

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: P590638

Luminaire Tested: FSR-24-2-LD4-3STD-35-UNV-93-85-EDD

Issue Date: 12/8/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P590638  
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-35-UNV-93-85-EDD  
Description: 2X2 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

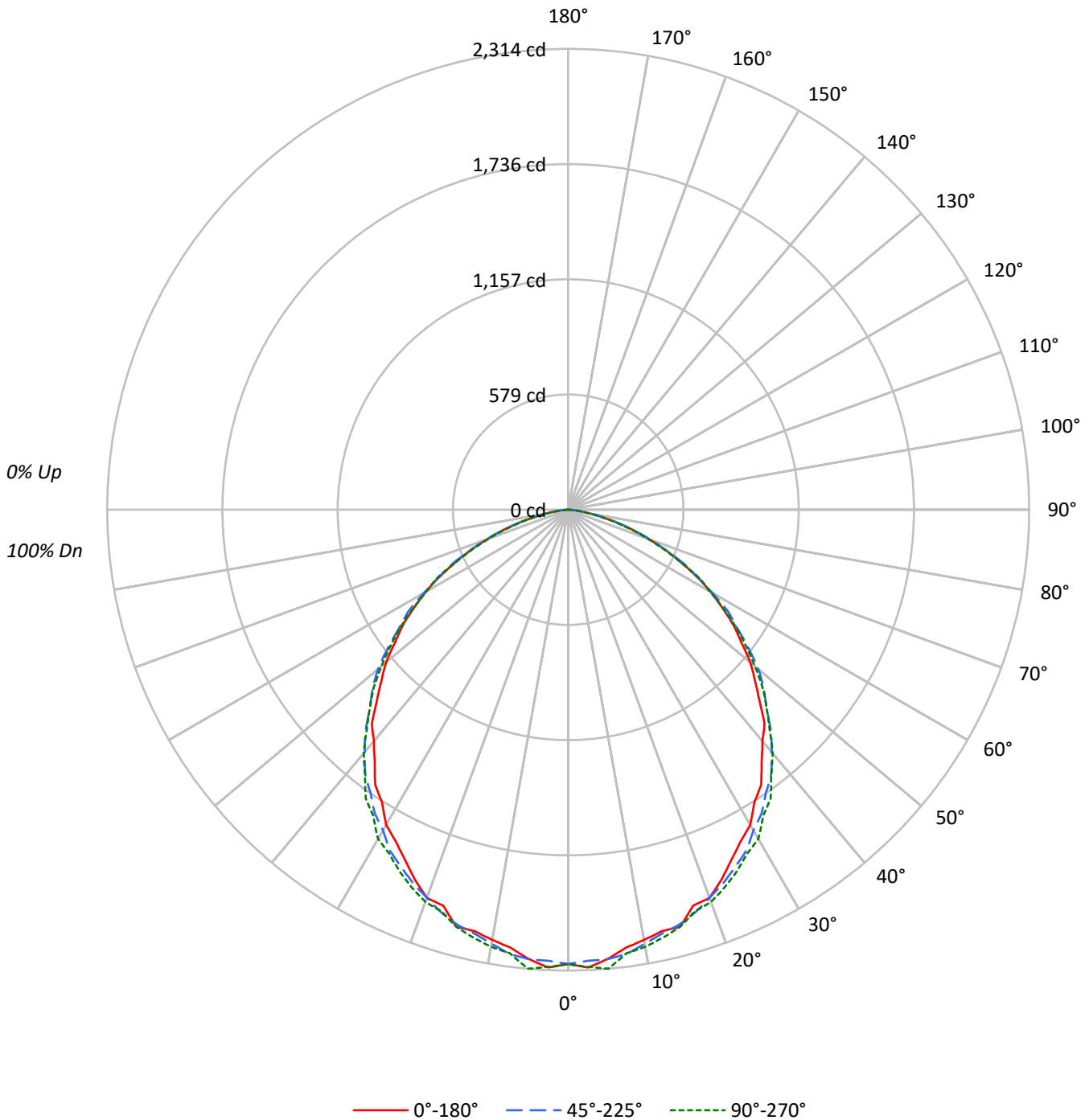
Lumens per Lamp: N/A  
Luminaire Lumens: 5749.0 lumens  
Efficiency: N/A  
Efficacy: 115.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.23 / 1.33  
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 50  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P590638

CATALOG NUMBER: FSR-24-2-LD4-3STD-35-UNV-93-85-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P590638

CATALOG NUMBER: FSR-24-2-LD4-3STD-35-UNV-93-85-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				
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°	6138	6138	6138
5°	6118	6120	6249
10°	5994	6046	6089
15°	6042	6009	6042
20°	5939	5939	6003
25°	5757	5883	5947
30°	5678	5777	5931
35°	5544	5689	5817
40°	5328	5585	5610
45°	5167	5351	5359
50°	4997	5223	5123
55°	4761	4854	4820
60°	4452	4497	4416
65°	3970	4071	3942
70°	3406	3418	3323
75°	2698	2692	2588
80°	1807	1757	1689
85°	982	973	911

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 67.5°  
 Vertical Angle: 45°  
 Luminance: 5489 cd/sqm



TEST NUMBER: P590638

CATALOG NUMBER: FSR-24-2-LD4-3STD-35-UNV-93-85-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	214.6	3.7
10°-20°	608.1	10.6
20°-30°	911.1	15.8
30°-40°	1079.8	18.8
40°-50°	1081.8	18.8
50°-60°	918.3	16.0
60°-70°	619.1	10.8
70°-80°	272.0	4.7
80°-90°	44.2	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°	1733.8	30.2
0°-40°	2813.6	48.9
0°-60°	4813.6	83.7
0°-90°	5749.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5749.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2281	2281	2281	2281	2281	
5°	2265	2260	2266	2259	2314	214
15°	2169	2144	2157	2168	2169	604
25°	1939	1949	1981	2007	2003	896
35°	1688	1693	1732	1772	1771	1048
45°	1358	1383	1406	1442	1408	1050
55°	1015	1008	1035	1028	1027	903
65°	624	615	639	615	619	620
75°	260	254	259	241	249	278
85°	32	31	32	31	30	46
90°	0	0	0	0	0	



TEST NUMBER: P590638

CATALOG NUMBER: FSR-24-2-LD4-3STD-35-UNV-93-85-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2281.1	2281.1	2281.1	2281.1	2281.1
2.5°	2300.8	2283.4	2267.2	2286.1	2297.6
5°	2264.9	2259.6	2265.7	2259.0	2313.5
7.5°	2218.3	2238.6	2250.4	2243.1	2246.3
10°	2193.6	2186.5	2212.7	2231.0	2228.3
12.5°	2167.1	2177.7	2179.2	2198.9	2200.7
15°	2168.6	2143.5	2156.8	2168.0	2168.8
17.5°	2084.3	2111.4	2120.5	2146.2	2114.4
20°	2074.0	2054.3	2074.0	2100.2	2096.1
22.5°	2010.7	1988.6	2031.0	2054.3	2052.8
25°	1938.8	1949.4	1981.2	2007.2	2003.0
27.5°	1875.8	1888.2	1933.5	1969.2	1946.2
30°	1827.2	1821.0	1859.3	1891.1	1908.8
32.5°	1740.3	1762.7	1807.5	1839.0	1822.2
35°	1687.6	1692.6	1731.8	1771.8	1770.7
37.5°	1595.4	1618.7	1673.8	1684.9	1674.6
40°	1516.8	1540.0	1589.8	1601.9	1596.9
42.5°	1458.8	1462.9	1505.6	1519.4	1497.3
45°	1357.7	1383.1	1406.0	1442.3	1408.1
47.5°	1271.7	1283.5	1333.0	1342.7	1324.8
50°	1193.7	1197.8	1247.6	1235.5	1223.7
52.5°	1095.6	1113.0	1141.0	1138.6	1124.8
55°	1014.9	1008.1	1034.6	1027.6	1027.3
57.5°	918.0	929.8	951.6	940.4	922.4
60°	827.3	827.6	835.6	822.9	820.5
62.5°	726.3	729.8	731.6	716.0	741.3
65°	623.5	615.3	639.4	615.0	619.1
67.5°	529.0	533.1	530.7	515.4	521.3
70°	432.9	438.2	434.4	417.0	422.3
72.5°	345.2	338.7	342.8	321.0	331.0
75°	259.5	254.2	258.9	240.6	248.9
77.5°	176.7	180.8	177.9	168.2	173.8
80°	116.6	113.4	113.4	107.8	109.0
82.5°	68.0	64.8	63.9	62.1	64.8
85°	31.8	30.9	31.5	30.6	29.5
87.5°	11.5	11.8	11.8	11.2	10.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)