

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: P563494

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-93-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563494  
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-35-UNV-93-87-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

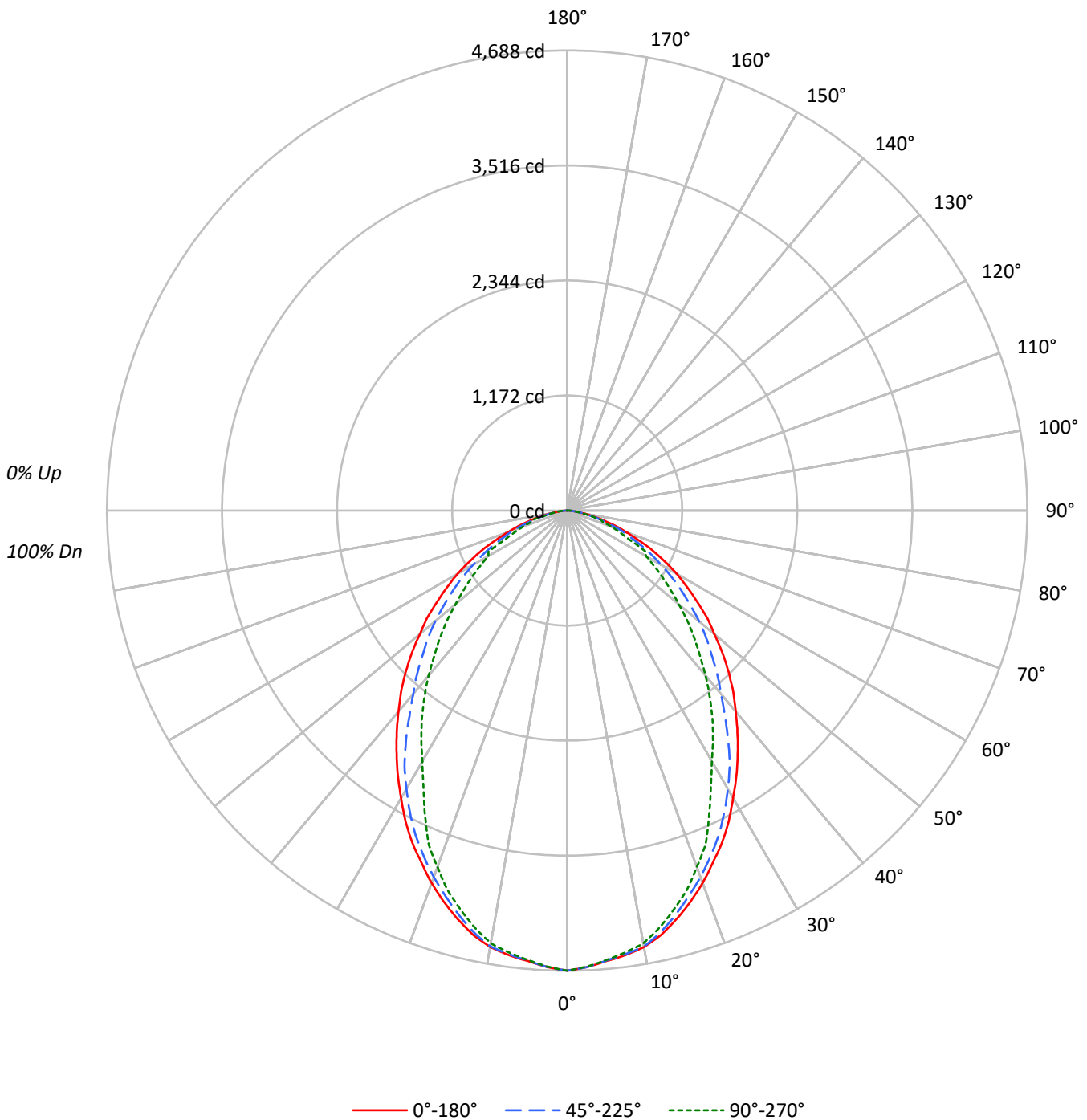
Lumens per Lamp: N/A  
Luminaire Lumens: 9203.0 lumens  
Efficiency: N/A  
Efficacy: 92.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	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°	6308	6308	6308
5°	6222	6215	6207
10°	6168	6160	6116
15°	6002	5941	5858
20°	5781	5688	5533
25°	5543	5423	5085
30°	5254	5086	4580
35°	4976	4700	4237
40°	4693	4284	3855
45°	4424	3960	3486
50°	4095	3675	3108
55°	3788	3331	2784
60°	3471	2975	2494
65°	3054	2605	2209
70°	2516	2281	1876
75°	2000	1747	1831
80°	1344	1260	1175
85°	837	1003	1172

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4424 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	436.4	4.7
10°-20°	1197.6	13.0
20°-30°	1658.0	18.0
30°-40°	1767.9	19.2
40°-50°	1612.9	17.5
50°-60°	1263.5	13.7
60°-70°	823.5	8.9
70°-80°	364.9	4.0
80°-90°	78.3	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°	3292.0	35.8
0°-40°	5059.9	55.0
0°-60°	7936.3	86.2
0°-90°	9203.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9203.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4688	4688	4688	4688	4688	
5°	4607	4601	4601	4596	4596	437
15°	4308	4308	4265	4222	4206	1211
25°	3734	3712	3653	3523	3425	1714
35°	3030	3008	2862	2645	2580	1894
45°	2325	2276	2081	1908	1832	1791
55°	1615	1566	1420	1252	1187	1449
65°	959	905	818	835	694	945
75°	385	358	336	320	352	412
85°	54	60	65	70	76	75
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4687.9	4687.9	4687.9	4687.9	4687.9
2.5°	4655.4	4655.4	4655.4	4649.9	4649.9
5°	4606.6	4601.2	4601.2	4595.8	4595.8
7.5°	4568.7	4563.2	4557.8	4552.4	4541.6
10°	4514.5	4514.5	4509.0	4481.9	4476.5
12.5°	4427.7	4422.3	4400.7	4362.7	4351.9
15°	4308.5	4308.5	4265.2	4221.8	4205.5
17.5°	4178.5	4173.0	4118.8	4075.5	4053.8
20°	4037.5	4026.7	3972.5	3902.1	3864.1
22.5°	3880.4	3880.4	3815.3	3723.2	3685.3
25°	3734.0	3712.4	3652.8	3522.7	3425.1
27.5°	3566.0	3533.5	3468.5	3284.2	3170.4
30°	3381.8	3365.5	3273.4	3034.9	2948.2
32.5°	3208.4	3181.3	3083.7	2834.4	2764.0
35°	3029.5	3007.8	2861.5	2644.7	2579.7
37.5°	2850.7	2823.6	2639.3	2465.9	2384.6
40°	2671.8	2639.3	2438.8	2281.6	2194.9
42.5°	2503.8	2460.5	2265.4	2097.4	1999.8
45°	2325.0	2276.2	2081.1	1907.7	1831.8
47.5°	2146.1	2102.8	1923.9	1745.1	1658.4
50°	1956.4	1918.5	1755.9	1577.1	1484.9
52.5°	1799.3	1739.7	1582.5	1403.7	1327.8
55°	1615.0	1566.2	1419.9	1251.9	1186.9
57.5°	1447.0	1398.2	1262.7	1105.6	1051.4
60°	1289.8	1219.4	1105.6	970.1	926.7
62.5°	1116.4	1062.2	964.7	850.9	905.1
65°	959.3	905.1	818.3	834.6	693.7
67.5°	785.8	758.7	682.9	607.0	585.3
70°	639.5	607.0	579.9	498.6	476.9
72.5°	509.4	476.9	439.0	395.6	379.4
75°	384.8	357.7	336.0	319.8	352.3
77.5°	265.6	254.7	238.5	222.2	216.8
80°	173.4	168.0	162.6	157.2	151.7
82.5°	103.0	103.0	103.0	103.0	103.0
85°	54.2	59.6	65.0	70.5	75.9
87.5°	32.5	32.5	37.9	43.4	48.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)