

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: P564178

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-82-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564178  
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-LD4-4STD-50-UNV-82-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

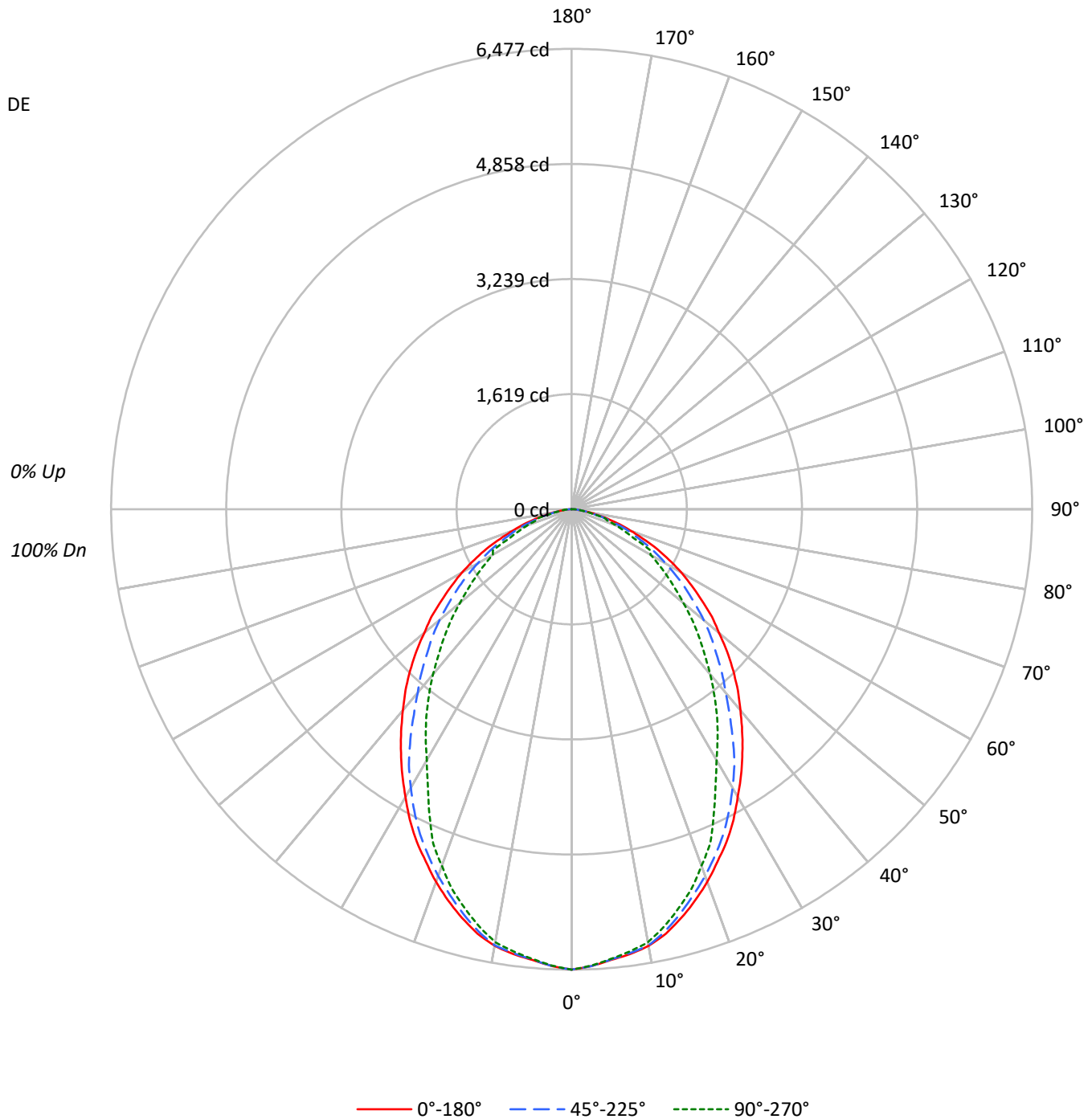
Lumens per Lamp: N/A  
Luminaire Lumens: 12715.0 lumens  
Efficiency: N/A  
Efficacy: 95.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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				
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°	8715	8715	8715
5°	8596	8586	8576
10°	8522	8511	8450
15°	8292	8208	8094
20°	7987	7859	7644
25°	7659	7492	7025
30°	7259	7026	6328
35°	6875	6494	5854
40°	6484	5918	5326
45°	6112	5471	4816
50°	5658	5078	4294
55°	5234	4602	3847
60°	4796	4110	3446
65°	4219	3599	3051
70°	3476	3152	2592
75°	2764	2413	2530
80°	1857	1740	1625
85°	1156	1388	1618

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6112 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	602.9	4.7
10°-20°	1654.6	13.0
20°-30°	2290.7	18.0
30°-40°	2442.6	19.2
40°-50°	2228.3	17.5
50°-60°	1745.7	13.7
60°-70°	1137.8	8.9
70°-80°	504.1	4.0
80°-90°	108.2	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°	4548.3	35.8
0°-40°	6990.8	55.0
0°-60°	10964.9	86.2
0°-90°	12715.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12715.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6477	6477	6477	6477	6477	
5°	6364	6357	6357	6350	6350	604
15°	5953	5953	5893	5833	5810	1673
25°	5159	5129	5047	4867	4732	2368
35°	4186	4156	3954	3654	3564	2617
45°	3212	3145	2875	2636	2531	2474
55°	2231	2164	1962	1730	1640	2001
65°	1325	1250	1131	1153	958	1306
75°	532	494	464	442	487	570
85°	75	82	90	97	105	104
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6476.9	6476.9	6476.9	6476.9	6476.9
2.5°	6431.9	6431.9	6431.9	6424.4	6424.4
5°	6364.5	6357.0	6357.0	6349.6	6349.6
7.5°	6312.1	6304.6	6297.1	6289.7	6274.7
10°	6237.2	6237.2	6229.8	6192.3	6184.8
12.5°	6117.4	6110.0	6080.0	6027.6	6012.6
15°	5952.7	5952.7	5892.8	5832.9	5810.4
17.5°	5773.0	5765.5	5690.6	5630.7	5600.8
20°	5578.3	5563.4	5488.5	5391.1	5338.7
22.5°	5361.2	5361.2	5271.3	5144.0	5091.6
25°	5159.0	5129.1	5046.7	4867.0	4732.2
27.5°	4926.9	4882.0	4792.1	4537.5	4380.3
30°	4672.3	4649.9	4522.6	4193.1	4073.3
32.5°	4432.7	4395.3	4260.5	3916.1	3818.7
35°	4185.6	4155.7	3953.5	3654.0	3564.1
37.5°	3938.5	3901.1	3646.5	3406.9	3294.6
40°	3691.4	3646.5	3369.5	3152.3	3032.5
42.5°	3459.3	3399.4	3129.9	2897.7	2763.0
45°	3212.2	3144.8	2875.3	2635.7	2530.8
47.5°	2965.1	2905.2	2658.1	2411.0	2291.2
50°	2703.1	2650.6	2426.0	2178.9	2051.6
52.5°	2485.9	2403.5	2186.4	1939.3	1834.5
55°	2231.3	2163.9	1961.8	1729.7	1639.8
57.5°	1999.2	1931.8	1744.6	1527.5	1452.6
60°	1782.1	1684.7	1527.5	1340.3	1280.4
62.5°	1542.5	1467.6	1332.8	1175.6	1250.4
65°	1325.3	1250.4	1130.6	1153.1	958.4
67.5°	1085.7	1048.3	943.4	838.6	808.7
70°	883.5	838.6	801.2	688.9	658.9
72.5°	703.8	658.9	606.5	546.6	524.1
75°	531.6	494.2	464.2	441.8	486.7
77.5°	366.9	351.9	329.5	307.0	299.5
80°	239.6	232.1	224.6	217.1	209.7
82.5°	142.3	142.3	142.3	142.3	142.3
85°	74.9	82.4	89.9	97.3	104.8
87.5°	44.9	44.9	52.4	59.9	67.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)