

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: P563977

Luminaire Tested: FSR-24-4-LD4-4LO-50-UNV-81-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563977  
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-81-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

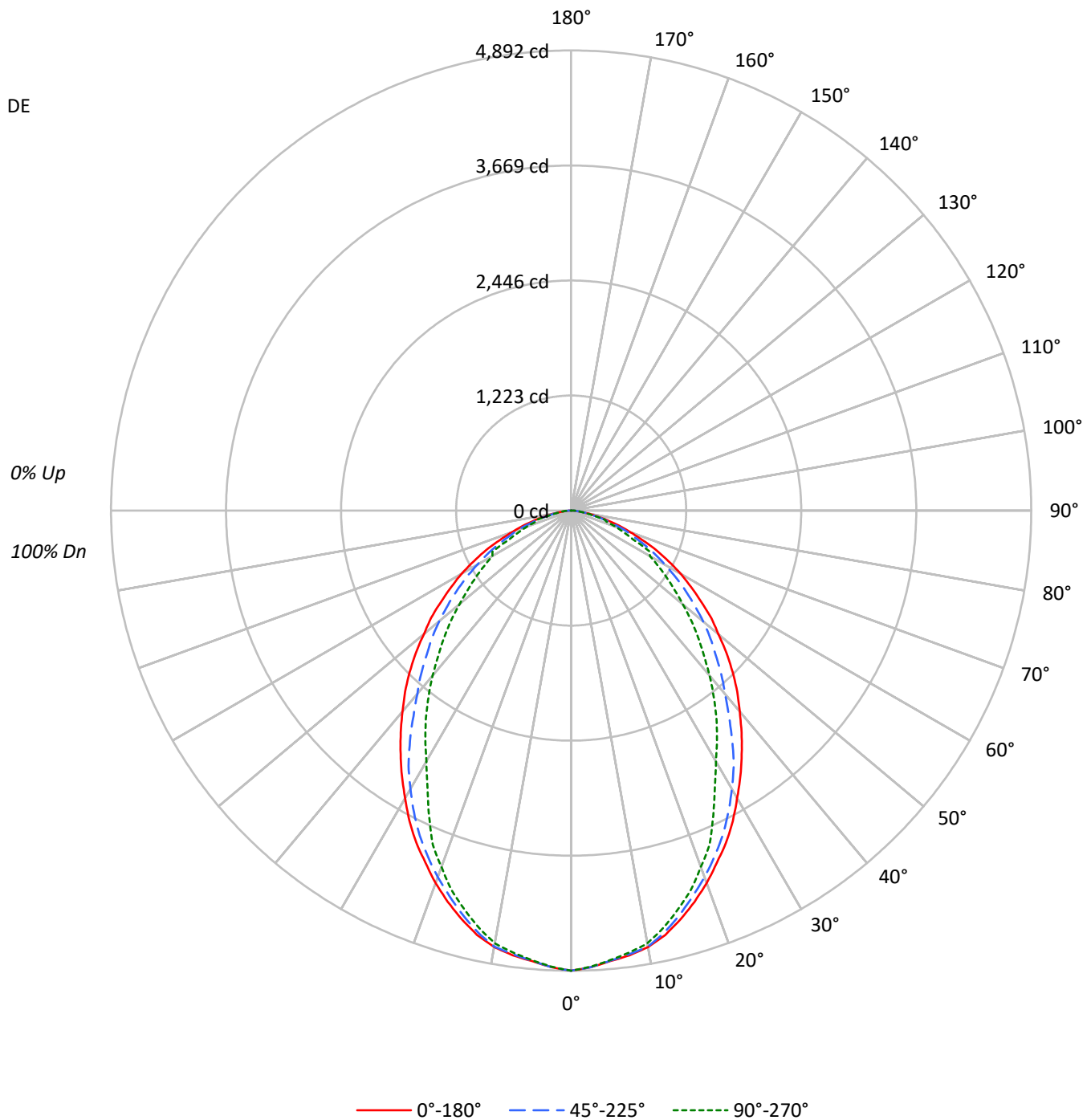
Lumens per Lamp: N/A  
Luminaire Lumens: 9604.0 lumens  
Efficiency: N/A  
Efficacy: 102.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6582	6582	6582
5°	6493	6485	6478
10°	6437	6429	6383
15°	6263	6200	6113
20°	6033	5936	5774
25°	5785	5659	5306
30°	5483	5307	4780
35°	5193	4905	4422
40°	4897	4470	4023
45°	4617	4133	3637
50°	4274	3836	3244
55°	3954	3476	2905
60°	3622	3105	2602
65°	3187	2719	2305
70°	2626	2381	1958
75°	2088	1823	1911
80°	1402	1315	1227
85°	874	1048	1223

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4617 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	455.4	4.7
10°-20°	1249.8	13.0
20°-30°	1730.3	18.0
30°-40°	1844.9	19.2
40°-50°	1683.1	17.5
50°-60°	1318.6	13.7
60°-70°	859.4	8.9
70°-80°	380.8	4.0
80°-90°	81.8	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°	3435.4	35.8
0°-40°	5280.4	55.0
0°-60°	8282.1	86.2
0°-90°	9604.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9604.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4892	4892	4892	4892	4892	
5°	4807	4802	4802	4796	4796	456
15°	4496	4496	4451	4406	4389	1264
25°	3897	3874	3812	3676	3574	1789
35°	3162	3139	2986	2760	2692	1977
45°	2426	2375	2172	1991	1912	1869
55°	1685	1634	1482	1306	1239	1512
65°	1001	944	854	871	724	987
75°	402	373	351	334	368	430
85°	57	62	68	74	79	78
90°	0	0	0	0	0	

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4892.1	4892.1	4892.1	4892.1	4892.1
2.5°	4858.2	4858.2	4858.2	4852.6	4852.6
5°	4807.3	4801.7	4801.7	4796.0	4796.0
7.5°	4767.7	4762.1	4756.4	4750.8	4739.4
10°	4711.2	4711.2	4705.5	4677.2	4671.6
12.5°	4620.7	4615.0	4592.4	4552.8	4541.5
15°	4496.3	4496.3	4451.0	4405.8	4388.8
17.5°	4360.5	4354.9	4298.3	4253.1	4230.4
20°	4213.5	4202.2	4145.6	4072.1	4032.5
22.5°	4049.5	4049.5	3981.6	3885.4	3845.9
25°	3896.8	3874.1	3811.9	3676.2	3574.4
27.5°	3721.4	3687.5	3619.6	3427.3	3308.6
30°	3529.1	3512.2	3416.0	3167.2	3076.7
32.5°	3348.2	3319.9	3218.1	2957.9	2884.4
35°	3161.5	3138.9	2986.2	2760.0	2692.1
37.5°	2974.9	2946.6	2754.3	2573.3	2488.5
40°	2788.2	2754.3	2545.0	2381.0	2290.5
42.5°	2612.9	2567.7	2364.1	2188.7	2086.9
45°	2426.3	2375.4	2171.8	1990.8	1911.6
47.5°	2239.6	2194.4	2007.8	1821.1	1730.6
50°	2041.7	2002.1	1832.4	1645.8	1549.7
52.5°	1877.7	1815.5	1651.5	1464.8	1385.6
55°	1685.4	1634.5	1481.8	1306.5	1238.6
57.5°	1510.1	1459.2	1317.8	1153.8	1097.2
60°	1346.0	1272.5	1153.8	1012.4	967.1
62.5°	1165.1	1108.5	1006.7	887.9	944.5
65°	1001.1	944.5	854.0	871.0	723.9
67.5°	820.1	791.8	712.6	633.4	610.8
70°	667.4	633.4	605.2	520.3	497.7
72.5°	531.6	497.7	458.1	412.9	395.9
75°	401.6	373.3	350.7	333.7	367.6
77.5°	277.1	265.8	248.8	231.9	226.2
80°	181.0	175.3	169.7	164.0	158.4
82.5°	107.5	107.5	107.5	107.5	107.5
85°	56.6	62.2	67.9	73.5	79.2
87.5°	33.9	33.9	39.6	45.2	50.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)