

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: P563972

Luminaire Tested: FSR-24-4-LD4-4LO-50-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563972  
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-81-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

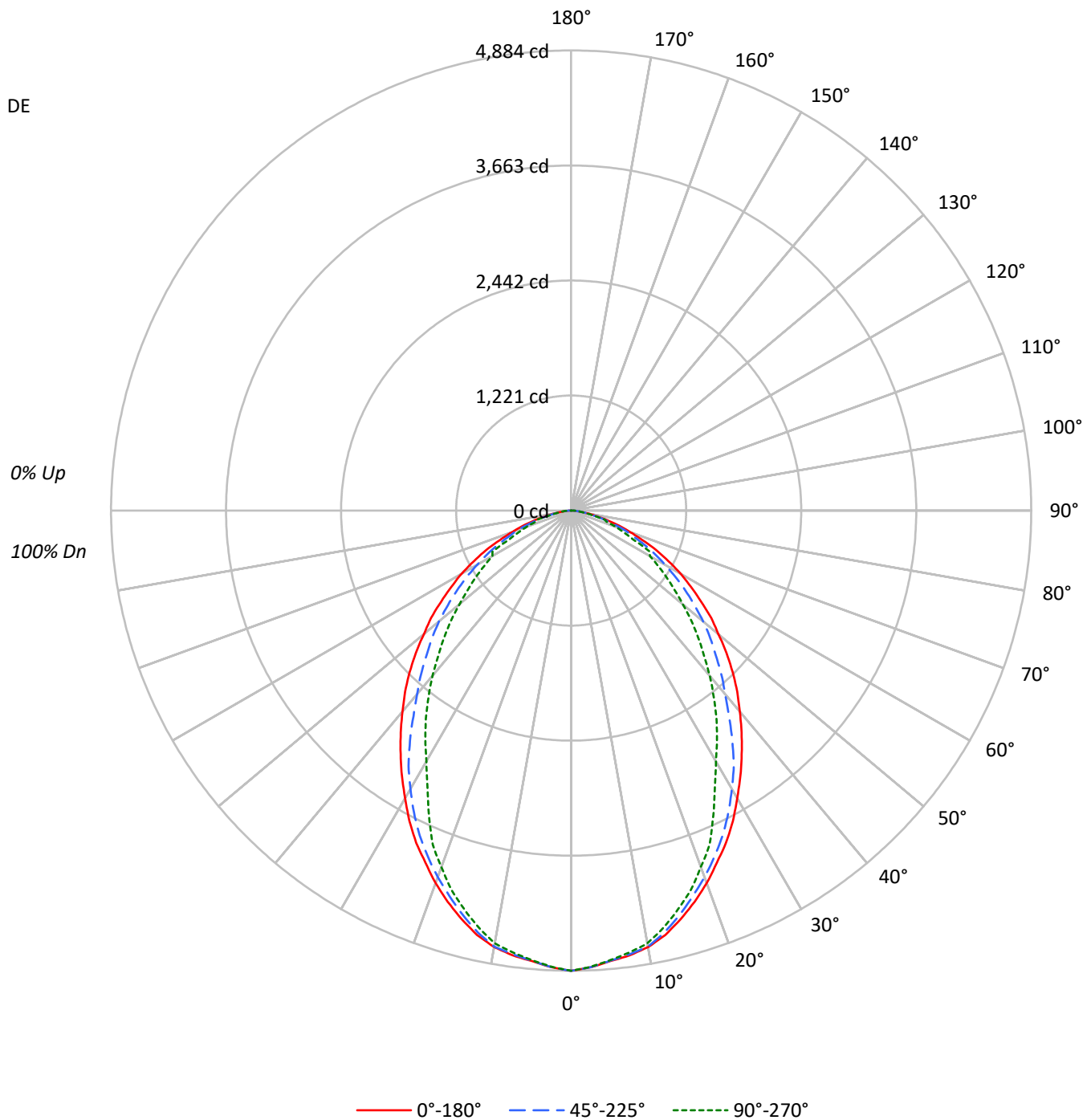
Lumens per Lamp: N/A  
Luminaire Lumens: 9589.0 lumens  
Efficiency: N/A  
Efficacy: 102.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 93.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P563972

CATALOG NUMBER: FSR-24-4-LD4-4LO-50-UNV-81-86-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P563972

CATALOG NUMBER: FSR-24-4-LD4-4LO-50-UNV-81-86-EDD-90

**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				
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°	6572	6572	6572
5°	6483	6475	6467
10°	6427	6419	6373
15°	6253	6190	6104
20°	6024	5927	5765
25°	5776	5650	5298
30°	5474	5299	4773
35°	5185	4897	4415
40°	4890	4463	4017
45°	4610	4126	3632
50°	4267	3830	3239
55°	3947	3471	2901
60°	3616	3100	2598
65°	3182	2715	2301
70°	2621	2377	1955
75°	2084	1820	1908
80°	1400	1313	1225
85°	872	1047	1221

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4610 cd/sqm



TEST NUMBER: P563972

CATALOG NUMBER: FSR-24-4-LD4-4LO-50-UNV-81-86-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	454.7	4.7
10°-20°	1247.8	13.0
20°-30°	1727.5	18.0
30°-40°	1842.1	19.2
40°-50°	1680.5	17.5
50°-60°	1316.5	13.7
60°-70°	858.1	8.9
70°-80°	380.2	4.0
80°-90°	81.6	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°	3430.1	35.8
0°-40°	5272.1	55.0
0°-60°	8269.2	86.2
0°-90°	9589.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9589.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4884	4884	4884	4884	4884	
5°	4800	4794	4794	4788	4788	456
15°	4489	4489	4444	4399	4382	1262
25°	3891	3868	3806	3670	3569	1786
35°	3157	3134	2982	2756	2688	1973
45°	2422	2372	2168	1988	1909	1866
55°	1683	1632	1480	1304	1237	1509
65°	1000	943	853	870	723	985
75°	401	373	350	333	367	430
85°	56	62	68	73	79	78
90°	0	0	0	0	0	



TEST NUMBER: P563972

CATALOG NUMBER: FSR-24-4-LD4-4LO-50-UNV-81-86-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4884.5	4884.5	4884.5	4884.5	4884.5
2.5°	4850.6	4850.6	4850.6	4845.0	4845.0
5°	4799.8	4794.2	4794.2	4788.5	4788.5
7.5°	4760.3	4754.6	4749.0	4743.3	4732.0
10°	4703.8	4703.8	4698.2	4669.9	4664.3
12.5°	4613.5	4607.8	4585.2	4545.7	4534.4
15°	4489.2	4489.2	4444.1	4398.9	4381.9
17.5°	4353.7	4348.1	4291.6	4246.4	4223.8
20°	4206.9	4195.6	4139.1	4065.7	4026.2
22.5°	4043.1	4043.1	3975.4	3879.4	3839.8
25°	3890.7	3868.1	3806.0	3670.4	3568.8
27.5°	3715.6	3681.7	3614.0	3422.0	3303.4
30°	3523.6	3506.7	3410.7	3162.2	3071.9
32.5°	3342.9	3314.7	3213.0	2953.3	2879.9
35°	3156.6	3134.0	2981.5	2755.7	2687.9
37.5°	2970.2	2942.0	2750.0	2569.3	2484.6
40°	2783.9	2750.0	2541.1	2377.3	2287.0
42.5°	2608.8	2563.7	2360.4	2185.3	2083.7
45°	2422.5	2371.7	2168.4	1987.7	1908.6
47.5°	2236.1	2191.0	2004.6	1818.3	1727.9
50°	2038.5	1999.0	1829.6	1643.2	1547.2
52.5°	1874.7	1812.6	1648.9	1462.5	1383.5
55°	1682.8	1631.9	1479.5	1304.4	1236.7
57.5°	1507.7	1456.9	1315.7	1152.0	1095.5
60°	1343.9	1270.5	1152.0	1010.8	965.6
62.5°	1163.2	1106.8	1005.1	886.6	943.0
65°	999.5	943.0	852.7	869.6	722.8
67.5°	818.8	790.6	711.5	632.4	609.9
70°	666.3	632.4	604.2	519.5	496.9
72.5°	530.8	496.9	457.4	412.2	395.3
75°	400.9	372.7	350.1	333.2	367.0
77.5°	276.7	265.4	248.5	231.5	225.9
80°	180.7	175.1	169.4	163.8	158.1
82.5°	107.3	107.3	107.3	107.3	107.3
85°	56.5	62.1	67.8	73.4	79.1
87.5°	33.9	33.9	39.5	45.2	50.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)