

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: P560788

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-82-86-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560788  
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-35-UNV-82-86-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

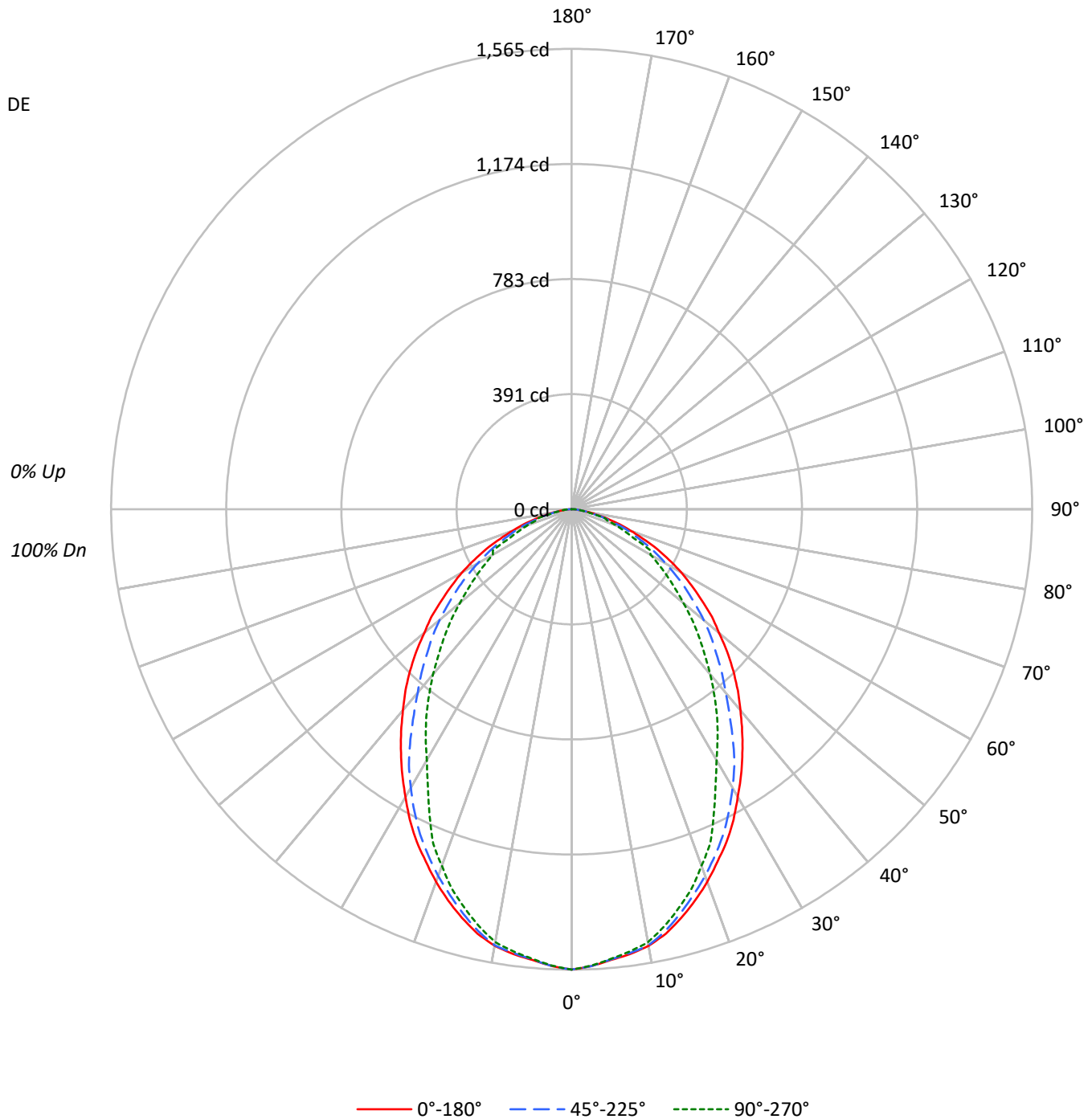
Lumens per Lamp: N/A  
Luminaire Lumens: 3072.0 lumens  
Efficiency: N/A  
Efficacy: 71.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	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°	4211	4211	4211
5°	4154	4149	4144
10°	4118	4113	4083
15°	4007	3966	3911
20°	3859	3797	3694
25°	3701	3620	3395
30°	3508	3395	3058
35°	3322	3138	2829
40°	3133	2860	2574
45°	2954	2644	2327
50°	2734	2454	2075
55°	2529	2224	1859
60°	2317	1986	1665
65°	2039	1740	1475
70°	1680	1523	1253
75°	1335	1167	1223
80°	897	841	786
85°	559	670	781

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2954 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	145.7	4.7
10°-20°	399.8	13.0
20°-30°	553.4	18.0
30°-40°	590.1	19.2
40°-50°	538.4	17.5
50°-60°	421.8	13.7
60°-70°	274.9	8.9
70°-80°	121.8	4.0
80°-90°	26.2	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°	1098.9	35.8
0°-40°	1689.0	55.0
0°-60°	2649.2	86.2
0°-90°	3072.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3072.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1565	1565	1565	1565	1565	
5°	1538	1536	1536	1534	1534	146
15°	1438	1438	1424	1409	1404	404
25°	1246	1239	1219	1176	1143	572
35°	1011	1004	955	883	861	632
45°	776	760	695	637	612	598
55°	539	523	474	418	396	484
65°	320	302	273	279	232	316
75°	128	119	112	107	118	138
85°	18	20	22	24	25	25
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1564.8	1564.8	1564.8	1564.8	1564.8
2.5°	1554.0	1554.0	1554.0	1552.2	1552.2
5°	1537.7	1535.9	1535.9	1534.1	1534.1
7.5°	1525.0	1523.2	1521.4	1519.6	1516.0
10°	1506.9	1506.9	1505.1	1496.1	1494.3
12.5°	1478.0	1476.2	1469.0	1456.3	1452.7
15°	1438.2	1438.2	1423.7	1409.3	1403.8
17.5°	1394.8	1393.0	1374.9	1360.4	1353.2
20°	1347.7	1344.1	1326.0	1302.5	1289.9
22.5°	1295.3	1295.3	1273.6	1242.8	1230.2
25°	1246.4	1239.2	1219.3	1175.9	1143.3
27.5°	1190.4	1179.5	1157.8	1096.3	1058.3
30°	1128.9	1123.4	1092.7	1013.1	984.1
32.5°	1071.0	1061.9	1029.4	946.1	922.6
35°	1011.3	1004.0	955.2	882.8	861.1
37.5°	951.6	942.5	881.0	823.1	796.0
40°	891.9	881.0	814.1	761.6	732.7
42.5°	835.8	821.3	756.2	700.1	667.5
45°	776.1	759.8	694.7	636.8	611.5
47.5°	716.4	701.9	642.2	582.5	553.6
50°	653.1	640.4	586.1	526.4	495.7
52.5°	600.6	580.7	528.2	468.5	443.2
55°	539.1	522.8	474.0	417.9	396.2
57.5°	483.0	466.7	421.5	369.0	351.0
60°	430.6	407.0	369.0	323.8	309.3
62.5°	372.7	354.6	322.0	284.0	302.1
65°	320.2	302.1	273.2	278.6	231.6
67.5°	262.3	253.3	227.9	202.6	195.4
70°	213.5	202.6	193.6	166.4	159.2
72.5°	170.1	159.2	146.5	132.1	126.6
75°	128.4	119.4	112.2	106.7	117.6
77.5°	88.6	85.0	79.6	74.2	72.4
80°	57.9	56.1	54.3	52.5	50.7
82.5°	34.4	34.4	34.4	34.4	34.4
85°	18.1	19.9	21.7	23.5	25.3
87.5°	10.9	10.9	12.7	14.5	16.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)