

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: P590226

Luminaire Tested: FSR-24-2-LD4-2HI-50-UNV-93-94-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590226  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-1)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/8/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-2-LD4-2HI-50-UNV-93-94-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

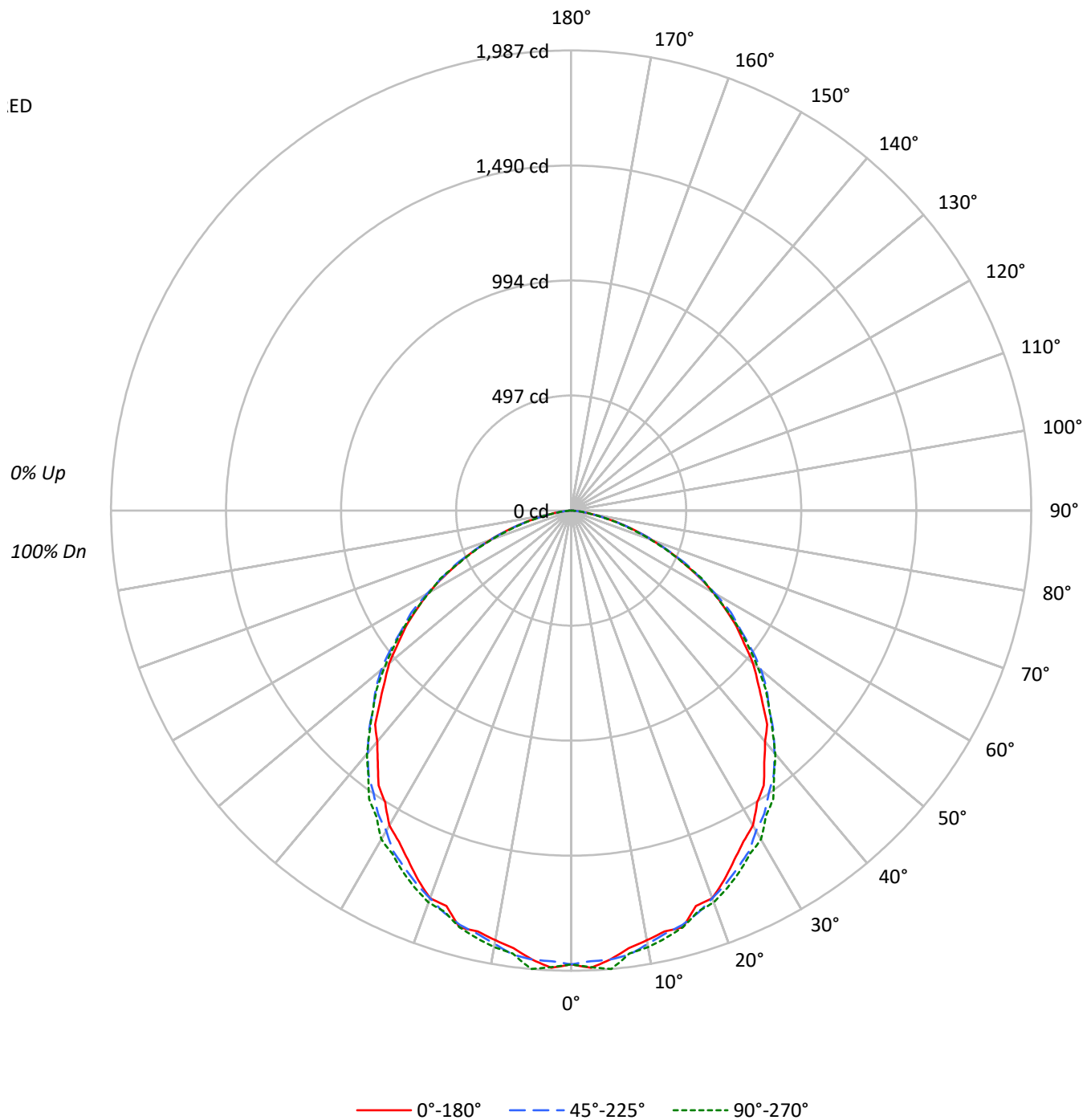
Lumens per Lamp: N/A  
Luminaire Lumens: 4938.0 lumens  
Efficiency: N/A  
Efficacy: 114.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
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



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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	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86									86																			
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73									73																			
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62									62																			
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53									53																			
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46									46																			
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41									41																			
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36									36																			
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32									32																			
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29									29																			
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26									26																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5272	5272	5272
5°	5255	5257	5368
10°	5148	5193	5230
15°	5189	5161	5190
20°	5101	5101	5156
25°	4945	5053	5108
30°	4877	4962	5094
35°	4762	4887	4996
40°	4577	4797	4818
45°	4438	4596	4603
50°	4292	4486	4400
55°	4090	4169	4140
60°	3824	3863	3793
65°	3410	3497	3386
70°	2926	2936	2854
75°	2318	2312	2223
80°	1553	1509	1450
85°	843	837	781

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°

Vertical Angle: 45°

Luminance: 4714 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	184.3	3.7
10°-20°	522.3	10.6
20°-30°	782.6	15.8
30°-40°	927.5	18.8
40°-50°	929.2	18.8
50°-60°	788.7	16.0
60°-70°	531.8	10.8
70°-80°	233.7	4.7
80°-90°	38.0	0.8
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°	1489.2	30.2
0°-40°	2416.7	48.9
0°-60°	4134.6	83.7
0°-90°	4938.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4938.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1959	1959	1959	1959	1959	
5°	1945	1941	1946	1940	1987	183
15°	1863	1841	1852	1862	1863	519
25°	1665	1674	1702	1724	1720	770
35°	1450	1454	1488	1522	1521	900
45°	1166	1188	1208	1239	1210	902
55°	872	866	889	883	882	775
65°	536	528	549	528	532	533
75°	223	218	222	207	214	239
85°	27	27	27	26	25	40
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1959.3	1959.3	1959.3	1959.3	1959.3
2.5°	1976.2	1961.3	1947.4	1963.6	1973.4
5°	1945.4	1940.8	1946.1	1940.3	1987.1
7.5°	1905.4	1922.8	1933.0	1926.6	1929.4
10°	1884.1	1878.1	1900.6	1916.3	1914.0
12.5°	1861.4	1870.5	1871.7	1888.7	1890.2
15°	1862.6	1841.1	1852.5	1862.1	1862.9
17.5°	1790.3	1813.6	1821.4	1843.4	1816.1
20°	1781.4	1764.5	1781.4	1803.9	1800.4
22.5°	1727.0	1708.1	1744.5	1764.5	1763.2
25°	1665.3	1674.4	1701.7	1724.0	1720.5
27.5°	1611.2	1621.8	1660.8	1691.4	1671.6
30°	1569.4	1564.1	1597.0	1624.3	1639.5
32.5°	1494.8	1514.0	1552.5	1579.6	1565.1
35°	1449.5	1453.8	1487.5	1521.9	1520.9
37.5°	1370.4	1390.3	1437.6	1447.3	1438.4
40°	1302.8	1322.8	1365.5	1375.9	1371.6
42.5°	1253.0	1256.5	1293.2	1305.1	1286.1
45°	1166.2	1188.0	1207.7	1238.8	1209.5
47.5°	1092.3	1102.5	1145.0	1153.3	1137.9
50°	1025.3	1028.8	1071.6	1061.2	1051.1
52.5°	941.1	956.0	980.0	978.0	966.1
55°	871.7	865.9	888.7	882.6	882.4
57.5°	788.5	798.6	817.4	807.7	792.3
60°	710.6	710.9	717.7	706.8	704.8
62.5°	623.8	626.9	628.4	615.0	636.7
65°	535.5	528.5	549.2	528.2	531.7
67.5°	454.3	457.9	455.9	442.7	447.8
70°	371.9	376.4	373.1	358.2	362.8
72.5°	296.5	290.9	294.5	275.7	284.3
75°	222.9	218.3	222.4	206.7	213.8
77.5°	151.8	155.3	152.8	144.4	149.3
80°	100.2	97.4	97.4	92.6	93.6
82.5°	58.4	55.7	54.9	53.4	55.7
85°	27.3	26.6	27.1	26.3	25.3
87.5°	9.9	10.1	10.1	9.6	9.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)