

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: P561253

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-93-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561253  
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-40-UNV-93-86-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

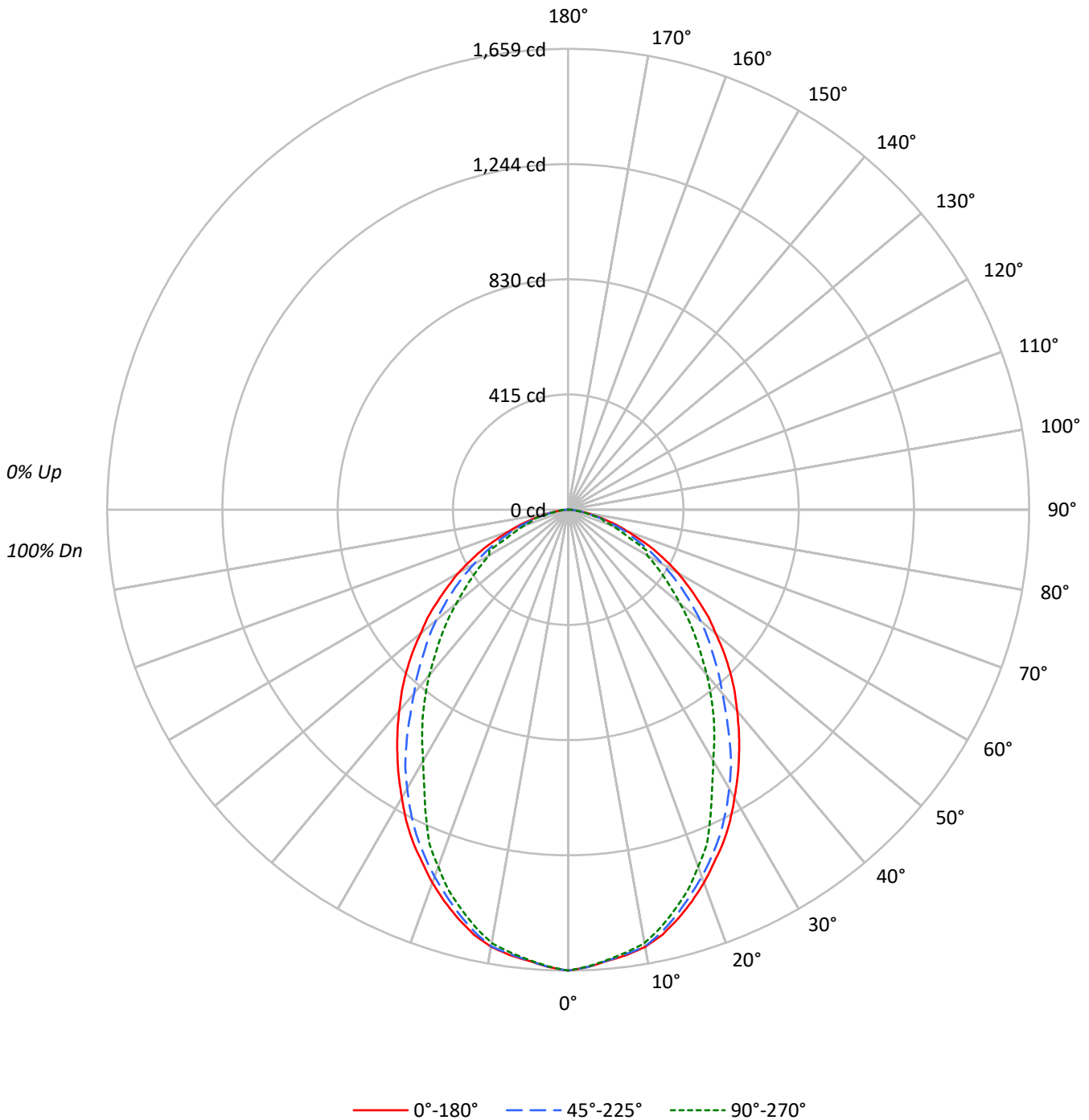
Lumens per Lamp: N/A  
Luminaire Lumens: 3257.0 lumens  
Efficiency: N/A  
Efficacy: 97.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	4465	4465	4465
5°	4404	4399	4394
10°	4366	4361	4329
15°	4248	4205	4147
20°	4092	4026	3916
25°	3924	3838	3599
30°	3719	3600	3242
35°	3522	3327	2999
40°	3322	3032	2729
45°	3131	2803	2467
50°	2899	2601	2200
55°	2682	2358	1970
60°	2457	2106	1765
65°	2162	1844	1563
70°	1781	1614	1328
75°	1416	1236	1297
80°	951	891	832
85°	593	710	831

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3131 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	154.4	4.7
10°-20°	423.8	13.0
20°-30°	586.8	18.0
30°-40°	625.7	19.2
40°-50°	570.8	17.5
50°-60°	447.2	13.7
60°-70°	291.4	8.9
70°-80°	129.1	4.0
80°-90°	27.7	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°	1165.1	35.8
0°-40°	1790.7	55.0
0°-60°	2808.7	86.2
0°-90°	3257.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3257.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1659	1659	1659	1659	1659	
5°	1630	1628	1628	1626	1626	155
15°	1525	1525	1510	1494	1488	429
25°	1322	1314	1293	1247	1212	607
35°	1072	1064	1013	936	913	670
45°	823	806	736	675	648	634
55°	572	554	502	443	420	513
65°	340	320	290	295	246	335
75°	136	127	119	113	125	146
85°	19	21	23	25	27	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1659.1	1659.1	1659.1	1659.1	1659.1
2.5°	1647.6	1647.6	1647.6	1645.6	1645.6
5°	1630.3	1628.4	1628.4	1626.5	1626.5
7.5°	1616.9	1615.0	1613.0	1611.1	1607.3
10°	1597.7	1597.7	1595.8	1586.2	1584.3
12.5°	1567.0	1565.1	1557.4	1544.0	1540.2
15°	1524.8	1524.8	1509.5	1494.1	1488.4
17.5°	1478.8	1476.9	1457.7	1442.3	1434.7
20°	1428.9	1425.1	1405.9	1381.0	1367.5
22.5°	1373.3	1373.3	1350.3	1317.7	1304.2
25°	1321.5	1313.8	1292.7	1246.7	1212.2
27.5°	1262.0	1250.5	1227.5	1162.3	1122.0
30°	1196.8	1191.1	1158.5	1074.1	1043.4
32.5°	1135.5	1125.9	1091.3	1003.1	978.2
35°	1072.2	1064.5	1012.7	936.0	913.0
37.5°	1008.9	999.3	934.1	872.7	843.9
40°	945.6	934.1	863.1	807.5	776.8
42.5°	886.1	870.8	801.7	742.3	707.7
45°	822.8	805.6	736.5	675.1	648.3
47.5°	759.5	744.2	680.9	617.6	586.9
50°	692.4	679.0	621.4	558.1	525.5
52.5°	636.8	615.7	560.1	496.8	469.9
55°	571.6	554.3	502.5	443.1	420.0
57.5°	512.1	494.8	446.9	391.3	372.1
60°	456.5	431.6	391.3	343.3	328.0
62.5°	395.1	375.9	341.4	301.1	320.3
65°	339.5	320.3	289.6	295.4	245.5
67.5°	278.1	268.5	241.7	214.8	207.1
70°	226.3	214.8	205.2	176.5	168.8
72.5°	180.3	168.8	155.4	140.0	134.3
75°	136.2	126.6	118.9	113.2	124.7
77.5°	94.0	90.1	84.4	78.6	76.7
80°	61.4	59.5	57.5	55.6	53.7
82.5°	36.4	36.4	36.4	36.4	36.4
85°	19.2	21.1	23.0	24.9	26.9
87.5°	11.5	11.5	13.4	15.3	17.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)