

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: P590820

Luminaire Tested: FSR-24-2-LD4-4LO-35-UNV-81-97-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590820  
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-35-UNV-81-97-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

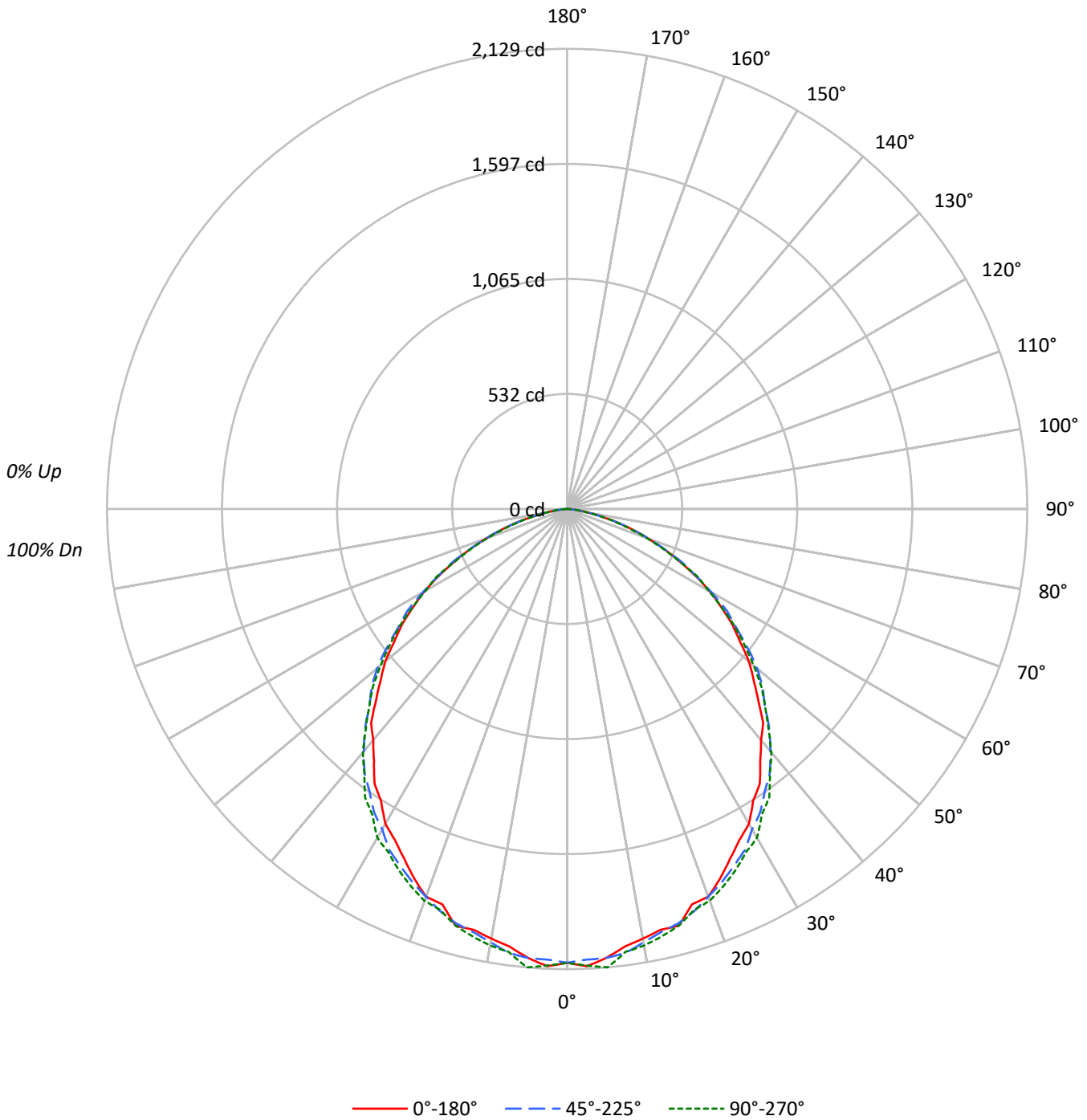
Lumens per Lamp: N/A  
Luminaire Lumens: 5291.0 lumens  
Efficiency: N/A  
Efficacy: 113.1 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
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



TEST NUMBER: P590820

CATALOG NUMBER: FSR-24-2-LD4-4LO-35-UNV-81-97-EDD

### Luminous Intensity Polar Plot



TEST NUMBER: P590820

CATALOG NUMBER: FSR-24-2-LD4-4LO-35-UNV-81-97-EDD

**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°	5649	5649	5649
5°	5631	5633	5752
10°	5516	5564	5604
15°	5560	5530	5561
20°	5466	5466	5524
25°	5298	5414	5474
30°	5225	5317	5459
35°	5102	5236	5353
40°	4904	5140	5163
45°	4756	4924	4932
50°	4599	4807	4715
55°	4382	4467	4435
60°	4098	4139	4064
65°	3654	3747	3628
70°	3135	3146	3058
75°	2483	2478	2381
80°	1663	1618	1554
85°	905	895	837

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°

Vertical Angle: 45°

Luminance: 5052 cd/sqm



TEST NUMBER: P590820

CATALOG NUMBER: FSR-24-2-LD4-4LO-35-UNV-81-97-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	197.5	3.7
10°-20°	559.7	10.6
20°-30°	838.5	15.8
30°-40°	993.8	18.8
40°-50°	995.6	18.8
50°-60°	845.1	16.0
60°-70°	569.8	10.8
70°-80°	250.4	4.7
80°-90°	40.7	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°	1595.6	30.2
0°-40°	2589.4	48.9
0°-60°	4430.2	83.7
0°-90°	5291.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5291.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2099	2099	2099	2099	2099	
5°	2084	2080	2085	2079	2129	197
15°	1996	1973	1985	1995	1996	556
25°	1784	1794	1823	1847	1844	825
35°	1553	1558	1594	1631	1630	964
45°	1250	1273	1294	1327	1296	967
55°	934	928	952	946	945	831
65°	574	566	588	566	570	571
75°	239	234	238	222	229	256
85°	29	28	29	28	27	42
90°	0	0	0	0	0	

TEST NUMBER: P590820

CATALOG NUMBER: FSR-24-2-LD4-4LO-35-UNV-81-97-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2099.3	2099.3	2099.3	2099.3	2099.3
2.5°	2117.5	2101.5	2086.6	2103.9	2114.5
5°	2084.4	2079.5	2085.2	2079.0	2129.2
7.5°	2041.6	2060.3	2071.1	2064.4	2067.4
10°	2018.8	2012.3	2036.4	2053.3	2050.8
12.5°	1994.4	2004.2	2005.5	2023.7	2025.3
15°	1995.8	1972.8	1984.9	1995.2	1996.1
17.5°	1918.3	1943.2	1951.6	1975.2	1945.9
20°	1908.8	1890.6	1908.8	1932.9	1929.1
22.5°	1850.5	1830.2	1869.2	1890.6	1889.3
25°	1784.4	1794.1	1823.4	1847.3	1843.5
27.5°	1726.4	1737.7	1779.5	1812.3	1791.1
30°	1681.6	1675.9	1711.2	1740.5	1756.7
32.5°	1601.7	1622.3	1663.5	1692.5	1677.0
35°	1553.2	1557.8	1593.8	1630.7	1629.6
37.5°	1468.3	1489.7	1540.4	1550.7	1541.2
40°	1395.9	1417.4	1463.2	1474.3	1469.7
42.5°	1342.5	1346.3	1385.6	1398.4	1378.1
45°	1249.6	1272.9	1294.0	1327.4	1295.9
47.5°	1170.4	1181.3	1226.8	1235.7	1219.2
50°	1098.6	1102.4	1148.2	1137.1	1126.2
52.5°	1008.3	1024.3	1050.1	1047.9	1035.2
55°	934.1	927.8	952.2	945.7	945.4
57.5°	844.9	855.7	875.8	865.5	848.9
60°	761.4	761.7	769.0	757.3	755.2
62.5°	668.4	671.7	673.3	658.9	682.3
65°	573.8	566.2	588.5	566.0	569.8
67.5°	486.8	490.6	488.4	474.3	479.8
70°	398.5	403.3	399.8	383.8	388.7
72.5°	317.7	311.7	315.5	295.5	304.7
75°	238.8	233.9	238.3	221.5	229.0
77.5°	162.6	166.4	163.7	154.8	159.9
80°	107.3	104.4	104.4	99.2	100.3
82.5°	62.6	59.6	58.8	57.2	59.6
85°	29.3	28.5	29.0	28.2	27.1
87.5°	10.6	10.8	10.8	10.3	9.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)