

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: P561642

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-93-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561642  
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-40-UNV-93-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

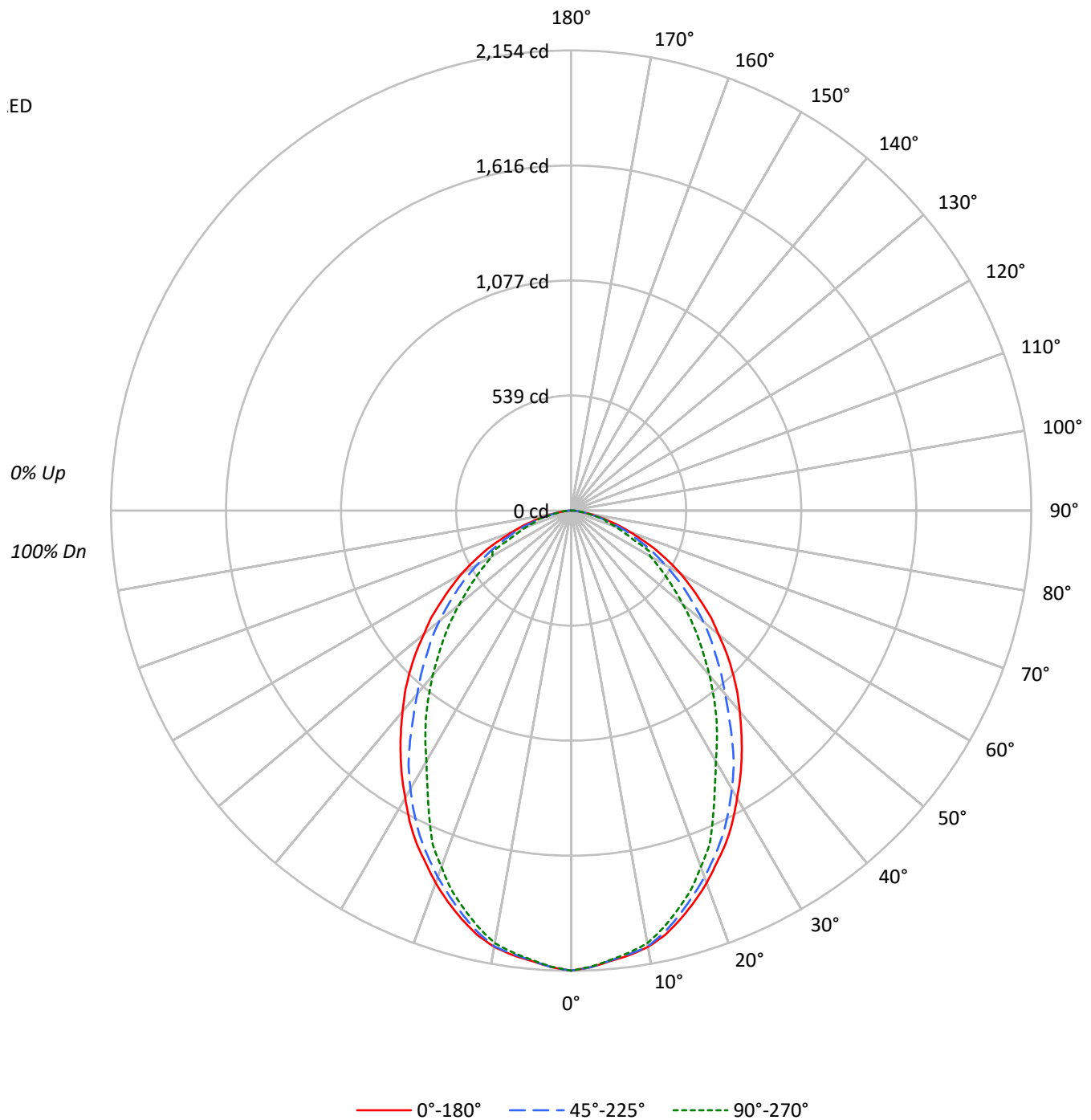
Lumens per Lamp: N/A  
Luminaire Lumens: 4228.0 lumens  
Efficiency: N/A  
Efficacy: 90.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5796	5796	5796
5°	5717	5710	5703
10°	5667	5660	5620
15°	5514	5459	5383
20°	5312	5226	5084
25°	5094	4983	4672
30°	4827	4673	4209
35°	4572	4319	3893
40°	4312	3936	3542
45°	4065	3639	3203
50°	3763	3377	2856
55°	3481	3060	2558
60°	3189	2733	2292
65°	2806	2394	2029
70°	2312	2096	1724
75°	1838	1605	1682
80°	1235	1158	1080
85°	769	923	1078

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4065 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	200.5	4.7
10°-20°	550.2	13.0
20°-30°	761.7	18.0
30°-40°	812.2	19.2
40°-50°	741.0	17.5
50°-60°	580.5	13.7
60°-70°	378.3	8.9
70°-80°	167.6	4.0
80°-90°	36.0	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°	1512.4	35.8
0°-40°	2324.6	55.0
0°-60°	3646.0	86.2
0°-90°	4228.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4228.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2154	2154	2154	2154	2154	
5°	2116	2114	2114	2111	2111	201
15°	1979	1979	1960	1940	1932	556
25°	1716	1706	1678	1618	1574	788
35°	1392	1382	1315	1215	1185	870
45°	1068	1046	956	876	842	823
55°	742	720	652	575	545	665
65°	441	416	376	383	319	434
75°	177	164	154	147	162	189
85°	25	27	30	32	35	35
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2153.7	2153.7	2153.7	2153.7	2153.7
2.5°	2138.7	2138.7	2138.7	2136.3	2136.3
5°	2116.3	2113.8	2113.8	2111.4	2111.4
7.5°	2098.9	2096.4	2093.9	2091.4	2086.5
10°	2074.0	2074.0	2071.5	2059.1	2056.6
12.5°	2034.2	2031.7	2021.7	2004.3	1999.3
15°	1979.4	1979.4	1959.5	1939.6	1932.1
17.5°	1919.6	1917.2	1892.3	1872.3	1862.4
20°	1854.9	1849.9	1825.0	1792.7	1775.2
22.5°	1782.7	1782.7	1752.8	1710.5	1693.1
25°	1715.5	1705.5	1678.1	1618.4	1573.6
27.5°	1638.3	1623.4	1593.5	1508.8	1456.5
30°	1553.6	1546.2	1503.8	1394.3	1354.5
32.5°	1474.0	1461.5	1416.7	1302.2	1269.8
35°	1391.8	1381.8	1314.6	1215.0	1185.2
37.5°	1309.6	1297.2	1212.5	1132.9	1095.5
40°	1227.5	1212.5	1120.4	1048.2	1008.4
42.5°	1150.3	1130.4	1040.7	963.6	918.7
45°	1068.1	1045.7	956.1	876.4	841.6
47.5°	986.0	966.0	883.9	801.7	761.9
50°	898.8	881.4	806.7	724.5	682.2
52.5°	826.6	799.2	727.0	644.9	610.0
55°	742.0	719.6	652.3	575.1	545.3
57.5°	664.8	642.4	580.1	507.9	483.0
60°	592.6	560.2	507.9	445.7	425.8
62.5°	512.9	488.0	443.2	390.9	415.8
65°	440.7	415.8	376.0	383.4	318.7
67.5°	361.0	348.6	313.7	278.9	268.9
70°	293.8	278.9	266.4	229.1	219.1
72.5°	234.0	219.1	201.7	181.8	174.3
75°	176.8	164.3	154.4	146.9	161.8
77.5°	122.0	117.0	109.6	102.1	99.6
80°	79.7	77.2	74.7	72.2	69.7
82.5°	47.3	47.3	47.3	47.3	47.3
85°	24.9	27.4	29.9	32.4	34.9
87.5°	14.9	14.9	17.4	19.9	22.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)