

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: P560848

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-82-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560848  
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-40-UNV-82-84-EDD-90  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

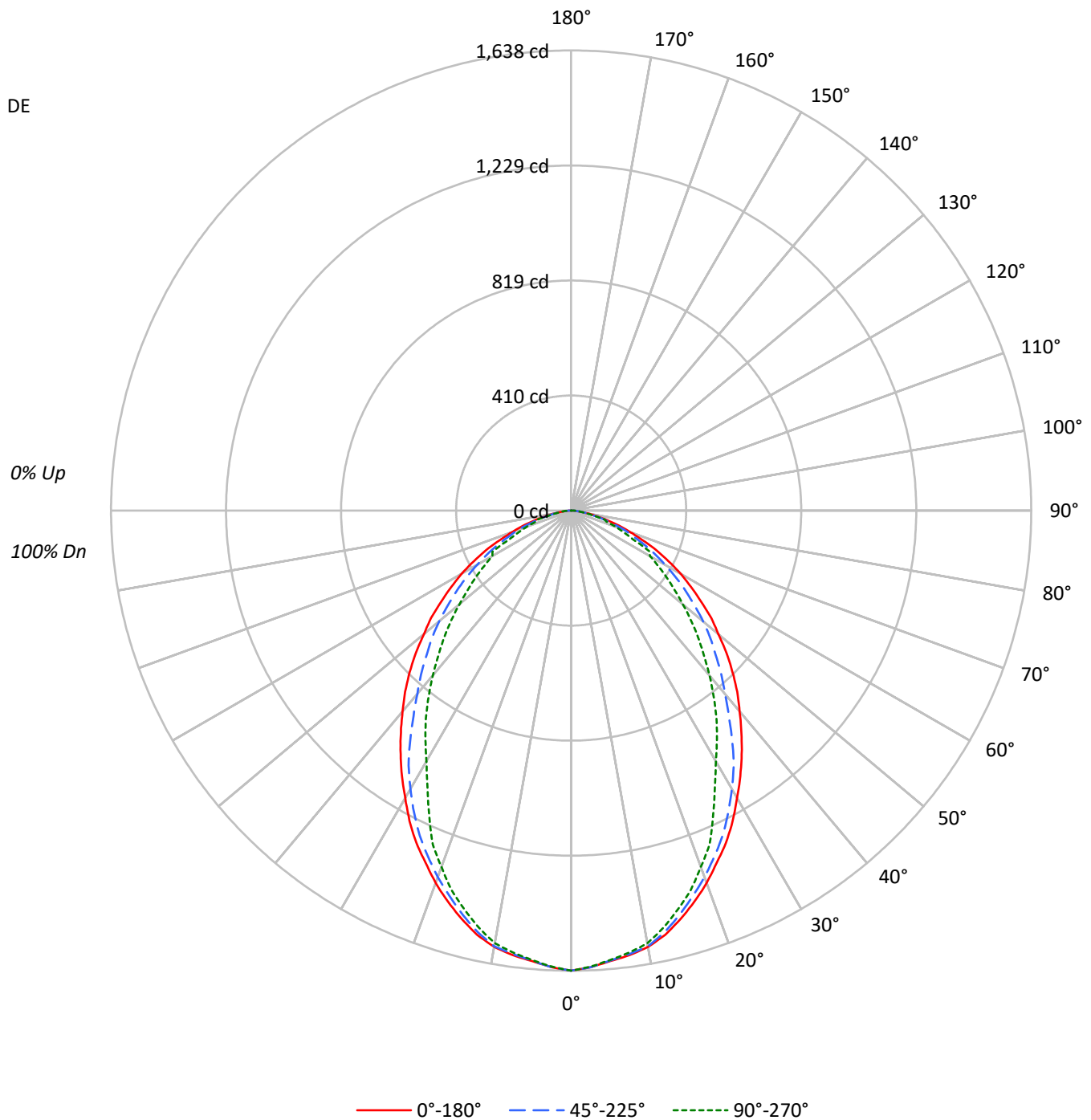
Lumens per Lamp: N/A  
Luminaire Lumens: 3215.0 lumens  
Efficiency: N/A  
Efficacy: 74.4 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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



TEST NUMBER: P560848

CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-82-84-EDD-90

### Luminous Intensity Polar Plot





TEST NUMBER: P560848

CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-82-84-EDD-90

**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	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°	4407	4407	4407
5°	4347	4342	4337
10°	4309	4304	4273
15°	4193	4151	4093
20°	4039	3974	3866
25°	3873	3789	3553
30°	3671	3553	3200
35°	3477	3284	2961
40°	3279	2993	2694
45°	3091	2767	2435
50°	2861	2568	2172
55°	2647	2327	1945
60°	2425	2079	1742
65°	2134	1820	1543
70°	1758	1594	1311
75°	1397	1221	1280
80°	939	880	821
85°	584	701	818

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3091 cd/sqm



TEST NUMBER: P560848

CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-82-84-EDD-90

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	152.4	4.7
10°-20°	418.4	13.0
20°-30°	579.2	18.0
30°-40°	617.6	19.2
40°-50°	563.4	17.5
50°-60°	441.4	13.7
60°-70°	287.7	8.9
70°-80°	127.5	4.0
80°-90°	27.4	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°	1150.0	35.8
0°-40°	1767.6	55.0
0°-60°	2772.5	86.2
0°-90°	3215.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3215.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1638	1638	1638	1638	1638	
5°	1609	1607	1607	1606	1606	153
15°	1505	1505	1490	1475	1469	423
25°	1304	1297	1276	1231	1196	599
35°	1058	1051	1000	924	901	662
45°	812	795	727	666	640	626
55°	564	547	496	437	415	506
65°	335	316	286	292	242	330
75°	134	125	117	112	123	144
85°	19	21	23	25	26	26
90°	0	0	0	0	0	



TEST NUMBER: P560848

CATALOG NUMBER: FSR-12-4-LD4-1HI-40-UNV-82-84-EDD-90

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1637.7	1637.7	1637.7	1637.7	1637.7
2.5°	1626.3	1626.3	1626.3	1624.4	1624.4
5°	1609.3	1607.4	1607.4	1605.5	1605.5
7.5°	1596.0	1594.1	1592.2	1590.3	1586.6
10°	1577.1	1577.1	1575.2	1565.7	1563.8
12.5°	1546.8	1544.9	1537.3	1524.1	1520.3
15°	1505.1	1505.1	1490.0	1474.9	1469.2
17.5°	1459.7	1457.8	1438.9	1423.7	1416.2
20°	1410.5	1406.7	1387.8	1363.2	1349.9
22.5°	1355.6	1355.6	1332.9	1300.7	1287.4
25°	1304.5	1296.9	1276.1	1230.6	1196.5
27.5°	1245.8	1234.4	1211.7	1147.3	1107.6
30°	1181.4	1175.7	1143.5	1060.2	1029.9
32.5°	1120.8	1111.3	1077.3	990.2	965.6
35°	1058.3	1050.8	999.6	923.9	901.2
37.5°	995.9	986.4	922.0	861.4	833.0
40°	933.4	922.0	852.0	797.1	766.8
42.5°	874.7	859.5	791.4	732.7	698.6
45°	812.2	795.2	727.0	666.4	639.9
47.5°	749.7	734.6	672.1	609.6	579.3
50°	683.5	670.2	613.4	550.9	518.8
52.5°	628.6	607.7	552.8	490.4	463.9
55°	564.2	547.2	496.0	437.3	414.6
57.5°	505.5	488.5	441.1	386.2	367.3
60°	450.6	426.0	386.2	338.9	323.7
62.5°	390.0	371.1	337.0	297.2	316.2
65°	335.1	316.2	285.9	291.6	242.3
67.5°	274.5	265.1	238.6	212.0	204.5
70°	223.4	212.0	202.6	174.2	166.6
72.5°	178.0	166.6	153.4	138.2	132.5
75°	134.4	125.0	117.4	111.7	123.1
77.5°	92.8	89.0	83.3	77.6	75.7
80°	60.6	58.7	56.8	54.9	53.0
82.5°	36.0	36.0	36.0	36.0	36.0
85°	18.9	20.8	22.7	24.6	26.5
87.5°	11.4	11.4	13.3	15.1	17.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)