

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: P562093

Luminaire Tested: FSR-24-4-LD4-1HI-40-UNV-93-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562093  
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-LD4-1HI-40-UNV-93-96-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

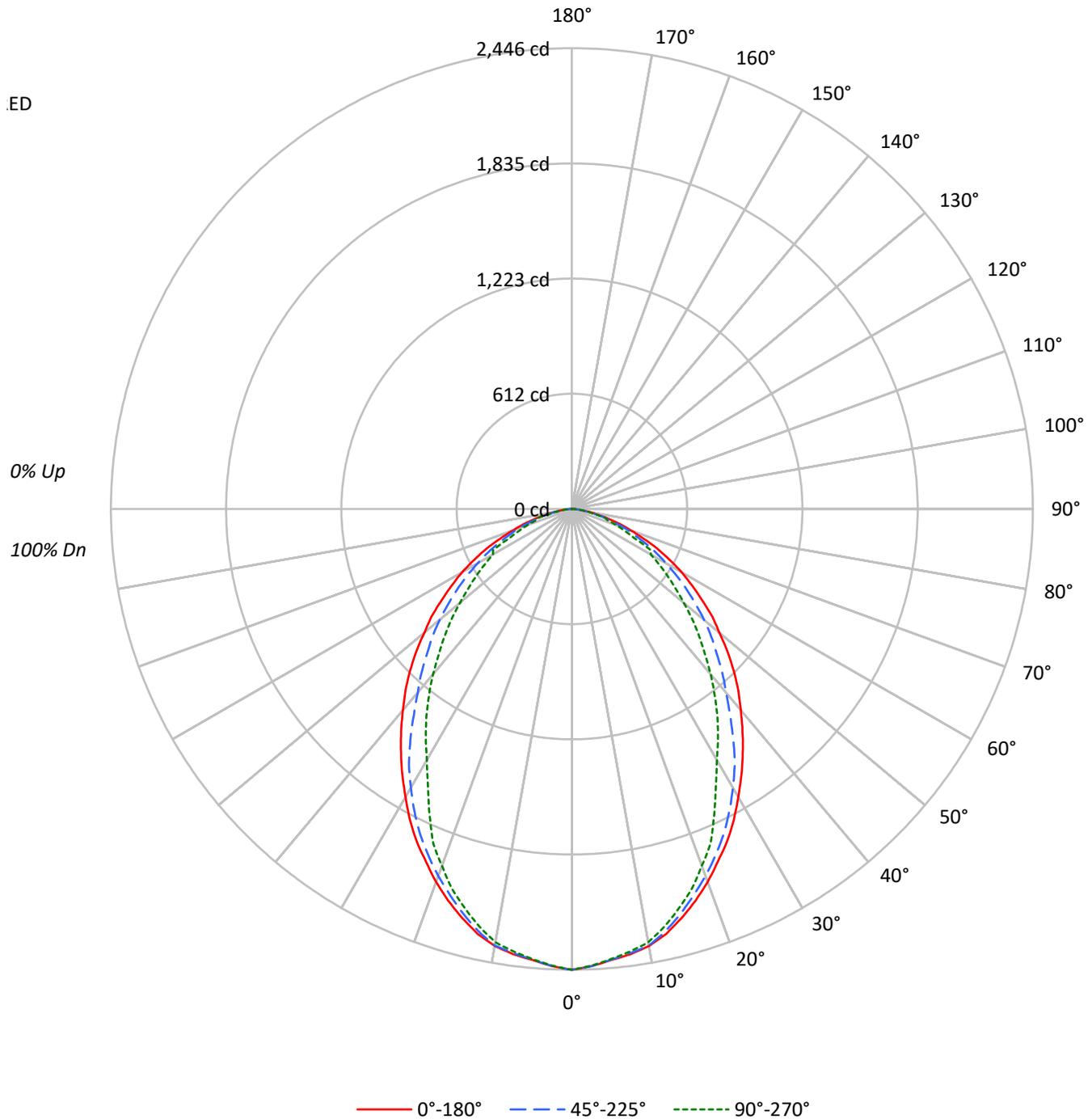
Lumens per Lamp: N/A  
Luminaire Lumens: 4802.0 lumens  
Efficiency: N/A  
Efficacy: 111.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P562093

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-93-96-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P562093

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-93-96-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	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°	3291	3291	3291
5°	3247	3243	3239
10°	3218	3215	3191
15°	3131	3100	3057
20°	3016	2968	2887
25°	2893	2830	2653
30°	2742	2654	2390
35°	2597	2452	2211
40°	2449	2235	2012
45°	2308	2066	1819
50°	2137	1918	1622
55°	1977	1738	1453
60°	1811	1552	1301
65°	1593	1359	1152
70°	1313	1190	979
75°	1044	911	955
80°	701	657	614
85°	437	523	611

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2308 cd/sqm



TEST NUMBER: P562093

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-93-96-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	227.7	4.7
10°-20°	624.9	13.0
20°-30°	865.1	18.0
30°-40°	922.5	19.2
40°-50°	841.6	17.5
50°-60°	659.3	13.7
60°-70°	429.7	8.9
70°-80°	190.4	4.0
80°-90°	40.9	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°	1717.7	35.8
0°-40°	2640.2	55.0
0°-60°	4141.0	86.2
0°-90°	4802.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4802.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2446	2446	2446	2446	2446	
5°	2404	2401	2401	2398	2398	228
15°	2248	2248	2226	2203	2194	632
25°	1948	1937	1906	1838	1787	894
35°	1581	1569	1493	1380	1346	988
45°	1213	1188	1086	995	956	934
55°	843	817	741	653	619	756
65°	500	472	427	436	362	493
75°	201	187	175	167	184	215
85°	28	31	34	37	40	39
90°	0	0	0	0	0	



TEST NUMBER: P562093

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-93-96-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2446.1	2446.1	2446.1	2446.1	2446.1
2.5°	2429.1	2429.1	2429.1	2426.3	2426.3
5°	2403.7	2400.8	2400.8	2398.0	2398.0
7.5°	2383.9	2381.0	2378.2	2375.4	2369.7
10°	2355.6	2355.6	2352.8	2338.6	2335.8
12.5°	2310.3	2307.5	2296.2	2276.4	2270.7
15°	2248.1	2248.1	2225.5	2202.9	2194.4
17.5°	2180.3	2177.4	2149.2	2126.5	2115.2
20°	2106.7	2101.1	2072.8	2036.0	2016.2
22.5°	2024.7	2024.7	1990.8	1942.7	1922.9
25°	1948.4	1937.1	1906.0	1838.1	1787.2
27.5°	1860.7	1843.7	1809.8	1713.7	1654.3
30°	1764.6	1756.1	1708.0	1583.6	1538.3
32.5°	1674.1	1659.9	1609.0	1479.0	1442.2
35°	1580.8	1569.4	1493.1	1380.0	1346.0
37.5°	1487.4	1473.3	1377.2	1286.7	1244.2
40°	1394.1	1377.2	1272.5	1190.5	1145.3
42.5°	1306.5	1283.8	1182.0	1094.4	1043.5
45°	1213.1	1187.7	1085.9	995.4	955.8
47.5°	1119.8	1097.2	1003.9	910.6	865.3
50°	1020.8	1001.1	916.2	822.9	774.8
52.5°	938.8	907.7	825.7	732.4	692.8
55°	842.7	817.2	740.9	653.2	619.3
57.5°	755.0	729.6	658.9	576.9	548.6
60°	673.0	636.3	576.9	506.2	483.6
62.5°	582.5	554.3	503.4	444.0	472.2
65°	500.5	472.2	427.0	435.5	362.0
67.5°	410.0	395.9	356.3	316.7	305.4
70°	333.7	316.7	302.6	260.2	248.8
72.5°	265.8	248.8	229.1	206.4	197.9
75°	200.8	186.6	175.3	166.8	183.8
77.5°	138.6	132.9	124.4	115.9	113.1
80°	90.5	87.7	84.8	82.0	79.2
82.5°	53.7	53.7	53.7	53.7	53.7
85°	28.3	31.1	33.9	36.8	39.6
87.5°	17.0	17.0	19.8	22.6	25.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)