

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: P562669

Luminaire Tested: FSR-24-4-LD4-2HI-50-UNV-93-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562669  
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-LD4-2HI-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**

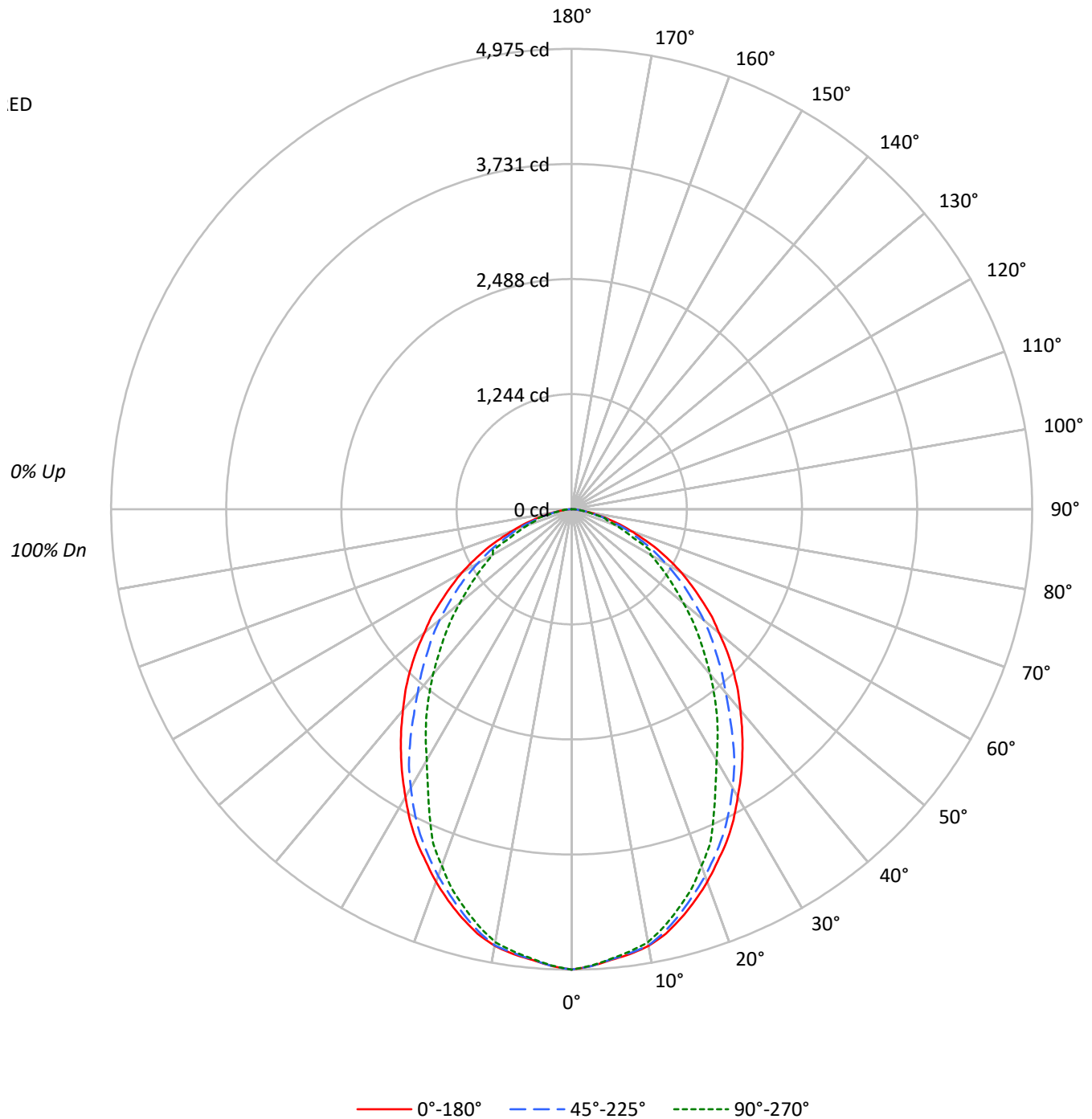
Lumens per Lamp: N/A  
Luminaire Lumens: 9766.0 lumens  
Efficiency: N/A  
Efficacy: 113.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6693	6693	6693
5°	6602	6595	6587
10°	6545	6537	6490
15°	6369	6305	6216
20°	6135	6036	5871
25°	5883	5755	5396
30°	5576	5397	4861
35°	5280	4988	4496
40°	4980	4546	4091
45°	4695	4202	3699
50°	4346	3900	3298
55°	4020	3535	2955
60°	3683	3157	2646
65°	3241	2765	2344
70°	2670	2421	1991
75°	2123	1854	1943
80°	1426	1337	1247
85°	888	1065	1243

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4695 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	463.1	4.7
10°-20°	1270.9	13.0
20°-30°	1759.4	18.0
30°-40°	1876.1	19.2
40°-50°	1711.5	17.5
50°-60°	1340.8	13.7
60°-70°	873.9	8.9
70°-80°	387.2	4.0
80°-90°	83.1	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°	3493.4	35.8
0°-40°	5369.4	55.0
0°-60°	8421.8	86.2
0°-90°	9766.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9766.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4975	4975	4975	4975	4975	
5°	4888	4883	4883	4877	4877	464
15°	4572	4572	4526	4480	4463	1285
25°	3962	3940	3876	3738	3635	1819
35°	3215	3192	3037	2806	2738	2010
45°	2467	2415	2208	2024	1944	1900
55°	1714	1662	1507	1328	1260	1537
65°	1018	960	868	886	736	1003
75°	408	380	357	339	374	438
85°	58	63	69	75	80	80
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4974.7	4974.7	4974.7	4974.7	4974.7
2.5°	4940.2	4940.2	4940.2	4934.4	4934.4
5°	4888.4	4882.7	4882.7	4876.9	4876.9
7.5°	4848.1	4842.4	4836.6	4830.9	4819.4
10°	4790.6	4790.6	4784.9	4756.1	4750.4
12.5°	4698.6	4692.9	4669.9	4629.6	4618.1
15°	4572.1	4572.1	4526.1	4480.1	4462.8
17.5°	4434.1	4428.3	4370.8	4324.8	4301.8
20°	4284.5	4273.0	4215.5	4140.8	4100.5
22.5°	4117.8	4117.8	4048.7	3951.0	3910.7
25°	3962.5	3939.5	3876.2	3738.2	3634.7
27.5°	3784.2	3749.7	3680.7	3485.1	3364.4
30°	3588.7	3571.4	3473.6	3220.6	3128.6
32.5°	3404.6	3375.9	3272.4	3007.8	2933.0
35°	3214.8	3191.8	3036.6	2806.5	2737.5
37.5°	3025.1	2996.3	2800.8	2616.7	2530.5
40°	2835.3	2800.8	2588.0	2421.2	2329.2
42.5°	2657.0	2611.0	2403.9	2225.7	2122.1
45°	2467.2	2415.4	2208.4	2024.4	1943.9
47.5°	2277.4	2231.4	2041.6	1851.8	1759.8
50°	2076.1	2035.9	1863.3	1673.6	1575.8
52.5°	1909.4	1846.1	1679.3	1489.5	1409.0
55°	1713.8	1662.1	1506.8	1328.5	1259.5
57.5°	1535.5	1483.8	1340.0	1173.2	1115.7
60°	1368.8	1294.0	1173.2	1029.4	983.4
62.5°	1184.7	1127.2	1023.7	902.9	960.4
65°	1017.9	960.4	868.4	885.7	736.1
67.5°	833.9	805.1	724.6	644.1	621.1
70°	678.6	644.1	615.4	529.1	506.1
72.5°	540.6	506.1	465.8	419.8	402.6
75°	408.3	379.6	356.6	339.3	373.8
77.5°	281.8	270.3	253.0	235.8	230.0
80°	184.0	178.3	172.5	166.8	161.0
82.5°	109.3	109.3	109.3	109.3	109.3
85°	57.5	63.3	69.0	74.8	80.5
87.5°	34.5	34.5	40.3	46.0	51.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)