

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: P563845

Luminaire Tested: FSR-24-4-LD4-4LO-35-UNV-81-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563845  
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-35-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 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

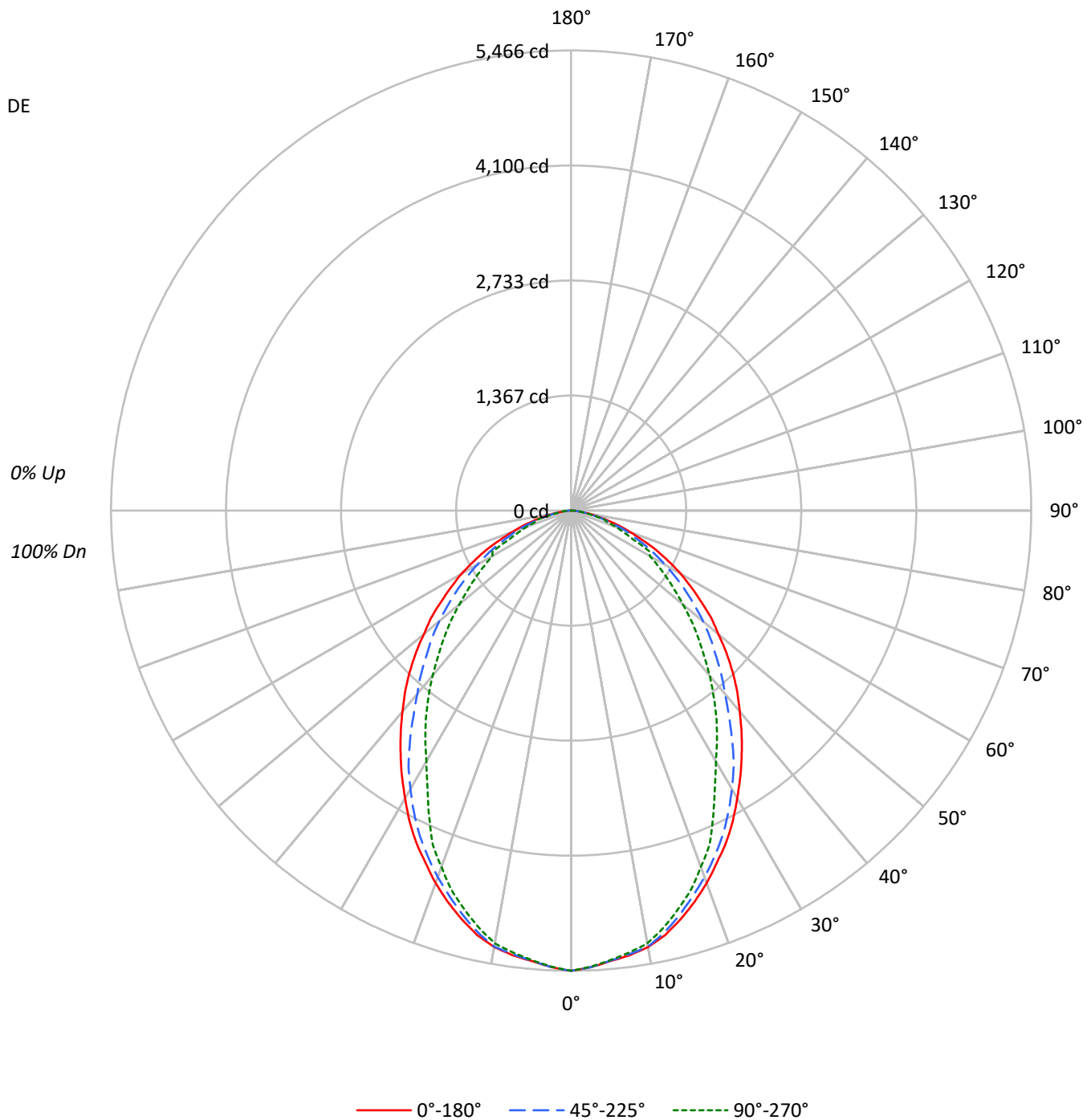
Lumens per Lamp: N/A  
Luminaire Lumens: 10731.0 lumens  
Efficiency: N/A  
Efficacy: 114.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	50	30	10	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	7355	7355	7355
5°	7255	7246	7238
10°	7192	7183	7132
15°	6998	6928	6831
20°	6741	6632	6451
25°	6464	6323	5929
30°	6126	5930	5341
35°	5802	5480	4941
40°	5472	4995	4495
45°	5159	4617	4064
50°	4775	4286	3624
55°	4418	3884	3246
60°	4047	3469	2908
65°	3561	3038	2575
70°	2934	2660	2188
75°	2333	2037	2136
80°	1567	1469	1371
85°	976	1170	1366

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5159 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	508.8	4.7
10°-20°	1396.4	13.0
20°-30°	1933.3	18.0
30°-40°	2061.4	19.2
40°-50°	1880.6	17.5
50°-60°	1473.3	13.7
60°-70°	960.2	8.9
70°-80°	425.4	4.0
80°-90°	91.4	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°	3838.6	35.8
0°-40°	5900.0	55.0
0°-60°	9254.0	86.2
0°-90°	10731.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	10731.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5466	5466	5466	5466	5466	
5°	5371	5365	5365	5359	5359	510
15°	5024	5024	4973	4923	4904	1412
25°	4354	4329	4259	4108	3994	1999
35°	3532	3507	3337	3084	3008	2208
45°	2711	2654	2427	2224	2136	2088
55°	1883	1826	1656	1460	1384	1689
65°	1118	1055	954	973	809	1102
75°	449	417	392	373	411	481
85°	63	70	76	82	88	88
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5466.2	5466.2	5466.2	5466.2	5466.2
2.5°	5428.3	5428.3	5428.3	5422.0	5422.0
5°	5371.4	5365.1	5365.1	5358.8	5358.8
7.5°	5327.2	5320.9	5314.6	5308.2	5295.6
10°	5264.0	5264.0	5257.7	5226.1	5219.8
12.5°	5162.9	5156.6	5131.3	5087.1	5074.4
15°	5023.9	5023.9	4973.3	4922.8	4903.8
17.5°	4872.2	4865.9	4802.7	4752.1	4726.9
20°	4707.9	4695.3	4632.1	4549.9	4505.7
22.5°	4524.6	4524.6	4448.8	4341.4	4297.2
25°	4354.0	4328.7	4259.2	4107.6	3993.8
27.5°	4158.1	4120.2	4044.4	3829.5	3696.8
30°	3943.3	3924.3	3816.9	3538.8	3437.7
32.5°	3741.0	3709.5	3595.7	3305.0	3222.9
35°	3532.5	3507.2	3336.6	3083.8	3008.0
37.5°	3324.0	3292.4	3077.5	2875.3	2780.5
40°	3115.4	3077.5	2843.7	2660.4	2559.3
42.5°	2919.5	2869.0	2641.5	2445.6	2331.8
45°	2711.0	2654.1	2426.6	2224.4	2135.9
47.5°	2502.5	2451.9	2243.4	2034.8	1933.7
50°	2281.3	2237.0	2047.5	1838.9	1731.5
52.5°	2098.0	2028.5	1845.2	1636.7	1548.2
55°	1883.2	1826.3	1655.7	1459.8	1383.9
57.5°	1687.3	1630.4	1472.4	1289.1	1226.0
60°	1504.0	1421.9	1289.1	1131.2	1080.6
62.5°	1301.8	1238.6	1124.8	992.1	1055.3
65°	1118.5	1055.3	954.2	973.2	808.9
67.5°	916.3	884.7	796.2	707.8	682.5
70°	745.7	707.8	676.2	581.4	556.1
72.5°	594.0	556.1	511.9	461.3	442.4
75°	448.7	417.1	391.8	372.8	410.8
77.5°	309.6	297.0	278.1	259.1	252.8
80°	202.2	195.9	189.6	183.3	176.9
82.5°	120.1	120.1	120.1	120.1	120.1
85°	63.2	69.5	75.8	82.2	88.5
87.5°	37.9	37.9	44.2	50.6	56.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)