

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: P561224

Luminaire Tested: FSR-12-4-LD4-1STD-40-UNV-81-88-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561224  
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-LD4-1STD-40-UNV-81-88-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

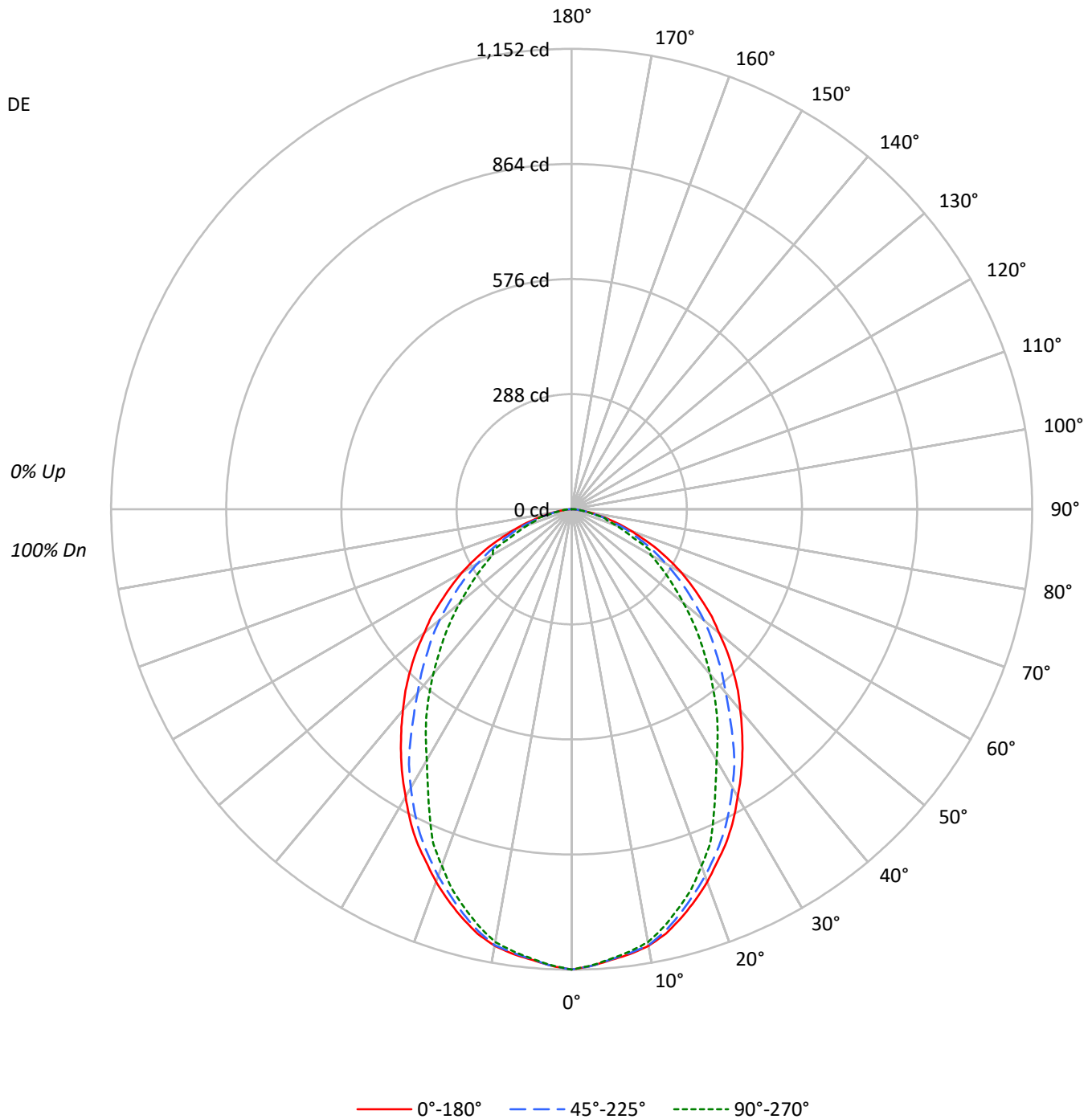
Lumens per Lamp: N/A  
Luminaire Lumens: 2261.0 lumens  
Efficiency: N/A  
Efficacy: 67.9 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 33.3  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	3099	3099	3099
5°	3057	3054	3050
10°	3031	3027	3005
15°	2949	2919	2878
20°	2840	2795	2718
25°	2724	2665	2499
30°	2582	2499	2251
35°	2445	2309	2082
40°	2306	2105	1894
45°	2174	1946	1713
50°	2012	1806	1527
55°	1862	1636	1368
60°	1706	1462	1225
65°	1501	1280	1085
70°	1236	1121	922
75°	983	859	899
80°	660	618	578
85°	411	494	574

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2174 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	107.2	4.7
10°-20°	294.2	13.0
20°-30°	407.3	18.0
30°-40°	434.3	19.2
40°-50°	396.2	17.5
50°-60°	310.4	13.7
60°-70°	202.3	8.9
70°-80°	89.6	4.0
80°-90°	19.2	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°	808.8	35.8
0°-40°	1243.1	55.0
0°-60°	1949.8	86.2
0°-90°	2261.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2261.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1152	1152	1152	1152	1152	
5°	1132	1130	1130	1129	1129	107
15°	1058	1058	1048	1037	1033	298
25°	917	912	897	866	842	421
35°	744	739	703	650	634	465
45°	571	559	511	469	450	440
55°	397	385	349	308	292	356
65°	236	222	201	205	170	232
75°	94	88	83	79	86	101
85°	13	15	16	17	19	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1151.7	1151.7	1151.7	1151.7	1151.7
2.5°	1143.7	1143.7	1143.7	1142.4	1142.4
5°	1131.8	1130.4	1130.4	1129.1	1129.1
7.5°	1122.4	1121.1	1119.8	1118.4	1115.8
10°	1109.1	1109.1	1107.8	1101.1	1099.8
12.5°	1087.8	1086.5	1081.2	1071.8	1069.2
15°	1058.5	1058.5	1047.9	1037.2	1033.2
17.5°	1026.6	1025.2	1011.9	1001.3	995.9
20°	991.9	989.3	976.0	958.7	949.3
22.5°	953.3	953.3	937.4	914.7	905.4
25°	917.4	912.1	897.4	865.5	841.5
27.5°	876.1	868.1	852.1	806.9	778.9
30°	830.8	826.8	804.2	745.6	724.3
32.5°	788.2	781.6	757.6	696.4	679.1
35°	744.3	739.0	703.0	649.8	633.8
37.5°	700.4	693.7	648.4	605.8	585.8
40°	656.4	648.4	599.2	560.5	539.2
42.5°	615.1	604.5	556.6	515.3	491.3
45°	571.2	559.2	511.3	468.7	450.0
47.5°	527.3	516.6	472.7	428.7	407.4
50°	480.7	471.3	431.4	387.5	364.8
52.5°	442.0	427.4	388.8	344.9	326.2
55°	396.8	384.8	348.8	307.6	291.6
57.5°	355.5	343.5	310.2	271.6	258.3
60°	316.9	299.6	271.6	238.3	227.7
62.5°	274.3	261.0	237.0	209.0	222.4
65°	235.7	222.4	201.1	205.0	170.4
67.5°	193.1	186.4	167.8	149.1	143.8
70°	157.1	149.1	142.5	122.5	117.2
72.5°	125.2	117.2	107.8	97.2	93.2
75°	94.5	87.9	82.6	78.6	86.5
77.5°	65.2	62.6	58.6	54.6	53.3
80°	42.6	41.3	39.9	38.6	37.3
82.5°	25.3	25.3	25.3	25.3	25.3
85°	13.3	14.6	16.0	17.3	18.6
87.5°	8.0	8.0	9.3	10.7	12.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)