

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: P561383

Luminaire Tested: FSR-12-4-LD4-2HI-35-UNV-93-87-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561383  
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-12-4-LD4-2HI-35-UNV-93-87-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

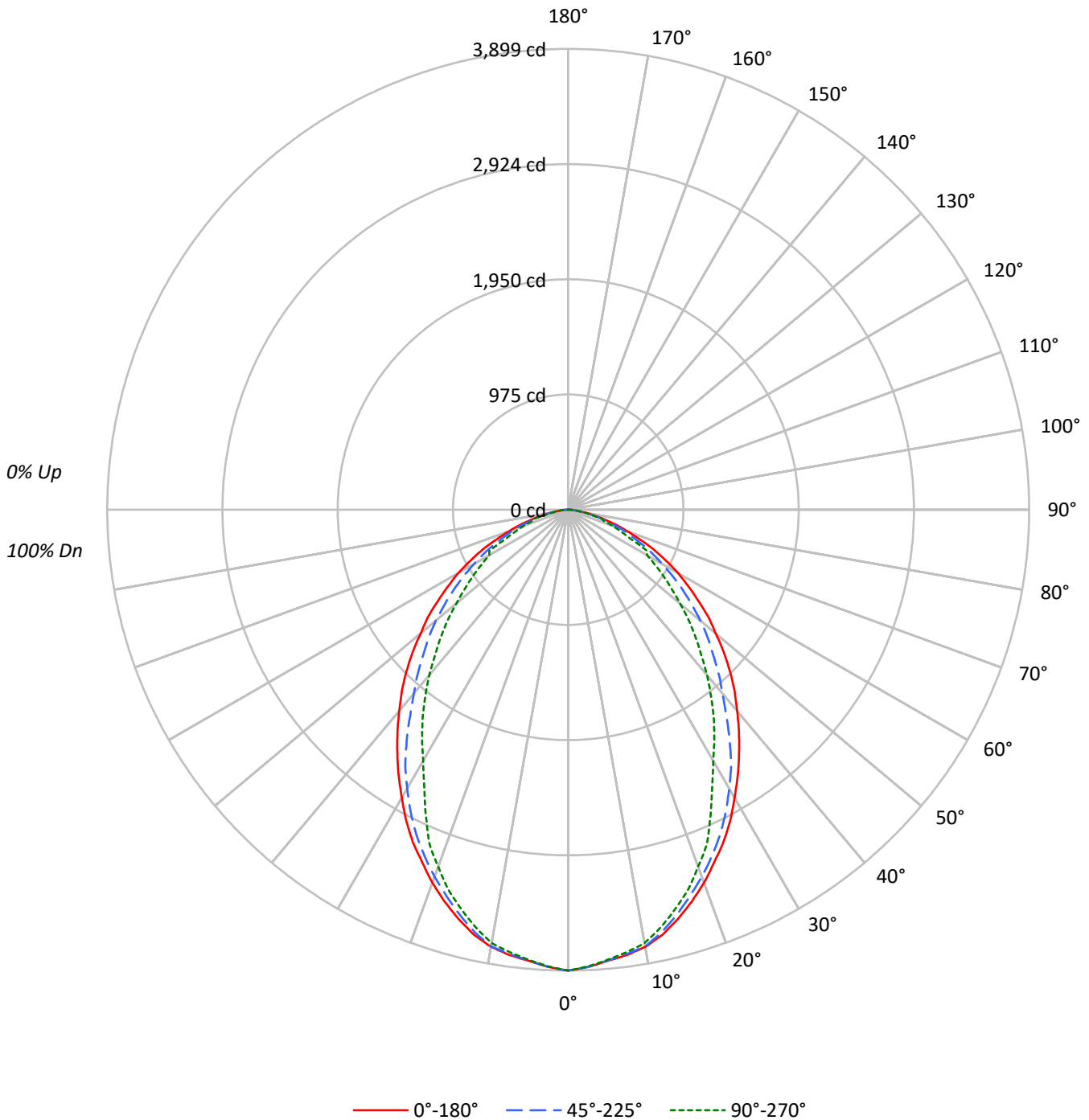
Lumens per Lamp: N/A  
Luminaire Lumens: 7655.0 lumens  
Efficiency: N/A  
Efficacy: 88.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	10493	10493	10493
5°	10350	10338	10326
10°	10261	10248	10174
15°	9984	9884	9745
20°	9617	9462	9204
25°	9222	9021	8459
30°	8740	8460	7620
35°	8278	7819	7049
40°	7807	7126	6413
45°	7360	6588	5799
50°	6813	6115	5171
55°	6303	5541	4632
60°	5774	4949	4149
65°	5081	4334	3674
70°	4185	3795	3121
75°	3328	2906	3046
80°	2236	2095	1956
85°	1392	1670	1948

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 7360 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	363.0	4.7
10°-20°	996.2	13.0
20°-30°	1379.1	18.0
30°-40°	1470.5	19.2
40°-50°	1341.6	17.5
50°-60°	1051.0	13.7
60°-70°	685.0	8.9
70°-80°	303.5	4.0
80°-90°	65.2	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°	2738.3	35.8
0°-40°	4208.8	55.0
0°-60°	6601.4	86.2
0°-90°	7655.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7655.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	3899	3899	3899	3899	3899	
5°	3832	3827	3827	3823	3823	364
15°	3584	3584	3548	3512	3498	1008
25°	3106	3088	3038	2930	2849	1426
35°	2520	2502	2380	2200	2146	1575
45°	1934	1893	1731	1587	1524	1490
55°	1343	1303	1181	1041	987	1205
65°	798	753	681	694	577	786
75°	320	298	280	266	293	343
85°	45	50	54	59	63	63
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	3899.4	3899.4	3899.4	3899.4	3899.4
2.5°	3872.3	3872.3	3872.3	3867.8	3867.8
5°	3831.7	3827.2	3827.2	3822.7	3822.7
7.5°	3800.2	3795.7	3791.2	3786.7	3777.6
10°	3755.1	3755.1	3750.6	3728.1	3723.5
12.5°	3683.0	3678.5	3660.4	3628.9	3619.9
15°	3583.8	3583.8	3547.7	3511.7	3498.1
17.5°	3475.6	3471.1	3426.0	3390.0	3371.9
20°	3358.4	3349.4	3304.3	3245.7	3214.2
22.5°	3227.7	3227.7	3173.6	3096.9	3065.4
25°	3106.0	3087.9	3038.3	2930.2	2849.0
27.5°	2966.2	2939.2	2885.1	2731.8	2637.1
30°	2812.9	2799.4	2722.8	2524.4	2452.3
32.5°	2668.7	2646.2	2565.0	2357.6	2299.0
35°	2519.9	2501.9	2380.2	2199.9	2145.8
37.5°	2371.2	2348.6	2195.4	2051.1	1983.5
40°	2222.4	2195.4	2028.6	1897.8	1825.7
42.5°	2082.7	2046.6	1884.3	1744.6	1663.4
45°	1933.9	1893.3	1731.0	1586.8	1523.7
47.5°	1785.1	1749.1	1600.3	1451.6	1379.4
50°	1627.4	1595.8	1460.6	1311.8	1235.2
52.5°	1496.6	1447.0	1316.3	1167.6	1104.4
55°	1343.4	1302.8	1181.1	1041.3	987.2
57.5°	1203.6	1163.0	1050.3	919.6	874.5
60°	1072.9	1014.3	919.6	806.9	770.9
62.5°	928.6	883.6	802.4	707.7	752.8
65°	797.9	752.8	680.7	694.2	577.0
67.5°	653.6	631.1	568.0	504.9	486.9
70°	531.9	504.9	482.3	414.7	396.7
72.5°	423.7	396.7	365.1	329.1	315.6
75°	320.1	297.5	279.5	266.0	293.0
77.5°	220.9	211.9	198.3	184.8	180.3
80°	144.3	139.7	135.2	130.7	126.2
82.5°	85.7	85.7	85.7	85.7	85.7
85°	45.1	49.6	54.1	58.6	63.1
87.5°	27.0	27.0	31.6	36.1	40.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)