

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: P564164

Luminaire Tested: FSR-24-4-LD4-4STD-50-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564164  
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-81-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

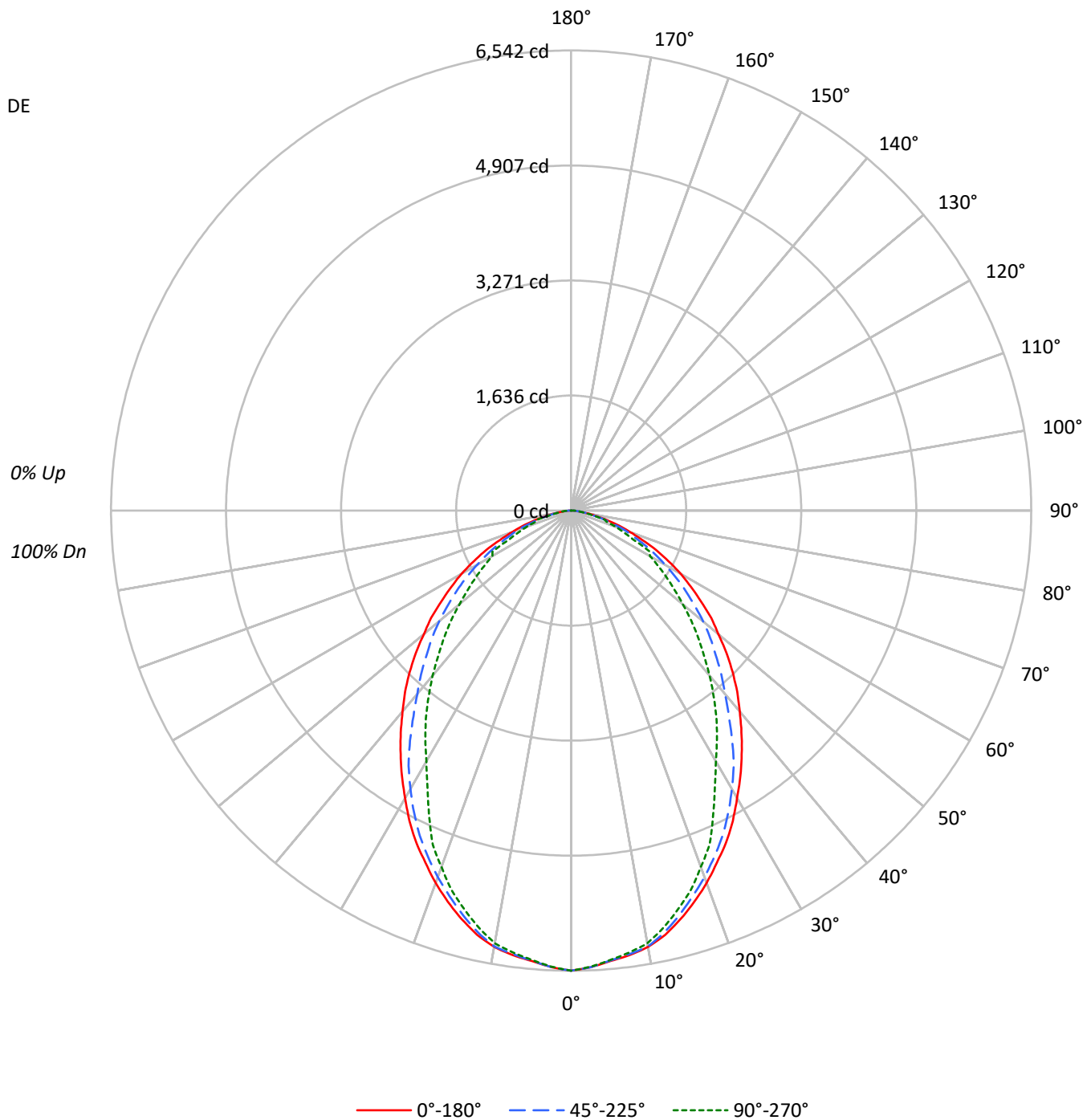
Lumens per Lamp: N/A  
Luminaire Lumens: 12842.0 lumens  
Efficiency: N/A  
Efficacy: 96.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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					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°	8802	8802	8802
5°	8682	8672	8662
10°	8607	8596	8534
15°	8375	8290	8175
20°	8067	7937	7720
25°	7735	7567	7096
30°	7332	7097	6392
35°	6944	6559	5913
40°	6548	5977	5380
45°	6173	5526	4864
50°	5715	5129	4337
55°	5286	4648	3885
60°	4843	4151	3480
65°	4262	3635	3082
70°	3511	3183	2618
75°	2791	2438	2556
80°	1875	1758	1640
85°	1167	1400	1635

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6173 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	608.9	4.7
10°-20°	1671.2	13.0
20°-30°	2313.6	18.0
30°-40°	2467.0	19.2
40°-50°	2250.6	17.5
50°-60°	1763.2	13.7
60°-70°	1149.1	8.9
70°-80°	509.1	4.0
80°-90°	109.3	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°	4593.7	35.8
0°-40°	7060.7	55.0
0°-60°	11074.4	86.2
0°-90°	12842.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	12842.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6542	6542	6542	6542	6542	
5°	6428	6420	6420	6413	6413	610
15°	6012	6012	5952	5891	5868	1690
25°	5210	5180	5097	4916	4780	2392
35°	4227	4197	3993	3690	3600	2643
45°	3244	3176	2904	2662	2556	2499
55°	2254	2186	1981	1747	1656	2021
65°	1339	1263	1142	1165	968	1319
75°	537	499	469	446	492	575
85°	76	83	91	98	106	105
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6541.5	6541.5	6541.5	6541.5	6541.5
2.5°	6496.2	6496.2	6496.2	6488.6	6488.6
5°	6428.1	6420.5	6420.5	6413.0	6413.0
7.5°	6375.2	6367.6	6360.0	6352.5	6337.4
10°	6299.5	6299.5	6292.0	6254.2	6246.6
12.5°	6178.5	6171.0	6140.7	6087.8	6072.7
15°	6012.2	6012.2	5951.7	5891.2	5868.5
17.5°	5830.7	5823.1	5747.5	5687.0	5656.7
20°	5634.0	5618.9	5543.3	5445.0	5392.0
22.5°	5414.7	5414.7	5324.0	5195.4	5142.5
25°	5210.5	5180.3	5097.1	4915.6	4779.5
27.5°	4976.1	4930.7	4840.0	4582.9	4424.0
30°	4719.0	4696.3	4567.7	4235.0	4114.0
32.5°	4477.0	4439.2	4303.0	3955.2	3856.9
35°	4227.4	4197.2	3993.0	3690.5	3599.7
37.5°	3977.9	3940.1	3682.9	3440.9	3327.5
40°	3728.3	3682.9	3403.1	3183.8	3062.8
42.5°	3493.9	3433.4	3161.1	2926.7	2790.6
45°	3244.3	3176.2	2904.0	2662.0	2556.1
47.5°	2994.7	2934.2	2684.7	2435.1	2314.1
50°	2730.1	2677.1	2450.2	2200.7	2072.1
52.5°	2510.7	2427.6	2208.2	1958.7	1852.8
55°	2253.6	2185.6	1981.4	1746.9	1656.2
57.5°	2019.2	1951.1	1762.1	1542.7	1467.1
60°	1799.9	1701.6	1542.7	1353.7	1293.2
62.5°	1557.9	1482.2	1346.1	1187.3	1262.9
65°	1338.6	1262.9	1141.9	1164.6	968.0
67.5°	1096.6	1058.7	952.9	847.0	816.7
70°	892.4	847.0	809.2	695.7	665.5
72.5°	710.9	665.5	612.6	552.1	529.4
75°	536.9	499.1	468.9	446.2	491.6
77.5°	370.6	355.4	332.7	310.1	302.5
80°	242.0	234.4	226.9	219.3	211.7
82.5°	143.7	143.7	143.7	143.7	143.7
85°	75.6	83.2	90.7	98.3	105.9
87.5°	45.4	45.4	52.9	60.5	68.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)