

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: P560851

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-82-85-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560851  
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-82-85-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

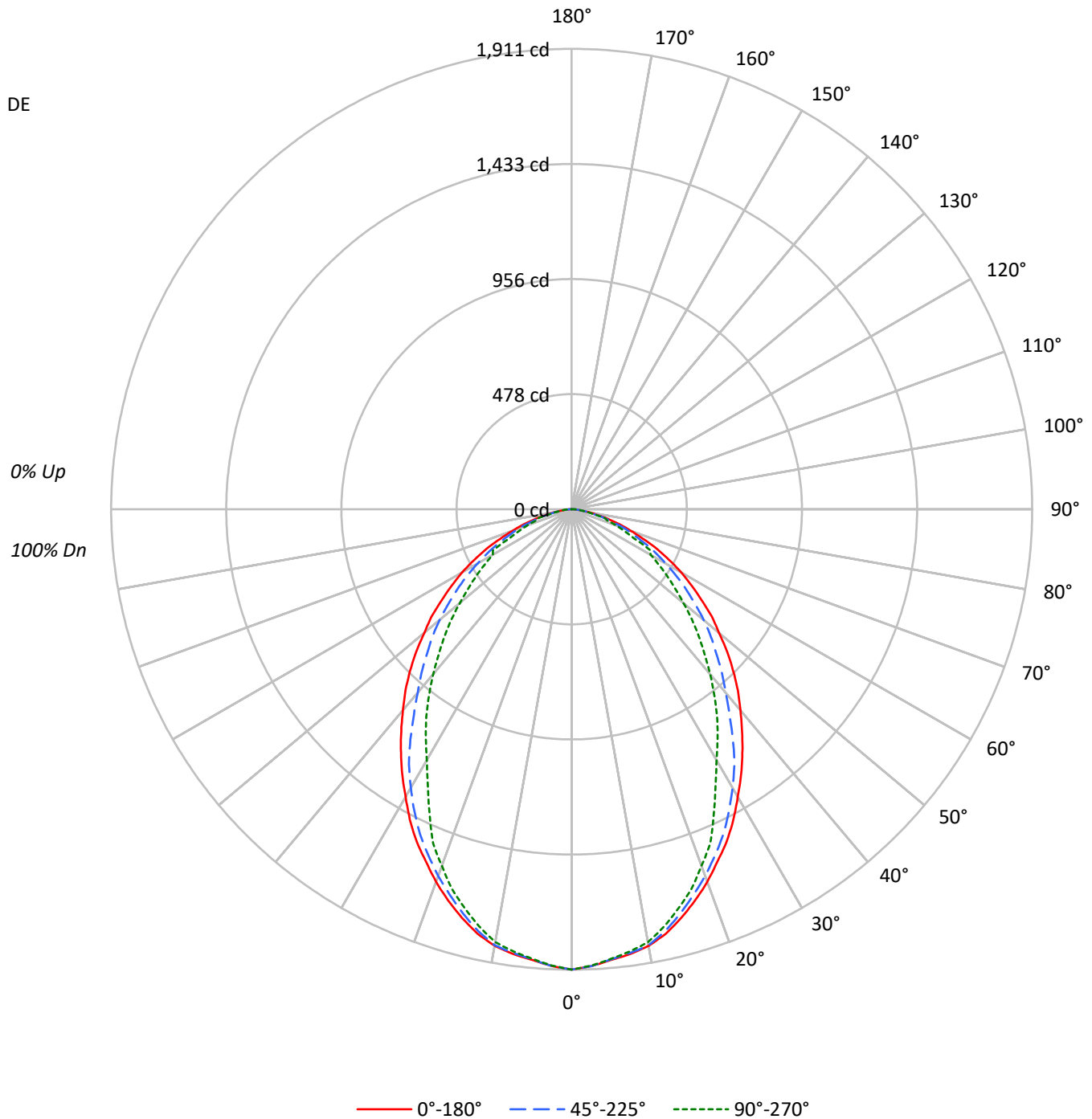
Lumens per Lamp: N/A  
Luminaire Lumens: 3751.0 lumens  
Efficiency: N/A  
Efficacy: 86.8 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	5142	5142	5142
5°	5072	5066	5060
10°	5028	5022	4986
15°	4892	4843	4775
20°	4712	4637	4510
25°	4519	4420	4145
30°	4283	4146	3734
35°	4056	3831	3454
40°	3825	3492	3143
45°	3606	3228	2841
50°	3338	2996	2534
55°	3088	2715	2270
60°	2829	2425	2033
65°	2490	2124	1800
70°	2051	1860	1530
75°	1630	1424	1493
80°	1096	1027	958
85°	682	818	954

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3606 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	177.9	4.7
10°-20°	488.1	13.0
20°-30°	675.8	18.0
30°-40°	720.6	19.2
40°-50°	657.4	17.5
50°-60°	515.0	13.7
60°-70°	335.6	8.9
70°-80°	148.7	4.0
80°-90°	31.9	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°	1341.8	35.8
0°-40°	2062.3	55.0
0°-60°	3234.7	86.2
0°-90°	3751.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3751.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1911	1911	1911	1911	1911	
5°	1878	1875	1875	1873	1873	178
15°	1756	1756	1738	1721	1714	494
25°	1522	1513	1489	1436	1396	699
35°	1235	1226	1166	1078	1051	772
45°	948	928	848	778	747	730
55°	658	638	579	510	484	590
65°	391	369	334	340	283	385
75°	157	146	137	130	144	168
85°	22	24	26	29	31	31
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1910.7	1910.7	1910.7	1910.7	1910.7
2.5°	1897.5	1897.5	1897.5	1895.2	1895.2
5°	1877.6	1875.4	1875.4	1873.2	1873.2
7.5°	1862.1	1859.9	1857.7	1855.5	1851.1
10°	1840.0	1840.0	1837.8	1826.8	1824.6
12.5°	1804.7	1802.5	1793.6	1778.2	1773.8
15°	1756.1	1756.1	1738.4	1720.7	1714.1
17.5°	1703.1	1700.9	1678.8	1661.1	1652.3
20°	1645.6	1641.2	1619.1	1590.4	1575.0
22.5°	1581.6	1581.6	1555.1	1517.5	1502.1
25°	1521.9	1513.1	1488.8	1435.8	1396.0
27.5°	1453.5	1440.2	1413.7	1338.6	1292.2
30°	1378.4	1371.7	1334.2	1237.0	1201.6
32.5°	1307.7	1296.6	1256.9	1155.3	1126.5
35°	1234.8	1225.9	1166.3	1077.9	1051.4
37.5°	1161.9	1150.8	1075.7	1005.1	971.9
40°	1089.0	1075.7	994.0	930.0	894.6
42.5°	1020.5	1002.8	923.3	854.8	815.1
45°	947.6	927.7	848.2	777.5	746.6
47.5°	874.7	857.1	784.2	711.3	675.9
50°	797.4	782.0	715.7	642.8	605.2
52.5°	733.4	709.1	645.0	572.1	541.2
55°	658.3	638.4	578.7	510.3	483.8
57.5°	589.8	569.9	514.7	450.6	428.5
60°	525.7	497.0	450.6	395.4	377.7
62.5°	455.0	432.9	393.2	346.8	368.9
65°	391.0	368.9	333.5	340.2	282.7
67.5°	320.3	309.2	278.3	247.4	238.6
70°	260.7	247.4	236.4	203.2	194.4
72.5°	207.6	194.4	178.9	161.3	154.6
75°	156.8	145.8	137.0	130.3	143.6
77.5°	108.2	103.8	97.2	90.6	88.4
80°	70.7	68.5	66.3	64.1	61.8
82.5°	42.0	42.0	42.0	42.0	42.0
85°	22.1	24.3	26.5	28.7	30.9
87.5°	13.3	13.3	15.5	17.7	19.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)