

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: P560985

Luminaire Tested: FSR-12-4-LD4-1LO-35-UNV-82-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560985  
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-82-88-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

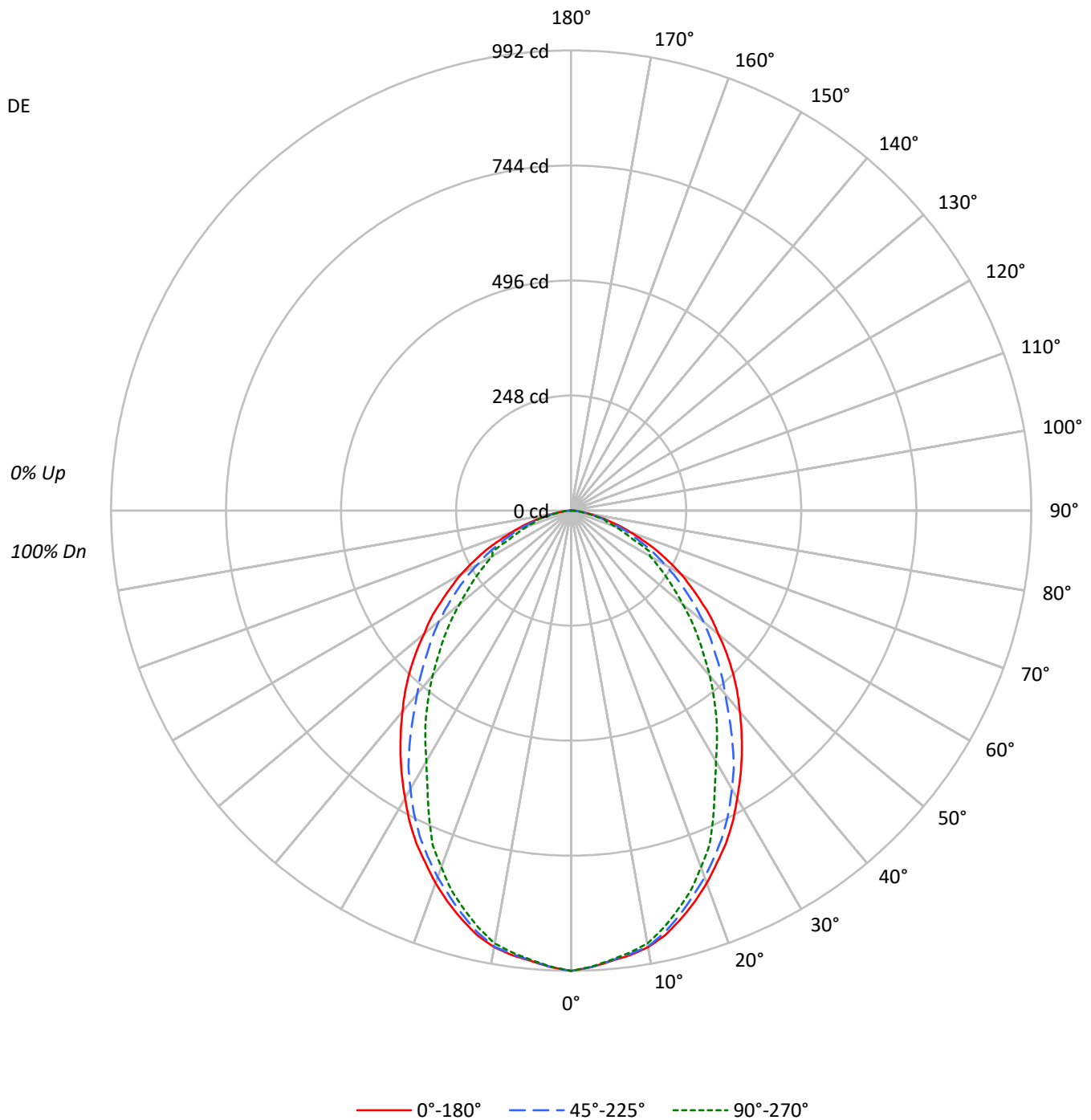
Lumens per Lamp: N/A  
Luminaire Lumens: 1948.0 lumens  
Efficiency: N/A  
Efficacy: 83.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	2670	2670	2670
5°	2634	2631	2628
10°	2611	2608	2589
15°	2541	2515	2480
20°	2447	2408	2342
25°	2347	2296	2153
30°	2224	2153	1939
35°	2107	1990	1794
40°	1987	1813	1632
45°	1873	1676	1475
50°	1734	1556	1316
55°	1604	1410	1179
60°	1469	1259	1056
65°	1293	1103	935
70°	1065	965	794
75°	846	739	776
80°	569	533	497
85°	355	426	497

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1873 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	92.4	4.7
10°-20°	253.5	13.0
20°-30°	351.0	18.0
30°-40°	374.2	19.2
40°-50°	341.4	17.5
50°-60°	267.5	13.7
60°-70°	174.3	8.9
70°-80°	77.2	4.0
80°-90°	16.6	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°	696.8	35.8
0°-40°	1071.0	55.0
0°-60°	1679.9	86.2
0°-90°	1948.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1948.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	992	992	992	992	992	
5°	975	974	974	973	973	93
15°	912	912	903	894	890	256
25°	790	786	773	746	725	363
35°	641	637	606	560	546	401
45°	492	482	440	404	388	379
55°	342	332	301	265	251	307
65°	203	192	173	177	147	200
75°	81	76	71	68	75	87
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°	992.3	992.3	992.3	992.3	992.3
2.5°	985.4	985.4	985.4	984.3	984.3
5°	975.1	973.9	973.9	972.8	972.8
7.5°	967.0	965.9	964.8	963.6	961.3
10°	955.6	955.6	954.4	948.7	947.5
12.5°	937.2	936.1	931.5	923.5	921.2
15°	912.0	912.0	902.8	893.6	890.2
17.5°	884.5	883.3	871.8	862.7	858.1
20°	854.6	852.3	840.9	825.9	817.9
22.5°	821.4	821.4	807.6	788.1	780.1
25°	790.4	785.8	773.2	745.6	725.0
27.5°	754.8	747.9	734.2	695.2	671.1
30°	715.8	712.4	692.9	642.4	624.0
32.5°	679.1	673.4	652.7	600.0	585.0
35°	641.3	636.7	605.7	559.8	546.0
37.5°	603.4	597.7	558.7	522.0	504.7
40°	565.5	558.7	516.2	483.0	464.6
42.5°	530.0	520.8	479.5	443.9	423.3
45°	492.1	481.8	440.5	403.8	387.7
47.5°	454.3	445.1	407.2	369.4	351.0
50°	414.1	406.1	371.7	333.8	314.3
52.5°	380.9	368.2	335.0	297.1	281.1
55°	341.9	331.5	300.6	265.0	251.2
57.5°	306.3	296.0	267.3	234.0	222.5
60°	273.0	258.1	234.0	205.3	196.2
62.5°	236.3	224.8	204.2	180.1	191.6
65°	203.0	191.6	173.2	176.7	146.8
67.5°	166.3	160.6	144.5	128.5	123.9
70°	135.4	128.5	122.7	105.5	100.9
72.5°	107.8	100.9	92.9	83.7	80.3
75°	81.4	75.7	71.1	67.7	74.6
77.5°	56.2	53.9	50.5	47.0	45.9
80°	36.7	35.6	34.4	33.3	32.1
82.5°	21.8	21.8	21.8	21.8	21.8
85°	11.5	12.6	13.8	14.9	16.1
87.5°	6.9	6.9	8.0	9.2	10.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)