

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: P563557

Luminaire Tested: FSR-24-4-LD4-3STD-40-UNV-93-86-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563557  
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-LD4-3STD-40-UNV-93-86-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

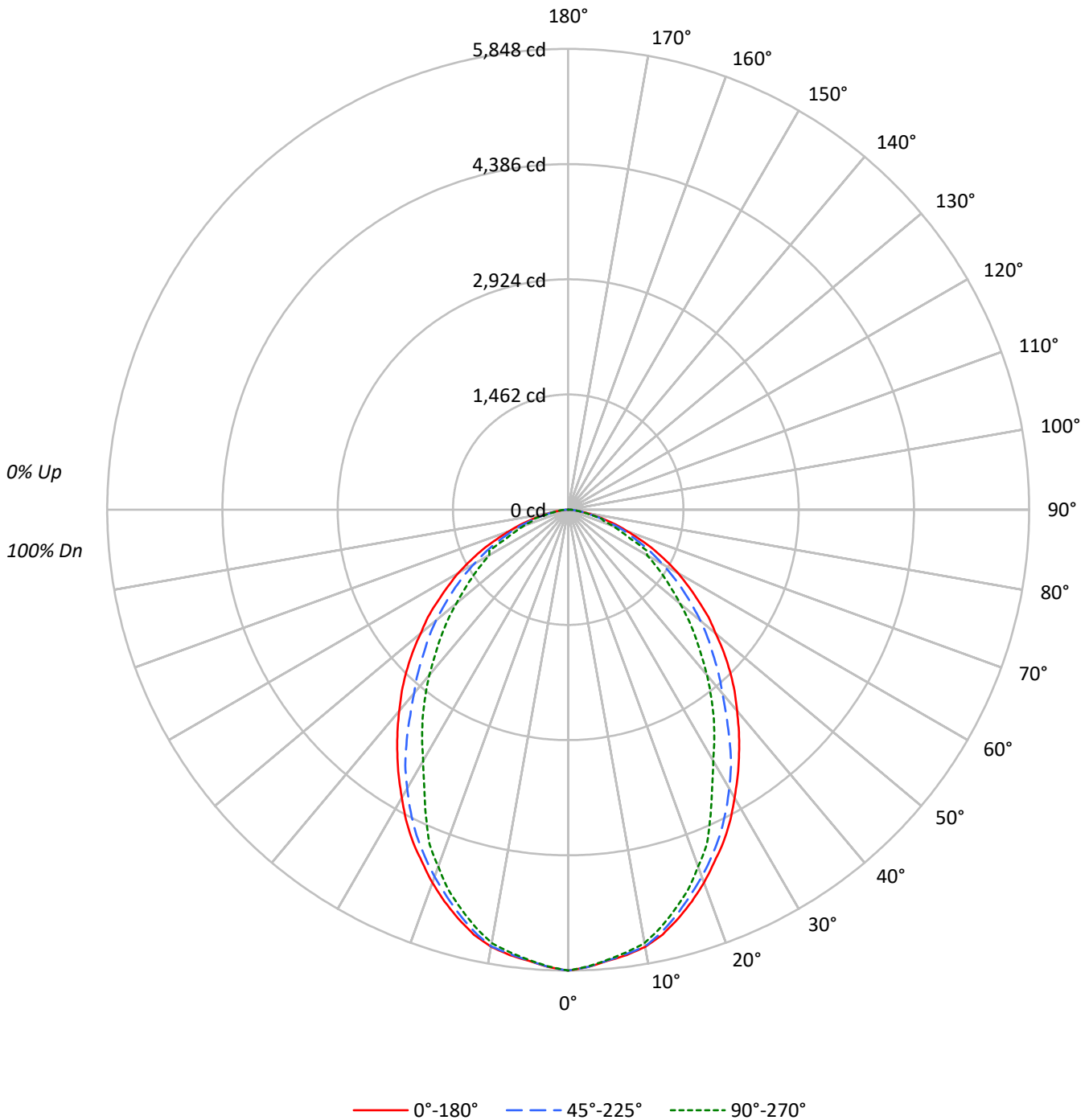
Lumens per Lamp: N/A  
Luminaire Lumens: 11481.0 lumens  
Efficiency: N/A  
Efficacy: 114.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	7869	7869	7869
5°	7762	7753	7744
10°	7695	7685	7630
15°	7487	7412	7308
20°	7212	7096	6902
25°	6916	6765	6344
30°	6555	6344	5714
35°	6208	5864	5286
40°	5854	5344	4809
45°	5519	4940	4348
50°	5109	4585	3878
55°	4726	4155	3473
60°	4330	3711	3111
65°	3810	3250	2755
70°	3139	2846	2341
75°	2495	2179	2285
80°	1677	1571	1467
85°	1044	1252	1462

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5519 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	544.4	4.7
10°-20°	1494.0	13.0
20°-30°	2068.4	18.0
30°-40°	2205.5	19.2
40°-50°	2012.1	17.5
50°-60°	1576.3	13.7
60°-70°	1027.4	8.9
70°-80°	455.2	4.0
80°-90°	97.7	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°	4106.8	35.8
0°-40°	6312.4	55.0
0°-60°	9900.8	86.2
0°-90°	11481.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11481.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	5848	5848	5848	5848	5848	
5°	5747	5740	5740	5733	5733	546
15°	5375	5375	5321	5267	5246	1511
25°	4658	4631	4557	4395	4273	2139
35°	3779	3752	3570	3299	3218	2363
45°	2900	2840	2596	2380	2285	2234
55°	2015	1954	1771	1562	1481	1807
65°	1197	1129	1021	1041	865	1179
75°	480	446	419	399	440	514
85°	68	74	81	88	95	94
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	5848.3	5848.3	5848.3	5848.3	5848.3
2.5°	5807.7	5807.7	5807.7	5800.9	5800.9
5°	5746.9	5740.1	5740.1	5733.3	5733.3
7.5°	5699.5	5692.8	5686.0	5679.2	5665.7
10°	5631.9	5631.9	5625.2	5591.3	5584.6
12.5°	5523.7	5517.0	5489.9	5442.6	5429.1
15°	5375.0	5375.0	5320.9	5266.8	5246.5
17.5°	5212.7	5206.0	5138.4	5084.3	5057.2
20°	5036.9	5023.4	4955.8	4867.9	4820.6
22.5°	4840.9	4840.9	4759.7	4644.8	4597.5
25°	4658.3	4631.3	4556.9	4394.7	4273.0
27.5°	4448.7	4408.2	4327.0	4097.2	3955.2
30°	4218.9	4198.6	4083.6	3786.2	3678.0
32.5°	4002.5	3968.7	3847.0	3536.0	3448.1
35°	3779.4	3752.4	3569.8	3299.4	3218.2
37.5°	3556.3	3522.5	3292.6	3076.3	2974.8
40°	3333.2	3292.6	3042.5	2846.4	2738.2
42.5°	3123.6	3069.5	2826.1	2616.5	2494.8
45°	2900.5	2839.6	2596.2	2379.9	2285.2
47.5°	2677.4	2623.3	2400.2	2177.0	2068.9
50°	2440.7	2393.4	2190.6	1967.5	1852.5
52.5°	2244.7	2170.3	1974.2	1751.1	1656.4
55°	2014.8	1953.9	1771.4	1561.8	1480.7
57.5°	1805.2	1744.3	1575.3	1379.2	1311.6
60°	1609.1	1521.2	1379.2	1210.2	1156.1
62.5°	1392.8	1325.2	1203.5	1061.5	1129.1
65°	1196.7	1129.1	1020.9	1041.2	865.4
67.5°	980.3	946.5	851.9	757.2	730.2
70°	797.8	757.2	723.4	622.0	595.0
72.5°	635.5	595.0	547.6	493.6	473.3
75°	480.0	446.2	419.2	398.9	439.5
77.5°	331.3	317.8	297.5	277.2	270.4
80°	216.4	209.6	202.8	196.1	189.3
82.5°	128.5	128.5	128.5	128.5	128.5
85°	67.6	74.4	81.1	87.9	94.7
87.5°	40.6	40.6	47.3	54.1	60.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)