

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: P562368

Luminaire Tested: FSR-24-4-LD4-1STD-40-UNV-81-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562368  
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-81-84-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

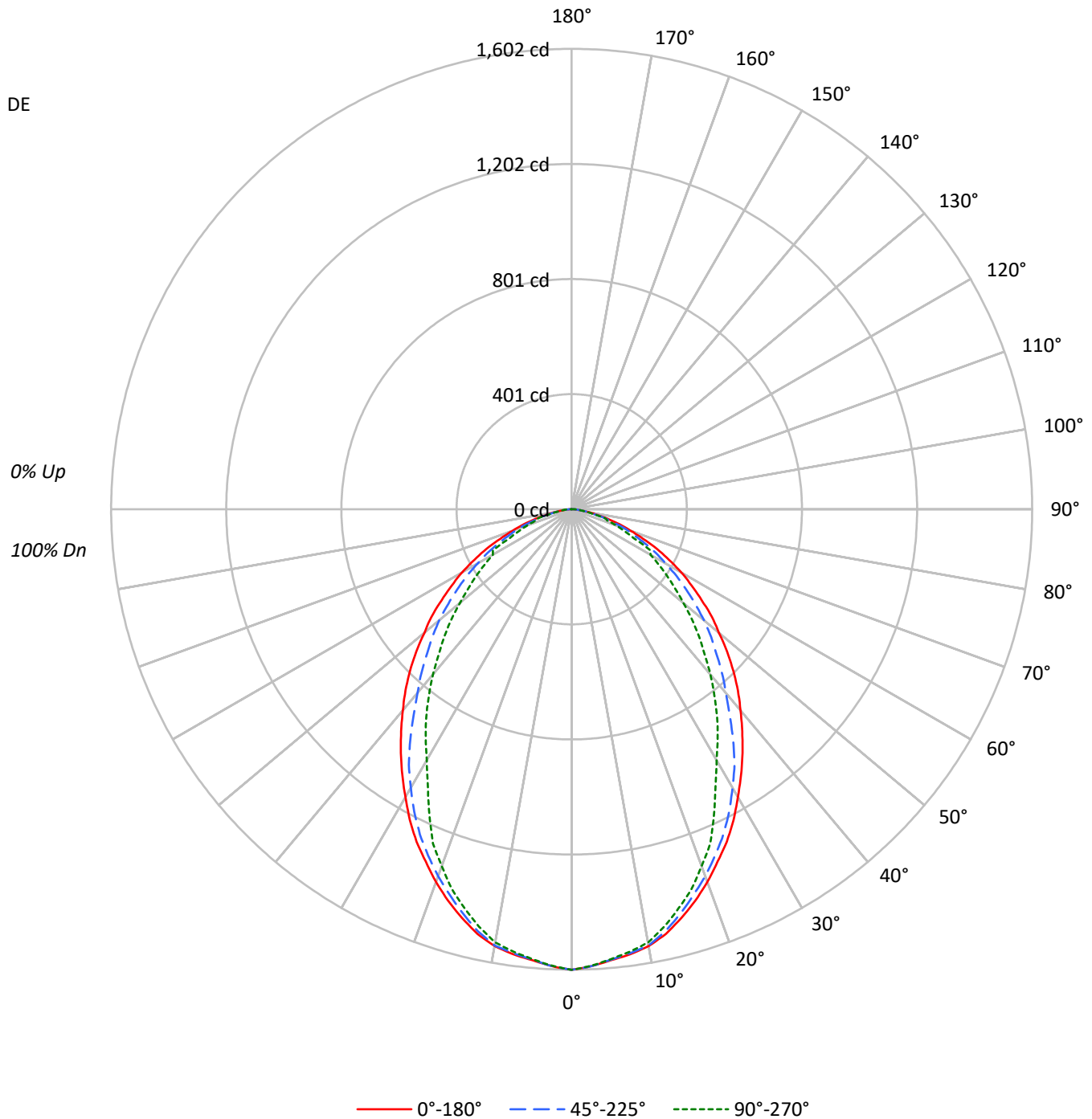
Lumens per Lamp: N/A  
Luminaire Lumens: 3146.0 lumens  
Efficiency: N/A  
Efficacy: 94.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2156	2156	2156
5°	2127	2124	2122
10°	2108	2106	2091
15°	2052	2031	2003
20°	1976	1944	1891
25°	1895	1854	1738
30°	1796	1739	1566
35°	1701	1607	1449
40°	1604	1464	1318
45°	1512	1354	1192
50°	1400	1257	1063
55°	1295	1139	952
60°	1186	1017	853
65°	1044	890	755
70°	860	780	641
75°	684	597	626
80°	459	431	402
85°	286	343	400

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1512 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.2	4.7
10°-20°	409.4	13.0
20°-30°	566.8	18.0
30°-40°	604.4	19.2
40°-50°	551.3	17.5
50°-60°	431.9	13.7
60°-70°	281.5	8.9
70°-80°	124.7	4.0
80°-90°	26.8	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°	1125.4	35.8
0°-40°	1729.7	55.0
0°-60°	2713.0	86.2
0°-90°	3146.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3146.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1602	1602	1602	1602	1602	
5°	1575	1573	1573	1571	1571	149
15°	1473	1473	1458	1443	1438	414
25°	1276	1269	1249	1204	1171	586
35°	1036	1028	978	904	882	647
45°	795	778	711	652	626	612
55°	552	535	485	428	406	495
65°	328	309	280	285	237	323
75°	132	122	115	109	120	141
85°	18	20	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1602.5	1602.5	1602.5	1602.5	1602.5
2.5°	1591.4	1591.4	1591.4	1589.6	1589.6
5°	1574.7	1572.9	1572.9	1571.0	1571.0
7.5°	1561.8	1559.9	1558.1	1556.2	1552.5
10°	1543.2	1543.2	1541.4	1532.1	1530.3
12.5°	1513.6	1511.8	1504.3	1491.4	1487.7
15°	1472.8	1472.8	1458.0	1443.2	1437.6
17.5°	1428.4	1426.5	1408.0	1393.2	1385.8
20°	1380.2	1376.5	1358.0	1333.9	1320.9
22.5°	1326.5	1326.5	1304.3	1272.8	1259.8
25°	1276.5	1269.1	1248.7	1204.2	1170.9
27.5°	1219.0	1207.9	1185.7	1122.7	1083.8
30°	1156.0	1150.5	1119.0	1037.5	1007.8
32.5°	1096.8	1087.5	1054.2	968.9	944.8
35°	1035.6	1028.2	978.2	904.1	881.9
37.5°	974.5	965.2	902.2	842.9	815.2
40°	913.3	902.2	833.7	780.0	750.3
42.5°	855.9	841.1	774.4	717.0	683.6
45°	794.8	778.1	711.4	652.1	626.2
47.5°	733.6	718.8	657.7	596.5	566.9
50°	668.8	655.8	600.3	539.1	507.6
52.5°	615.1	594.7	541.0	479.8	453.9
55°	552.1	535.4	485.4	428.0	405.7
57.5°	494.7	478.0	431.7	377.9	359.4
60°	440.9	416.8	377.9	331.6	316.8
62.5°	381.6	363.1	329.8	290.9	309.4
65°	327.9	309.4	279.7	285.3	237.1
67.5°	268.6	259.4	233.4	207.5	200.1
70°	218.6	207.5	198.2	170.4	163.0
72.5°	174.1	163.0	150.1	135.2	129.7
75°	131.5	122.3	114.9	109.3	120.4
77.5°	90.8	87.1	81.5	76.0	74.1
80°	59.3	57.4	55.6	53.7	51.9
82.5°	35.2	35.2	35.2	35.2	35.2
85°	18.5	20.4	22.2	24.1	25.9
87.5°	11.1	11.1	13.0	14.8	16.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)