

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: P562201

Luminaire Tested: FSR-24-4-LD4-1LO-40-UNV-82-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P562201  
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-24-4-LD4-1LO-40-UNV-82-88-EDD  
Description: 2X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

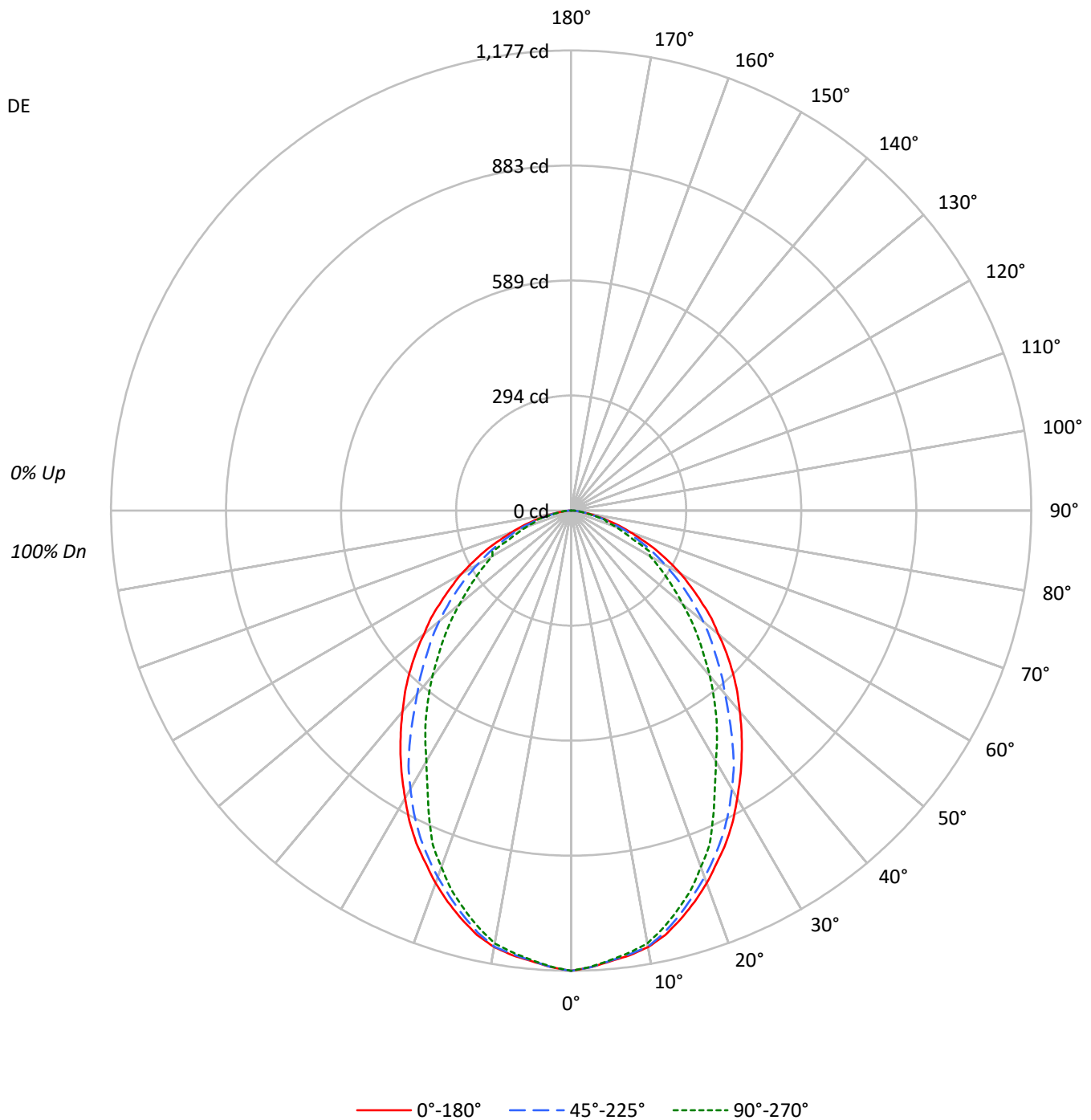
Lumens per Lamp: N/A  
Luminaire Lumens: 2311.0 lumens  
Efficiency: N/A  
Efficacy: 98.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 2' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	1584	1584	1584
5°	1562	1561	1559
10°	1549	1547	1536
15°	1507	1492	1471
20°	1452	1428	1389
25°	1392	1362	1277
30°	1319	1277	1150
35°	1250	1180	1064
40°	1178	1076	968
45°	1111	994	875
50°	1028	923	781
55°	951	837	699
60°	872	747	626
65°	767	654	555
70°	632	573	471
75°	502	439	460
80°	337	316	295
85°	210	252	295

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 1111 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	109.6	4.7
10°-20°	300.7	13.0
20°-30°	416.3	18.0
30°-40°	444.0	19.2
40°-50°	405.0	17.5
50°-60°	317.3	13.7
60°-70°	206.8	8.9
70°-80°	91.6	4.0
80°-90°	19.7	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°	826.7	35.8
0°-40°	1270.6	55.0
0°-60°	1992.9	86.2
0°-90°	2311.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2311.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1177	1177	1177	1177	1177	
5°	1157	1155	1155	1154	1154	110
15°	1082	1082	1071	1060	1056	304
25°	938	932	917	885	860	430
35°	761	755	719	664	648	476
45°	584	572	523	479	460	450
55°	406	393	357	314	298	364
65°	241	227	206	210	174	237
75°	97	90	84	80	88	104
85°	14	15	16	18	19	19
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1177.2	1177.2	1177.2	1177.2	1177.2
2.5°	1169.0	1169.0	1169.0	1167.7	1167.7
5°	1156.8	1155.4	1155.4	1154.1	1154.1
7.5°	1147.3	1145.9	1144.5	1143.2	1140.4
10°	1133.6	1133.6	1132.3	1125.5	1124.1
12.5°	1111.9	1110.5	1105.1	1095.5	1092.8
15°	1081.9	1081.9	1071.0	1060.2	1056.1
17.5°	1049.3	1047.9	1034.3	1023.4	1018.0
20°	1013.9	1011.2	997.6	979.9	970.3
22.5°	974.4	974.4	958.1	934.9	925.4
25°	937.7	932.2	917.3	884.6	860.1
27.5°	895.5	887.3	871.0	824.7	796.1
30°	849.2	845.1	822.0	762.1	740.3
32.5°	805.7	798.9	774.4	711.8	694.1
35°	760.8	755.3	718.6	664.1	647.8
37.5°	715.8	709.0	662.8	619.2	598.8
40°	670.9	662.8	612.4	572.9	551.2
42.5°	628.7	617.9	568.9	526.7	502.2
45°	583.8	571.6	522.6	479.0	460.0
47.5°	538.9	528.0	483.1	438.2	416.4
50°	491.3	481.8	440.9	396.0	372.9
52.5°	451.8	436.9	397.4	352.5	333.4
55°	405.6	393.3	356.6	314.4	298.0
57.5°	363.4	351.1	317.1	277.6	264.0
60°	323.9	306.2	277.6	243.6	232.7
62.5°	280.3	266.7	242.2	213.7	227.3
65°	240.9	227.3	205.5	209.6	174.2
67.5°	197.3	190.5	171.5	152.4	147.0
70°	160.6	152.4	145.6	125.2	119.8
72.5°	127.9	119.8	110.2	99.3	95.3
75°	96.6	89.8	84.4	80.3	88.5
77.5°	66.7	64.0	59.9	55.8	54.4
80°	43.5	42.2	40.8	39.5	38.1
82.5°	25.9	25.9	25.9	25.9	25.9
85°	13.6	15.0	16.3	17.7	19.1
87.5°	8.2	8.2	9.5	10.9	12.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)