

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: P563492

Luminaire Tested: FSR-24-4-LD4-3STD-35-UNV-93-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P563492  
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-93-86-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

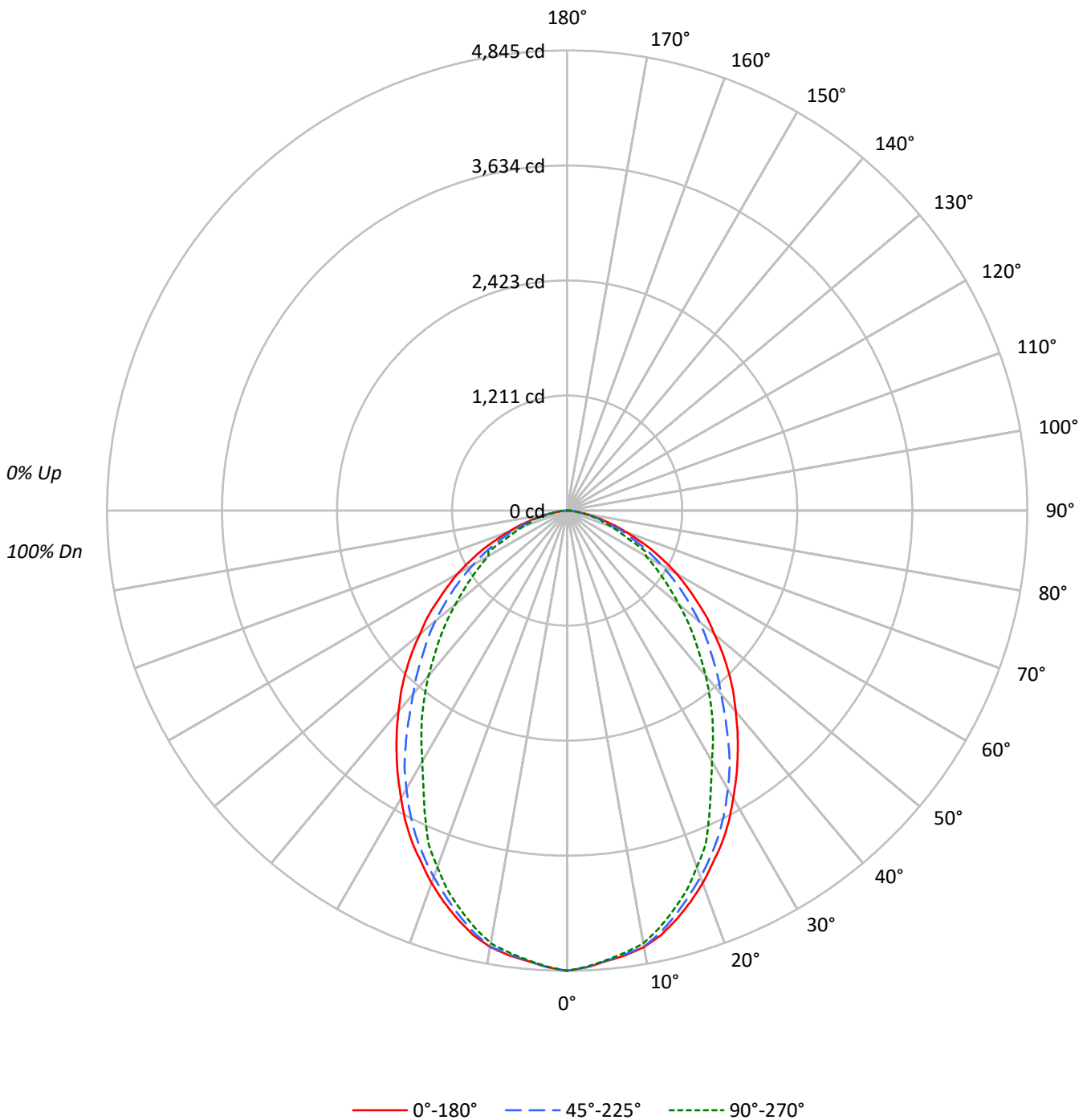
Lumens per Lamp: N/A  
Luminaire Lumens: 9512.0 lumens  
Efficiency: N/A  
Efficacy: 95.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 99.9  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6519	6519	6519
5°	6431	6423	6416
10°	6375	6367	6321
15°	6203	6141	6055
20°	5975	5879	5719
25°	5730	5605	5256
30°	5430	5256	4734
35°	5143	4858	4380
40°	4850	4427	3985
45°	4572	4093	3603
50°	4233	3799	3213
55°	3916	3443	2878
60°	3588	3075	2578
65°	3157	2693	2283
70°	2600	2358	1939
75°	2067	1805	1893
80°	1389	1302	1215
85°	865	1037	1210

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4572 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	451.0	4.7
10°-20°	1237.8	13.0
20°-30°	1713.7	18.0
30°-40°	1827.3	19.2
40°-50°	1667.0	17.5
50°-60°	1306.0	13.7
60°-70°	851.2	8.9
70°-80°	377.1	4.0
80°-90°	80.9	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°	3402.5	35.8
0°-40°	5229.8	55.0
0°-60°	8202.8	86.2
0°-90°	9512.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	9512.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4845	4845	4845	4845	4845	
5°	4761	4756	4756	4750	4750	452
15°	4453	4453	4408	4364	4347	1252
25°	3859	3837	3775	3641	3540	1772
35°	3131	3109	2958	2734	2666	1958
45°	2403	2353	2151	1972	1893	1851
55°	1669	1619	1468	1294	1227	1497
65°	992	935	846	863	717	977
75°	398	370	347	330	364	426
85°	56	62	67	73	78	78
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4845.3	4845.3	4845.3	4845.3	4845.3
2.5°	4811.7	4811.7	4811.7	4806.1	4806.1
5°	4761.3	4755.7	4755.7	4750.1	4750.1
7.5°	4722.1	4716.5	4710.9	4705.2	4694.0
10°	4666.0	4666.0	4660.4	4632.4	4626.8
12.5°	4576.4	4570.8	4548.4	4509.2	4498.0
15°	4453.2	4453.2	4408.4	4363.6	4346.8
17.5°	4318.7	4313.1	4257.1	4212.3	4189.9
20°	4173.1	4161.9	4105.9	4033.1	3993.9
22.5°	4010.7	4010.7	3943.4	3848.2	3809.0
25°	3859.4	3837.0	3775.4	3641.0	3540.1
27.5°	3685.8	3652.2	3585.0	3394.5	3276.9
30°	3495.3	3478.5	3383.3	3136.8	3047.2
32.5°	3316.1	3288.1	3187.2	2929.6	2856.8
35°	3131.2	3108.8	2957.6	2733.5	2666.3
37.5°	2946.4	2918.4	2727.9	2548.7	2464.7
40°	2761.5	2727.9	2520.7	2358.2	2268.6
42.5°	2587.9	2543.1	2341.4	2167.8	2066.9
45°	2403.0	2352.6	2151.0	1971.7	1893.3
47.5°	2218.2	2173.4	1988.5	1803.7	1714.1
50°	2022.1	1982.9	1814.9	1630.0	1534.8
52.5°	1859.7	1798.1	1635.6	1450.8	1372.4
55°	1669.2	1618.8	1467.6	1293.9	1226.7
57.5°	1495.6	1445.2	1305.1	1142.7	1086.7
60°	1333.2	1260.3	1142.7	1002.7	957.9
62.5°	1153.9	1097.9	997.1	879.4	935.4
65°	991.5	935.4	845.8	862.6	717.0
67.5°	812.2	784.2	705.8	627.4	605.0
70°	661.0	627.4	599.4	515.3	492.9
72.5°	526.5	492.9	453.7	408.9	392.1
75°	397.7	369.7	347.3	330.5	364.1
77.5°	274.5	263.3	246.5	229.7	224.1
80°	179.2	173.6	168.0	162.4	156.8
82.5°	106.4	106.4	106.4	106.4	106.4
85°	56.0	61.6	67.2	72.8	78.4
87.5°	33.6	33.6	39.2	44.8	50.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)