

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: P561570

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561570  
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-93-85-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

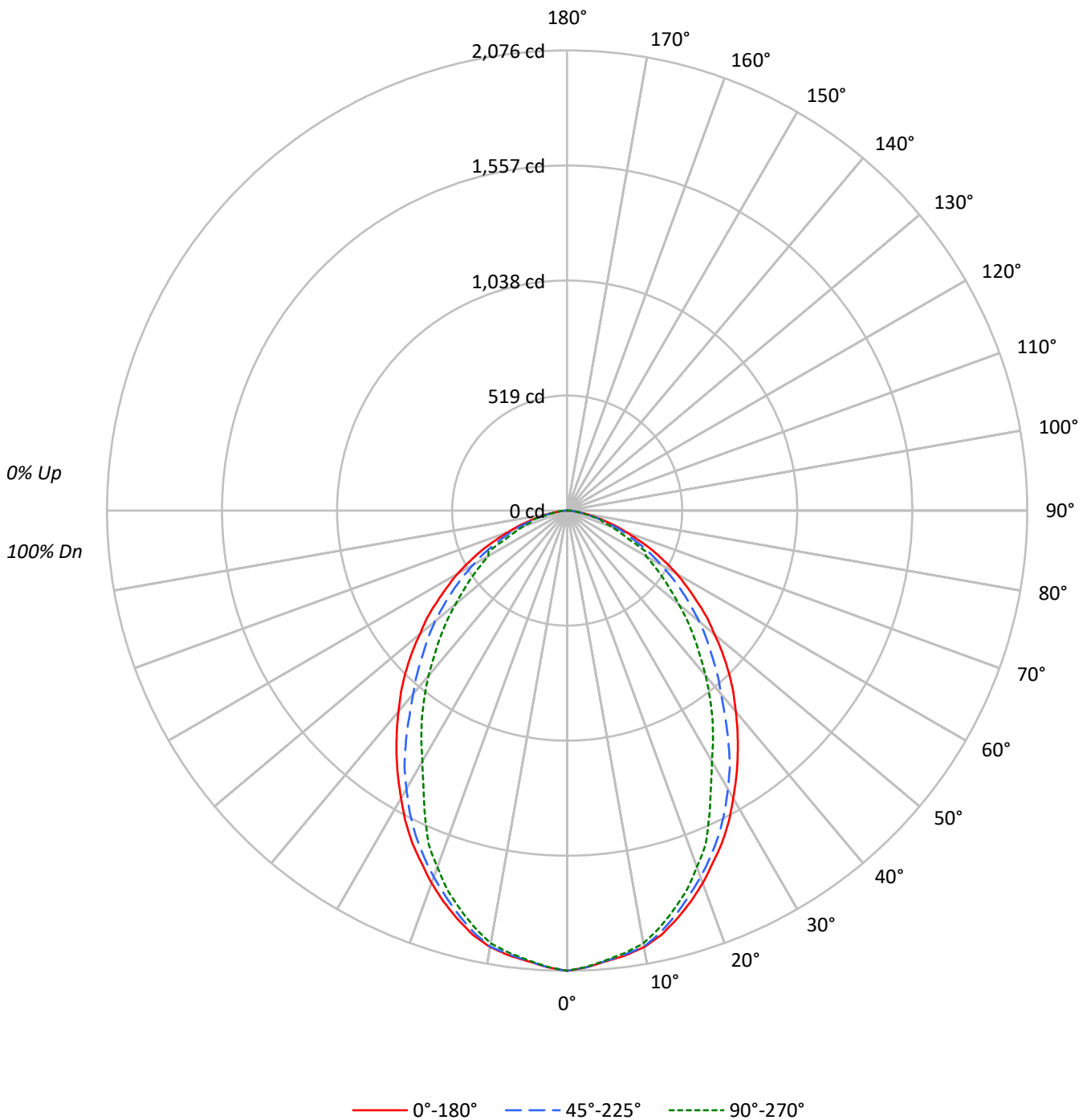
Lumens per Lamp: N/A  
Luminaire Lumens: 4076.0 lumens  
Efficiency: N/A  
Efficacy: 87.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5587	5587	5587
5°	5511	5505	5498
10°	5464	5457	5417
15°	5316	5263	5189
20°	5121	5038	4901
25°	4910	4804	4504
30°	4654	4505	4057
35°	4408	4164	3753
40°	4157	3794	3415
45°	3919	3508	3087
50°	3628	3256	2753
55°	3356	2951	2466
60°	3075	2636	2209
65°	2706	2308	1956
70°	2228	2020	1662
75°	1772	1547	1622
80°	1190	1116	1041
85°	741	889	1037

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3919 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	193.3	4.7
10°-20°	530.4	13.0
20°-30°	734.3	18.0
30°-40°	783.0	19.2
40°-50°	714.3	17.5
50°-60°	559.6	13.7
60°-70°	364.7	8.9
70°-80°	161.6	4.0
80°-90°	34.7	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°	1458.0	35.8
0°-40°	2241.0	55.0
0°-60°	3515.0	86.2
0°-90°	4076.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4076.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2076	2076	2076	2076	2076	
5°	2040	2038	2038	2036	2036	194
15°	1908	1908	1889	1870	1863	536
25°	1654	1644	1618	1560	1517	759
35°	1342	1332	1267	1171	1142	839
45°	1030	1008	922	845	811	793
55°	715	694	629	554	526	642
65°	425	401	362	370	307	419
75°	170	158	149	142	156	183
85°	24	26	29	31	34	33
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2076.3	2076.3	2076.3	2076.3	2076.3
2.5°	2061.9	2061.9	2061.9	2059.5	2059.5
5°	2040.3	2037.9	2037.9	2035.5	2035.5
7.5°	2023.5	2021.1	2018.7	2016.3	2011.5
10°	1999.5	1999.5	1997.1	1985.0	1982.6
12.5°	1961.0	1958.6	1949.0	1932.2	1927.4
15°	1908.2	1908.2	1889.0	1869.8	1862.6
17.5°	1850.6	1848.2	1824.2	1805.0	1795.4
20°	1788.2	1783.4	1759.4	1728.2	1711.4
22.5°	1718.6	1718.6	1689.8	1649.0	1632.2
25°	1653.8	1644.2	1617.8	1560.2	1517.0
27.5°	1579.4	1565.0	1536.2	1454.6	1404.2
30°	1497.8	1490.6	1449.8	1344.2	1305.8
32.5°	1421.0	1409.0	1365.8	1255.4	1224.2
35°	1341.8	1332.2	1267.4	1171.3	1142.5
37.5°	1262.6	1250.6	1168.9	1092.1	1056.1
40°	1183.3	1168.9	1080.1	1010.5	972.1
42.5°	1108.9	1089.7	1003.3	928.9	885.7
45°	1029.7	1008.1	921.7	844.9	811.3
47.5°	950.5	931.3	852.1	772.9	734.5
50°	866.5	849.7	777.7	698.5	657.7
52.5°	796.9	770.5	700.9	621.7	588.1
55°	715.3	693.7	628.9	554.5	525.7
57.5°	640.9	619.3	559.3	489.7	465.7
60°	571.3	540.1	489.7	429.7	410.5
62.5°	494.5	470.5	427.3	376.8	400.9
65°	424.9	400.9	362.4	369.6	307.2
67.5°	348.0	336.0	302.4	268.8	259.2
70°	283.2	268.8	256.8	220.8	211.2
72.5°	225.6	211.2	194.4	175.2	168.0
75°	170.4	158.4	148.8	141.6	156.0
77.5°	117.6	112.8	105.6	98.4	96.0
80°	76.8	74.4	72.0	69.6	67.2
82.5°	45.6	45.6	45.6	45.6	45.6
85°	24.0	26.4	28.8	31.2	33.6
87.5°	14.4	14.4	16.8	19.2	21.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)