

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: P561629

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-82-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561629  
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-LD4-2LO-40-UNV-82-96-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

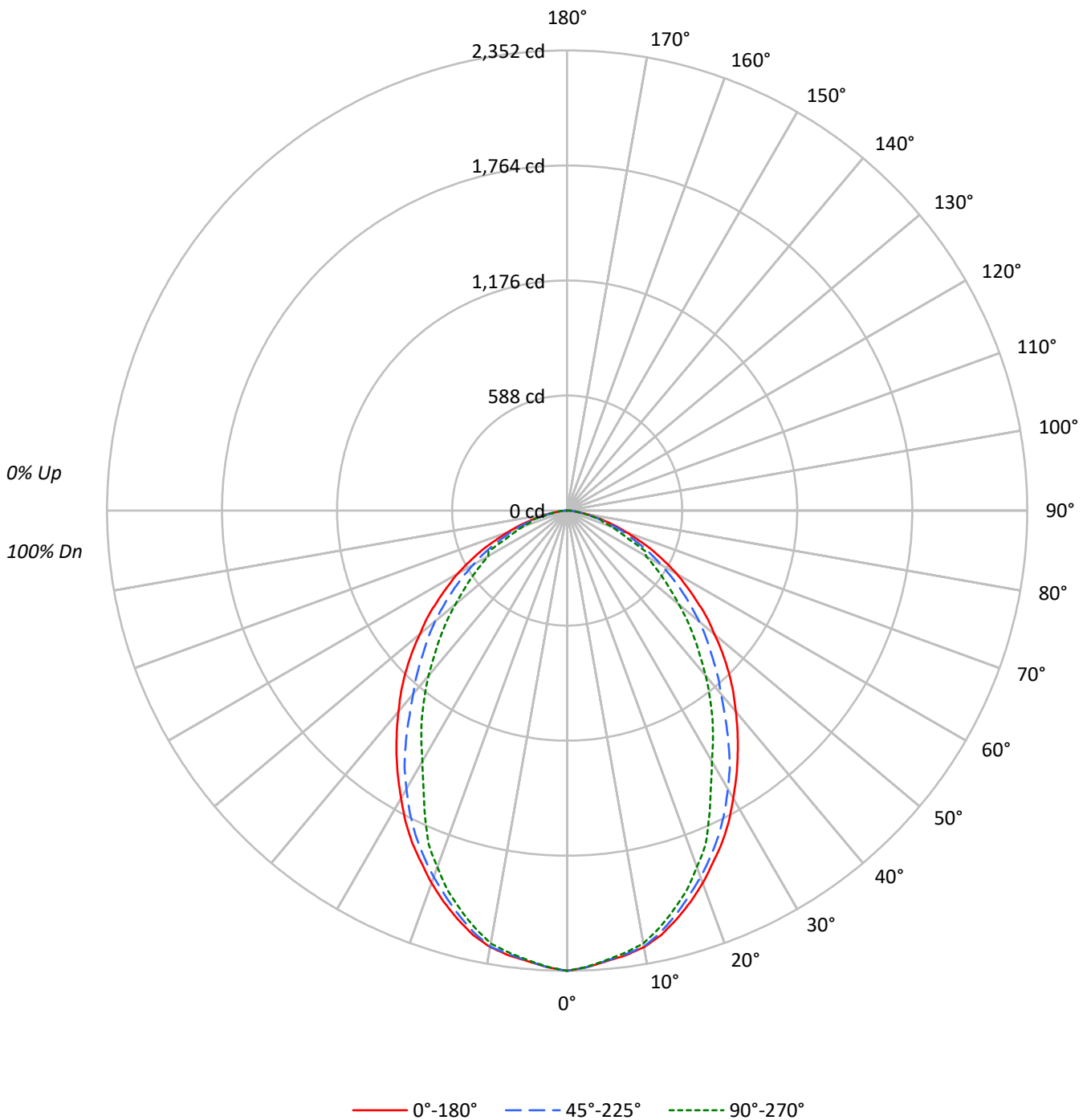
Lumens per Lamp: N/A  
Luminaire Lumens: 4618.0 lumens  
Efficiency: N/A  
Efficacy: 98.7 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 46.8  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	6330	6330	6330
5°	6244	6237	6229
10°	6190	6183	6138
15°	6023	5962	5879
20°	5802	5708	5553
25°	5563	5442	5103
30°	5273	5104	4597
35°	4994	4717	4253
40°	4710	4299	3869
45°	4440	3974	3498
50°	4110	3689	3119
55°	3802	3343	2794
60°	3483	2986	2503
65°	3065	2614	2216
70°	2525	2290	1883
75°	2008	1753	1838
80°	1348	1265	1179
85°	840	1007	1176

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4440 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	219.0	4.7
10°-20°	600.9	13.0
20°-30°	832.0	18.0
30°-40°	887.1	19.2
40°-50°	809.3	17.5
50°-60°	634.0	13.7
60°-70°	413.2	8.9
70°-80°	183.1	4.0
80°-90°	39.3	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°	1651.9	35.8
0°-40°	2539.0	55.0
0°-60°	3982.4	86.2
0°-90°	4618.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4618.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	2352	2352	2352	2352	2352	
5°	2312	2309	2309	2306	2306	219
15°	2162	2162	2140	2118	2110	608
25°	1874	1863	1833	1768	1719	860
35°	1520	1509	1436	1327	1294	950
45°	1167	1142	1044	957	919	899
55°	810	786	712	628	596	727
65°	481	454	411	419	348	474
75°	193	180	169	160	177	207
85°	27	30	33	35	38	38
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	2352.3	2352.3	2352.3	2352.3	2352.3
2.5°	2336.0	2336.0	2336.0	2333.3	2333.3
5°	2311.6	2308.8	2308.8	2306.1	2306.1
7.5°	2292.5	2289.8	2287.1	2284.4	2278.9
10°	2265.3	2265.3	2262.6	2249.0	2246.3
12.5°	2221.8	2219.1	2208.2	2189.2	2183.7
15°	2162.0	2162.0	2140.2	2118.5	2110.3
17.5°	2096.7	2094.0	2066.8	2045.0	2034.2
20°	2026.0	2020.6	1993.4	1958.0	1939.0
22.5°	1947.1	1947.1	1914.5	1868.3	1849.2
25°	1873.7	1862.8	1832.9	1767.7	1718.7
27.5°	1789.4	1773.1	1740.5	1648.0	1590.9
30°	1697.0	1688.8	1642.6	1522.9	1479.4
32.5°	1609.9	1596.3	1547.4	1422.3	1386.9
35°	1520.2	1509.3	1435.9	1327.1	1294.5
37.5°	1430.4	1416.8	1324.4	1237.4	1196.6
40°	1340.7	1324.4	1223.8	1144.9	1101.4
42.5°	1256.4	1234.6	1136.7	1052.4	1003.5
45°	1166.7	1142.2	1044.3	957.3	919.2
47.5°	1076.9	1055.2	965.4	875.7	832.2
50°	981.7	962.7	881.1	791.4	745.1
52.5°	902.9	873.0	794.1	704.3	666.3
55°	810.4	785.9	712.5	628.2	595.6
57.5°	726.1	701.6	633.6	554.8	527.6
60°	647.2	611.9	554.8	486.8	465.0
62.5°	560.2	533.0	484.1	427.0	454.2
65°	481.3	454.2	410.6	418.8	348.1
67.5°	394.3	380.7	342.7	304.6	293.7
70°	320.9	304.6	291.0	250.2	239.3
72.5°	255.6	239.3	220.3	198.5	190.4
75°	193.1	179.5	168.6	160.4	176.8
77.5°	133.3	127.8	119.7	111.5	108.8
80°	87.0	84.3	81.6	78.9	76.1
82.5°	51.7	51.7	51.7	51.7	51.7
85°	27.2	29.9	32.6	35.4	38.1
87.5°	16.3	16.3	19.0	21.8	24.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)