

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: P564007

Luminaire Tested: FSR-24-4-LD4-4LO-50-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564007  
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-LD4-4LO-50-UNV-93-87-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

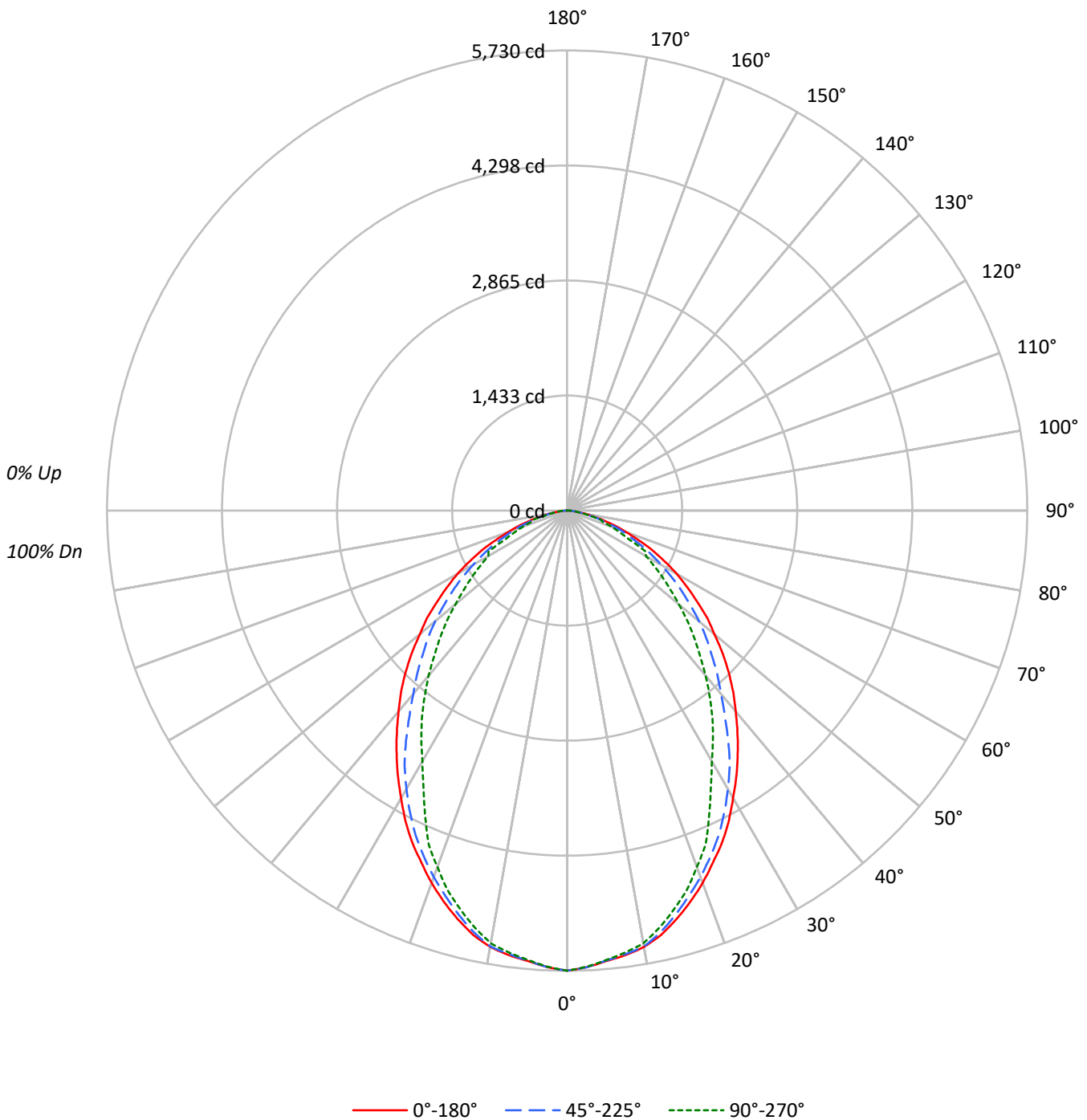
Lumens per Lamp: N/A  
Luminaire Lumens: 11248.0 lumens  
Efficiency: N/A  
Efficacy: 120.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7709	7709	7709
5°	7604	7595	7586
10°	7538	7529	7475
15°	7335	7261	7160
20°	7066	6952	6762
25°	6775	6628	6215
30°	6421	6216	5598
35°	6082	5745	5179
40°	5736	5235	4712
45°	5407	4840	4260
50°	5005	4492	3799
55°	4630	4071	3403
60°	4242	3636	3048
65°	3733	3184	2699
70°	3075	2788	2293
75°	2445	2135	2238
80°	1643	1540	1437
85°	1022	1227	1431

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5407 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	533.3	4.7
10°-20°	1463.7	13.0
20°-30°	2026.4	18.0
30°-40°	2160.8	19.2
40°-50°	1971.2	17.5
50°-60°	1544.3	13.7
60°-70°	1006.5	8.9
70°-80°	445.9	4.0
80°-90°	95.8	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°	4023.5	35.8
0°-40°	6184.3	55.0
0°-60°	9699.8	86.2
0°-90°	11248.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11248.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5730	5730	5730	5730	5730	
5°	5630	5624	5624	5617	5617	534
15°	5266	5266	5213	5160	5140	1480
25°	4564	4537	4464	4306	4186	2095
35°	3703	3676	3497	3232	3153	2315
45°	2842	2782	2544	2332	2239	2189
55°	1974	1914	1735	1530	1451	1770
65°	1172	1106	1000	1020	848	1155
75°	470	437	411	391	430	504
85°	66	73	80	86	93	92
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5729.6	5729.6	5729.6	5729.6	5729.6
2.5°	5689.8	5689.8	5689.8	5683.2	5683.2
5°	5630.2	5623.6	5623.6	5617.0	5617.0
7.5°	5583.9	5577.2	5570.6	5564.0	5550.7
10°	5517.6	5517.6	5511.0	5477.9	5471.3
12.5°	5411.6	5405.0	5378.5	5332.2	5318.9
15°	5265.9	5265.9	5212.9	5159.9	5140.1
17.5°	5106.9	5100.3	5034.1	4981.1	4954.6
20°	4934.7	4921.5	4855.2	4769.1	4722.8
22.5°	4742.6	4742.6	4663.2	4550.5	4504.2
25°	4563.8	4537.3	4464.4	4305.5	4186.2
27.5°	4358.5	4318.7	4239.2	4014.0	3874.9
30°	4133.2	4113.4	4000.8	3709.3	3603.3
32.5°	3921.3	3888.2	3768.9	3464.2	3378.1
35°	3702.7	3676.2	3497.4	3232.4	3152.9
37.5°	3484.1	3451.0	3225.8	3013.8	2914.5
40°	3265.5	3225.8	2980.7	2788.6	2682.6
42.5°	3060.2	3007.2	2768.7	2563.4	2444.2
45°	2841.6	2782.0	2543.5	2331.6	2238.8
47.5°	2623.0	2570.0	2351.4	2132.9	2026.9
50°	2391.2	2344.8	2146.1	1927.5	1814.9
52.5°	2199.1	2126.2	1934.1	1715.6	1622.8
55°	1973.9	1914.3	1735.4	1530.1	1450.6
57.5°	1768.6	1708.9	1543.3	1351.3	1285.0
60°	1576.5	1490.4	1351.3	1185.7	1132.7
62.5°	1364.5	1298.3	1179.0	1039.9	1106.2
65°	1172.4	1106.2	1000.2	1020.1	847.8
67.5°	960.4	927.3	834.6	741.9	715.4
70°	781.6	741.9	708.7	609.4	582.9
72.5°	622.6	582.9	536.5	483.5	463.7
75°	470.3	437.2	410.7	390.8	430.5
77.5°	324.6	311.3	291.4	271.6	265.0
80°	212.0	205.3	198.7	192.1	185.5
82.5°	125.9	125.9	125.9	125.9	125.9
85°	66.2	72.9	79.5	86.1	92.7
87.5°	39.7	39.7	46.4	53.0	59.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)