

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: P562197

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562197  
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-LD4-1LO-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**

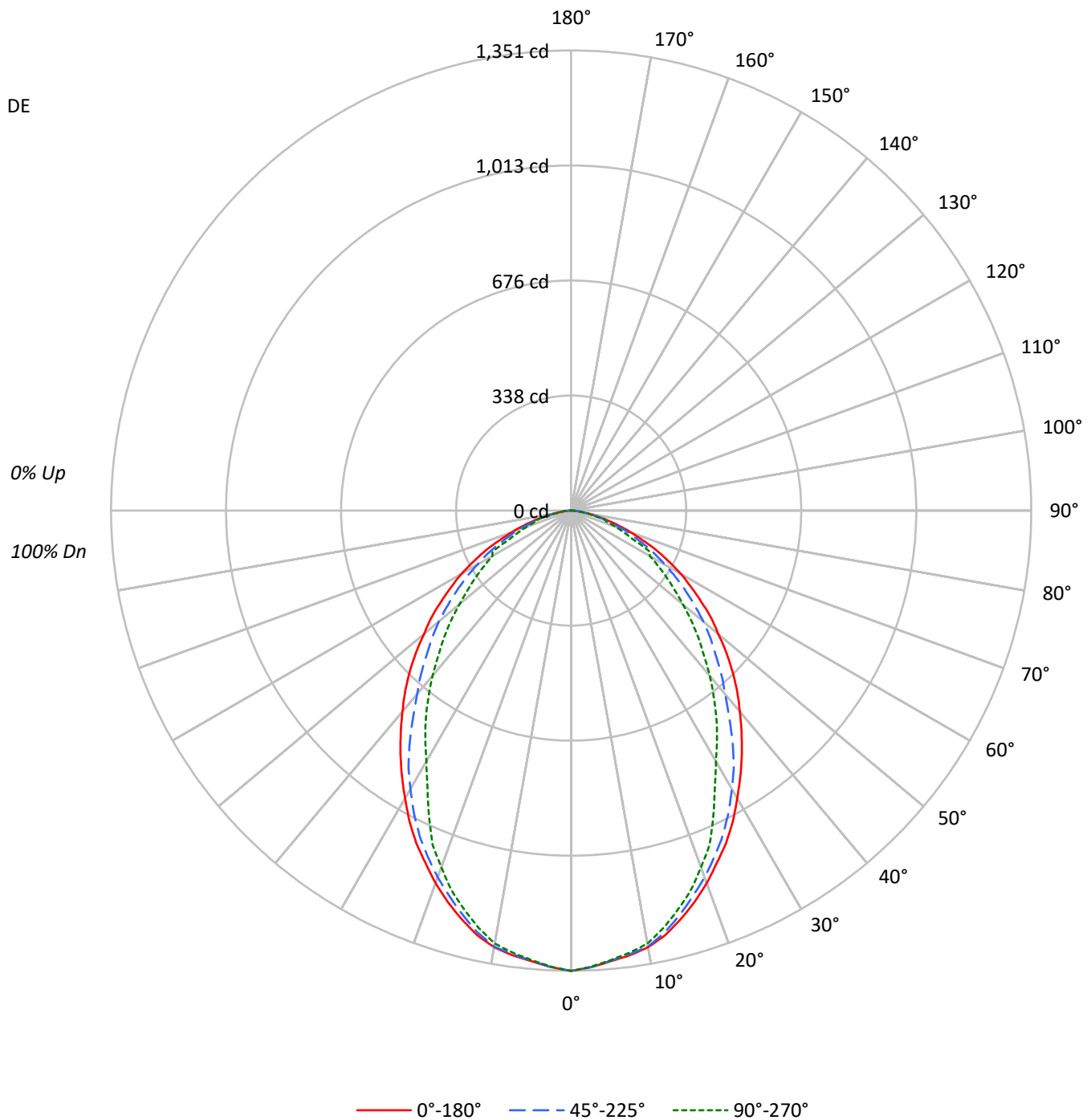
Lumens per Lamp: N/A  
Luminaire Lumens: 2653.0 lumens  
Efficiency: N/A  
Efficacy: 113.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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											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°	1818	1818	1818
5°	1794	1791	1789
10°	1778	1776	1763
15°	1730	1713	1689
20°	1667	1640	1595
25°	1598	1563	1466
30°	1515	1466	1320
35°	1434	1355	1222
40°	1353	1235	1111
45°	1275	1141	1005
50°	1181	1060	896
55°	1092	960	802
60°	1001	858	719
65°	880	751	637
70°	725	658	541
75°	577	504	528
80°	387	363	339
85°	241	289	338

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1275 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	125.8	4.7
10°-20°	345.2	13.0
20°-30°	478.0	18.0
30°-40°	509.6	19.2
40°-50°	464.9	17.5
50°-60°	364.2	13.7
60°-70°	237.4	8.9
70°-80°	105.2	4.0
80°-90°	22.6	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°	949.0	35.8
0°-40°	1458.6	55.0
0°-60°	2287.8	86.2
0°-90°	2653.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2653.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1351	1351	1351	1351	1351	
5°	1328	1326	1326	1325	1325	126
15°	1242	1242	1230	1217	1212	349
25°	1076	1070	1053	1016	987	494
35°	873	867	825	762	744	546
45°	670	656	600	550	528	516
55°	466	452	409	361	342	418
65°	276	261	236	241	200	272
75°	111	103	97	92	102	119
85°	16	17	19	20	22	22
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1351.4	1351.4	1351.4	1351.4	1351.4
2.5°	1342.0	1342.0	1342.0	1340.5	1340.5
5°	1328.0	1326.4	1326.4	1324.8	1324.8
7.5°	1317.0	1315.5	1313.9	1312.3	1309.2
10°	1301.4	1301.4	1299.8	1292.0	1290.5
12.5°	1276.4	1274.8	1268.6	1257.7	1254.5
15°	1242.0	1242.0	1229.5	1217.0	1212.4
17.5°	1204.5	1203.0	1187.4	1174.9	1168.6
20°	1163.9	1160.8	1145.2	1124.9	1113.9
22.5°	1118.6	1118.6	1099.9	1073.3	1062.4
25°	1076.4	1070.2	1053.0	1015.5	987.4
27.5°	1028.0	1018.6	999.9	946.8	914.0
30°	974.9	970.2	943.6	874.9	849.9
32.5°	924.9	917.1	889.0	817.1	796.8
35°	873.3	867.1	824.9	762.4	743.7
37.5°	821.8	814.0	760.8	710.9	687.4
40°	770.2	760.8	703.0	657.7	632.7
42.5°	721.8	709.3	653.0	604.6	576.5
45°	670.2	656.2	599.9	549.9	528.1
47.5°	618.7	606.2	554.6	503.1	478.1
50°	564.0	553.1	506.2	454.6	428.1
52.5°	518.7	501.5	456.2	404.6	382.8
55°	465.6	451.5	409.3	360.9	342.1
57.5°	417.1	403.1	364.0	318.7	303.1
60°	371.8	351.5	318.7	279.7	267.2
62.5°	321.8	306.2	278.1	245.3	260.9
65°	276.5	260.9	235.9	240.6	200.0
67.5°	226.5	218.7	196.9	175.0	168.7
70°	184.4	175.0	167.2	143.7	137.5
72.5°	146.9	137.5	126.5	114.0	109.4
75°	110.9	103.1	96.9	92.2	101.6
77.5°	76.6	73.4	68.7	64.1	62.5
80°	50.0	48.4	46.9	45.3	43.7
82.5°	29.7	29.7	29.7	29.7	29.7
85°	15.6	17.2	18.7	20.3	21.9
87.5°	9.4	9.4	10.9	12.5	14.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)