

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: P562569

Luminaire Tested: FSR-24-4-LD4-2HI-40-UNV-81-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562569  
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-LD4-2HI-40-UNV-81-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

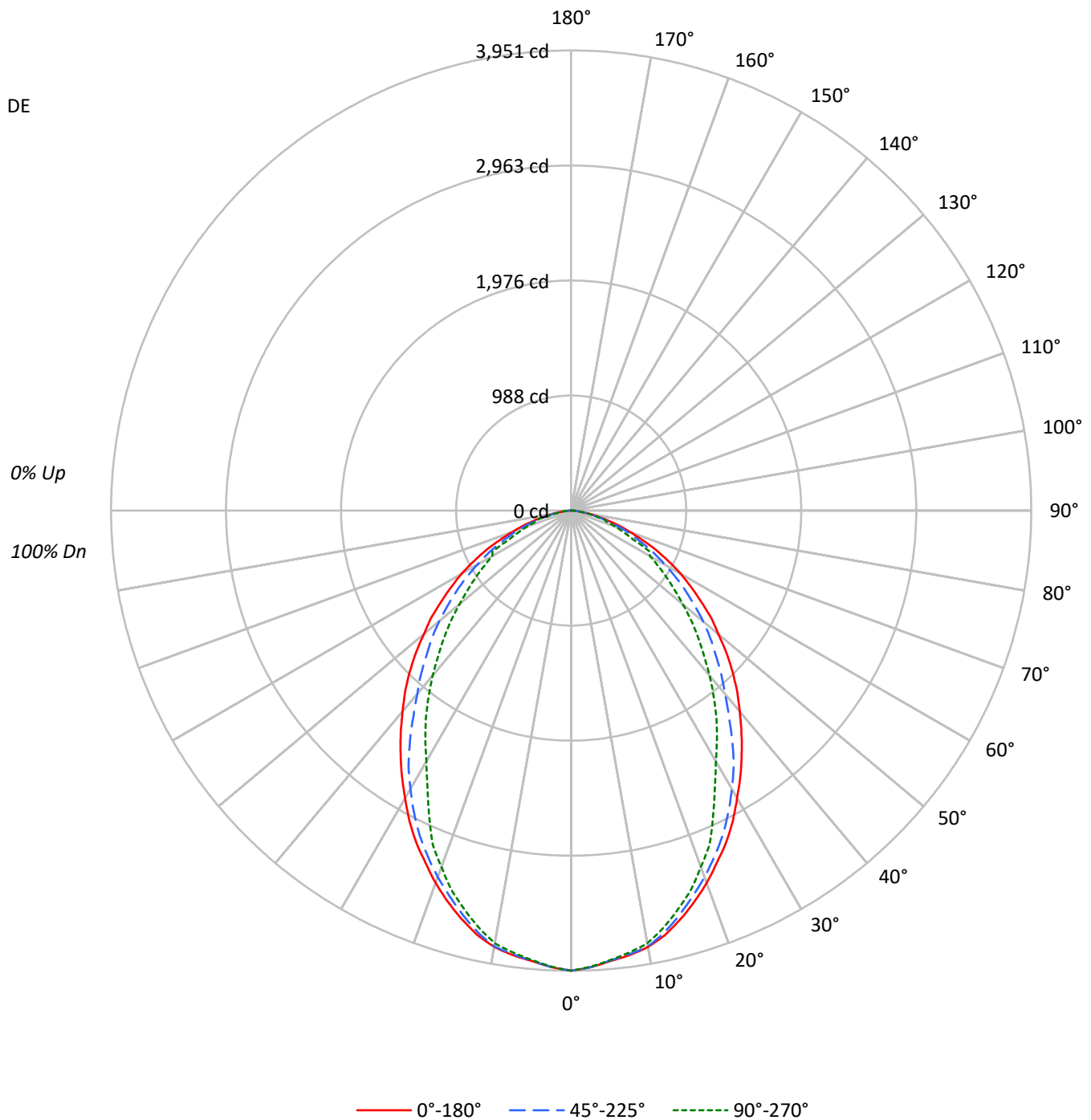
Lumens per Lamp: N/A  
Luminaire Lumens: 7756.0 lumens  
Efficiency: N/A  
Efficacy: 89.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P562569

CATALOG NUMBER: FSR-24-4-LD4-2HI-40-UNV-81-88-EDD

### Luminous Intensity Polar Plot





TEST NUMBER: P562569

CATALOG NUMBER: FSR-24-4-LD4-2HI-40-UNV-81-88-EDD

**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°	5316	5316	5316
5°	5244	5237	5231
10°	5198	5192	5154
15°	5058	5007	4937
20°	4872	4794	4663
25°	4672	4570	4285
30°	4428	4286	3860
35°	4194	3961	3571
40°	3955	3610	3249
45°	3728	3337	2938
50°	3451	3098	2620
55°	3193	2807	2346
60°	2925	2507	2102
65°	2574	2196	1861
70°	2120	1923	1581
75°	1686	1472	1543
80°	1133	1062	991
85°	706	846	986

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3728 cd/sqm



TEST NUMBER: P562569

CATALOG NUMBER: FSR-24-4-LD4-2HI-40-UNV-81-88-EDD

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	367.8	4.7
10°-20°	1009.3	13.0
20°-30°	1397.3	18.0
30°-40°	1490.0	19.2
40°-50°	1359.3	17.5
50°-60°	1064.9	13.7
60°-70°	694.0	8.9
70°-80°	307.5	4.0
80°-90°	66.0	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°	2774.4	35.8
0°-40°	4264.3	55.0
0°-60°	6688.5	86.2
0°-90°	7756.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7756.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3951	3951	3951	3951	3951	
5°	3882	3878	3878	3873	3873	369
15°	3631	3631	3594	3558	3544	1021
25°	3147	3129	3078	2969	2887	1445
35°	2553	2535	2412	2229	2174	1596
45°	1959	1918	1754	1608	1544	1509
55°	1361	1320	1197	1055	1000	1221
65°	808	763	690	703	585	797
75°	324	301	283	270	297	348
85°	46	50	55	59	64	63
90°	0	0	0	0	0	



TEST NUMBER: P562569

CATALOG NUMBER: FSR-24-4-LD4-2HI-40-UNV-81-88-EDD

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3950.8	3950.8	3950.8	3950.8	3950.8
2.5°	3923.4	3923.4	3923.4	3918.8	3918.8
5°	3882.3	3877.7	3877.7	3873.2	3873.2
7.5°	3850.3	3845.8	3841.2	3836.6	3827.5
10°	3804.6	3804.6	3800.1	3777.2	3772.7
12.5°	3731.6	3727.0	3708.7	3676.8	3667.6
15°	3631.1	3631.1	3594.5	3558.0	3544.3
17.5°	3521.5	3516.9	3471.2	3434.7	3416.4
20°	3402.7	3393.6	3347.9	3288.5	3256.6
22.5°	3270.3	3270.3	3215.5	3137.8	3105.8
25°	3146.9	3128.7	3078.4	2968.8	2886.6
27.5°	3005.4	2977.9	2923.1	2767.8	2671.9
30°	2850.1	2836.4	2758.7	2557.7	2484.7
32.5°	2703.9	2681.1	2598.9	2388.8	2329.4
35°	2553.2	2534.9	2411.6	2228.9	2174.1
37.5°	2402.5	2379.6	2224.3	2078.2	2009.7
40°	2251.7	2224.3	2055.3	1922.9	1849.8
42.5°	2110.1	2073.6	1909.2	1767.6	1685.4
45°	1959.4	1918.3	1753.9	1607.7	1543.8
47.5°	1808.7	1772.2	1621.4	1470.7	1397.6
50°	1648.8	1616.9	1479.8	1329.1	1251.5
52.5°	1516.4	1466.1	1333.7	1183.0	1119.0
55°	1361.1	1320.0	1196.7	1055.1	1000.3
57.5°	1219.5	1178.4	1064.2	931.8	886.1
60°	1087.0	1027.7	931.8	817.6	781.0
62.5°	940.9	895.2	813.0	717.1	762.8
65°	808.4	762.8	689.7	703.4	584.6
67.5°	662.3	639.4	575.5	511.5	493.3
70°	539.0	511.5	488.7	420.2	401.9
72.5°	429.3	401.9	370.0	333.4	319.7
75°	324.3	301.4	283.2	269.5	296.9
77.5°	223.8	214.7	201.0	187.3	182.7
80°	146.2	141.6	137.0	132.5	127.9
82.5°	86.8	86.8	86.8	86.8	86.8
85°	45.7	50.2	54.8	59.4	63.9
87.5°	27.4	27.4	32.0	36.5	41.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)