

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: P590653

Luminaire Tested: FSR-24-2-LD4-3STD-40-UNV-81-84-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590653  
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-LD4-3STD-40-UNV-81-84-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

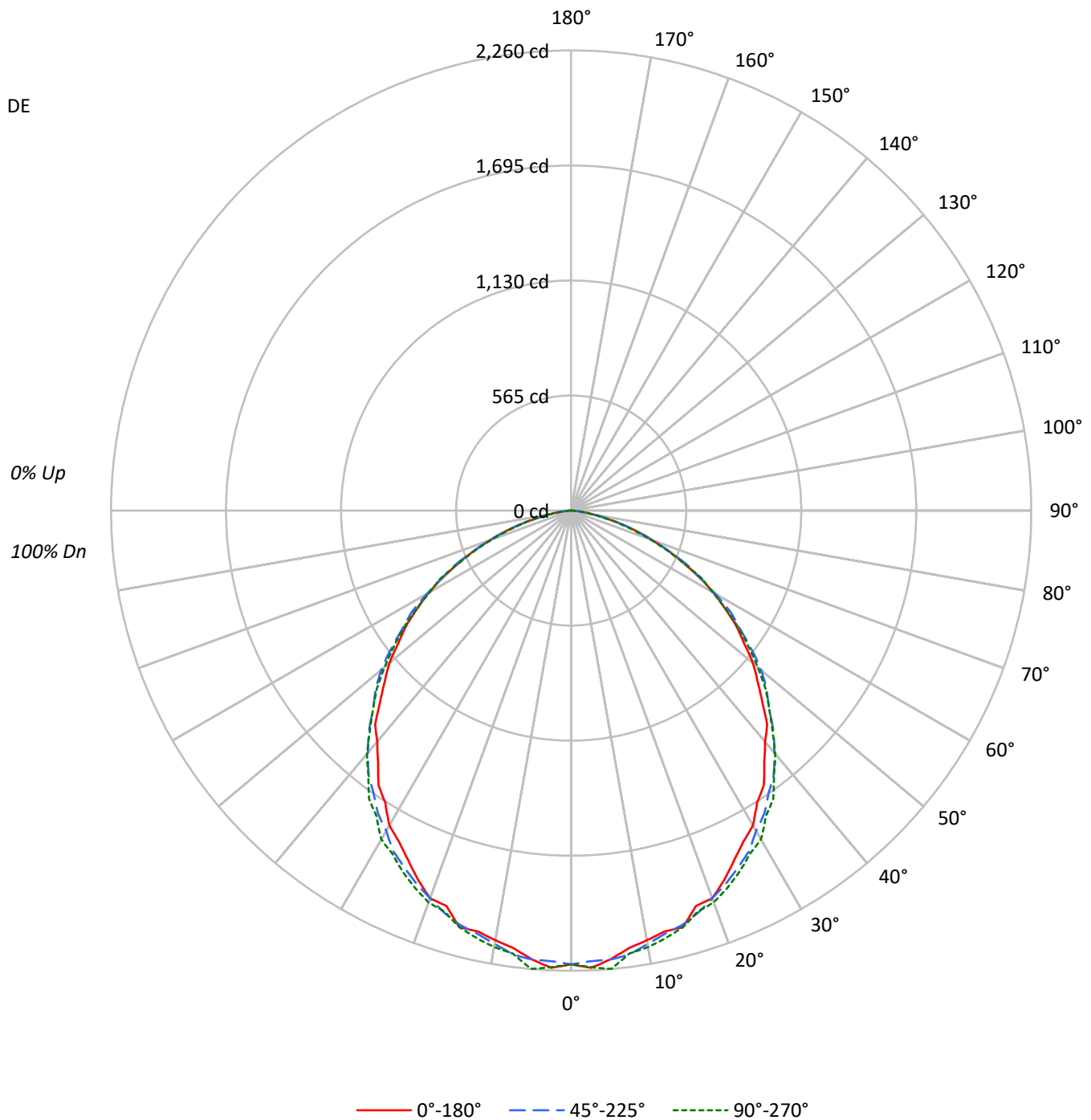
Lumens per Lamp: N/A  
Luminaire Lumens: 5616.0 lumens  
Efficiency: N/A  
Efficacy: 112.3 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5996	5996	5996
5°	5977	5979	6105
10°	5855	5906	5948
15°	5902	5870	5902
20°	5802	5802	5864
25°	5624	5747	5810
30°	5546	5644	5794
35°	5416	5557	5682
40°	5205	5455	5480
45°	5047	5227	5235
50°	4882	5102	5004
55°	4651	4742	4708
60°	4350	4393	4314
65°	3878	3977	3851
70°	3327	3339	3246
75°	2636	2629	2528
80°	1765	1717	1650
85°	960	951	889

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5362 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	209.6	3.7
10°-20°	594.0	10.6
20°-30°	890.0	15.8
30°-40°	1054.8	18.8
40°-50°	1056.8	18.8
50°-60°	897.0	16.0
60°-70°	604.8	10.8
70°-80°	265.8	4.7
80°-90°	43.2	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°	1693.6	30.2
0°-40°	2748.5	48.9
0°-60°	4702.3	83.7
0°-90°	5616.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5616.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2228	2228	2228	2228	2228	
5°	2212	2207	2213	2207	2260	209
15°	2118	2094	2107	2118	2119	590
25°	1894	1904	1935	1961	1957	876
35°	1649	1653	1692	1731	1730	1024
45°	1326	1351	1374	1409	1376	1026
55°	991	985	1011	1004	1004	882
65°	609	601	625	601	605	606
75°	254	248	253	235	243	272
85°	31	30	31	30	29	45
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2228.3	2228.3	2228.3	2228.3	2228.3
2.5°	2247.6	2230.6	2214.8	2233.2	2244.4
5°	2212.5	2207.3	2213.3	2206.7	2259.9
7.5°	2167.0	2186.9	2198.4	2191.2	2194.3
10°	2142.8	2135.9	2161.5	2179.4	2176.8
12.5°	2116.9	2127.3	2128.7	2148.0	2149.7
15°	2118.4	2093.9	2106.9	2117.8	2118.7
17.5°	2036.1	2062.6	2071.5	2096.5	2065.4
20°	2026.0	2006.8	2026.0	2051.6	2047.6
22.5°	1964.2	1942.6	1984.0	2006.8	2005.3
25°	1894.0	1904.3	1935.4	1960.7	1956.7
27.5°	1832.4	1844.5	1888.8	1923.6	1901.2
30°	1784.9	1778.9	1816.3	1847.4	1864.6
32.5°	1700.1	1721.9	1765.7	1796.4	1780.0
35°	1648.6	1653.4	1691.7	1730.8	1729.7
37.5°	1558.5	1581.2	1635.0	1646.0	1635.9
40°	1481.7	1504.4	1553.0	1564.8	1559.9
42.5°	1425.0	1429.0	1470.8	1484.3	1462.7
45°	1326.3	1351.1	1373.5	1408.9	1375.5
47.5°	1242.3	1253.8	1302.2	1311.7	1294.1
50°	1166.1	1170.1	1218.7	1206.9	1195.4
52.5°	1070.3	1087.2	1114.6	1112.3	1098.8
55°	991.4	984.8	1010.7	1003.8	1003.5
57.5°	896.8	908.3	929.6	918.6	901.1
60°	808.2	808.5	816.2	803.9	801.6
62.5°	709.5	712.9	714.7	699.4	724.2
65°	609.1	601.0	624.6	600.7	604.8
67.5°	516.7	520.7	518.4	503.5	509.2
70°	422.9	428.1	424.4	407.4	412.6
72.5°	337.2	330.9	334.9	313.6	323.4
75°	253.5	248.3	252.9	235.1	243.1
77.5°	172.6	176.7	173.8	164.3	169.7
80°	113.9	110.8	110.8	105.3	106.5
82.5°	66.5	63.3	62.4	60.7	63.3
85°	31.1	30.2	30.8	29.9	28.8
87.5°	11.2	11.5	11.5	10.9	10.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)