

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: P562406

Luminaire Tested: FSR-24-4-LD4-1STD-40-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562406  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2102-135-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 7/20/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: FSR-24-4-LD4-1STD-40-UNV-93-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

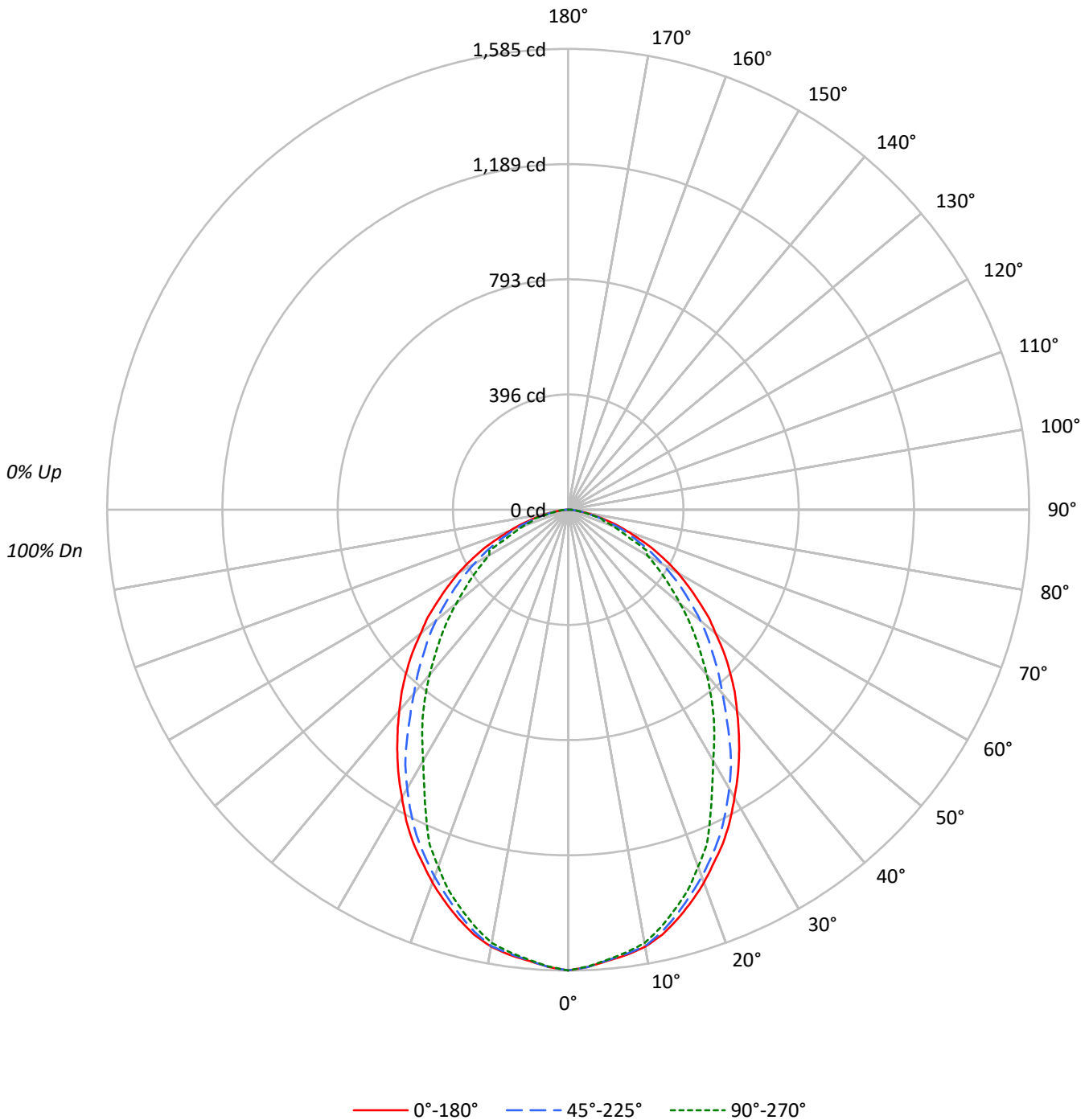
Lumens per Lamp: N/A  
Luminaire Lumens: 3111.0 lumens  
Efficiency: N/A  
Efficacy: 93.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P562406

CATALOG NUMBER: FSR-24-4-LD4-1STD-40-UNV-93-87-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P562406

CATALOG NUMBER: FSR-24-4-LD4-1STD-40-UNV-93-87-EDD-90

**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	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	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

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

	0°	45°	90°
0°	2132	2132	2132
5°	2103	2101	2098
10°	2085	2082	2068
15°	2029	2008	1980
20°	1954	1923	1870
25°	1874	1833	1719
30°	1776	1719	1548
35°	1682	1589	1432
40°	1586	1448	1303
45°	1495	1339	1178
50°	1384	1243	1051
55°	1281	1126	941
60°	1173	1006	843
65°	1032	881	747
70°	851	771	634
75°	676	591	619
80°	454	426	397
85°	283	340	395

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1495 cd/sqm



TEST NUMBER: P562406

CATALOG NUMBER: FSR-24-4-LD4-1STD-40-UNV-93-87-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.5	4.7
10°-20°	404.8	13.0
20°-30°	560.5	18.0
30°-40°	597.6	19.2
40°-50°	545.2	17.5
50°-60°	427.1	13.7
60°-70°	278.4	8.9
70°-80°	123.3	4.0
80°-90°	26.5	0.9
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°	1112.8	35.8
0°-40°	1710.5	55.0
0°-60°	2682.8	86.2
0°-90°	3111.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3111.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1585	1585	1585	1585	1585	
5°	1557	1555	1555	1554	1554	148
15°	1456	1456	1442	1427	1422	409
25°	1262	1255	1235	1191	1158	580
35°	1024	1017	967	894	872	640
45°	786	770	704	645	619	605
55°	546	530	480	423	401	490
65°	324	306	277	282	234	320
75°	130	121	114	108	119	139
85°	18	20	22	24	26	25
90°	0	0	0	0	0	



TEST NUMBER: P562406

CATALOG NUMBER: FSR-24-4-LD4-1STD-40-UNV-93-87-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1584.7	1584.7	1584.7	1584.7	1584.7
2.5°	1573.7	1573.7	1573.7	1571.9	1571.9
5°	1557.2	1555.4	1555.4	1553.6	1553.6
7.5°	1544.4	1542.6	1540.7	1538.9	1535.2
10°	1526.1	1526.1	1524.2	1515.1	1513.3
12.5°	1496.8	1494.9	1487.6	1474.8	1471.1
15°	1456.5	1456.5	1441.8	1427.1	1421.7
17.5°	1412.5	1410.7	1392.3	1377.7	1370.4
20°	1364.9	1361.2	1342.9	1319.1	1306.2
22.5°	1311.7	1311.7	1289.7	1258.6	1245.8
25°	1262.3	1254.9	1234.8	1190.8	1157.8
27.5°	1205.5	1194.5	1172.5	1110.2	1071.7
30°	1143.2	1137.7	1106.5	1025.9	996.6
32.5°	1084.6	1075.4	1042.4	958.1	934.3
35°	1024.1	1016.8	967.3	894.0	872.0
37.5°	963.6	954.5	892.2	833.6	806.1
40°	903.2	892.2	824.4	771.3	742.0
42.5°	846.4	831.7	765.8	709.0	676.0
45°	785.9	769.5	703.5	644.9	619.2
47.5°	725.5	710.8	650.4	589.9	560.6
50°	661.4	648.5	593.6	533.1	502.0
52.5°	608.2	588.1	535.0	474.5	448.8
55°	545.9	529.5	480.0	423.2	401.2
57.5°	489.2	472.7	426.9	373.7	355.4
60°	436.0	412.2	373.7	327.9	313.3
62.5°	377.4	359.1	326.1	287.6	305.9
65°	324.3	305.9	276.6	282.1	234.5
67.5°	265.6	256.5	230.8	205.2	197.9
70°	216.2	205.2	196.0	168.5	161.2
72.5°	172.2	161.2	148.4	133.7	128.2
75°	130.1	120.9	113.6	108.1	119.1
77.5°	89.8	86.1	80.6	75.1	73.3
80°	58.6	56.8	55.0	53.1	51.3
82.5°	34.8	34.8	34.8	34.8	34.8
85°	18.3	20.2	22.0	23.8	25.6
87.5°	11.0	11.0	12.8	14.7	16.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)