

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: P562530

Luminaire Tested: FSR-24-4-LD4-2HI-35-UNV-93-85-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562530  
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-35-UNV-93-85-EDD-90  
Description: 2X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

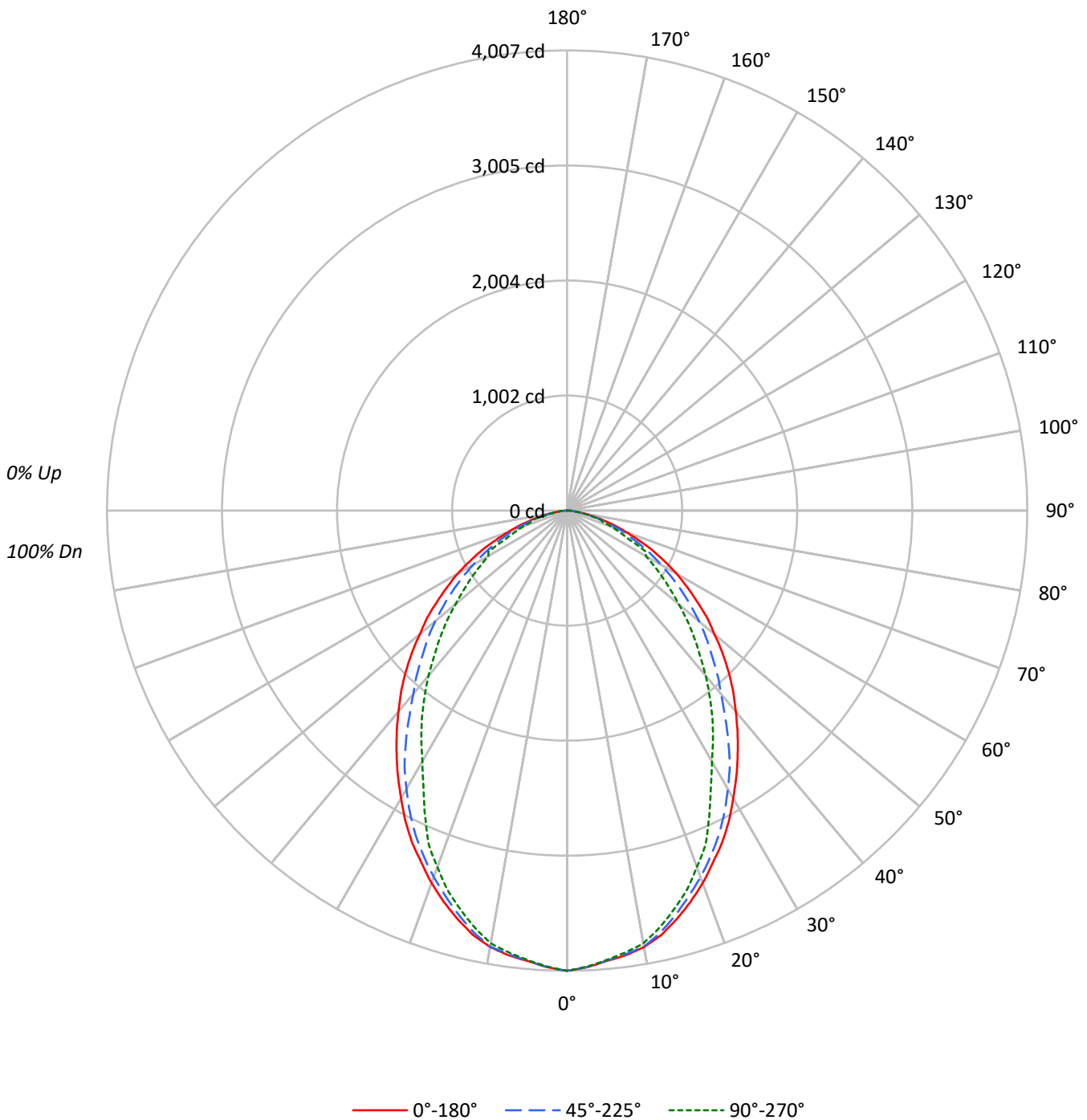
Lumens per Lamp: N/A  
Luminaire Lumens: 7867.0 lumens  
Efficiency: N/A  
Efficacy: 91.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 86.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	5392	5392	5392
5°	5319	5312	5306
10°	5272	5266	5228
15°	5130	5079	5008
20°	4942	4862	4730
25°	4739	4636	4347
30°	4491	4347	3915
35°	4254	4018	3622
40°	4012	3662	3296
45°	3782	3385	2980
50°	3501	3142	2657
55°	3239	2847	2380
60°	2967	2543	2132
65°	2611	2227	1888
70°	2151	1950	1604
75°	1710	1493	1565
80°	1148	1077	1005
85°	715	858	1002

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3782 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	373.0	4.7
10°-20°	1023.7	13.0
20°-30°	1417.3	18.0
30°-40°	1511.3	19.2
40°-50°	1378.7	17.5
50°-60°	1080.1	13.7
60°-70°	704.0	8.9
70°-80°	311.9	4.0
80°-90°	67.0	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°	2814.1	35.8
0°-40°	4325.4	55.0
0°-60°	6784.2	86.2
0°-90°	7867.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	7867.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	4007	4007	4007	4007	4007	
5°	3938	3933	3933	3929	3929	374
15°	3683	3683	3646	3609	3595	1035
25°	3192	3173	3122	3011	2928	1465
35°	2590	2571	2446	2261	2205	1619
45°	1988	1946	1779	1631	1566	1531
55°	1381	1339	1214	1070	1015	1238
65°	820	774	700	713	593	808
75°	329	306	287	273	301	353
85°	46	51	56	60	65	64
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	4007.3	4007.3	4007.3	4007.3	4007.3
2.5°	3979.5	3979.5	3979.5	3974.9	3974.9
5°	3937.9	3933.2	3933.2	3928.6	3928.6
7.5°	3905.4	3900.8	3896.2	3891.5	3882.3
10°	3859.1	3859.1	3854.5	3831.3	3826.7
12.5°	3785.0	3780.3	3761.8	3729.4	3720.1
15°	3683.1	3683.1	3646.0	3608.9	3595.0
17.5°	3571.9	3567.2	3520.9	3483.8	3465.3
20°	3451.4	3442.1	3395.8	3335.6	3303.2
22.5°	3317.1	3317.1	3261.5	3182.7	3150.3
25°	3192.0	3173.4	3122.5	3011.3	2927.9
27.5°	3048.4	3020.6	2965.0	2807.5	2710.2
30°	2890.8	2876.9	2798.2	2594.4	2520.2
32.5°	2742.6	2719.4	2636.0	2422.9	2362.7
35°	2589.7	2571.2	2446.1	2260.8	2205.2
37.5°	2436.8	2413.7	2256.2	2107.9	2038.4
40°	2284.0	2256.2	2084.7	1950.4	1876.3
42.5°	2140.3	2103.3	1936.5	1792.9	1709.5
45°	1987.5	1945.8	1779.0	1630.7	1565.9
47.5°	1834.6	1797.5	1644.6	1491.8	1417.6
50°	1672.4	1640.0	1501.0	1348.1	1269.4
52.5°	1538.1	1487.1	1352.8	1199.9	1135.0
55°	1380.6	1338.9	1213.8	1070.2	1014.6
57.5°	1236.9	1195.3	1079.4	945.1	898.8
60°	1102.6	1042.4	945.1	829.3	792.2
62.5°	954.4	908.0	824.6	727.3	773.7
65°	820.0	773.7	699.5	713.4	593.0
67.5°	671.8	648.6	583.7	518.9	500.3
70°	546.7	518.9	495.7	426.2	407.7
72.5°	435.5	407.7	375.3	338.2	324.3
75°	328.9	305.8	287.2	273.3	301.1
77.5°	227.0	217.7	203.8	189.9	185.3
80°	148.2	143.6	139.0	134.4	129.7
82.5°	88.0	88.0	88.0	88.0	88.0
85°	46.3	51.0	55.6	60.2	64.9
87.5°	27.8	27.8	32.4	37.1	41.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)