605	1554	1400
35°	1520	1436	1295
40°	1434	1309	1178
45°	1352	1210	1065
50°	1251	1123	950
55°	1158	1018	851
60°	1061	909	762
65°	933	796	675
70°	769	697	573
75°	611	534	559
80°	411	385	360
85°	256	307	358

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1352 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	133.3	4.7
10°-20°	365.9	13.0
20°-30°	506.6	18.0
30°-40°	540.2	19.2
40°-50°	492.8	17.5
50°-60°	386.1	13.7
60°-70°	251.6	8.9
70°-80°	111.5	4.0
80°-90°	23.9	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°	1005.9	35.8
0°-40°	1546.1	55.0
0°-60°	2425.0	86.2
0°-90°	2812.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2812.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1432	1432	1432	1432	1432	
5°	1408	1406	1406	1404	1404	134
15°	1316	1316	1303	1290	1285	370
25°	1141	1134	1116	1076	1047	524
35°	926	919	874	808	788	579
45°	710	696	636	583	560	547
55°	494	479	434	382	363	443
65°	293	276	250	255	212	289
75°	118	109	103	98	108	126
85°	17	18	20	22	23	23
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1432.4	1432.4	1432.4	1432.4	1432.4
2.5°	1422.5	1422.5	1422.5	1420.8	1420.8
5°	1407.6	1405.9	1405.9	1404.2	1404.2
7.5°	1396.0	1394.3	1392.7	1391.0	1387.7
10°	1379.4	1379.4	1377.7	1369.5	1367.8
12.5°	1352.9	1351.3	1344.6	1333.0	1329.7
15°	1316.5	1316.5	1303.2	1290.0	1285.0
17.5°	1276.7	1275.1	1258.5	1245.3	1238.6
20°	1233.7	1230.4	1213.8	1192.3	1180.7
22.5°	1185.7	1185.7	1165.8	1137.6	1126.0
25°	1140.9	1134.3	1116.1	1076.4	1046.6
27.5°	1089.6	1079.7	1059.8	1003.5	968.7
30°	1033.3	1028.3	1000.2	927.3	900.8
32.5°	980.3	972.0	942.2	866.1	844.5
35°	925.7	919.1	874.3	808.1	788.2
37.5°	871.0	862.7	806.4	753.5	728.6
40°	816.4	806.4	745.2	697.2	670.7
42.5°	765.0	751.8	692.2	640.9	611.0
45°	710.4	695.5	635.9	582.9	559.7
47.5°	655.8	642.5	587.9	533.2	506.7
50°	597.8	586.2	536.5	481.9	453.7
52.5°	549.8	531.6	483.5	428.9	405.7
55°	493.5	478.6	433.9	382.5	362.7
57.5°	442.1	427.2	385.8	337.8	321.3
60°	394.1	372.6	337.8	296.4	283.2
62.5°	341.1	324.6	294.8	260.0	276.5
65°	293.1	276.5	250.0	255.0	212.0
67.5°	240.1	231.8	208.6	185.5	178.8
70°	195.4	185.5	177.2	152.3	145.7
72.5°	155.7	145.7	134.1	120.9	115.9
75°	117.6	109.3	102.7	97.7	107.6
77.5°	81.1	77.8	72.9	67.9	66.2
80°	53.0	51.3	49.7	48.0	46.4
82.5°	31.5	31.5	31.5	31.5	31.5
85°	16.6	18.2	19.9	21.5	23.2
87.5°	9.9	9.9	11.6	13.2	14.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)