

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: P560875

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-93-94-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560875  
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-LD4-1HI-40-UNV-93-94-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

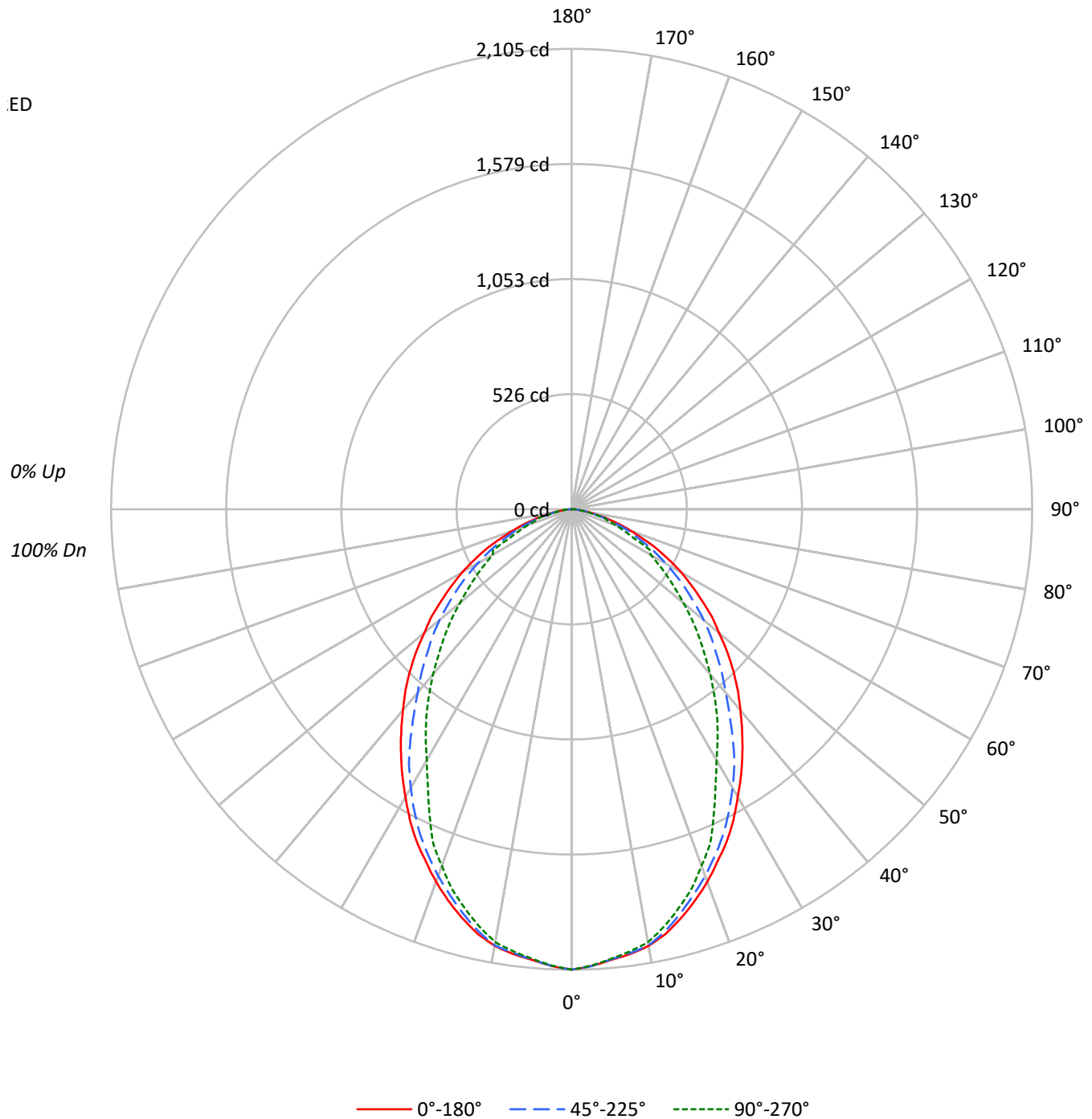
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4132.0 lumens  
Efficiency: N/A  
Efficacy: 95.6 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): 43.2  
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



TEST NUMBER: P560875  
CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-93-94-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P560875

CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-93-94-EDD

**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	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°	5664	5664	5664
5°	5587	5581	5574
10°	5538	5532	5492
15°	5389	5335	5260
20°	5191	5108	4968
25°	4978	4869	4566
30°	4718	4567	4113
35°	4468	4221	3805
40°	4214	3847	3462
45°	3973	3556	3130
50°	3677	3301	2791
55°	3402	2991	2500
60°	3117	2672	2239
65°	2742	2339	1983
70°	2259	2049	1685
75°	1797	1569	1645
80°	1207	1131	1055
85°	750	902	1053

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3973 cd/sqm



TEST NUMBER: P560875

CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-93-94-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	195.9	4.7
10°-20°	537.7	13.0
20°-30°	744.4	18.0
30°-40°	793.8	19.2
40°-50°	724.1	17.5
50°-60°	567.3	13.7
60°-70°	369.7	8.9
70°-80°	163.8	4.0
80°-90°	35.2	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°	1478.1	35.8
0°-40°	2271.8	55.0
0°-60°	3563.3	86.2
0°-90°	4132.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4132.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2105	2105	2105	2105	2105	
5°	2068	2066	2066	2063	2063	196
15°	1934	1934	1915	1896	1888	544
25°	1676	1667	1640	1582	1538	770
35°	1360	1350	1285	1187	1158	850
45°	1044	1022	934	856	822	804
55°	725	703	638	562	533	650
65°	431	406	367	375	312	424
75°	173	161	151	144	158	185
85°	24	27	29	32	34	34
90°	0	0	0	0	0	



TEST NUMBER: P560875

CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-93-94-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2104.8	2104.8	2104.8	2104.8	2104.8
2.5°	2090.2	2090.2	2090.2	2087.8	2087.8
5°	2068.3	2065.9	2065.9	2063.4	2063.4
7.5°	2051.3	2048.8	2046.4	2044.0	2039.1
10°	2026.9	2026.9	2024.5	2012.3	2009.9
12.5°	1988.0	1985.6	1975.8	1958.8	1953.9
15°	1934.5	1934.5	1915.0	1895.5	1888.2
17.5°	1876.1	1873.6	1849.3	1829.8	1820.1
20°	1812.8	1807.9	1783.6	1752.0	1734.9
22.5°	1742.2	1742.2	1713.0	1671.7	1654.6
25°	1676.5	1666.8	1640.0	1581.6	1537.8
27.5°	1601.1	1586.5	1557.3	1474.6	1423.5
30°	1518.4	1511.1	1469.7	1362.6	1323.7
32.5°	1440.5	1428.3	1384.5	1272.6	1241.0
35°	1360.2	1350.5	1284.8	1187.4	1158.2
37.5°	1279.9	1267.7	1185.0	1107.1	1070.6
40°	1199.6	1185.0	1095.0	1024.4	985.5
42.5°	1124.2	1104.7	1017.1	941.7	897.9
45°	1043.9	1022.0	934.4	856.5	822.4
47.5°	963.6	944.1	863.8	783.5	744.6
50°	878.4	861.4	788.4	708.1	666.7
52.5°	807.8	781.1	710.5	630.2	596.2
55°	725.1	703.2	637.5	562.1	532.9
57.5°	649.7	627.8	567.0	496.4	472.1
60°	579.1	547.5	496.4	435.6	416.1
62.5°	501.3	476.9	433.1	382.0	406.4
65°	430.7	406.4	367.4	374.7	311.5
67.5°	352.8	340.7	306.6	272.5	262.8
70°	287.1	272.5	260.4	223.9	214.1
72.5°	228.7	214.1	197.1	177.6	170.3
75°	172.8	160.6	150.9	143.6	158.2
77.5°	119.2	114.4	107.1	99.8	97.3
80°	77.9	75.4	73.0	70.6	68.1
82.5°	46.2	46.2	46.2	46.2	46.2
85°	24.3	26.8	29.2	31.6	34.1
87.5°	14.6	14.6	17.0	19.5	21.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)