

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: P563629

Luminaire Tested: FSR-24-4-LD4-3STD-50-UNV-93-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563629  
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-50-UNV-93-96-EDD  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

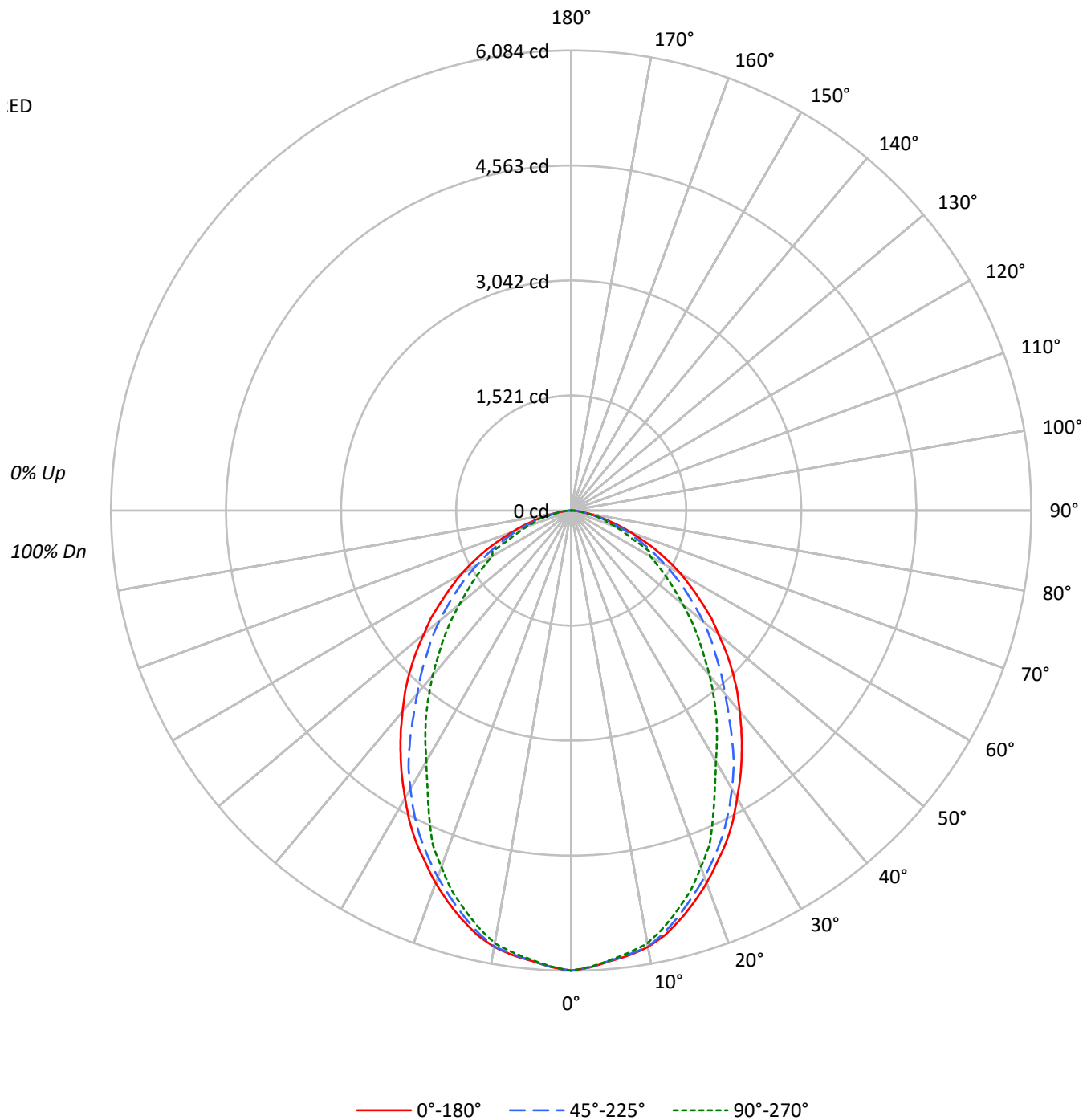
Lumens per Lamp: N/A  
Luminaire Lumens: 11943.0 lumens  
Efficiency: N/A  
Efficacy: 119.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	8185	8185	8185
5°	8074	8065	8055
10°	8004	7995	7937
15°	7788	7710	7602
20°	7502	7381	7180
25°	7194	7037	6599
30°	6818	6600	5944
35°	6458	6100	5499
40°	6090	5559	5003
45°	5741	5139	4523
50°	5314	4770	4034
55°	4917	4323	3613
60°	4504	3861	3236
65°	3963	3381	2866
70°	3265	2960	2435
75°	2596	2267	2376
80°	1744	1635	1526
85°	1085	1303	1521

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 5741 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	566.3	4.7
10°-20°	1554.2	13.0
20°-30°	2151.6	18.0
30°-40°	2294.3	19.2
40°-50°	2093.0	17.5
50°-60°	1639.7	13.7
60°-70°	1068.7	8.9
70°-80°	473.5	4.0
80°-90°	101.7	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°	4272.1	35.8
0°-40°	6566.4	55.0
0°-60°	10299.2	86.2
0°-90°	11943.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	11943.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	6084	6084	6084	6084	6084	
5°	5978	5971	5971	5964	5964	567
15°	5591	5591	5535	5479	5458	1572
25°	4846	4818	4740	4572	4445	2225
35°	3932	3903	3714	3432	3348	2458
45°	3017	2954	2701	2476	2377	2324
55°	2096	2033	1843	1625	1540	1880
65°	1245	1174	1062	1083	900	1227
75°	499	464	436	415	457	535
85°	70	77	84	91	98	98
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	6083.6	6083.6	6083.6	6083.6	6083.6
2.5°	6041.4	6041.4	6041.4	6034.4	6034.4
5°	5978.1	5971.1	5971.1	5964.0	5964.0
7.5°	5928.9	5921.8	5914.8	5907.8	5893.7
10°	5858.5	5858.5	5851.5	5816.3	5809.3
12.5°	5746.0	5739.0	5710.9	5661.6	5647.6
15°	5591.3	5591.3	5535.0	5478.8	5457.7
17.5°	5422.5	5415.5	5345.1	5288.9	5260.7
20°	5239.6	5225.6	5155.2	5063.8	5014.6
22.5°	5035.7	5035.7	4951.3	4831.7	4782.5
25°	4845.8	4817.7	4740.3	4571.5	4444.9
27.5°	4627.8	4585.6	4501.2	4262.0	4114.3
30°	4388.6	4367.5	4248.0	3938.5	3826.0
32.5°	4163.6	4128.4	4001.8	3678.3	3586.9
35°	3931.5	3903.4	3713.5	3432.1	3347.7
37.5°	3699.4	3664.2	3425.1	3200.0	3094.6
40°	3467.3	3425.1	3164.9	2960.9	2848.4
42.5°	3249.3	3193.0	2939.8	2721.8	2595.2
45°	3017.2	2953.9	2700.7	2475.6	2377.2
47.5°	2785.1	2728.8	2496.7	2264.6	2152.1
50°	2538.9	2489.7	2278.7	2046.6	1927.1
52.5°	2335.0	2257.6	2053.7	1821.6	1723.1
55°	2095.9	2032.6	1842.7	1624.6	1540.2
57.5°	1877.8	1814.5	1638.7	1434.7	1364.4
60°	1673.9	1582.4	1434.7	1258.9	1202.7
62.5°	1448.8	1378.5	1251.9	1104.2	1174.5
65°	1244.9	1174.5	1062.0	1083.1	900.2
67.5°	1019.8	984.6	886.2	787.7	759.6
70°	829.9	787.7	752.5	647.0	618.9
72.5°	661.1	618.9	569.7	513.4	492.3
75°	499.3	464.2	436.1	415.0	457.1
77.5°	344.6	330.6	309.5	288.4	281.3
80°	225.1	218.0	211.0	204.0	196.9
82.5°	133.6	133.6	133.6	133.6	133.6
85°	70.3	77.4	84.4	91.4	98.5
87.5°	42.2	42.2	49.2	56.3	63.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)