

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: P561796

Luminaire Tested: FSR-12-4-LD4-2STD-40-UNV-81-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561796  
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-12-4-LD4-2STD-40-UNV-81-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

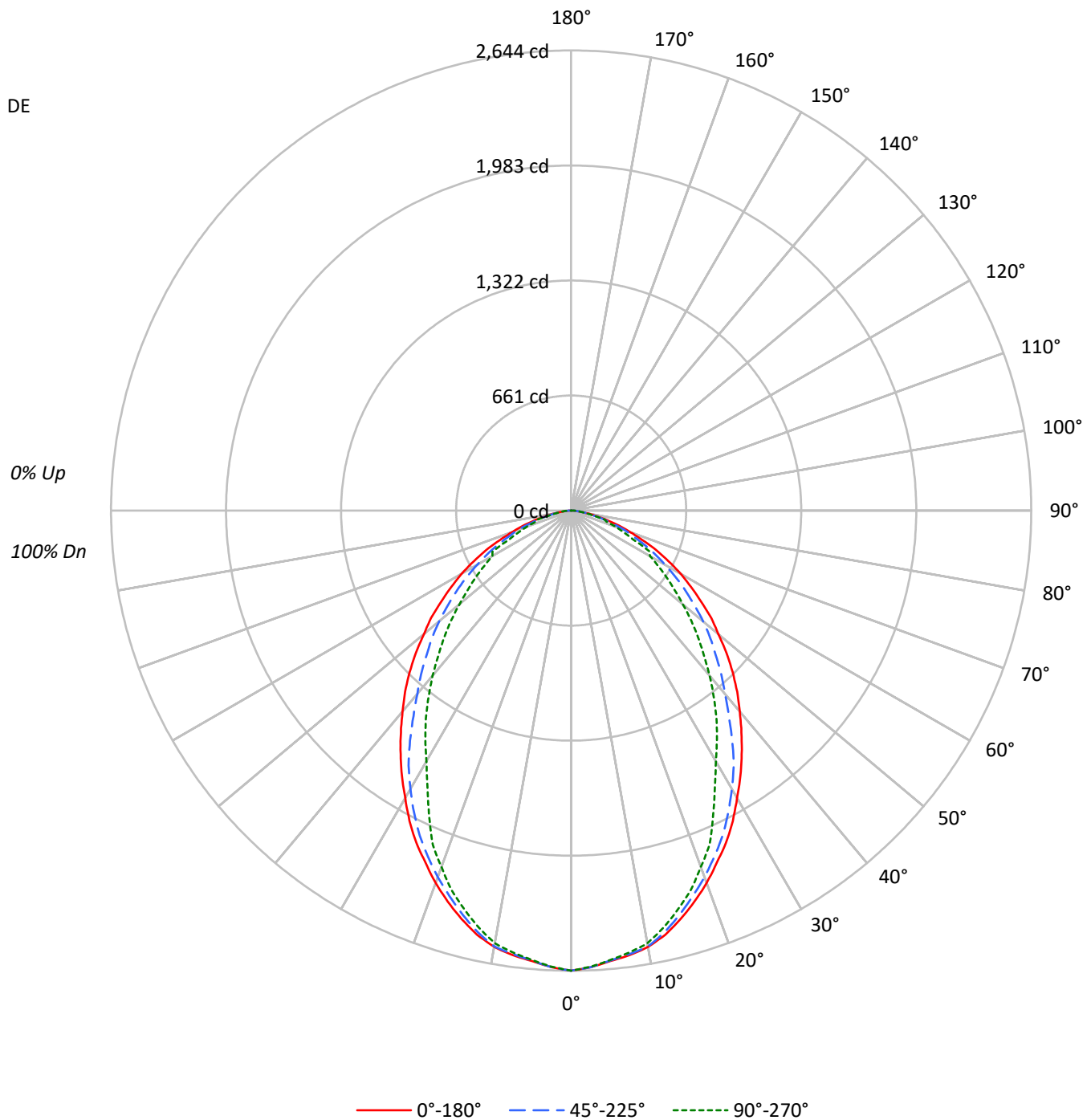
Lumens per Lamp: N/A  
Luminaire Lumens: 5190.0 lumens  
Efficiency: N/A  
Efficacy: 77.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 66.6  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7114	7114	7114
5°	7018	7009	7001
10°	6957	6948	6898
15°	6769	6701	6607
20°	6521	6416	6241
25°	6252	6116	5735
30°	5926	5736	5166
35°	5613	5301	4779
40°	5293	4831	4348
45°	4990	4466	3931
50°	4619	4145	3506
55°	4273	3757	3140
60°	3915	3356	2813
65°	3445	2939	2491
70°	2837	2573	2116
75°	2256	1970	2066
80°	1516	1421	1327
85°	945	1133	1321

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4990 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	246.1	4.7
10°-20°	675.4	13.0
20°-30°	935.0	18.0
30°-40°	997.0	19.2
40°-50°	909.6	17.5
50°-60°	712.6	13.7
60°-70°	464.4	8.9
70°-80°	205.8	4.0
80°-90°	44.2	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°	1856.5	35.8
0°-40°	2853.5	55.0
0°-60°	4475.6	86.2
0°-90°	5190.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	5190.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2644	2644	2644	2644	2644	
5°	2598	2595	2595	2592	2592	247
15°	2430	2430	2405	2381	2372	683
25°	2106	2094	2060	1987	1932	967
35°	1708	1696	1614	1492	1455	1068
45°	1311	1284	1174	1076	1033	1010
55°	911	883	801	706	669	817
65°	541	510	462	471	391	533
75°	217	202	190	180	199	233
85°	31	34	37	40	43	42
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2643.7	2643.7	2643.7	2643.7	2643.7
2.5°	2625.4	2625.4	2625.4	2622.3	2622.3
5°	2597.9	2594.8	2594.8	2591.8	2591.8
7.5°	2576.5	2573.4	2570.4	2567.3	2561.2
10°	2545.9	2545.9	2542.9	2527.6	2524.5
12.5°	2497.0	2494.0	2481.7	2460.3	2454.2
15°	2429.8	2429.8	2405.3	2380.9	2371.7
17.5°	2356.4	2353.4	2322.8	2298.4	2286.1
20°	2277.0	2270.8	2240.3	2200.6	2179.2
22.5°	2188.3	2188.3	2151.6	2099.7	2078.3
25°	2105.8	2093.6	2060.0	1986.6	1931.6
27.5°	2011.1	1992.7	1956.0	1852.1	1787.9
30°	1907.1	1898.0	1846.0	1711.5	1662.6
32.5°	1809.3	1794.1	1739.0	1598.5	1558.7
35°	1708.5	1696.3	1613.7	1491.5	1454.8
37.5°	1607.6	1592.3	1488.4	1390.6	1344.8
40°	1506.8	1488.4	1375.3	1286.7	1237.8
42.5°	1412.0	1387.6	1277.5	1182.8	1127.8
45°	1311.2	1283.7	1173.6	1075.8	1033.0
47.5°	1210.3	1185.9	1085.0	984.1	935.2
50°	1103.3	1081.9	990.2	889.4	837.4
52.5°	1014.7	981.1	892.4	791.6	748.8
55°	910.8	883.3	800.8	706.0	669.3
57.5°	816.0	788.5	712.1	623.5	592.9
60°	727.4	687.7	623.5	547.1	522.6
62.5°	629.6	599.0	544.0	479.8	510.4
65°	541.0	510.4	461.5	470.7	391.2
67.5°	443.2	427.9	385.1	342.3	330.1
70°	360.6	342.3	327.0	281.2	269.0
72.5°	287.3	269.0	247.6	223.1	213.9
75°	217.0	201.7	189.5	180.3	198.7
77.5°	149.8	143.6	134.5	125.3	122.3
80°	97.8	94.7	91.7	88.6	85.6
82.5°	58.1	58.1	58.1	58.1	58.1
85°	30.6	33.6	36.7	39.7	42.8
87.5°	18.3	18.3	21.4	24.5	27.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)