

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: P562380

Luminaire Tested: FSR-24-4-LD4-1STD-40-UNV-81-96-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562380  
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-81-96-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

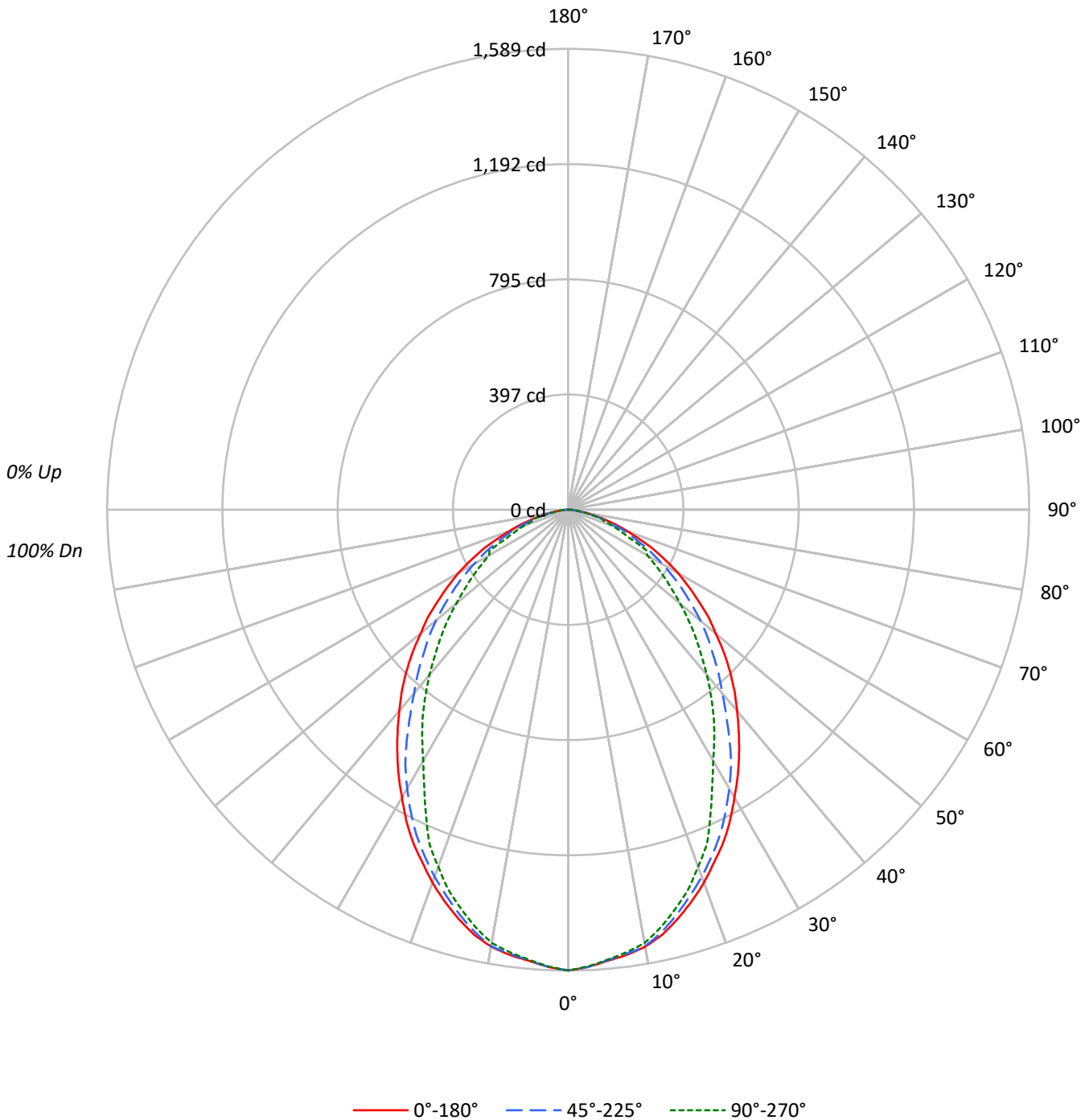
Lumens per Lamp: N/A  
Luminaire Lumens: 3119.0 lumens  
Efficiency: N/A  
Efficacy: 93.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2138	2138	2138
5°	2109	2106	2104
10°	2090	2088	2073
15°	2034	2014	1985
20°	1959	1928	1875
25°	1879	1838	1723
30°	1781	1724	1552
35°	1686	1593	1436
40°	1590	1452	1307
45°	1499	1342	1181
50°	1388	1246	1054
55°	1284	1129	943
60°	1176	1008	845
65°	1035	883	748
70°	852	773	636
75°	678	592	621
80°	456	427	398
85°	284	340	397

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1499 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.9	4.7
10°-20°	405.9	13.0
20°-30°	561.9	18.0
30°-40°	599.2	19.2
40°-50°	546.6	17.5
50°-60°	428.2	13.7
60°-70°	279.1	8.9
70°-80°	123.7	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°	1115.7	35.8
0°-40°	1714.9	55.0
0°-60°	2689.7	86.2
0°-90°	3119.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3119.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1589	1589	1589	1589	1589	
5°	1561	1559	1559	1558	1558	148
15°	1460	1460	1446	1431	1425	411
25°	1266	1258	1238	1194	1161	581
35°	1027	1019	970	896	874	642
45°	788	771	705	646	621	607
55°	547	531	481	424	402	491
65°	325	307	277	283	235	320
75°	130	121	114	108	119	140
85°	18	20	22	24	26	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1588.8	1588.8	1588.8	1588.8	1588.8
2.5°	1577.8	1577.8	1577.8	1575.9	1575.9
5°	1561.2	1559.4	1559.4	1557.6	1557.6
7.5°	1548.4	1546.5	1544.7	1542.9	1539.2
10°	1530.0	1530.0	1528.2	1519.0	1517.1
12.5°	1500.6	1498.8	1491.4	1478.6	1474.9
15°	1460.2	1460.2	1445.5	1430.8	1425.3
17.5°	1416.1	1414.3	1395.9	1381.2	1373.9
20°	1368.4	1364.7	1346.3	1322.5	1309.6
22.5°	1315.1	1315.1	1293.1	1261.8	1249.0
25°	1265.5	1258.2	1238.0	1193.9	1160.8
27.5°	1208.6	1197.6	1175.5	1113.1	1074.5
30°	1146.1	1140.6	1109.4	1028.6	999.2
32.5°	1087.3	1078.2	1045.1	960.6	936.7
35°	1026.7	1019.4	969.8	896.3	874.3
37.5°	966.1	956.9	894.5	835.7	808.2
40°	905.5	894.5	826.5	773.3	743.9
42.5°	848.6	833.9	767.8	710.8	677.8
45°	788.0	771.4	705.3	646.5	620.8
47.5°	727.3	712.7	652.0	591.4	562.0
50°	663.1	650.2	595.1	534.5	503.3
52.5°	609.8	589.6	536.3	475.7	450.0
55°	547.3	530.8	481.2	424.3	402.2
57.5°	490.4	473.9	428.0	374.7	356.3
60°	437.1	413.3	374.7	328.8	314.1
62.5°	378.4	360.0	326.9	288.4	306.7
65°	325.1	306.7	277.3	282.9	235.1
67.5°	266.3	257.1	231.4	205.7	198.4
70°	216.7	205.7	196.5	169.0	161.6
72.5°	172.7	161.6	148.8	134.1	128.6
75°	130.4	121.2	113.9	108.4	119.4
77.5°	90.0	86.3	80.8	75.3	73.5
80°	58.8	56.9	55.1	53.3	51.4
82.5°	34.9	34.9	34.9	34.9	34.9
85°	18.4	20.2	22.0	23.9	25.7
87.5°	11.0	11.0	12.9	14.7	16.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)