

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: P590847

Luminaire Tested: FSR-24-2-LD4-4LO-40-UNV-81-86-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590847  
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-LD4-4LO-40-UNV-81-86-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

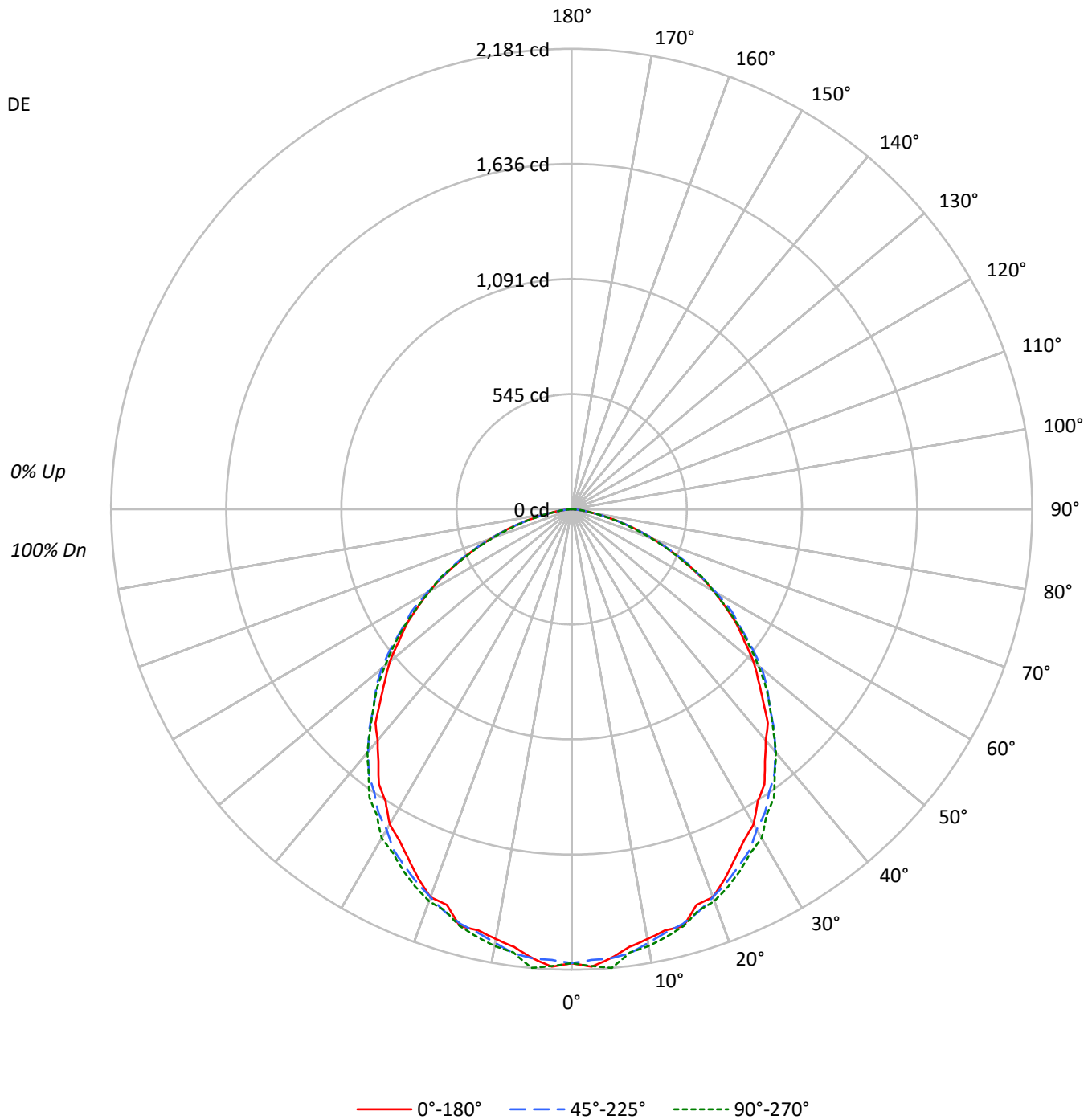
Lumens per Lamp: N/A  
Luminaire Lumens: 5419.0 lumens  
Efficiency: N/A  
Efficacy: 115.8 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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	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°	5786	5786	5786
5°	5767	5769	5891
10°	5650	5699	5739
15°	5695	5664	5696
20°	5598	5598	5658
25°	5426	5545	5606
30°	5352	5446	5591
35°	5226	5363	5483
40°	5022	5264	5288
45°	4870	5044	5051
50°	4711	4923	4829
55°	4488	4576	4543
60°	4197	4239	4162
65°	3742	3838	3715
70°	3211	3222	3132
75°	2543	2537	2439
80°	1703	1657	1592
85°	926	917	858

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5174 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	202.3	3.7
10°-20°	573.2	10.6
20°-30°	858.8	15.8
30°-40°	1017.8	18.8
40°-50°	1019.7	18.8
50°-60°	865.6	16.0
60°-70°	583.6	10.8
70°-80°	256.4	4.7
80°-90°	41.7	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°	1634.2	30.2
0°-40°	2652.1	48.9
0°-60°	4537.4	83.7
0°-90°	5419.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5419.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2150	2150	2150	2150	2150	
5°	2135	2130	2136	2129	2181	201
15°	2044	2020	2033	2044	2044	570
25°	1828	1838	1868	1892	1888	845
35°	1591	1595	1632	1670	1669	988
45°	1280	1304	1325	1360	1327	990
55°	957	950	975	969	968	851
65°	588	580	603	580	584	584
75°	245	240	244	227	235	262
85°	30	29	30	29	28	43
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2150.1	2150.1	2150.1	2150.1	2150.1
2.5°	2168.7	2152.3	2137.1	2154.8	2165.7
5°	2134.9	2129.9	2135.7	2129.3	2180.7
7.5°	2091.0	2110.1	2121.3	2114.3	2117.4
10°	2067.7	2061.0	2085.7	2102.9	2100.4
12.5°	2042.7	2052.7	2054.1	2072.7	2074.3
15°	2044.1	2020.5	2033.0	2043.5	2044.4
17.5°	1964.7	1990.2	1998.8	2023.0	1993.0
20°	1955.0	1936.4	1955.0	1979.7	1975.8
22.5°	1895.3	1874.5	1914.4	1936.4	1935.0
25°	1827.5	1837.5	1867.5	1891.9	1888.1
27.5°	1768.1	1779.8	1822.5	1856.1	1834.5
30°	1722.3	1716.5	1752.6	1782.6	1799.2
32.5°	1640.4	1661.5	1703.7	1733.4	1717.6
35°	1590.7	1595.4	1632.4	1670.1	1669.0
37.5°	1503.8	1525.8	1577.7	1588.2	1578.5
40°	1429.7	1451.6	1498.6	1509.9	1505.2
42.5°	1375.0	1378.9	1419.2	1432.2	1411.4
45°	1279.8	1303.7	1325.3	1359.5	1327.3
47.5°	1198.7	1209.8	1256.5	1265.6	1248.7
50°	1125.2	1129.1	1176.0	1164.6	1153.5
52.5°	1032.7	1049.1	1075.5	1073.3	1060.2
55°	956.7	950.3	975.3	968.6	968.3
57.5°	865.3	876.4	897.0	886.4	869.5
60°	779.8	780.1	787.6	775.7	773.4
62.5°	684.6	687.9	689.6	674.9	698.8
65°	587.7	579.9	602.7	579.7	583.5
67.5°	498.6	502.5	500.3	485.8	491.4
70°	408.1	413.1	409.5	393.1	398.1
72.5°	325.4	319.3	323.1	302.6	312.0
75°	244.6	239.6	244.0	226.8	234.6
77.5°	166.6	170.5	167.7	158.5	163.8
80°	109.9	106.9	106.9	101.6	102.7
82.5°	64.1	61.1	60.2	58.6	61.1
85°	30.0	29.1	29.7	28.9	27.8
87.5°	10.8	11.1	11.1	10.5	10.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)