

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: P590465

Luminaire Tested: FSR-24-2-LD4-3HI-40-UNV-81-88-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590465  
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-LD4-3HI-40-UNV-81-88-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

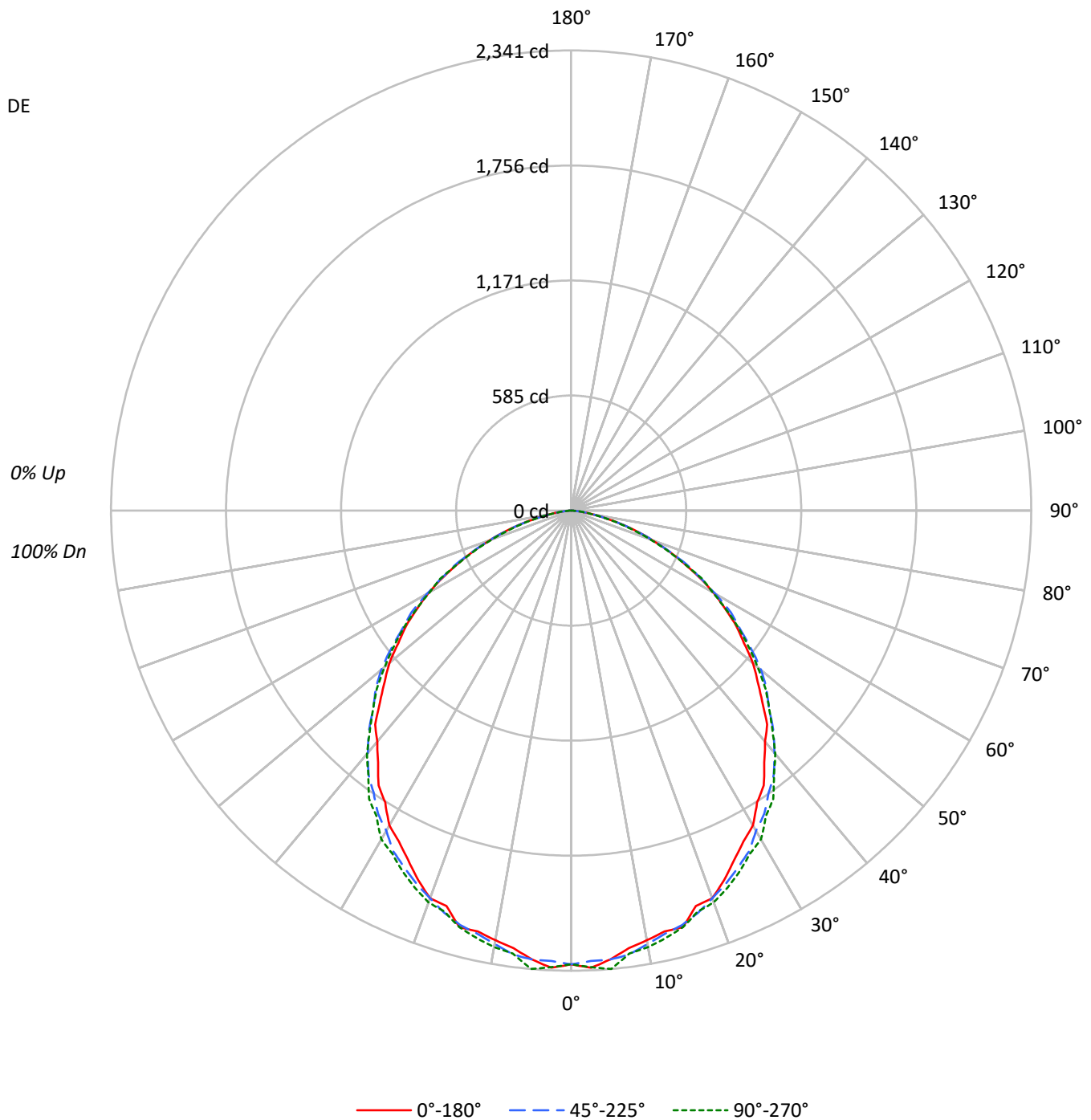
Lumens per Lamp: N/A  
Luminaire Lumens: 5817.0 lumens  
Efficiency: N/A  
Efficacy: 89.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 64.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	105	101	98	107	103	100	96	99	96	93	95	93	90	91	90	88	86
2	100	93	86	81	98	91	85	80	87	82	78	84	80	76	81	78	75	73
3	92	82	74	68	89	80	73	67	77	71	66	75	69	65	72	68	64	62
4	84	73	64	58	82	71	64	58	69	62	57	67	61	56	65	59	55	53
5	78	65	57	50	76	64	56	50	62	55	49	60	54	49	58	53	48	46
6	72	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	67	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	61	48	40	35	47	40	34	46	39	34	44	39	34	32
9	58	45	37	31	57	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	33	28	40	33	28	39	33	28	38	32	28	26

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

	0°	45°	90°
0°	6211	6211	6211
5°	6190	6193	6323
10°	6065	6118	6161
15°	6113	6080	6114
20°	6009	6009	6074
25°	5825	5952	6018
30°	5745	5846	6001
35°	5610	5756	5886
40°	5391	5651	5676
45°	5228	5414	5422
50°	5056	5285	5184
55°	4818	4912	4876
60°	4505	4550	4468
65°	4017	4120	3989
70°	3447	3459	3362
75°	2729	2723	2618
80°	1829	1777	1709
85°	994	985	920

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5554 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	217.1	3.7
10°-20°	615.3	10.6
20°-30°	921.9	15.8
30°-40°	1092.6	18.8
40°-50°	1094.6	18.8
50°-60°	929.1	16.0
60°-70°	626.4	10.8
70°-80°	275.3	4.7
80°-90°	44.7	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°	1754.3	30.2
0°-40°	2846.9	48.9
0°-60°	4870.6	83.7
0°-90°	5817.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5817.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2308	2308	2308	2308	2308	
5°	2292	2286	2292	2286	2341	216
15°	2194	2169	2182	2194	2194	611
25°	1962	1972	2005	2031	2027	907
35°	1708	1713	1752	1793	1792	1060
45°	1374	1399	1423	1459	1425	1063
55°	1027	1020	1047	1040	1039	914
65°	631	622	647	622	626	627
75°	262	257	262	244	252	281
85°	32	31	32	31	30	47
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2308.0	2308.0	2308.0	2308.0	2308.0
2.5°	2328.0	2310.4	2294.0	2313.1	2324.7
5°	2291.6	2286.3	2292.5	2285.7	2340.8
7.5°	2244.6	2265.1	2277.0	2269.6	2272.9
10°	2219.5	2212.4	2238.9	2257.4	2254.7
12.5°	2192.7	2203.4	2204.9	2224.9	2226.7
15°	2194.2	2168.9	2182.3	2193.6	2194.5
17.5°	2109.0	2136.4	2145.6	2171.6	2139.4
20°	2098.5	2078.6	2098.5	2125.1	2120.9
22.5°	2034.5	2012.1	2055.0	2078.6	2077.1
25°	1961.8	1972.5	2004.7	2030.9	2026.7
27.5°	1898.0	1910.5	1956.4	1992.5	1969.2
30°	1848.8	1842.6	1881.3	1913.5	1931.4
32.5°	1760.9	1783.6	1828.8	1860.7	1843.7
35°	1707.6	1712.6	1752.3	1792.8	1791.6
37.5°	1614.3	1637.8	1693.6	1704.9	1694.4
40°	1534.7	1558.3	1608.6	1620.8	1615.8
42.5°	1476.0	1480.2	1523.4	1537.4	1515.1
45°	1373.8	1399.4	1422.7	1459.3	1424.8
47.5°	1286.8	1298.7	1348.8	1358.6	1340.4
50°	1207.8	1212.0	1262.3	1250.1	1238.2
52.5°	1108.6	1126.2	1154.5	1152.1	1138.1
55°	1026.9	1020.1	1046.9	1039.7	1039.4
57.5°	928.9	940.8	962.8	951.5	933.3
60°	837.1	837.4	845.4	832.6	830.2
62.5°	734.9	738.5	740.2	724.4	750.1
65°	630.9	622.5	647.0	622.2	626.4
67.5°	535.2	539.4	537.0	521.5	527.5
70°	438.1	443.4	439.6	422.0	427.3
72.5°	349.3	342.7	346.9	324.8	335.0
75°	262.5	257.2	261.9	243.5	251.8
77.5°	178.8	183.0	180.0	170.2	175.8
80°	118.0	114.7	114.7	109.1	110.3
82.5°	68.8	65.6	64.7	62.9	65.6
85°	32.2	31.3	31.9	31.0	29.8
87.5°	11.6	11.9	11.9	11.3	10.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)