

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: P562079

Luminaire Tested: FSR-24-4-LD4-1HI-40-UNV-82-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562079  
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-82-97-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

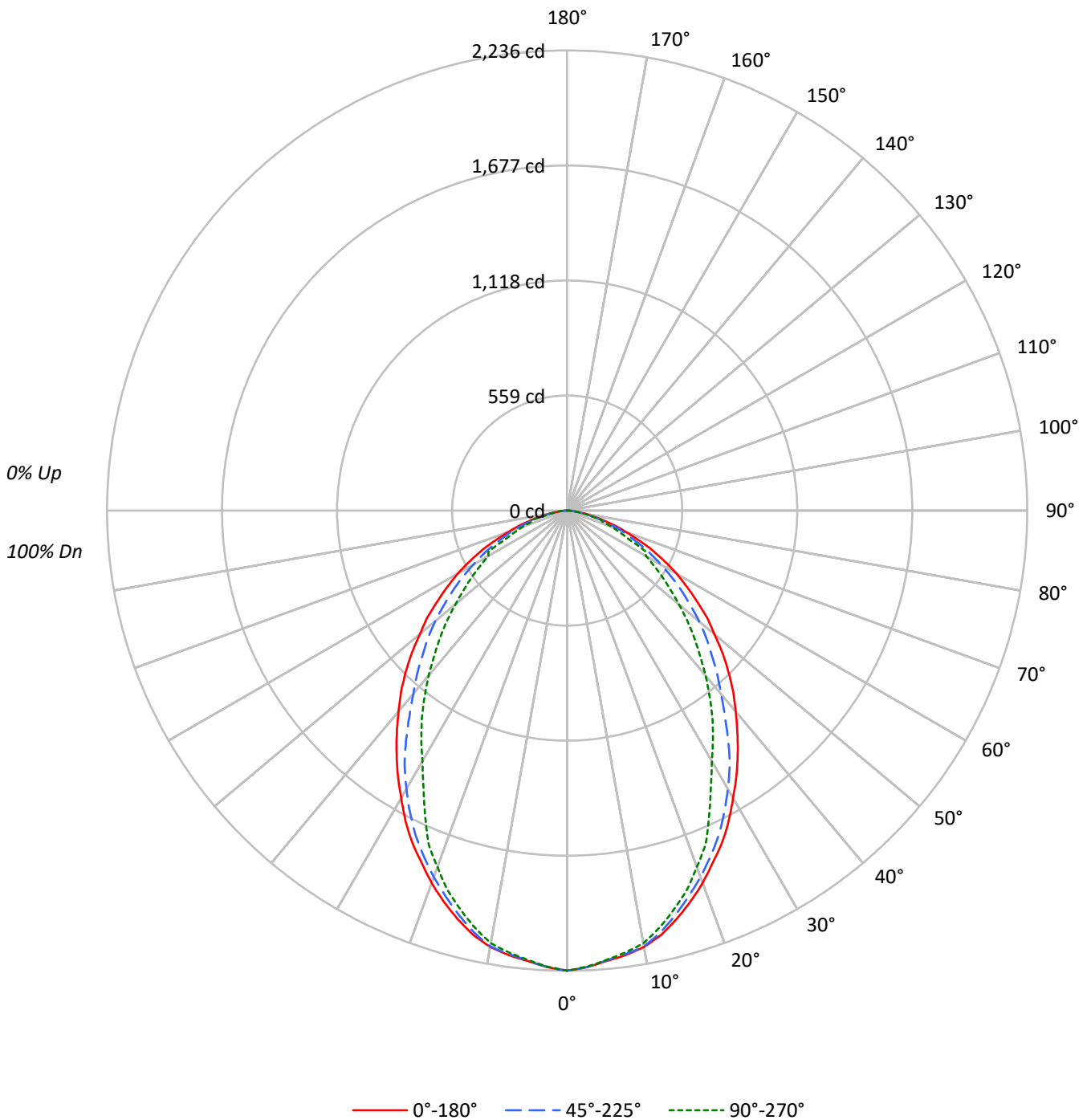
Lumens per Lamp: N/A  
Luminaire Lumens: 4389.0 lumens  
Efficiency: N/A  
Efficacy: 101.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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: P562079

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-82-97-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P562079

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-82-97-EDD

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	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									100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87									87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75									75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65									65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56									56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50									50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44									44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40									40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36									36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33									33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30									30																			

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

	0°	45°	90°
0°	3008	3008	3008
5°	2967	2964	2960
10°	2942	2938	2917
15°	2862	2833	2794
20°	2757	2713	2639
25°	2644	2586	2425
30°	2506	2425	2184
35°	2373	2242	2021
40°	2238	2043	1839
45°	2110	1889	1662
50°	1953	1753	1482
55°	1807	1589	1328
60°	1655	1419	1189
65°	1457	1243	1053
70°	1200	1088	895
75°	954	833	873
80°	641	600	561
85°	398	479	559

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2110 cd/sqm



TEST NUMBER: P562079

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-82-97-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	208.1	4.7
10°-20°	571.1	13.0
20°-30°	790.7	18.0
30°-40°	843.1	19.2
40°-50°	769.2	17.5
50°-60°	602.6	13.7
60°-70°	392.7	8.9
70°-80°	174.0	4.0
80°-90°	37.4	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°	1570.0	35.8
0°-40°	2413.1	55.0
0°-60°	3784.9	86.2
0°-90°	4389.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4389.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2236	2236	2236	2236	2236	
5°	2197	2194	2194	2192	2192	209
15°	2055	2055	2034	2013	2006	578
25°	1781	1770	1742	1680	1634	818
35°	1445	1434	1365	1261	1230	903
45°	1109	1086	992	910	874	854
55°	770	747	677	597	566	691
65°	458	432	390	398	331	451
75°	184	171	160	152	168	197
85°	26	28	31	34	36	36
90°	0	0	0	0	0	



TEST NUMBER: P562079

CATALOG NUMBER: FSR-24-4-LD4-1HI-40-UNV-82-97-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2235.7	2235.7	2235.7	2235.7	2235.7
2.5°	2220.2	2220.2	2220.2	2217.6	2217.6
5°	2196.9	2194.3	2194.3	2191.8	2191.8
7.5°	2178.8	2176.3	2173.7	2171.1	2165.9
10°	2153.0	2153.0	2150.4	2137.5	2134.9
12.5°	2111.6	2109.1	2098.7	2080.6	2075.5
15°	2054.8	2054.8	2034.1	2013.4	2005.7
17.5°	1992.7	1990.2	1964.3	1943.6	1933.3
20°	1925.5	1920.4	1894.5	1860.9	1842.8
22.5°	1850.6	1850.6	1819.6	1775.6	1757.5
25°	1780.8	1770.5	1742.0	1680.0	1633.5
27.5°	1700.7	1685.2	1654.2	1566.3	1512.0
30°	1612.8	1605.1	1561.1	1447.4	1406.0
32.5°	1530.1	1517.2	1470.6	1351.8	1318.2
35°	1444.8	1434.5	1364.7	1261.3	1230.3
37.5°	1359.5	1346.6	1258.7	1176.0	1137.2
40°	1274.2	1258.7	1163.1	1088.1	1046.8
42.5°	1194.1	1173.4	1080.4	1000.2	953.7
45°	1108.8	1085.5	992.5	909.8	873.6
47.5°	1023.5	1002.8	917.5	832.2	790.9
50°	933.0	915.0	837.4	752.1	708.2
52.5°	858.1	829.7	754.7	669.4	633.2
55°	770.2	747.0	677.2	597.0	566.0
57.5°	690.1	666.8	602.2	527.3	501.4
60°	615.1	581.5	527.3	462.6	442.0
62.5°	532.4	506.6	460.1	405.8	431.6
65°	457.5	431.6	390.3	398.0	330.8
67.5°	374.8	361.8	325.7	289.5	279.1
70°	305.0	289.5	276.6	237.8	227.4
72.5°	243.0	227.4	209.4	188.7	180.9
75°	183.5	170.6	160.2	152.5	168.0
77.5°	126.6	121.5	113.7	106.0	103.4
80°	82.7	80.1	77.5	75.0	72.4
82.5°	49.1	49.1	49.1	49.1	49.1
85°	25.8	28.4	31.0	33.6	36.2
87.5°	15.5	15.5	18.1	20.7	23.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)