

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: P562389

Luminaire Tested: FSR-24-4-LD4-1STD-40-UNV-82-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562389  
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-82-86-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

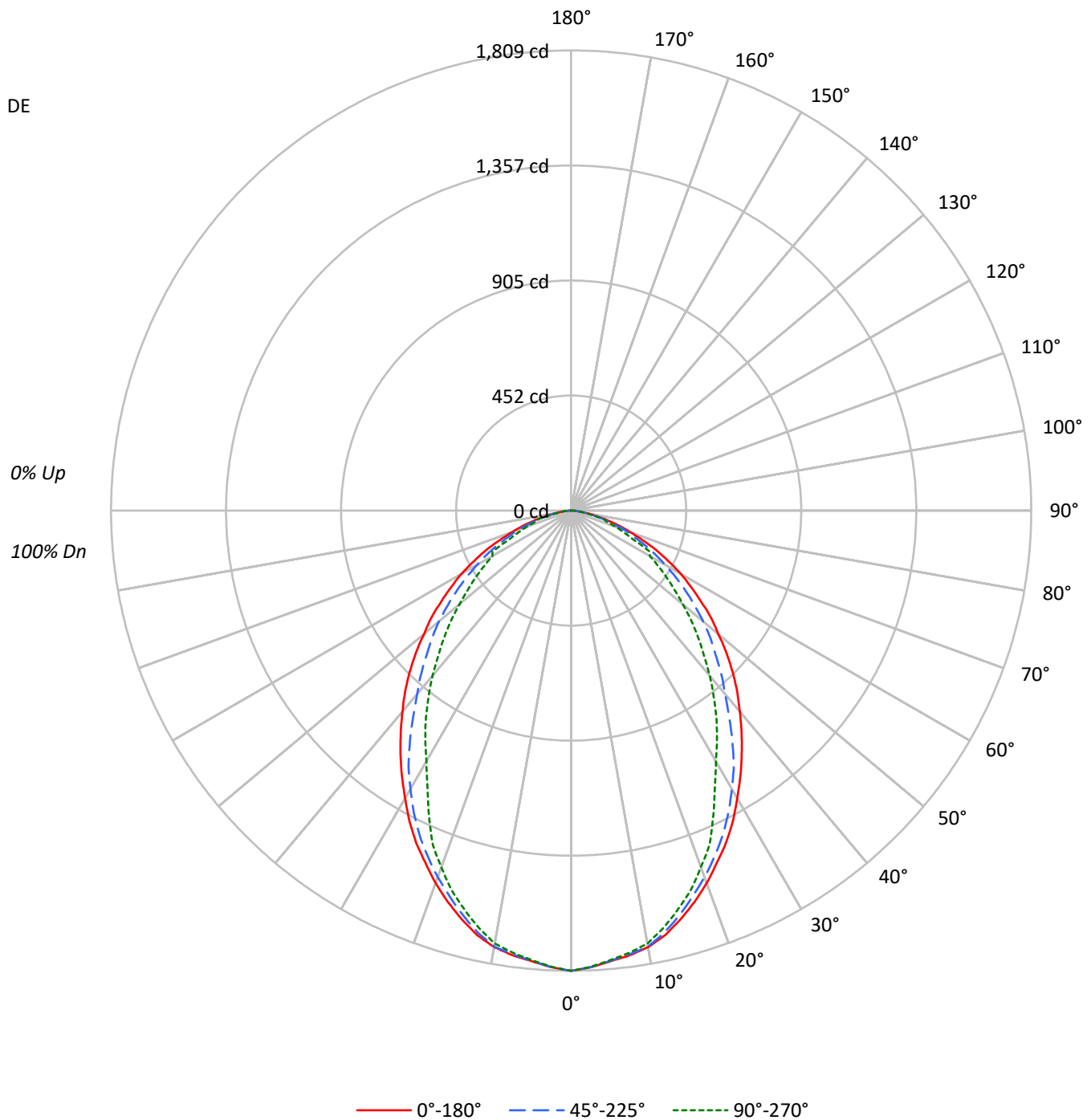
Lumens per Lamp: N/A  
Luminaire Lumens: 3552.0 lumens  
Efficiency: N/A  
Efficacy: 106.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2434	2434	2434
5°	2401	2399	2396
10°	2381	2378	2361
15°	2316	2293	2261
20°	2231	2195	2135
25°	2140	2093	1963
30°	2028	1963	1768
35°	1921	1814	1635
40°	1811	1653	1488
45°	1707	1528	1345
50°	1581	1419	1200
55°	1462	1285	1075
60°	1340	1148	963
65°	1179	1006	852
70°	971	880	724
75°	772	674	707
80°	518	487	454
85°	323	387	452

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1707 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	168.4	4.7
10°-20°	462.2	13.0
20°-30°	639.9	18.0
30°-40°	682.3	19.2
40°-50°	622.5	17.5
50°-60°	487.7	13.7
60°-70°	317.8	8.9
70°-80°	140.8	4.0
80°-90°	30.2	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°	1270.6	35.8
0°-40°	1952.9	55.0
0°-60°	3063.1	86.2
0°-90°	3552.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3552.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1809	1809	1809	1809	1809	
5°	1778	1776	1776	1774	1774	169
15°	1663	1663	1646	1630	1623	467
25°	1441	1433	1410	1360	1322	662
35°	1169	1161	1104	1021	996	731
45°	897	878	803	736	707	691
55°	623	604	548	483	458	559
65°	370	349	316	322	268	365
75°	148	138	130	123	136	159
85°	21	23	25	27	29	29
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1809.3	1809.3	1809.3	1809.3	1809.3
2.5°	1796.8	1796.8	1796.8	1794.7	1794.7
5°	1778.0	1775.9	1775.9	1773.8	1773.8
7.5°	1763.3	1761.2	1759.1	1757.0	1752.9
10°	1742.4	1742.4	1740.3	1729.9	1727.8
12.5°	1708.9	1706.8	1698.5	1683.8	1679.7
15°	1662.9	1662.9	1646.2	1629.5	1623.2
17.5°	1612.7	1610.6	1589.7	1573.0	1564.6
20°	1558.3	1554.2	1533.2	1506.0	1491.4
22.5°	1497.7	1497.7	1472.6	1437.0	1422.4
25°	1441.2	1432.8	1409.8	1359.6	1322.0
27.5°	1376.4	1363.8	1338.7	1267.6	1223.7
30°	1305.2	1299.0	1263.4	1171.4	1137.9
32.5°	1238.3	1227.8	1190.2	1094.0	1066.8
35°	1169.3	1160.9	1104.4	1020.8	995.7
37.5°	1100.2	1089.8	1018.7	951.7	920.4
40°	1031.2	1018.7	941.3	880.6	847.1
42.5°	966.4	949.6	874.3	809.5	771.8
45°	897.3	878.5	803.2	736.3	707.0
47.5°	828.3	811.6	742.6	673.5	640.1
50°	755.1	740.5	677.7	608.7	573.1
52.5°	694.5	671.4	610.8	541.8	512.5
55°	623.3	604.5	548.0	483.2	458.1
57.5°	558.5	539.7	487.4	426.7	405.8
60°	497.8	470.6	426.7	374.4	357.7
62.5°	430.9	410.0	372.3	328.4	349.3
65°	370.2	349.3	315.9	322.1	267.7
67.5°	303.3	292.8	263.6	234.3	225.9
70°	246.8	234.3	223.8	192.4	184.1
72.5°	196.6	184.1	169.4	152.7	146.4
75°	148.5	138.1	129.7	123.4	136.0
77.5°	102.5	98.3	92.0	85.8	83.7
80°	66.9	64.8	62.8	60.7	58.6
82.5°	39.7	39.7	39.7	39.7	39.7
85°	20.9	23.0	25.1	27.2	29.3
87.5°	12.6	12.6	14.6	16.7	18.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)