

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: P560970

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-81-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560970  
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-LD4-1LO-35-UNV-81-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

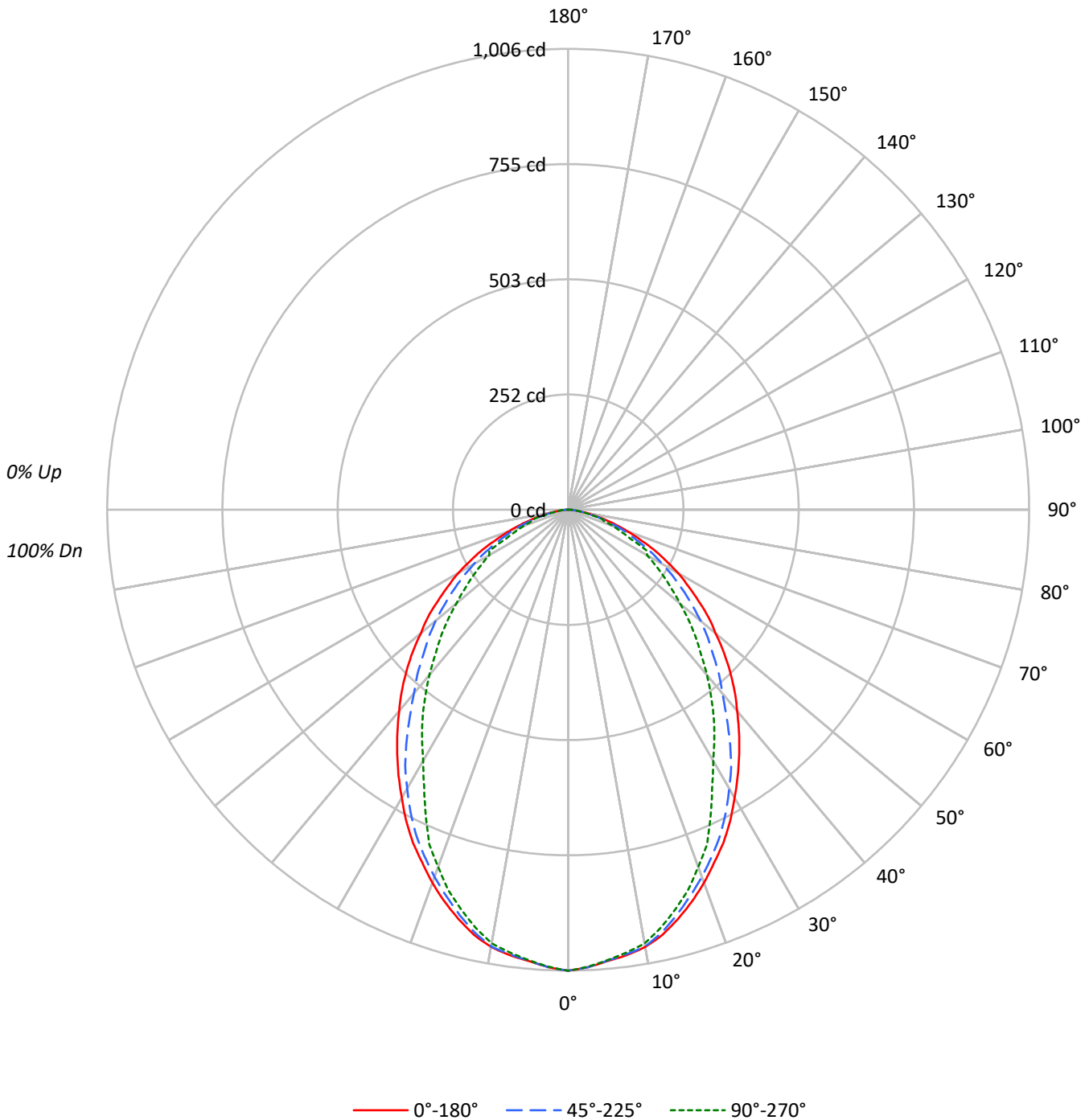
Lumens per Lamp: N/A  
Luminaire Lumens: 1976.0 lumens  
Efficiency: N/A  
Efficacy: 84.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	2708	2708	2708
5°	2672	2669	2666
10°	2649	2645	2626
15°	2577	2551	2516
20°	2483	2442	2376
25°	2380	2329	2184
30°	2256	2184	1967
35°	2137	2018	1820
40°	2015	1839	1656
45°	1900	1700	1497
50°	1759	1578	1335
55°	1627	1430	1195
60°	1490	1278	1071
65°	1312	1119	948
70°	1080	980	806
75°	859	750	786
80°	576	541	505
85°	358	432	503

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1900 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	93.7	4.7
10°-20°	257.1	13.0
20°-30°	356.0	18.0
30°-40°	379.6	19.2
40°-50°	346.3	17.5
50°-60°	271.3	13.7
60°-70°	176.8	8.9
70°-80°	78.3	4.0
80°-90°	16.8	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°	706.8	35.8
0°-40°	1086.4	55.0
0°-60°	1704.0	86.2
0°-90°	1976.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1976.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1006	1006	1006	1006	1006	
5°	989	988	988	987	987	94
15°	925	925	916	906	903	260
25°	802	797	784	756	735	368
35°	650	646	614	568	554	407
45°	499	489	447	410	393	385
55°	347	336	305	269	255	311
65°	206	194	176	179	149	203
75°	83	77	72	69	76	89
85°	12	13	14	15	16	16
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1006.5	1006.5	1006.5	1006.5	1006.5
2.5°	999.6	999.6	999.6	998.4	998.4
5°	989.1	987.9	987.9	986.8	986.8
7.5°	980.9	979.8	978.6	977.5	975.1
10°	969.3	969.3	968.1	962.3	961.2
12.5°	950.7	949.5	944.9	936.7	934.4
15°	925.1	925.1	915.8	906.5	903.0
17.5°	897.2	896.0	884.4	875.1	870.4
20°	866.9	864.6	852.9	837.8	829.7
22.5°	833.2	833.2	819.2	799.4	791.3
25°	801.7	797.1	784.3	756.4	735.4
27.5°	765.7	758.7	744.7	705.2	680.7
30°	726.1	722.6	702.8	651.6	633.0
32.5°	688.9	683.1	662.1	608.6	593.5
35°	650.5	645.8	614.4	567.9	553.9
37.5°	612.1	606.3	566.7	529.5	512.0
40°	573.7	566.7	523.6	489.9	471.3
42.5°	537.6	528.3	486.4	450.3	429.4
45°	499.2	488.7	446.8	409.6	393.3
47.5°	460.8	451.5	413.1	374.7	356.1
50°	420.1	411.9	377.0	338.6	318.8
52.5°	386.3	373.5	339.8	301.4	285.1
55°	346.8	336.3	304.9	268.8	254.8
57.5°	310.7	300.2	271.1	237.4	225.7
60°	276.9	261.8	237.4	208.3	199.0
62.5°	239.7	228.1	207.1	182.7	194.3
65°	206.0	194.3	175.7	179.2	148.9
67.5°	168.7	162.9	146.6	130.3	125.7
70°	137.3	130.3	124.5	107.1	102.4
72.5°	109.4	102.4	94.3	84.9	81.5
75°	82.6	76.8	72.1	68.7	75.6
77.5°	57.0	54.7	51.2	47.7	46.5
80°	37.2	36.1	34.9	33.7	32.6
82.5°	22.1	22.1	22.1	22.1	22.1
85°	11.6	12.8	14.0	15.1	16.3
87.5°	7.0	7.0	8.1	9.3	10.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)