

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: P561312

Luminaire Tested: FSR-12-4-LD4-1STD-50-UNV-93-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561312  
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-12-4-LD4-1STD-50-UNV-93-84-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

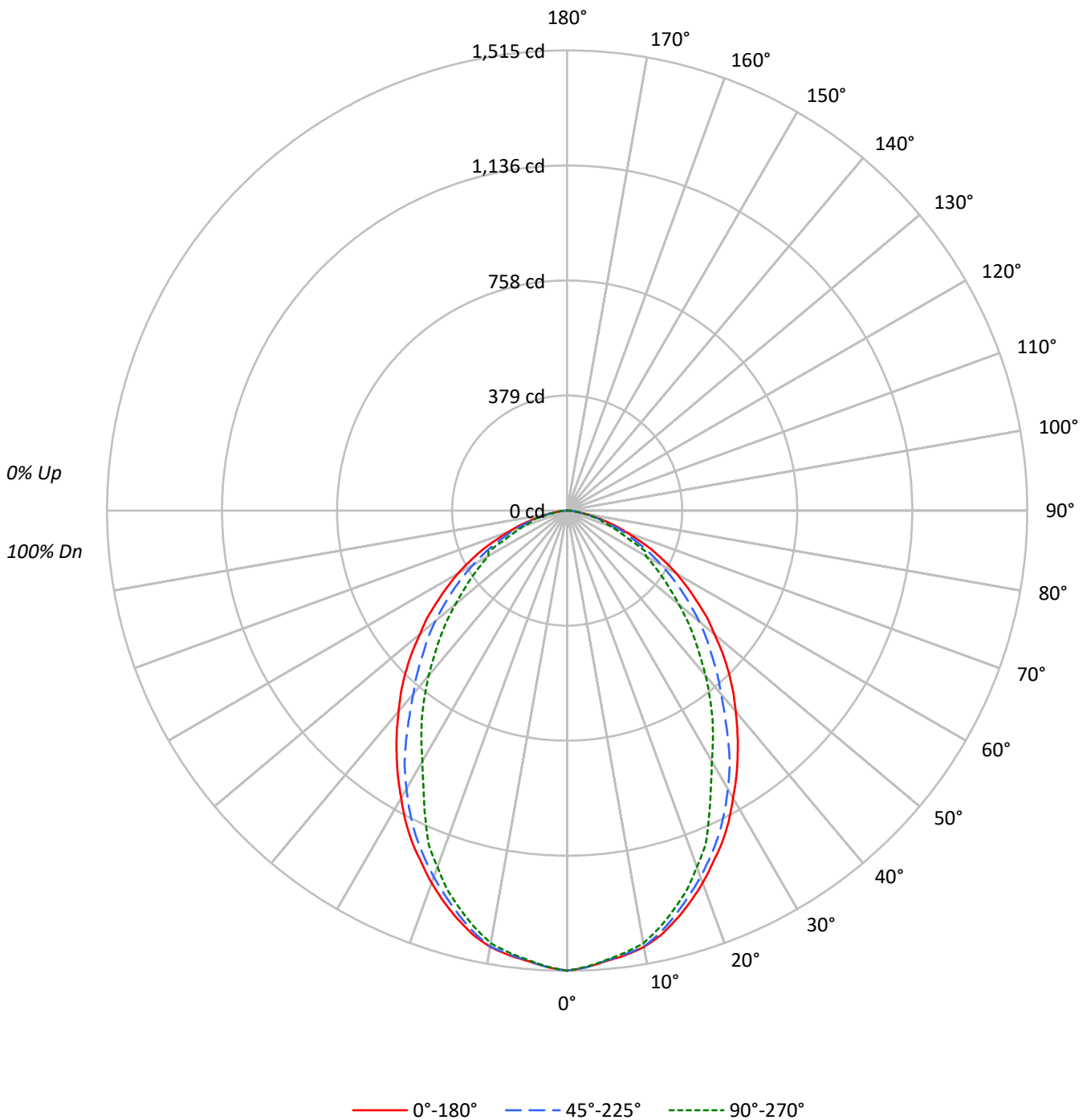
Lumens per Lamp: N/A  
Luminaire Lumens: 2974.0 lumens  
Efficiency: N/A  
Efficacy: 89.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	4077	4077	4077
5°	4021	4017	4012
10°	3986	3982	3953
15°	3879	3840	3786
20°	3737	3676	3576
25°	3583	3505	3287
30°	3396	3287	2960
35°	3216	3038	2738
40°	3033	2768	2492
45°	2859	2559	2253
50°	2647	2375	2009
55°	2449	2153	1799
60°	2243	1923	1612
65°	1974	1684	1428
70°	1626	1474	1212
75°	1292	1129	1183
80°	868	814	759
85°	540	648	756

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2859 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	141.0	4.7
10°-20°	387.0	13.0
20°-30°	535.8	18.0
30°-40°	571.3	19.2
40°-50°	521.2	17.5
50°-60°	408.3	13.7
60°-70°	266.1	8.9
70°-80°	117.9	4.0
80°-90°	25.3	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°	1063.8	35.8
0°-40°	1635.1	55.0
0°-60°	2564.7	86.2
0°-90°	2974.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2974.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1515	1515	1515	1515	1515	
5°	1489	1487	1487	1485	1485	141
15°	1392	1392	1378	1364	1359	391
25°	1207	1200	1180	1138	1107	554
35°	979	972	925	855	834	612
45°	751	736	672	616	592	579
55°	522	506	459	405	384	468
65°	310	292	264	270	224	305
75°	124	116	109	103	114	133
85°	18	19	21	23	24	24
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1514.9	1514.9	1514.9	1514.9	1514.9
2.5°	1504.4	1504.4	1504.4	1502.7	1502.7
5°	1488.6	1486.9	1486.9	1485.1	1485.1
7.5°	1476.4	1474.6	1472.9	1471.1	1467.6
10°	1458.9	1458.9	1457.1	1448.4	1446.6
12.5°	1430.9	1429.1	1422.1	1409.8	1406.3
15°	1392.3	1392.3	1378.3	1364.3	1359.0
17.5°	1350.3	1348.5	1331.0	1317.0	1310.0
20°	1304.8	1301.3	1283.7	1261.0	1248.7
22.5°	1254.0	1254.0	1232.9	1203.2	1190.9
25°	1206.7	1199.7	1180.4	1138.4	1106.9
27.5°	1152.4	1141.9	1120.9	1061.3	1024.5
30°	1092.8	1087.6	1057.8	980.8	952.7
32.5°	1036.8	1028.0	996.5	916.0	893.2
35°	979.0	972.0	924.7	854.7	833.6
37.5°	921.2	912.5	852.9	796.9	770.6
40°	863.4	852.9	788.1	737.3	709.3
42.5°	809.1	795.1	732.1	677.8	646.2
45°	751.3	735.6	672.5	616.5	592.0
47.5°	693.5	679.5	621.7	563.9	535.9
50°	632.2	620.0	567.4	509.6	479.9
52.5°	581.4	562.2	511.4	453.6	429.1
55°	521.9	506.1	458.9	404.6	383.5
57.5°	467.6	451.8	408.1	357.3	339.8
60°	416.8	394.1	357.3	313.5	299.5
62.5°	360.8	343.3	311.7	275.0	292.5
65°	310.0	292.5	264.5	269.7	224.2
67.5°	253.9	245.2	220.7	196.2	189.1
70°	206.7	196.2	187.4	161.1	154.1
72.5°	164.6	154.1	141.9	127.8	122.6
75°	124.3	115.6	108.6	103.3	113.8
77.5°	85.8	82.3	77.1	71.8	70.1
80°	56.0	54.3	52.5	50.8	49.0
82.5°	33.3	33.3	33.3	33.3	33.3
85°	17.5	19.3	21.0	22.8	24.5
87.5°	10.5	10.5	12.3	14.0	15.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)