

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: P560966

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-81-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560966  
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-81-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

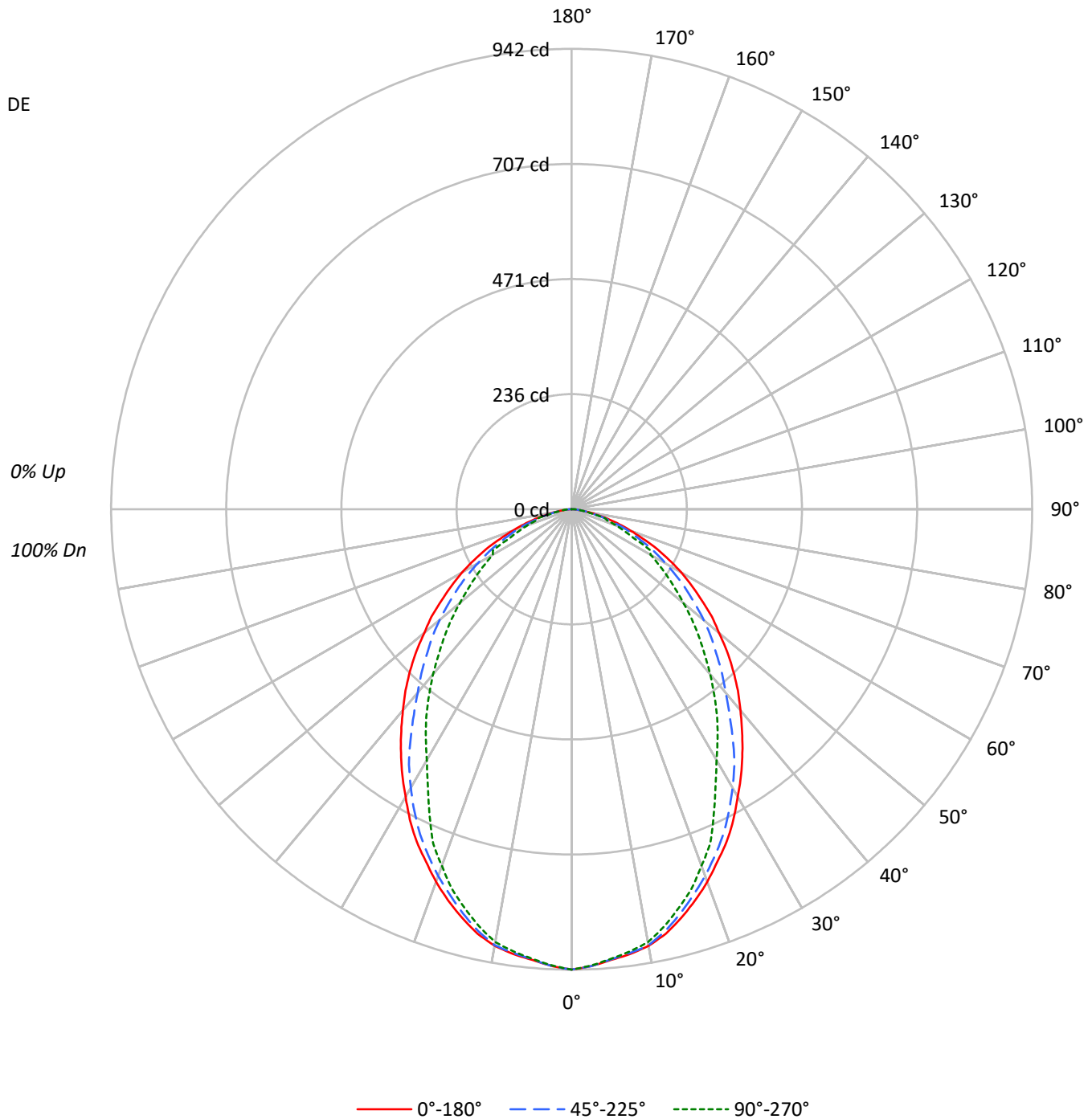
Lumens per Lamp: N/A  
Luminaire Lumens: 1849.0 lumens  
Efficiency: N/A  
Efficacy: 79.0 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (A<sub>in</sub>): 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°	2535	2535	2535
5°	2500	2497	2494
10°	2478	2475	2458
15°	2411	2387	2354
20°	2323	2286	2223
25°	2227	2179	2043
30°	2111	2044	1840
35°	2000	1889	1703
40°	1886	1721	1549
45°	1778	1591	1400
50°	1646	1477	1249
55°	1522	1339	1119
60°	1394	1195	1002
65°	1227	1047	888
70°	1011	917	754
75°	804	702	736
80°	539	507	473
85°	337	404	469

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1778 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	87.7	4.7
10°-20°	240.6	13.0
20°-30°	333.1	18.0
30°-40°	355.2	19.2
40°-50°	324.0	17.5
50°-60°	253.9	13.7
60°-70°	165.4	8.9
70°-80°	73.3	4.0
80°-90°	15.7	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°	661.4	35.8
0°-40°	1016.6	55.0
0°-60°	1594.5	86.2
0°-90°	1849.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1849.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	942	942	942	942	942	
5°	926	924	924	923	923	88
15°	866	866	857	848	845	243
25°	750	746	734	708	688	344
35°	609	604	575	531	518	381
45°	467	457	418	383	368	360
55°	324	315	285	252	238	291
65°	193	182	164	168	139	190
75°	77	72	68	64	71	83
85°	11	12	13	14	15	15
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	941.9	941.9	941.9	941.9	941.9
2.5°	935.3	935.3	935.3	934.2	934.2
5°	925.5	924.4	924.4	923.3	923.3
7.5°	917.9	916.8	915.7	914.6	912.5
10°	907.0	907.0	905.9	900.5	899.4
12.5°	889.6	888.5	884.1	876.5	874.3
15°	865.6	865.6	856.9	848.2	844.9
17.5°	839.5	838.4	827.5	818.8	814.5
20°	811.2	809.0	798.1	784.0	776.4
22.5°	779.6	779.6	766.6	748.0	740.4
25°	750.2	745.9	733.9	707.8	688.2
27.5°	716.5	709.9	696.9	659.8	637.0
30°	679.4	676.2	657.7	609.8	592.3
32.5°	644.6	639.2	619.6	569.5	555.3
35°	608.7	604.3	574.9	531.4	518.3
37.5°	572.7	567.3	530.3	495.4	479.1
40°	536.8	530.3	490.0	458.4	441.0
42.5°	503.0	494.3	455.1	421.4	401.8
45°	467.1	457.3	418.1	383.3	368.0
47.5°	431.2	422.5	386.5	350.6	333.2
50°	393.1	385.5	352.8	316.9	298.3
52.5°	361.5	349.5	317.9	282.0	266.8
55°	324.5	314.7	285.3	251.5	238.5
57.5°	290.7	280.9	253.7	222.1	211.2
60°	259.1	245.0	222.1	194.9	186.2
62.5°	224.3	213.4	193.8	170.9	181.8
65°	192.7	181.8	164.4	167.7	139.4
67.5°	157.9	152.4	137.2	122.0	117.6
70°	128.5	122.0	116.5	100.2	95.8
72.5°	102.4	95.8	88.2	79.5	76.2
75°	77.3	71.9	67.5	64.2	70.8
77.5°	53.4	51.2	47.9	44.6	43.6
80°	34.8	33.8	32.7	31.6	30.5
82.5°	20.7	20.7	20.7	20.7	20.7
85°	10.9	12.0	13.1	14.2	15.2
87.5°	6.5	6.5	7.6	8.7	9.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)