

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: P561583

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-93-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561583  
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-LD4-2LO-35-UNV-93-97-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

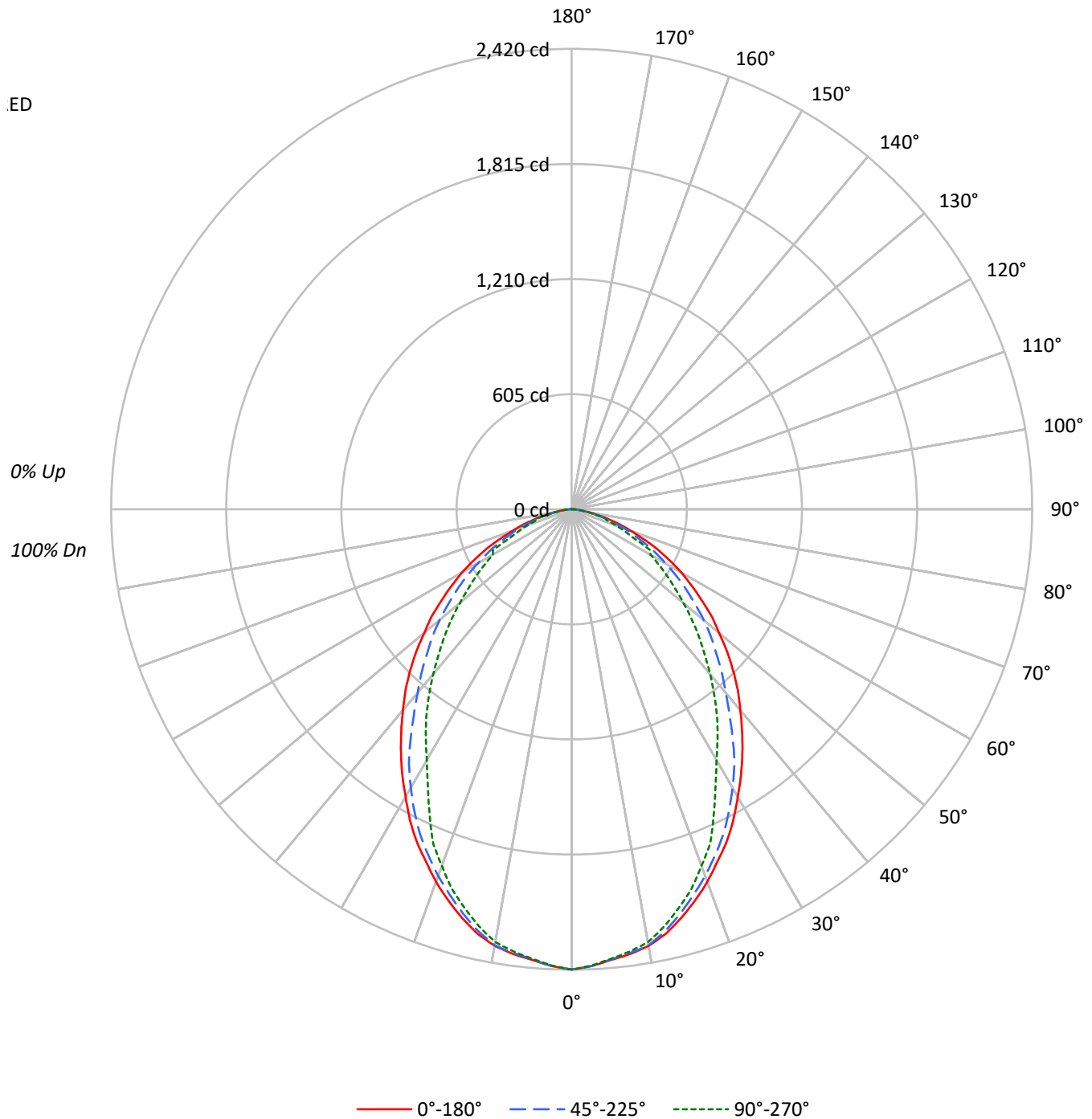
Lumens per Lamp: N/A  
Luminaire Lumens: 4750.0 lumens  
Efficiency: N/A  
Efficacy: 101.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6511	6511	6511
5°	6423	6415	6407
10°	6367	6359	6313
15°	6195	6133	6047
20°	5968	5872	5711
25°	5722	5598	5249
30°	5424	5250	4728
35°	5137	4852	4374
40°	4844	4422	3980
45°	4567	4088	3598
50°	4227	3794	3208
55°	3911	3438	2874
60°	3583	3071	2574
65°	3152	2690	2280
70°	2597	2355	1937
75°	2065	1803	1890
80°	1387	1300	1213
85°	865	1037	1210

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4567 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	225.2	4.7
10°-20°	618.1	13.0
20°-30°	855.8	18.0
30°-40°	912.5	19.2
40°-50°	832.4	17.5
50°-60°	652.2	13.7
60°-70°	425.0	8.9
70°-80°	188.3	4.0
80°-90°	40.4	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°	1699.1	35.8
0°-40°	2611.6	55.0
0°-60°	4096.2	86.2
0°-90°	4750.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4750.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2420	2420	2420	2420	2420	
5°	2378	2375	2375	2372	2372	226
15°	2224	2224	2201	2179	2171	625
25°	1927	1916	1885	1818	1768	885
35°	1564	1552	1477	1365	1332	978
45°	1200	1175	1074	985	946	924
55°	834	808	733	646	613	748
65°	495	467	422	431	358	488
75°	199	185	173	165	182	213
85°	28	31	34	36	39	39
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2419.6	2419.6	2419.6	2419.6	2419.6
2.5°	2402.8	2402.8	2402.8	2400.0	2400.0
5°	2377.6	2374.8	2374.8	2372.0	2372.0
7.5°	2358.0	2355.3	2352.5	2349.7	2344.1
10°	2330.1	2330.1	2327.3	2313.3	2310.5
12.5°	2285.3	2282.5	2271.3	2251.8	2246.2
15°	2223.8	2223.8	2201.4	2179.0	2170.6
17.5°	2156.6	2153.9	2125.9	2103.5	2092.3
20°	2083.9	2078.3	2050.4	2014.0	1994.4
22.5°	2002.8	2002.8	1969.2	1921.7	1902.1
25°	1927.3	1916.1	1885.3	1818.2	1767.8
27.5°	1840.6	1823.8	1790.2	1695.1	1636.4
30°	1745.5	1737.1	1689.5	1566.4	1521.7
32.5°	1655.9	1642.0	1591.6	1462.9	1426.6
35°	1563.6	1552.5	1476.9	1365.0	1331.5
37.5°	1471.3	1457.3	1362.2	1272.7	1230.8
40°	1379.0	1362.2	1258.7	1177.6	1132.9
42.5°	1292.3	1269.9	1169.2	1082.5	1032.2
45°	1200.0	1174.8	1074.1	984.6	945.5
47.5°	1107.7	1085.3	993.0	900.7	855.9
50°	1009.8	990.2	906.3	814.0	766.4
52.5°	928.7	897.9	816.8	724.5	685.3
55°	833.6	808.4	732.9	646.2	612.6
57.5°	746.9	721.7	651.7	570.6	542.7
60°	665.7	629.4	570.6	500.7	478.3
62.5°	576.2	548.3	497.9	439.2	467.1
65°	495.1	467.1	422.4	430.8	358.0
67.5°	405.6	391.6	352.4	313.3	302.1
70°	330.1	313.3	299.3	257.3	246.2
72.5°	262.9	246.2	226.6	204.2	195.8
75°	198.6	184.6	173.4	165.0	181.8
77.5°	137.1	131.5	123.1	114.7	111.9
80°	89.5	86.7	83.9	81.1	78.3
82.5°	53.1	53.1	53.1	53.1	53.1
85°	28.0	30.8	33.6	36.4	39.2
87.5°	16.8	16.8	19.6	22.4	25.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)