

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: P563849

Luminaire Tested: FSR-24-4-LD4-4LO-35-UNV-81-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563849  
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-81-88-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

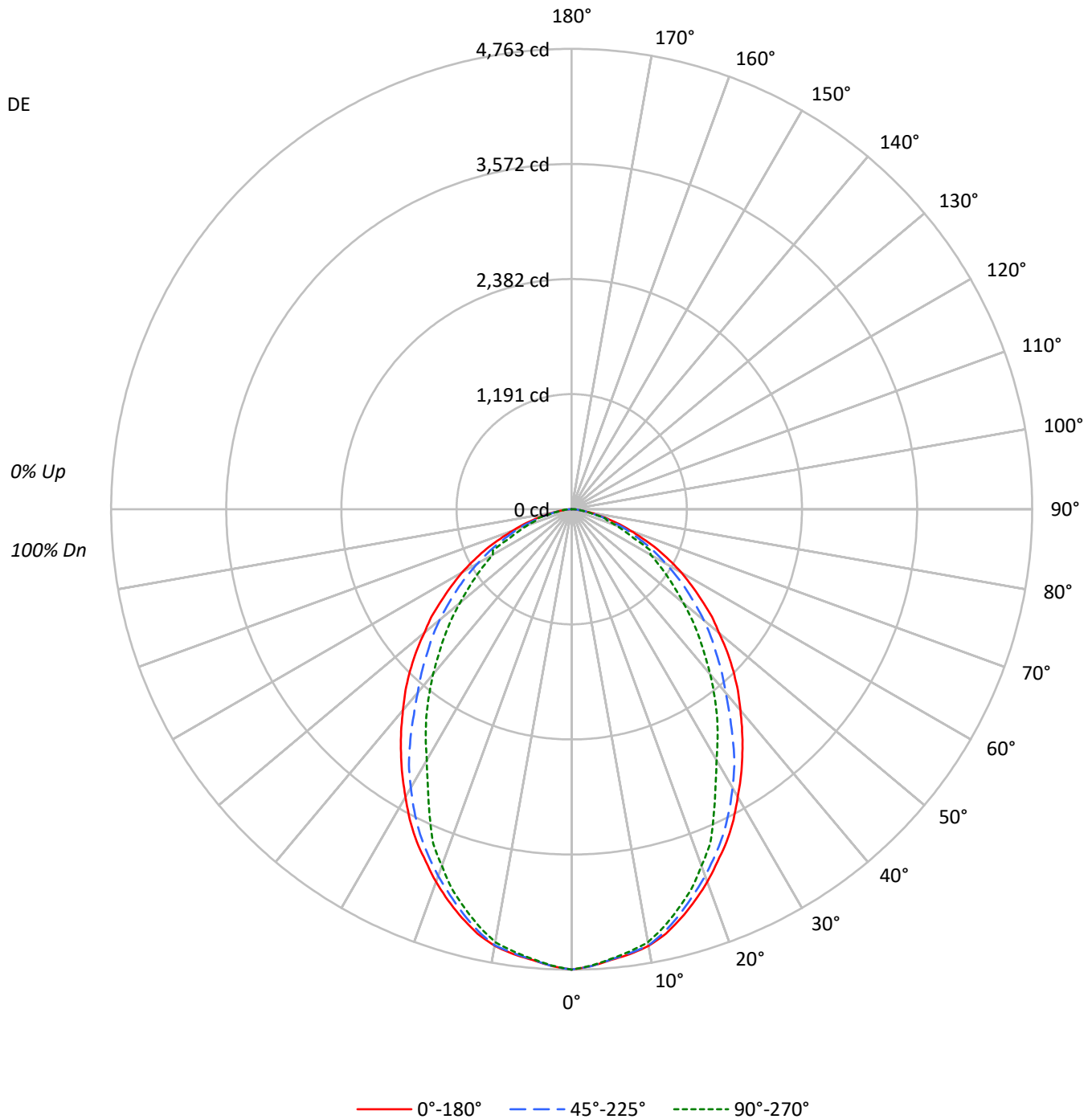
Lumens per Lamp: N/A  
Luminaire Lumens: 9350.0 lumens  
Efficiency: N/A  
Efficacy: 99.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	6408	6408	6408
5°	6321	6314	6306
10°	6266	6259	6214
15°	6097	6036	5952
20°	5873	5779	5621
25°	5632	5509	5166
30°	5338	5167	4654
35°	5056	4775	4305
40°	4768	4352	3917
45°	4495	4023	3541
50°	4161	3734	3158
55°	3849	3384	2829
60°	3526	3023	2534
65°	3103	2647	2244
70°	2556	2318	1906
75°	2032	1775	1861
80°	1365	1280	1195
85°	851	1020	1190

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4495 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	443.3	4.7
10°-20°	1216.7	13.0
20°-30°	1684.5	18.0
30°-40°	1796.2	19.2
40°-50°	1638.6	17.5
50°-60°	1283.7	13.7
60°-70°	836.7	8.9
70°-80°	370.7	4.0
80°-90°	79.6	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°	3344.6	35.8
0°-40°	5140.7	55.0
0°-60°	8063.1	86.2
0°-90°	9350.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9350.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4763	4763	4763	4763	4763	
5°	4680	4675	4675	4669	4669	444
15°	4377	4377	4333	4289	4273	1231
25°	3794	3772	3711	3579	3480	1742
35°	3078	3056	2907	2687	2621	1924
45°	2362	2313	2114	1938	1861	1820
55°	1641	1591	1443	1272	1206	1472
65°	975	920	831	848	705	960
75°	391	363	341	325	358	419
85°	55	61	66	72	77	76
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4762.8	4762.8	4762.8	4762.8	4762.8
2.5°	4729.7	4729.7	4729.7	4724.2	4724.2
5°	4680.2	4674.7	4674.7	4669.2	4669.2
7.5°	4641.6	4636.1	4630.6	4625.1	4614.1
10°	4586.6	4586.6	4581.1	4553.5	4548.0
12.5°	4498.5	4493.0	4470.9	4432.4	4421.4
15°	4377.3	4377.3	4333.3	4289.2	4272.7
17.5°	4245.2	4239.7	4184.6	4140.6	4118.6
20°	4102.0	4091.0	4036.0	3964.4	3925.8
22.5°	3942.4	3942.4	3876.3	3782.7	3744.1
25°	3793.7	3771.7	3711.1	3579.0	3479.8
27.5°	3623.0	3590.0	3523.9	3336.7	3221.1
30°	3435.8	3419.3	3325.7	3083.4	2995.3
32.5°	3259.6	3232.1	3133.0	2879.7	2808.1
35°	3077.9	3055.9	2907.2	2687.0	2620.9
37.5°	2896.2	2868.7	2681.5	2505.3	2422.7
40°	2714.5	2681.5	2477.7	2318.1	2230.0
42.5°	2543.8	2499.8	2301.5	2130.9	2031.7
45°	2362.1	2312.6	2114.3	1938.1	1861.1
47.5°	2180.4	2136.4	1954.7	1773.0	1684.9
50°	1987.7	1949.2	1784.0	1602.3	1508.7
52.5°	1828.0	1767.5	1607.8	1426.1	1349.0
55°	1640.8	1591.3	1442.6	1271.9	1205.8
57.5°	1470.1	1420.6	1282.9	1123.2	1068.2
60°	1310.4	1238.9	1123.2	985.6	941.5
62.5°	1134.3	1079.2	980.1	864.5	919.5
65°	974.6	919.5	831.4	847.9	704.8
67.5°	798.4	770.9	693.8	616.7	594.7
70°	649.7	616.7	589.2	506.6	484.5
72.5°	517.6	484.5	446.0	401.9	385.4
75°	390.9	363.4	341.4	324.9	357.9
77.5°	269.8	258.8	242.3	225.7	220.2
80°	176.2	170.7	165.2	159.7	154.2
82.5°	104.6	104.6	104.6	104.6	104.6
85°	55.1	60.6	66.1	71.6	77.1
87.5°	33.0	33.0	38.5	44.0	49.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)