

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: P560918

Luminaire Tested: FSR-12-4-LD4-1HI-50-UNV-82-87-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560918  
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-LD4-1HI-50-UNV-82-87-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

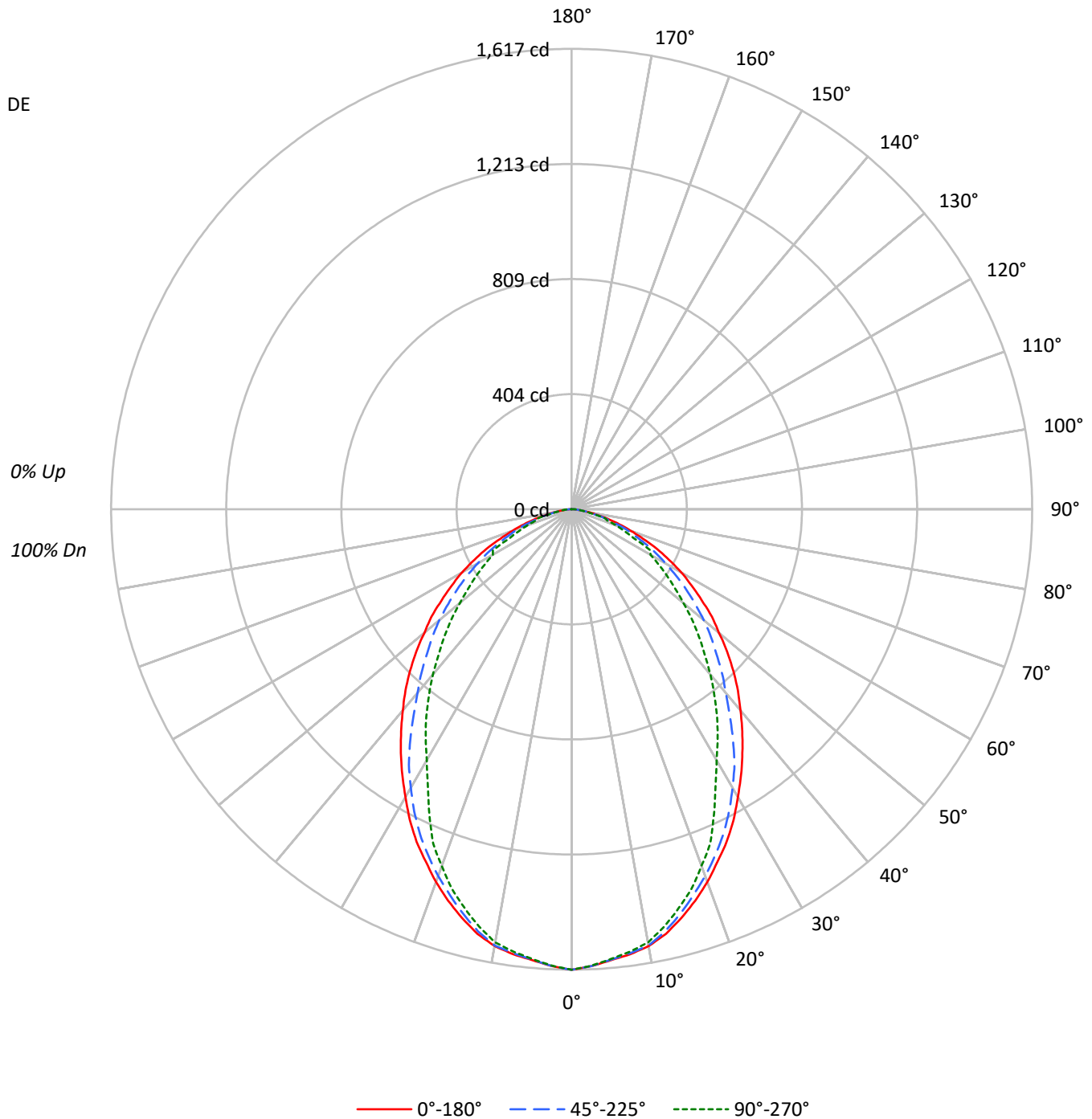
Lumens per Lamp: N/A  
Luminaire Lumens: 3175.0 lumens  
Efficiency: N/A  
Efficacy: 73.5 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4352	4352	4352
5°	4293	4288	4283
10°	4256	4251	4220
15°	4141	4099	4042
20°	3989	3925	3818
25°	3825	3742	3509
30°	3625	3509	3160
35°	3434	3243	2924
40°	3238	2956	2660
45°	3052	2732	2405
50°	2826	2536	2145
55°	2614	2298	1921
60°	2395	2053	1721
65°	2107	1798	1524
70°	1736	1574	1294
75°	1380	1205	1263
80°	927	869	812
85°	577	692	809

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3052 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	150.5	4.7
10°-20°	413.2	13.0
20°-30°	572.0	18.0
30°-40°	609.9	19.2
40°-50°	556.4	17.5
50°-60°	435.9	13.7
60°-70°	284.1	8.9
70°-80°	125.9	4.0
80°-90°	27.0	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°	1135.7	35.8
0°-40°	1745.7	55.0
0°-60°	2738.0	86.2
0°-90°	3175.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3175.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1617	1617	1617	1617	1617	
5°	1589	1587	1587	1586	1586	151
15°	1486	1486	1472	1456	1451	418
25°	1288	1281	1260	1215	1182	591
35°	1045	1038	987	912	890	653
45°	802	785	718	658	632	618
55°	557	540	490	432	410	500
65°	331	312	282	288	239	326
75°	133	123	116	110	122	142
85°	19	21	22	24	26	26
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1617.3	1617.3	1617.3	1617.3	1617.3
2.5°	1606.1	1606.1	1606.1	1604.2	1604.2
5°	1589.3	1587.4	1587.4	1585.5	1585.5
7.5°	1576.2	1574.3	1572.4	1570.6	1566.8
10°	1557.5	1557.5	1555.6	1546.3	1544.4
12.5°	1527.6	1525.7	1518.2	1505.1	1501.4
15°	1486.4	1486.4	1471.5	1456.5	1450.9
17.5°	1441.5	1439.7	1421.0	1406.0	1398.5
20°	1392.9	1389.2	1370.5	1346.2	1333.1
22.5°	1338.7	1338.7	1316.3	1284.5	1271.4
25°	1288.2	1280.8	1260.2	1215.3	1181.7
27.5°	1230.3	1219.1	1196.6	1133.0	1093.8
30°	1166.7	1161.1	1129.3	1047.0	1017.1
32.5°	1106.9	1097.5	1063.9	977.9	953.6
35°	1045.2	1037.7	987.2	912.4	890.0
37.5°	983.5	974.1	910.6	850.7	822.7
40°	921.8	910.6	841.4	787.1	757.2
42.5°	863.8	848.9	781.5	723.6	689.9
45°	802.1	785.3	718.0	658.1	632.0
47.5°	740.4	725.4	663.7	602.0	572.1
50°	675.0	661.9	605.8	544.1	512.3
52.5°	620.7	600.2	546.0	484.3	458.1
55°	557.2	540.3	489.9	431.9	409.5
57.5°	499.2	482.4	435.6	381.4	362.7
60°	445.0	420.7	381.4	334.7	319.7
62.5°	385.2	366.5	332.8	293.5	312.2
65°	330.9	312.2	282.3	287.9	239.3
67.5°	271.1	261.8	235.6	209.4	201.9
70°	220.6	209.4	200.1	172.0	164.5
72.5°	175.8	164.5	151.4	136.5	130.9
75°	132.7	123.4	115.9	110.3	121.5
77.5°	91.6	87.9	82.3	76.7	74.8
80°	59.8	58.0	56.1	54.2	52.4
82.5°	35.5	35.5	35.5	35.5	35.5
85°	18.7	20.6	22.4	24.3	26.2
87.5°	11.2	11.2	13.1	15.0	16.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)