

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: P561477

Luminaire Tested: FSR-12-4-LD4-2HI-50-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561477  
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-12-4-LD4-2HI-50-UNV-81-86-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

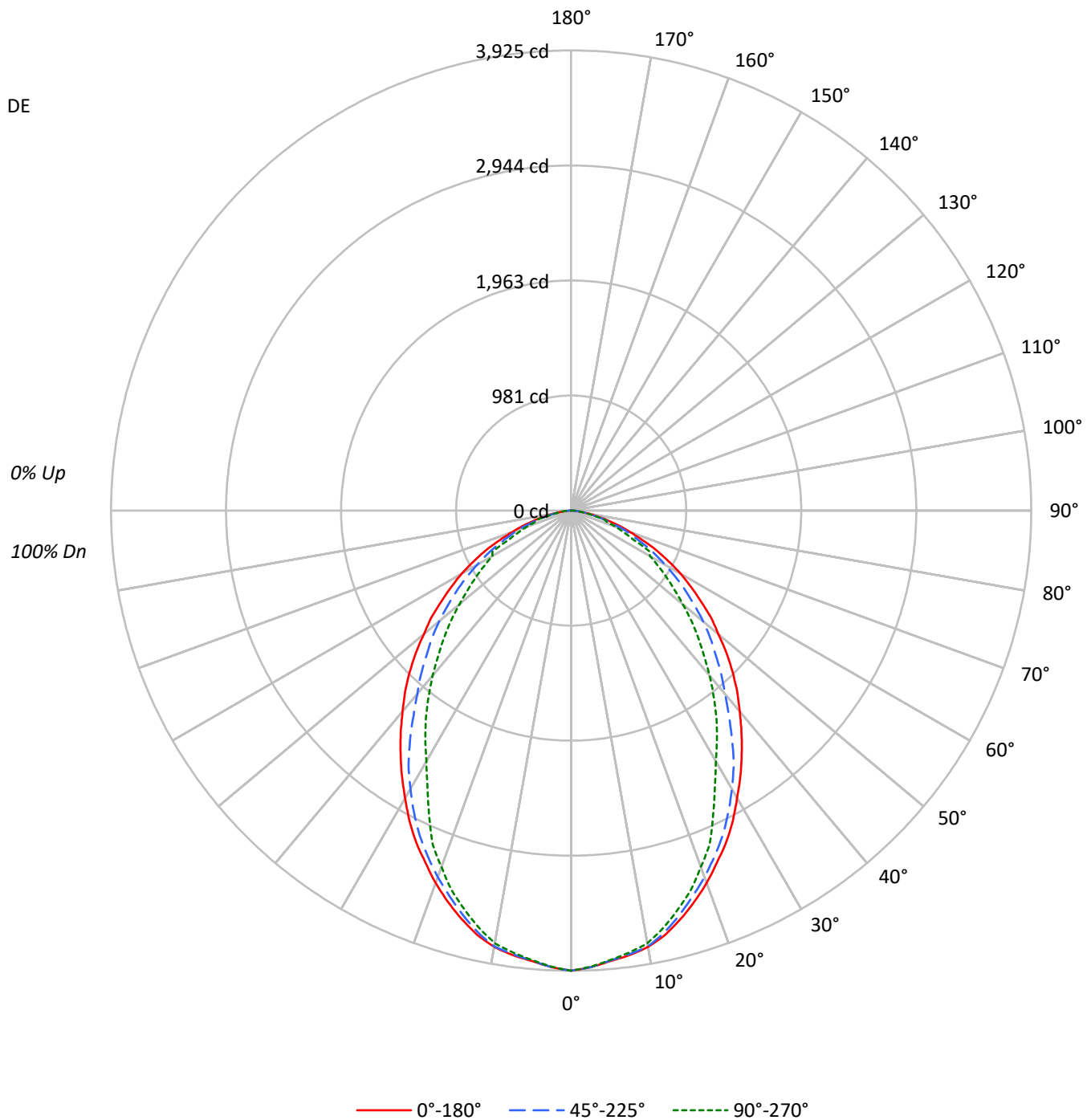
Lumens per Lamp: N/A  
Luminaire Lumens: 7705.0 lumens  
Efficiency: N/A  
Efficacy: 89.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



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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	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°	10562	10562	10562
5°	10418	10406	10394
10°	10328	10315	10241
15°	10049	9948	9809
20°	9680	9524	9264
25°	9282	9080	8514
30°	8798	8516	7670
35°	8332	7870	7095
40°	7858	7172	6455
45°	7408	6631	5836
50°	6857	6154	5205
55°	6343	5577	4662
60°	5812	4982	4176
65°	5114	4362	3698
70°	4212	3820	3142
75°	3350	2925	3066
80°	2250	2109	1968
85°	1402	1680	1961

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7408 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	365.3	4.7
10°-20°	1002.7	13.0
20°-30°	1388.1	18.0
30°-40°	1480.1	19.2
40°-50°	1350.3	17.5
50°-60°	1057.9	13.7
60°-70°	689.5	8.9
70°-80°	305.5	4.0
80°-90°	65.6	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°	2756.1	35.8
0°-40°	4236.3	55.0
0°-60°	6644.5	86.2
0°-90°	7705.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7705.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3925	3925	3925	3925	3925	
5°	3857	3852	3852	3848	3848	366
15°	3607	3607	3571	3535	3521	1014
25°	3126	3108	3058	2949	2868	1435
35°	2536	2518	2396	2214	2160	1586
45°	1946	1906	1742	1597	1534	1499
55°	1352	1311	1189	1048	994	1213
65°	803	758	685	699	581	791
75°	322	300	281	268	295	345
85°	45	50	54	59	64	63
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3924.8	3924.8	3924.8	3924.8	3924.8
2.5°	3897.6	3897.6	3897.6	3893.1	3893.1
5°	3856.8	3852.2	3852.2	3847.7	3847.7
7.5°	3825.0	3820.5	3815.9	3811.4	3802.3
10°	3779.6	3779.6	3775.1	3752.4	3747.9
12.5°	3707.0	3702.5	3684.3	3652.6	3643.5
15°	3607.2	3607.2	3570.9	3534.6	3521.0
17.5°	3498.3	3493.8	3448.4	3412.1	3394.0
20°	3380.3	3371.3	3325.9	3266.9	3235.1
22.5°	3248.8	3248.8	3194.3	3117.2	3085.4
25°	3126.2	3108.1	3058.2	2949.3	2867.6
27.5°	2985.6	2958.4	2903.9	2749.6	2654.4
30°	2831.3	2817.7	2740.6	2540.9	2468.3
32.5°	2686.1	2663.4	2581.8	2373.0	2314.1
35°	2536.4	2518.2	2395.7	2214.2	2159.8
37.5°	2386.7	2364.0	2209.7	2064.5	1996.4
40°	2236.9	2209.7	2041.8	1910.2	1837.6
42.5°	2096.3	2060.0	1896.6	1756.0	1674.3
45°	1946.5	1905.7	1742.3	1597.2	1533.6
47.5°	1796.8	1760.5	1610.8	1461.0	1388.4
50°	1638.0	1606.2	1470.1	1320.4	1243.2
52.5°	1506.4	1456.5	1324.9	1175.2	1111.7
55°	1352.1	1311.3	1188.8	1048.1	993.7
57.5°	1211.5	1170.6	1057.2	925.6	880.2
60°	1079.9	1020.9	925.6	812.2	775.9
62.5°	934.7	889.3	807.7	712.4	757.7
65°	803.1	757.7	685.1	698.8	580.8
67.5°	657.9	635.2	571.7	508.2	490.0
70°	535.4	508.2	485.5	417.4	399.3
72.5°	426.5	399.3	367.5	331.2	317.6
75°	322.2	299.5	281.3	267.7	294.9
77.5°	222.3	213.3	199.6	186.0	181.5
80°	145.2	140.7	136.1	131.6	127.0
82.5°	86.2	86.2	86.2	86.2	86.2
85°	45.4	49.9	54.4	59.0	63.5
87.5°	27.2	27.2	31.8	36.3	40.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)