

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: P562396

Luminaire Tested: FSR-24-4-LD4-1STD-40-UNV-82-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562396  
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-82-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

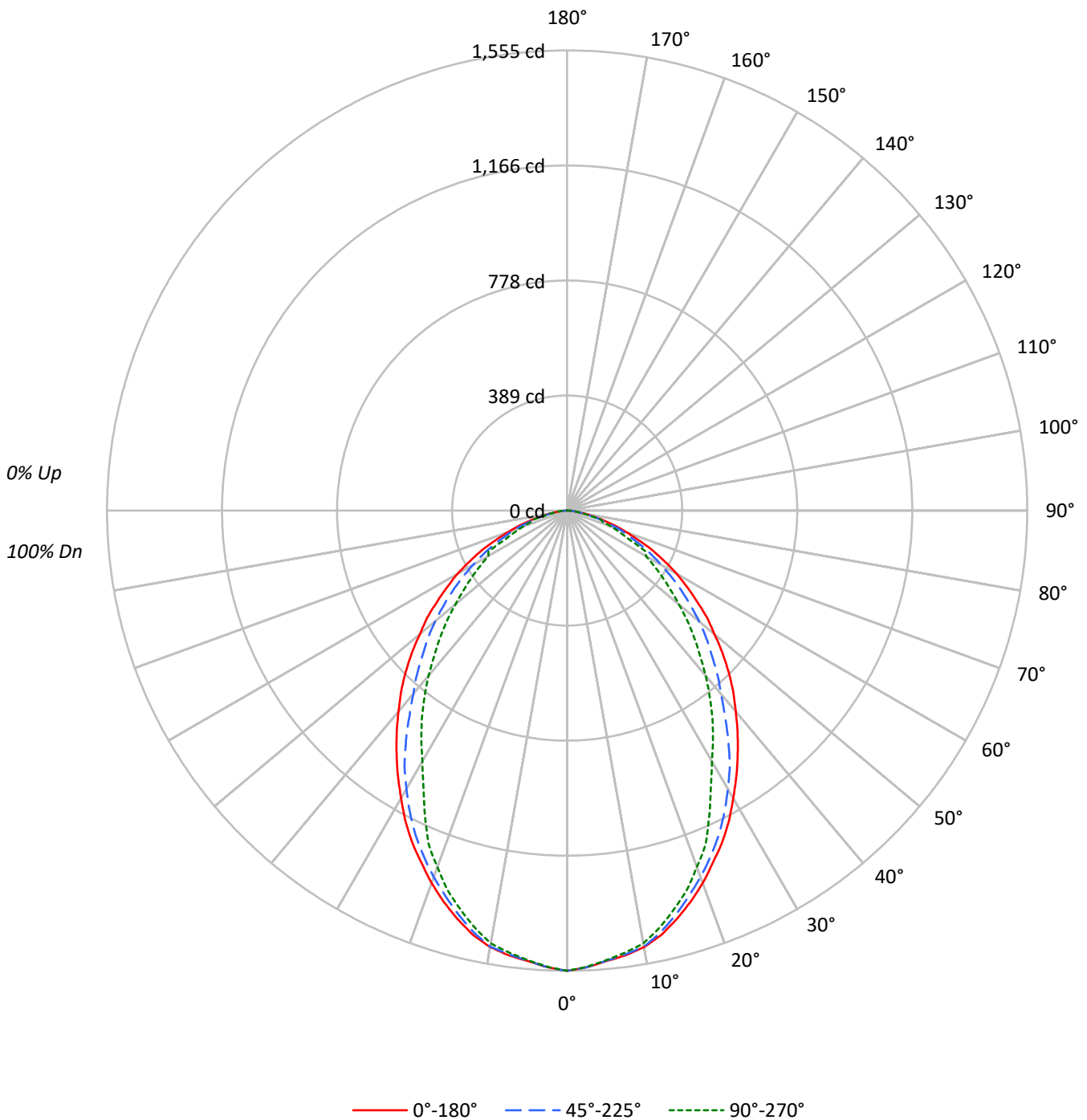
Lumens per Lamp: N/A  
Luminaire Lumens: 3053.0 lumens  
Efficiency: N/A  
Efficacy: 91.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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### Luminous Intensity Polar Plot





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**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	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°	2093	2093	2093
5°	2064	2062	2059
10°	2046	2044	2029
15°	1991	1971	1943
20°	1918	1887	1835
25°	1839	1799	1687
30°	1743	1687	1519
35°	1651	1559	1406
40°	1557	1421	1279
45°	1468	1314	1156
50°	1358	1219	1031
55°	1257	1105	924
60°	1151	987	827
65°	1013	864	733
70°	834	757	622
75°	663	580	608
80°	446	418	390
85°	278	333	389

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1468 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	144.8	4.7
10°-20°	397.3	13.0
20°-30°	550.0	18.0
30°-40°	586.5	19.2
40°-50°	535.0	17.5
50°-60°	419.2	13.7
60°-70°	273.2	8.9
70°-80°	121.0	4.0
80°-90°	26.0	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°	1092.1	35.8
0°-40°	1678.6	55.0
0°-60°	2632.8	86.2
0°-90°	3053.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3053.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1555	1555	1555	1555	1555	
5°	1528	1526	1526	1525	1525	145
15°	1429	1429	1415	1400	1395	402
25°	1239	1232	1212	1169	1136	569
35°	1005	998	949	877	856	628
45°	771	755	690	633	608	594
55°	536	520	471	415	394	481
65°	318	300	272	277	230	314
75°	128	119	112	106	117	137
85°	18	20	22	23	25	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1555.2	1555.2	1555.2	1555.2	1555.2
2.5°	1544.4	1544.4	1544.4	1542.6	1542.6
5°	1528.2	1526.4	1526.4	1524.6	1524.6
7.5°	1515.6	1513.8	1512.0	1510.2	1506.6
10°	1497.6	1497.6	1495.8	1486.8	1485.0
12.5°	1468.9	1467.1	1459.9	1447.3	1443.7
15°	1429.3	1429.3	1414.9	1400.5	1395.1
17.5°	1386.2	1384.4	1366.4	1352.0	1344.8
20°	1339.4	1335.8	1317.8	1294.5	1281.9
22.5°	1287.3	1287.3	1265.7	1235.1	1222.6
25°	1238.7	1231.5	1211.8	1168.6	1136.3
27.5°	1183.0	1172.2	1150.6	1089.5	1051.8
30°	1121.9	1116.5	1085.9	1006.8	978.0
32.5°	1064.3	1055.3	1023.0	940.3	916.9
35°	1005.0	997.8	949.3	877.4	855.8
37.5°	945.7	936.7	875.6	818.0	791.1
40°	886.3	875.6	809.0	756.9	728.1
42.5°	830.6	816.2	751.5	695.8	663.4
45°	771.3	755.1	690.4	632.9	607.7
47.5°	712.0	697.6	638.2	578.9	550.1
50°	649.0	636.4	582.5	523.2	492.6
52.5°	596.9	577.1	525.0	465.6	440.5
55°	535.8	519.6	471.0	415.3	393.7
57.5°	480.0	463.9	418.9	366.8	348.8
60°	427.9	404.5	366.8	321.8	307.4
62.5°	370.4	352.4	320.0	282.3	300.2
65°	318.2	300.2	271.5	276.9	230.1
67.5°	260.7	251.7	226.5	201.4	194.2
70°	212.1	201.4	192.4	165.4	158.2
72.5°	169.0	158.2	145.6	131.2	125.9
75°	127.6	118.7	111.5	106.1	116.9
77.5°	88.1	84.5	79.1	73.7	71.9
80°	57.5	55.7	53.9	52.1	50.3
82.5°	34.2	34.2	34.2	34.2	34.2
85°	18.0	19.8	21.6	23.4	25.2
87.5°	10.8	10.8	12.6	14.4	16.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)