

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: P560778

Luminaire Tested: FSR-12-4-LD4-1HI-35-UNV-81-94-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560778  
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-81-94-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

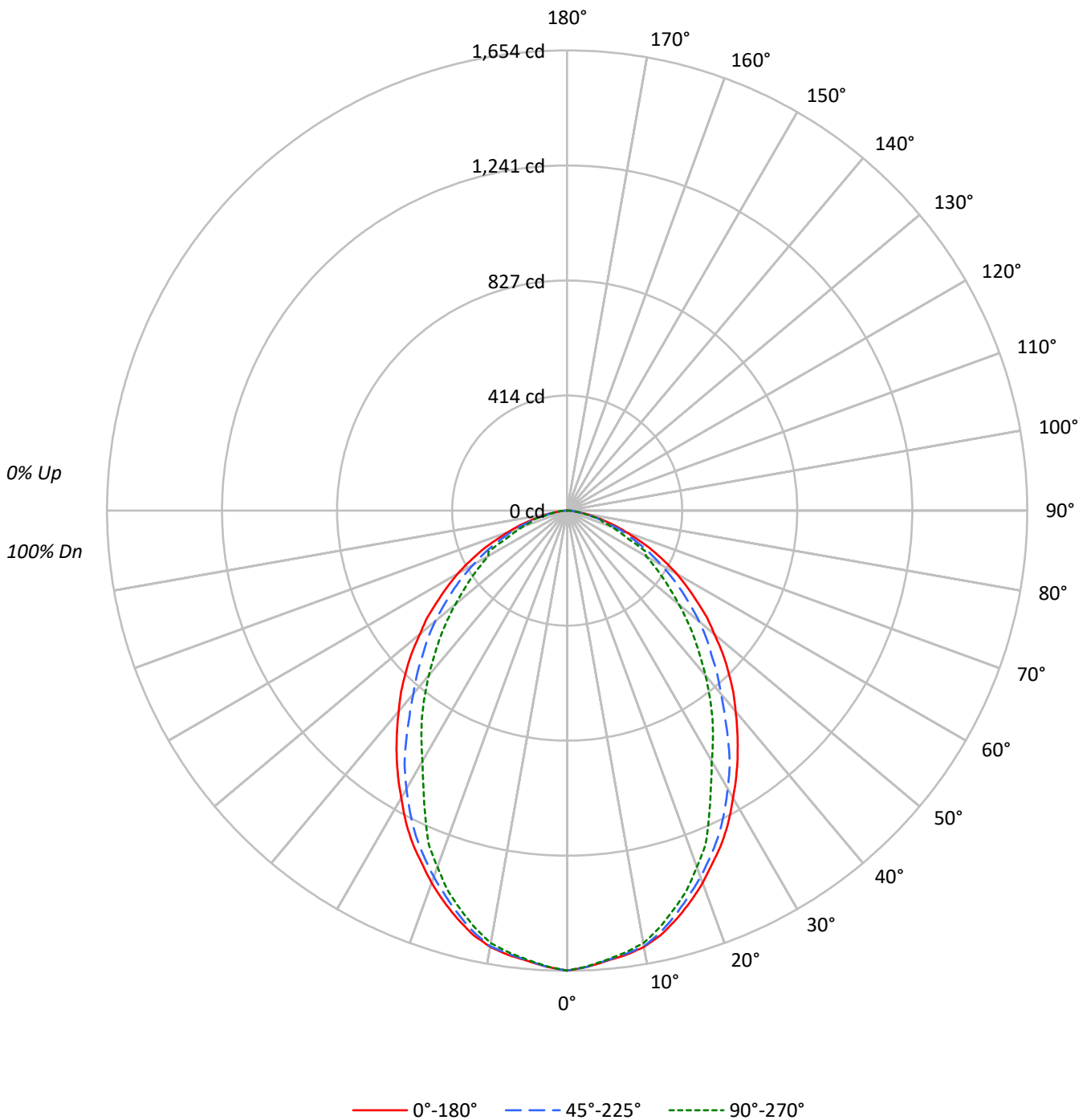
Lumens per Lamp: N/A  
Luminaire Lumens: 3246.0 lumens  
Efficiency: N/A  
Efficacy: 75.1 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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									100																			
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87									87																			
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75									75																			
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65									65																			
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56									56																			
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50									50																			
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44									44																			
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40									40																			
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36									36																			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33									33																			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30									30																			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4450	4450	4450
5°	4389	4384	4379
10°	4351	4346	4314
15°	4234	4191	4132
20°	4078	4012	3903
25°	3910	3825	3587
30°	3706	3588	3231
35°	3510	3316	2989
40°	3310	3022	2720
45°	3121	2793	2459
50°	2889	2593	2193
55°	2672	2350	1964
60°	2448	2099	1759
65°	2154	1838	1558
70°	1775	1609	1323
75°	1411	1232	1291
80°	948	888	829
85°	590	707	827

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3121 cd/sqm

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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	153.9	4.7
10°-20°	422.4	13.0
20°-30°	584.8	18.0
30°-40°	623.6	19.2
40°-50°	568.9	17.5
50°-60°	445.7	13.7
60°-70°	290.5	8.9
70°-80°	128.7	4.0
80°-90°	27.6	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°	1161.1	35.8
0°-40°	1784.7	55.0
0°-60°	2799.2	86.2
0°-90°	3246.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3246.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1654	1654	1654	1654	1654	
5°	1625	1623	1623	1621	1621	154
15°	1520	1520	1504	1489	1483	427
25°	1317	1309	1288	1242	1208	605
35°	1068	1061	1009	933	910	668
45°	820	803	734	673	646	632
55°	570	552	501	442	419	511
65°	338	319	289	294	245	333
75°	136	126	118	113	124	145
85°	19	21	23	25	27	27
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1653.5	1653.5	1653.5	1653.5	1653.5
2.5°	1642.0	1642.0	1642.0	1640.1	1640.1
5°	1624.8	1622.9	1622.9	1621.0	1621.0
7.5°	1611.4	1609.5	1607.6	1605.7	1601.9
10°	1592.3	1592.3	1590.4	1580.8	1578.9
12.5°	1561.7	1559.8	1552.2	1538.8	1535.0
15°	1519.7	1519.7	1504.4	1489.1	1483.3
17.5°	1473.8	1471.9	1452.8	1437.5	1429.8
20°	1424.1	1420.3	1401.1	1376.3	1362.9
22.5°	1368.7	1368.7	1345.7	1313.2	1299.8
25°	1317.0	1309.4	1288.4	1242.5	1208.1
27.5°	1257.8	1246.3	1223.4	1158.4	1118.2
30°	1192.8	1187.1	1154.6	1070.5	1039.9
32.5°	1131.6	1122.1	1087.7	999.7	974.9
35°	1068.5	1060.9	1009.3	932.8	909.9
37.5°	1005.5	995.9	930.9	869.7	841.1
40°	942.4	930.9	860.2	804.8	774.2
42.5°	883.1	867.8	799.0	739.8	705.4
45°	820.0	802.8	734.0	672.9	646.1
47.5°	757.0	741.7	678.6	615.5	584.9
50°	690.1	676.7	619.3	556.3	523.8
52.5°	634.6	613.6	558.2	495.1	468.3
55°	569.6	552.4	500.8	441.6	418.6
57.5°	510.4	493.2	445.4	390.0	370.8
60°	454.9	430.1	390.0	342.2	326.9
62.5°	393.8	374.7	340.3	300.1	319.2
65°	338.3	319.2	288.6	294.4	244.7
67.5°	277.2	267.6	240.9	214.1	206.4
70°	225.6	214.1	204.5	175.9	168.2
72.5°	179.7	168.2	154.8	139.5	133.8
75°	135.7	126.2	118.5	112.8	124.2
77.5°	93.7	89.8	84.1	78.4	76.5
80°	61.2	59.3	57.3	55.4	53.5
82.5°	36.3	36.3	36.3	36.3	36.3
85°	19.1	21.0	22.9	24.8	26.8
87.5°	11.5	11.5	13.4	15.3	17.2
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)