

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: P564165

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

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P564165  
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  
Description: 2X4 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**

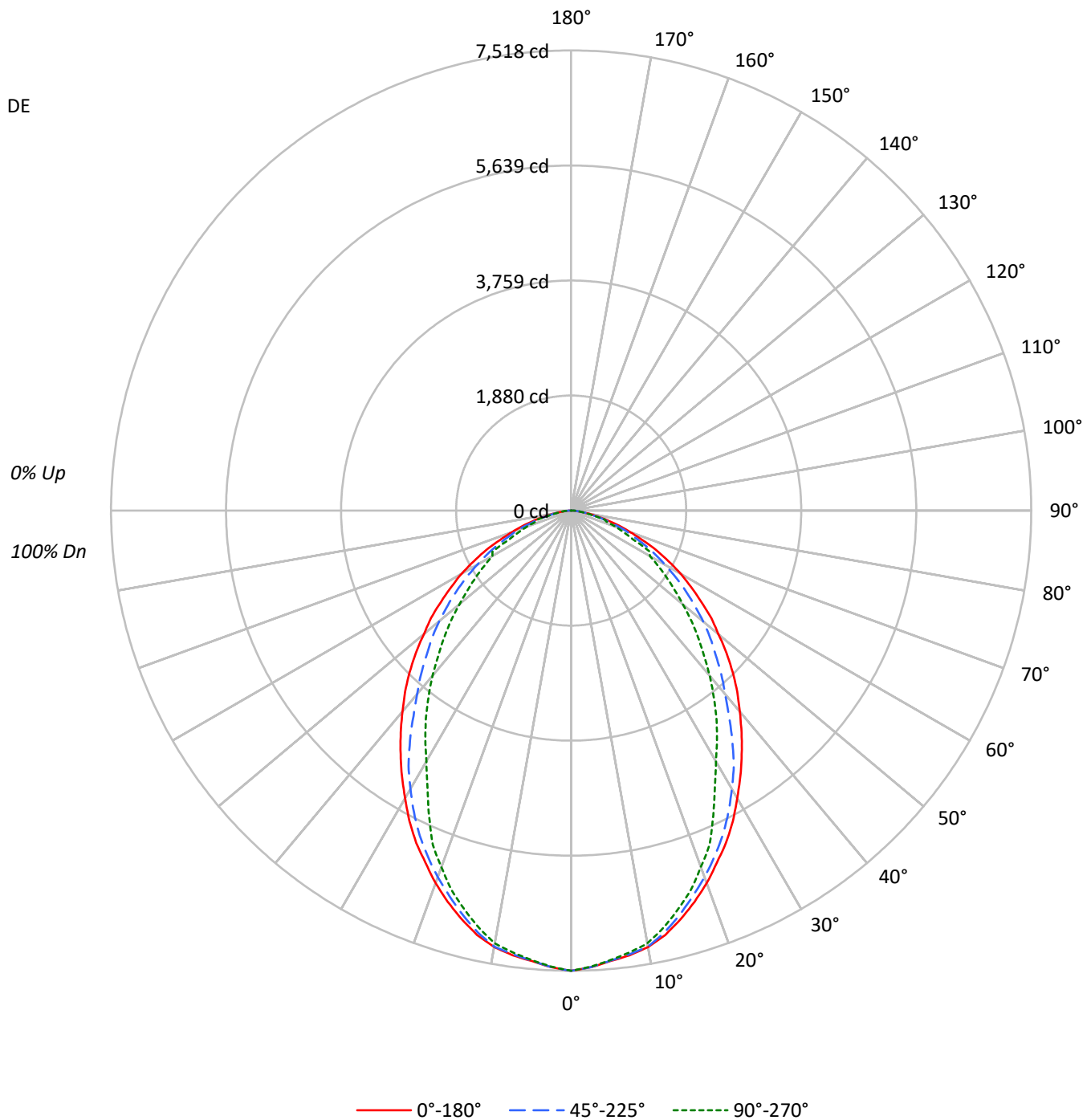
Lumens per Lamp: N/A  
Luminaire Lumens: 14760.0 lumens  
Efficiency: N/A  
Efficacy: 110.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 133.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	10116	10116	10116
5°	9979	9967	9955
10°	9892	9880	9809
15°	9625	9529	9395
20°	9272	9123	8874
25°	8891	8697	8155
30°	8427	8156	7346
35°	7981	7538	6796
40°	7526	6870	6183
45°	7095	6351	5590
50°	6568	5895	4985
55°	6076	5342	4465
60°	5567	4772	4000
65°	4898	4179	3542
70°	4035	3659	3009
75°	3208	2802	2937
80°	2155	2021	1886
85°	1342	1610	1879

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7095 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	699.9	4.7
10°-20°	1920.7	13.0
20°-30°	2659.1	18.0
30°-40°	2835.4	19.2
40°-50°	2586.7	17.5
50°-60°	2026.5	13.7
60°-70°	1320.8	8.9
70°-80°	585.2	4.0
80°-90°	125.6	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°	5279.8	35.8
0°-40°	8115.2	55.0
0°-60°	12728.4	86.2
0°-90°	14760.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	14760.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	7518	7518	7518	7518	7518	
5°	7388	7380	7380	7371	7371	701
15°	6910	6910	6841	6771	6745	1943
25°	5989	5954	5858	5650	5493	2749
35°	4859	4824	4589	4242	4137	3038
45°	3729	3651	3338	3060	2938	2872
55°	2590	2512	2277	2008	1904	2323
65°	1538	1452	1312	1339	1113	1516
75°	617	574	539	513	565	661
85°	87	96	104	113	122	121
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	7518.5	7518.5	7518.5	7518.5	7518.5
2.5°	7466.4	7466.4	7466.4	7457.7	7457.7
5°	7388.2	7379.5	7379.5	7370.8	7370.8
7.5°	7327.3	7318.6	7309.9	7301.2	7283.9
10°	7240.4	7240.4	7231.7	7188.3	7179.6
12.5°	7101.3	7092.6	7057.9	6997.0	6979.6
15°	6910.1	6910.1	6840.6	6771.0	6745.0
17.5°	6701.5	6692.8	6605.9	6536.4	6501.6
20°	6475.5	6458.1	6371.2	6258.2	6197.4
22.5°	6223.4	6223.4	6119.1	5971.4	5910.5
25°	5988.8	5954.0	5858.4	5649.8	5493.3
27.5°	5719.3	5667.2	5562.9	5267.3	5084.8
30°	5423.8	5397.7	5249.9	4867.5	4728.4
32.5°	5145.6	5102.2	4945.7	4545.9	4432.9
35°	4858.8	4824.0	4589.4	4241.7	4137.4
37.5°	4572.0	4528.5	4233.0	3954.8	3824.5
40°	4285.1	4233.0	3911.4	3659.3	3520.2
42.5°	4015.7	3946.2	3633.2	3363.8	3207.3
45°	3728.9	3650.6	3337.7	3059.6	2937.9
47.5°	3442.0	3372.5	3085.6	2798.8	2659.7
50°	3137.8	3077.0	2816.2	2529.4	2381.6
52.5°	2885.7	2790.1	2538.1	2251.2	2129.5
55°	2590.2	2512.0	2277.3	2007.8	1903.5
57.5°	2320.8	2242.5	2025.2	1773.2	1686.2
60°	2068.7	1955.7	1773.2	1555.9	1486.3
62.5°	1790.5	1703.6	1547.2	1364.6	1451.6
65°	1538.5	1451.6	1312.5	1338.6	1112.6
67.5°	1260.3	1216.9	1095.2	973.5	938.7
70°	1025.7	973.5	930.0	799.7	764.9
72.5°	817.0	764.9	704.0	634.5	608.4
75°	617.1	573.7	538.9	512.8	565.0
77.5°	425.9	408.5	382.4	356.4	347.7
80°	278.1	269.5	260.8	252.1	243.4
82.5°	165.1	165.1	165.1	165.1	165.1
85°	86.9	95.6	104.3	113.0	121.7
87.5°	52.2	52.2	60.8	69.5	78.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)