

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: P562659

Luminaire Tested: FSR-24-4-LD4-2HI-50-UNV-93-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562659  
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-LD4-2HI-50-UNV-93-85-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

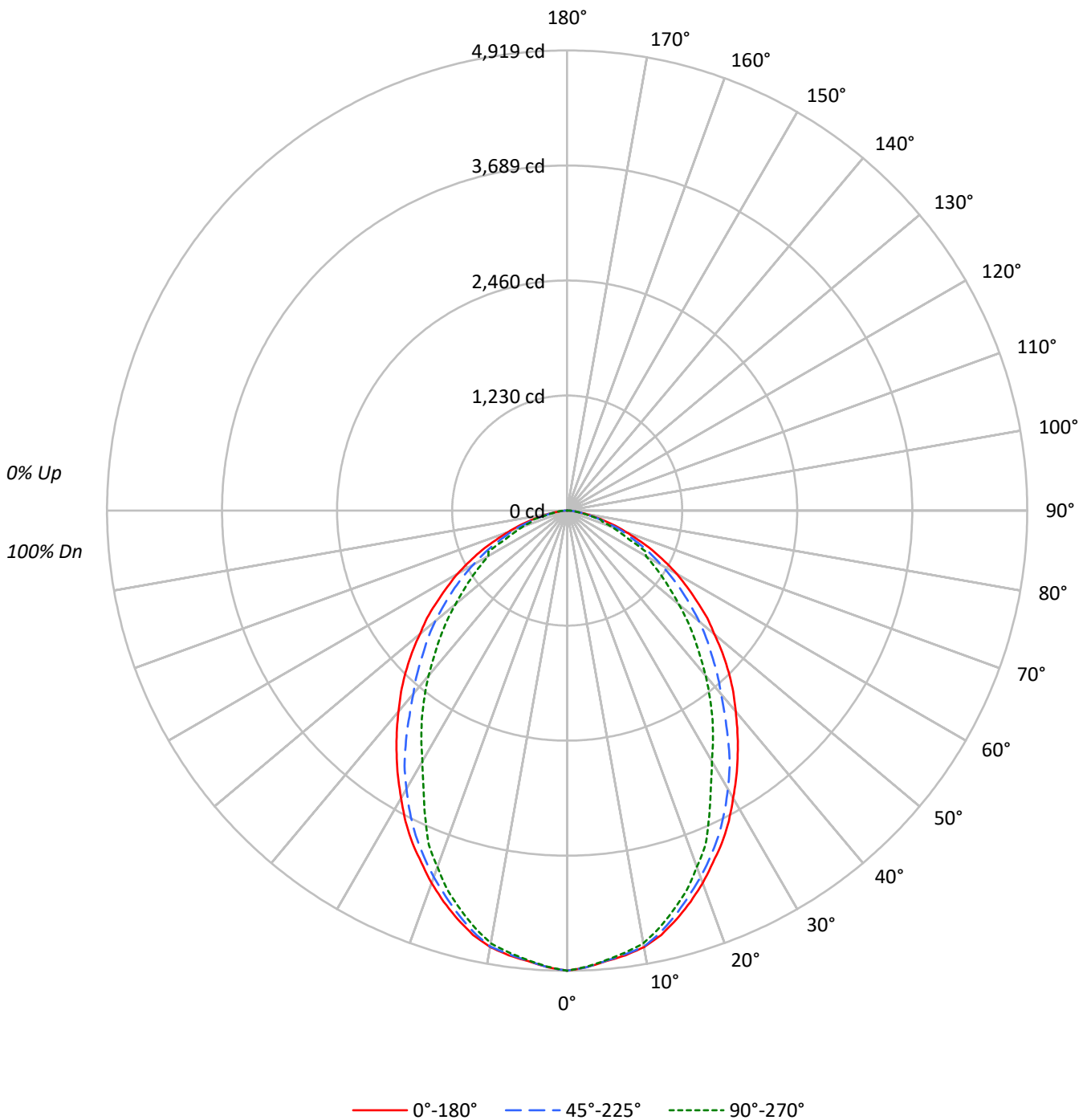
Lumens per Lamp: N/A  
Luminaire Lumens: 9657.0 lumens  
Efficiency: N/A  
Efficacy: 111.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	6619	6619	6619
5°	6529	6521	6513
10°	6472	6464	6418
15°	6298	6234	6147
20°	6066	5969	5806
25°	5817	5690	5336
30°	5513	5337	4806
35°	5222	4932	4446
40°	4924	4495	4045
45°	4642	4155	3658
50°	4297	3857	3262
55°	3975	3495	2921
60°	3642	3122	2617
65°	3205	2734	2317
70°	2640	2394	1969
75°	2099	1833	1921
80°	1410	1322	1234
85°	878	1053	1229

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4642 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	457.9	4.7
10°-20°	1256.7	13.0
20°-30°	1739.8	18.0
30°-40°	1855.1	19.2
40°-50°	1692.4	17.5
50°-60°	1325.9	13.7
60°-70°	864.1	8.9
70°-80°	382.8	4.0
80°-90°	82.2	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°	3454.4	35.8
0°-40°	5309.5	55.0
0°-60°	8327.8	86.2
0°-90°	9657.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9657.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4919	4919	4919	4919	4919	
5°	4834	4828	4828	4822	4822	459
15°	4521	4521	4476	4430	4413	1271
25°	3918	3896	3833	3696	3594	1799
35°	3179	3156	3003	2775	2707	1987
45°	2440	2388	2184	2002	1922	1879
55°	1695	1644	1490	1314	1245	1520
65°	1007	950	859	876	728	992
75°	404	375	353	336	370	433
85°	57	63	68	74	80	79
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4919.1	4919.1	4919.1	4919.1	4919.1
2.5°	4885.0	4885.0	4885.0	4879.3	4879.3
5°	4833.8	4828.2	4828.2	4822.5	4822.5
7.5°	4794.0	4788.3	4782.7	4777.0	4765.6
10°	4737.2	4737.2	4731.5	4703.0	4697.4
12.5°	4646.2	4640.5	4617.7	4577.9	4566.6
15°	4521.1	4521.1	4475.6	4430.1	4413.0
17.5°	4384.6	4378.9	4322.0	4276.5	4253.8
20°	4236.7	4225.3	4168.5	4094.5	4054.7
22.5°	4071.8	4071.8	4003.6	3906.9	3867.1
25°	3918.3	3895.5	3833.0	3696.5	3594.1
27.5°	3742.0	3707.8	3639.6	3446.2	3326.8
30°	3548.6	3531.5	3434.9	3184.6	3093.7
32.5°	3366.6	3338.2	3235.8	2974.2	2900.3
35°	3179.0	3156.2	3002.7	2775.2	2707.0
37.5°	2991.3	2962.9	2769.5	2587.5	2502.2
40°	2803.6	2769.5	2559.1	2394.2	2303.2
42.5°	2627.3	2581.8	2377.1	2200.8	2098.5
45°	2439.7	2388.5	2183.8	2001.8	1922.2
47.5°	2252.0	2206.5	2018.8	1831.2	1740.2
50°	2053.0	2013.2	1842.5	1654.9	1558.2
52.5°	1888.0	1825.5	1660.6	1472.9	1393.3
55°	1694.7	1643.5	1490.0	1313.7	1245.4
57.5°	1518.4	1467.2	1325.0	1160.1	1103.3
60°	1353.5	1279.5	1160.1	1018.0	972.5
62.5°	1171.5	1114.6	1012.3	892.8	949.7
65°	1006.6	949.7	858.7	875.8	727.9
67.5°	824.6	796.2	716.5	636.9	614.2
70°	671.1	636.9	608.5	523.2	500.4
72.5°	534.6	500.4	460.6	415.1	398.1
75°	403.8	375.3	352.6	335.5	369.6
77.5°	278.7	267.3	250.2	233.2	227.5
80°	182.0	176.3	170.6	164.9	159.2
82.5°	108.1	108.1	108.1	108.1	108.1
85°	56.9	62.6	68.2	73.9	79.6
87.5°	34.1	34.1	39.8	45.5	51.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)