

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: P562438

Luminaire Tested: FSR-24-4-LD4-1STD-50-UNV-81-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562438  
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-50-UNV-81-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

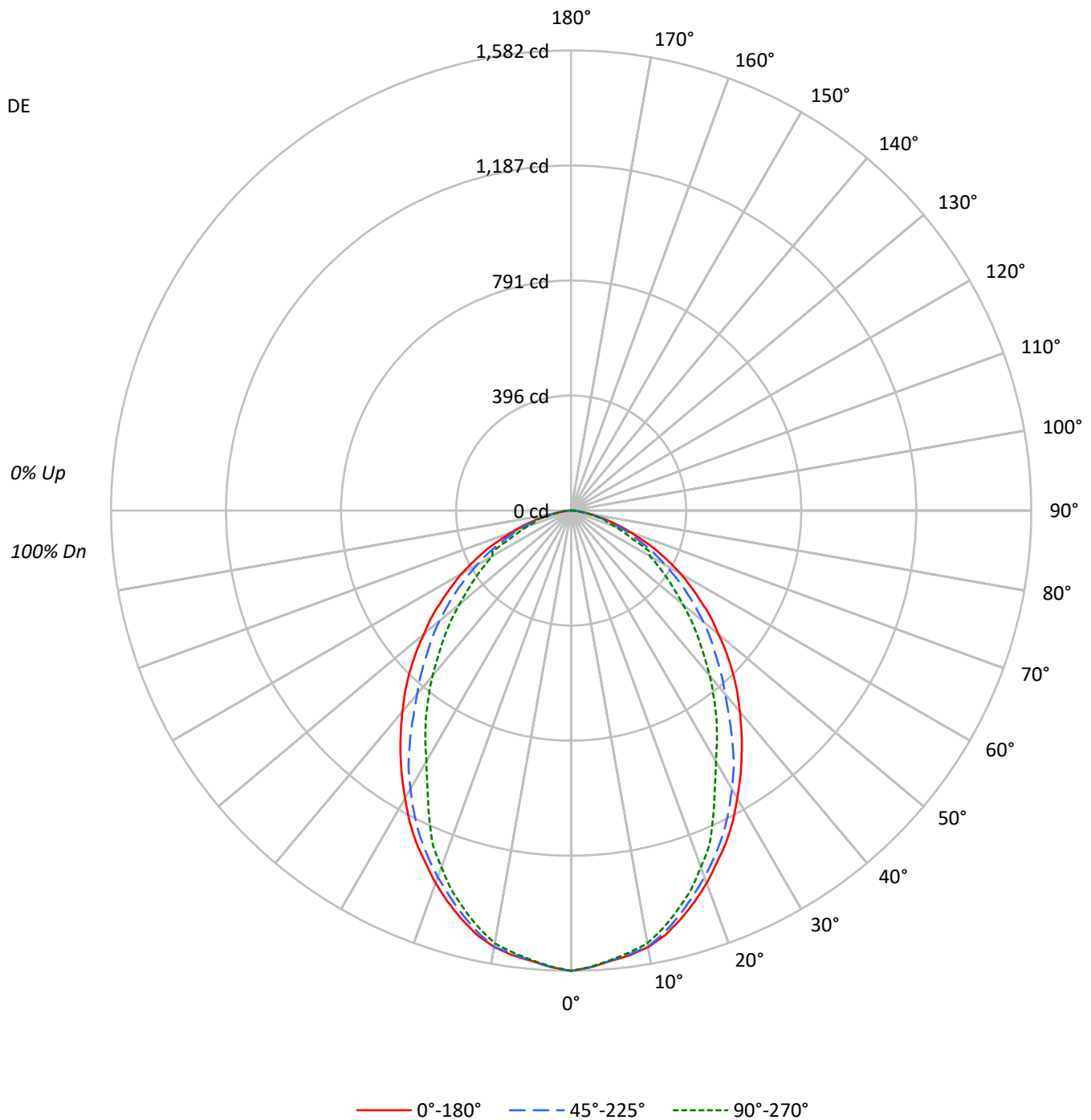
Lumens per Lamp: N/A  
Luminaire Lumens: 3106.0 lumens  
Efficiency: N/A  
Efficacy: 93.3 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2129	2129	2129
5°	2100	2097	2095
10°	2082	2079	2064
15°	2025	2005	1977
20°	1951	1920	1867
25°	1871	1830	1716
30°	1773	1716	1546
35°	1679	1586	1430
40°	1584	1446	1301
45°	1493	1337	1176
50°	1382	1240	1049
55°	1279	1124	940
60°	1171	1004	842
65°	1031	879	745
70°	849	770	633
75°	675	590	618
80°	453	425	397
85°	283	338	395

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1493 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	147.3	4.7
10°-20°	404.2	13.0
20°-30°	559.6	18.0
30°-40°	596.7	19.2
40°-50°	544.3	17.5
50°-60°	426.4	13.7
60°-70°	277.9	8.9
70°-80°	123.1	4.0
80°-90°	26.4	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°	1111.0	35.8
0°-40°	1707.7	55.0
0°-60°	2678.5	86.2
0°-90°	3106.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3106.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1582	1582	1582	1582	1582	
5°	1555	1553	1553	1551	1551	148
15°	1454	1454	1440	1425	1419	409
25°	1260	1253	1233	1189	1156	579
35°	1022	1015	966	893	871	639
45°	785	768	702	644	618	604
55°	545	529	479	422	401	489
65°	324	306	276	282	234	319
75°	130	121	113	108	119	139
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°	1582.2	1582.2	1582.2	1582.2	1582.2
2.5°	1571.2	1571.2	1571.2	1569.4	1569.4
5°	1554.7	1552.9	1552.9	1551.1	1551.1
7.5°	1541.9	1540.1	1538.3	1536.4	1532.8
10°	1523.6	1523.6	1521.8	1512.6	1510.8
12.5°	1494.4	1492.5	1485.2	1472.4	1468.8
15°	1454.1	1454.1	1439.5	1424.9	1419.4
17.5°	1410.2	1408.4	1390.1	1375.5	1368.2
20°	1362.7	1359.0	1340.7	1316.9	1304.1
22.5°	1309.6	1309.6	1287.7	1256.6	1243.8
25°	1260.2	1252.9	1232.8	1188.9	1156.0
27.5°	1203.5	1192.6	1170.6	1108.4	1070.0
30°	1141.3	1135.9	1104.8	1024.3	995.0
32.5°	1082.8	1073.7	1040.7	956.6	932.8
35°	1022.5	1015.1	965.8	892.6	870.6
37.5°	962.1	953.0	890.8	832.2	804.8
40°	901.7	890.8	823.1	770.0	740.8
42.5°	845.0	830.4	764.6	707.9	674.9
45°	784.7	768.2	702.4	643.8	618.2
47.5°	724.3	709.7	649.3	589.0	559.7
50°	660.3	647.5	592.6	532.3	501.2
52.5°	607.3	587.1	534.1	473.7	448.1
55°	545.1	528.6	479.2	422.5	400.6
57.5°	488.4	471.9	426.2	373.1	354.8
60°	435.3	411.5	373.1	327.4	312.8
62.5°	376.8	358.5	325.6	287.2	305.5
65°	323.7	305.5	276.2	281.7	234.1
67.5°	265.2	256.1	230.5	204.9	197.5
70°	215.8	204.9	195.7	168.3	161.0
72.5°	171.9	161.0	148.2	133.5	128.0
75°	129.9	120.7	113.4	107.9	118.9
77.5°	89.6	86.0	80.5	75.0	73.2
80°	58.5	56.7	54.9	53.0	51.2
82.5°	34.8	34.8	34.8	34.8	34.8
85°	18.3	20.1	21.9	23.8	25.6
87.5°	11.0	11.0	12.8	14.6	16.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)