

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: P562120

Luminaire Tested: FSR-24-4-LD4-1HI-50-UNV-81-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562120  
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-LD4-1HI-50-UNV-81-88-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

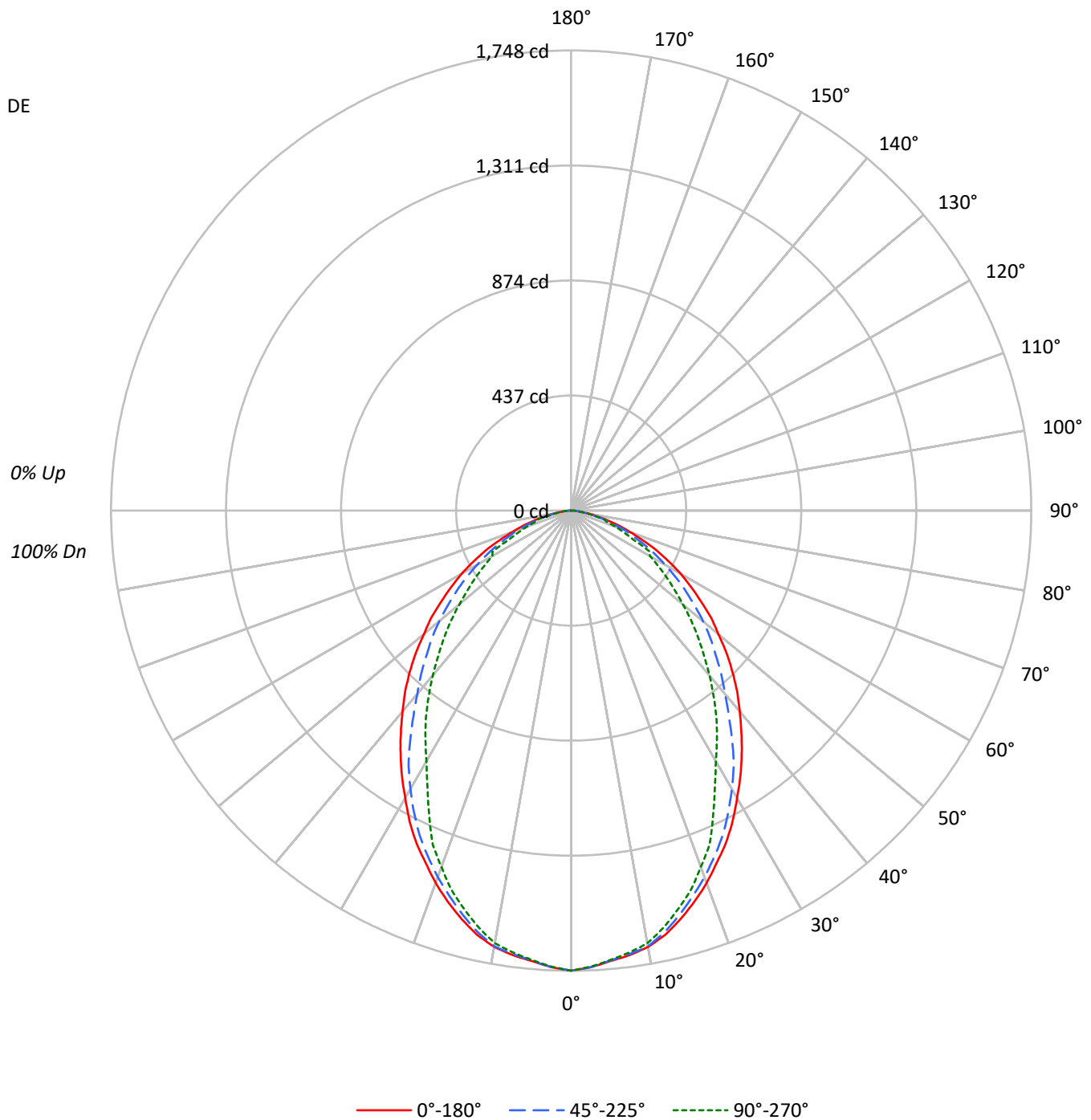
Lumens per Lamp: N/A  
Luminaire Lumens: 3431.0 lumens  
Efficiency: N/A  
Efficacy: 79.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2352	2352	2352
5°	2320	2317	2314
10°	2300	2297	2280
15°	2238	2215	2184
20°	2155	2121	2063
25°	2067	2022	1896
30°	1959	1896	1708
35°	1855	1752	1580
40°	1750	1597	1437
45°	1649	1476	1299
50°	1527	1370	1159
55°	1412	1242	1038
60°	1294	1109	930
65°	1138	971	823
70°	938	851	699
75°	746	651	683
80°	501	470	439
85°	312	374	437

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1649 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	162.7	4.7
10°-20°	446.5	13.0
20°-30°	618.1	18.0
30°-40°	659.1	19.2
40°-50°	601.3	17.5
50°-60°	471.1	13.7
60°-70°	307.0	8.9
70°-80°	136.0	4.0
80°-90°	29.2	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°	1227.3	35.8
0°-40°	1886.4	55.0
0°-60°	2958.8	86.2
0°-90°	3431.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3431.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1748	1748	1748	1748	1748	
5°	1717	1715	1715	1713	1713	163
15°	1606	1606	1590	1574	1568	452
25°	1392	1384	1362	1313	1277	639
35°	1129	1121	1067	986	962	706
45°	867	849	776	711	683	668
55°	602	584	529	467	442	540
65°	358	337	305	311	259	352
75°	144	133	125	119	131	154
85°	20	22	24	26	28	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1747.7	1747.7	1747.7	1747.7	1747.7
2.5°	1735.6	1735.6	1735.6	1733.6	1733.6
5°	1717.4	1715.4	1715.4	1713.4	1713.4
7.5°	1703.3	1701.2	1699.2	1697.2	1693.2
10°	1683.1	1683.1	1681.0	1670.9	1668.9
12.5°	1650.7	1648.7	1640.6	1626.5	1622.4
15°	1606.3	1606.3	1590.1	1573.9	1567.9
17.5°	1557.8	1555.8	1535.6	1519.4	1511.3
20°	1505.2	1501.2	1481.0	1454.7	1440.6
22.5°	1446.7	1446.7	1422.4	1388.1	1373.9
25°	1392.1	1384.0	1361.8	1313.3	1276.9
27.5°	1329.5	1317.3	1293.1	1224.4	1182.0
30°	1260.8	1254.7	1220.4	1131.5	1099.1
32.5°	1196.1	1186.0	1149.6	1056.7	1030.4
35°	1129.4	1121.4	1066.8	986.0	961.7
37.5°	1062.8	1052.7	984.0	919.3	889.0
40°	996.1	984.0	909.2	850.6	818.3
42.5°	933.5	917.3	844.6	781.9	745.6
45°	866.8	848.6	775.9	711.2	682.9
47.5°	800.1	783.9	717.3	650.6	618.3
50°	729.4	715.2	654.6	588.0	553.6
52.5°	670.8	648.6	590.0	523.3	495.0
55°	602.1	583.9	529.4	466.7	442.5
57.5°	539.5	521.3	470.8	412.2	392.0
60°	480.9	454.6	412.2	361.7	345.5
62.5°	416.2	396.0	359.6	317.2	337.4
65°	357.6	337.4	305.1	311.2	258.6
67.5°	293.0	282.9	254.6	226.3	218.2
70°	238.4	226.3	216.2	185.9	177.8
72.5°	189.9	177.8	163.7	147.5	141.4
75°	143.5	133.4	125.3	119.2	131.3
77.5°	99.0	95.0	88.9	82.8	80.8
80°	64.7	62.6	60.6	58.6	56.6
82.5°	38.4	38.4	38.4	38.4	38.4
85°	20.2	22.2	24.2	26.3	28.3
87.5°	12.1	12.1	14.1	16.2	18.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)