

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: P563374

Luminaire Tested: FSR-24-4-LD4-3LO-40-UNV-93-97-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563374  
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-LD4-3LO-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**

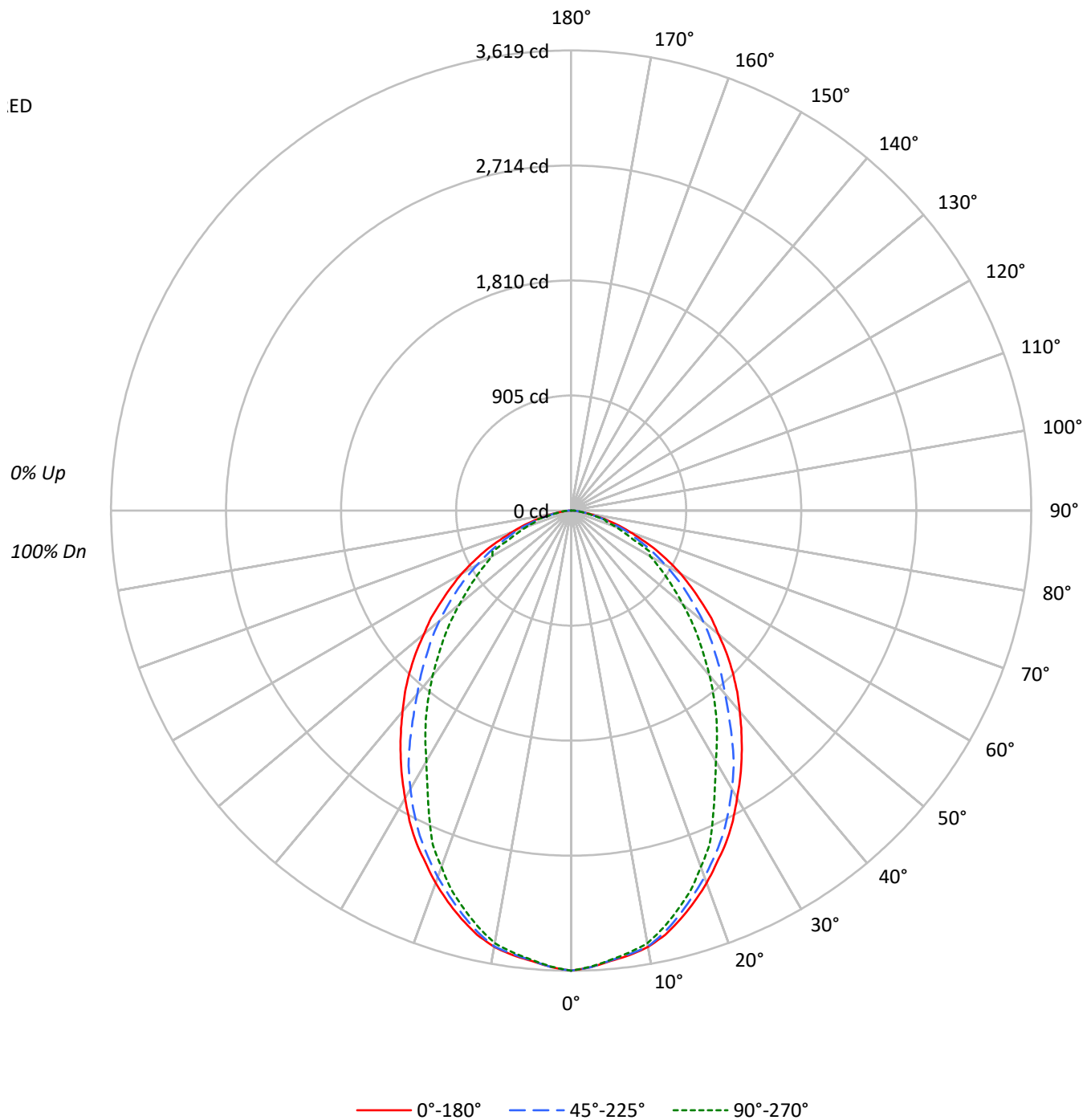
Lumens per Lamp: N/A  
Luminaire Lumens: 7104.0 lumens  
Efficiency: N/A  
Efficacy: 101.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 70.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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													100															
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87													87															
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75													75															
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65													65															
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56													56															
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50													50															
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44													44															
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40													40															
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36													36															
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33													33															
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30													30															

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4869	4869	4869
5°	4803	4797	4791
10°	4761	4755	4721
15°	4633	4586	4522
20°	4463	4391	4271
25°	4279	4186	3925
30°	4056	3926	3536
35°	3841	3628	3271
40°	3622	3307	2976
45°	3415	3057	2691
50°	3161	2837	2399
55°	2924	2571	2149
60°	2679	2296	1925
65°	2358	2011	1705
70°	1942	1761	1448
75°	1544	1349	1413
80°	1038	972	907
85°	645	775	905

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3415 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	336.9	4.7
10°-20°	924.5	13.0
20°-30°	1279.8	18.0
30°-40°	1364.7	19.2
40°-50°	1245.0	17.5
50°-60°	975.4	13.7
60°-70°	635.7	8.9
70°-80°	281.6	4.0
80°-90°	60.5	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°	2541.2	35.8
0°-40°	3905.8	55.0
0°-60°	6126.2	86.2
0°-90°	7104.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7104.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3619	3619	3619	3619	3619	
5°	3556	3552	3552	3548	3548	338
15°	3326	3326	3292	3259	3246	935
25°	2882	2866	2820	2719	2644	1323
35°	2338	2322	2209	2042	1991	1462
45°	1795	1757	1606	1473	1414	1382
55°	1247	1209	1096	966	916	1118
65°	740	699	632	644	536	730
75°	297	276	259	247	272	318
85°	42	46	50	54	59	58
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3618.7	3618.7	3618.7	3618.7	3618.7
2.5°	3593.6	3593.6	3593.6	3589.4	3589.4
5°	3555.9	3551.7	3551.7	3547.6	3547.6
7.5°	3526.6	3522.5	3518.3	3514.1	3505.7
10°	3484.8	3484.8	3480.6	3459.7	3455.5
12.5°	3417.9	3413.7	3397.0	3367.7	3359.3
15°	3325.8	3325.8	3292.4	3258.9	3246.4
17.5°	3225.4	3221.3	3179.4	3146.0	3129.2
20°	3116.7	3108.3	3066.5	3012.1	2982.8
22.5°	2995.3	2995.3	2945.1	2874.0	2844.7
25°	2882.4	2865.7	2819.6	2719.2	2643.9
27.5°	2752.7	2727.6	2677.4	2535.2	2447.3
30°	2610.5	2597.9	2526.8	2342.7	2275.8
32.5°	2476.6	2455.7	2380.4	2187.9	2133.6
35°	2338.5	2321.8	2208.9	2041.5	1991.3
37.5°	2200.5	2179.6	2037.3	1903.5	1840.7
40°	2062.4	2037.3	1882.6	1761.2	1694.3
42.5°	1932.8	1899.3	1748.7	1619.0	1543.7
45°	1794.7	1757.0	1606.4	1472.6	1414.0
47.5°	1656.6	1623.2	1485.1	1347.1	1280.1
50°	1510.2	1480.9	1355.4	1217.4	1146.3
52.5°	1388.9	1342.9	1221.6	1083.5	1024.9
55°	1246.7	1209.0	1096.1	966.4	916.2
57.5°	1117.0	1079.3	974.7	853.4	811.6
60°	995.7	941.3	853.4	748.8	715.4
62.5°	861.8	820.0	744.7	656.8	698.6
65°	740.5	698.6	631.7	644.3	535.5
67.5°	606.6	585.7	527.1	468.5	451.8
70°	493.6	468.5	447.6	384.9	368.1
72.5°	393.2	368.1	338.9	305.4	292.8
75°	297.0	276.1	259.4	246.8	271.9
77.5°	205.0	196.6	184.1	171.5	167.3
80°	133.9	129.7	125.5	121.3	117.1
82.5°	79.5	79.5	79.5	79.5	79.5
85°	41.8	46.0	50.2	54.4	58.6
87.5°	25.1	25.1	29.3	33.5	37.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)