

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: P560864

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-93-84-EDD-90

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560864  
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-93-84-EDD-90  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

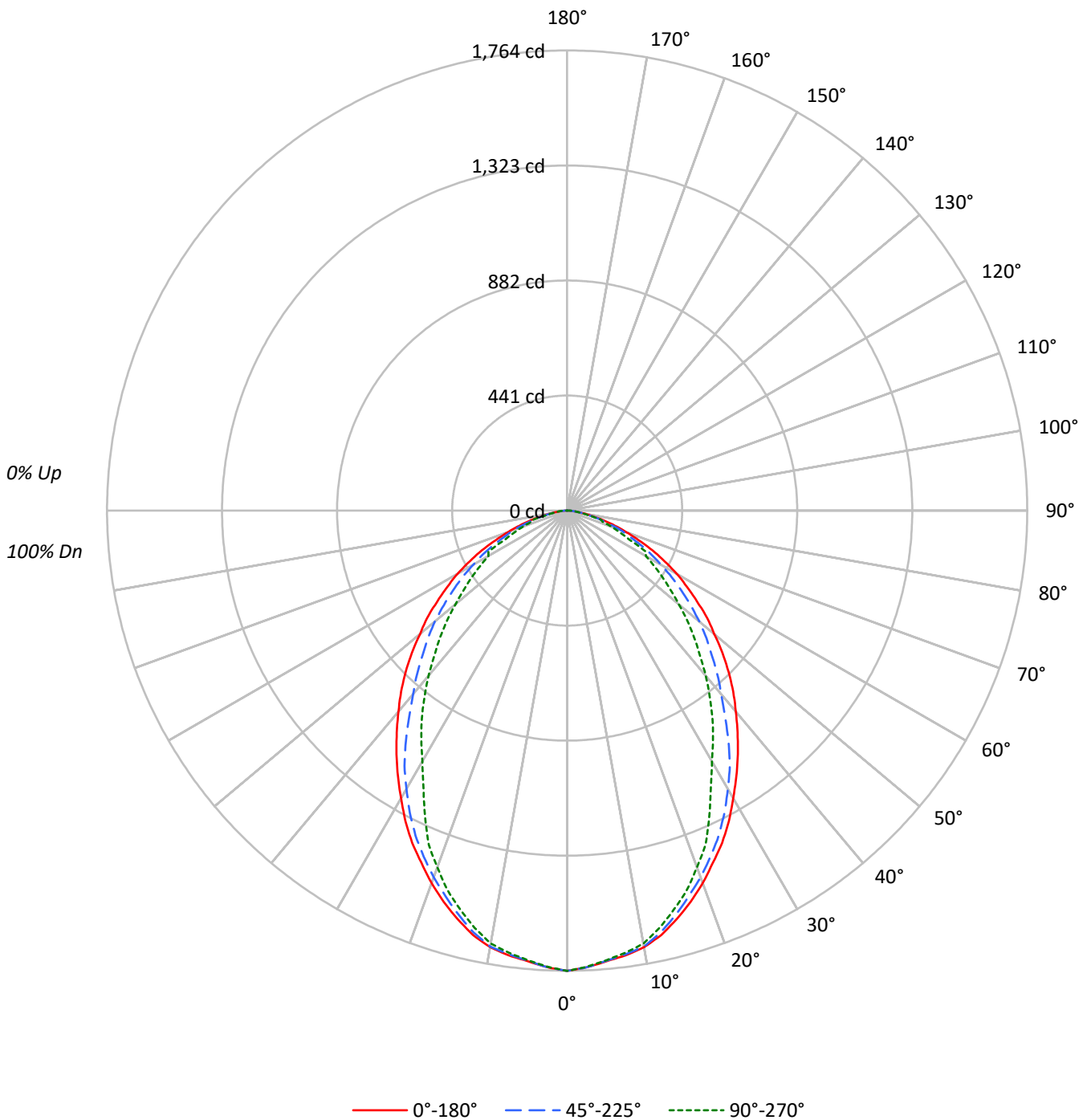
Lumens per Lamp: N/A  
Luminaire Lumens: 3464.0 lumens  
Efficiency: N/A  
Efficacy: 80.2 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 43.2  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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°	4748	4748	4748
5°	4684	4678	4673
10°	4643	4638	4604
15°	4518	4472	4410
20°	4352	4282	4165
25°	4173	4082	3828
30°	3955	3828	3448
35°	3746	3538	3190
40°	3533	3225	2902
45°	3330	2981	2624
50°	3083	2767	2340
55°	2852	2508	2096
60°	2613	2239	1877
65°	2299	1961	1663
70°	1894	1718	1412
75°	1506	1315	1379
80°	1012	948	885
85°	630	756	883

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3330 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	164.3	4.7
10°-20°	450.8	13.0
20°-30°	624.1	18.0
30°-40°	665.4	19.2
40°-50°	607.1	17.5
50°-60°	475.6	13.7
60°-70°	310.0	8.9
70°-80°	137.3	4.0
80°-90°	29.5	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°	1239.1	35.8
0°-40°	1904.5	55.0
0°-60°	2987.2	86.2
0°-90°	3464.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3464.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1764	1764	1764	1764	1764	
5°	1734	1732	1732	1730	1730	165
15°	1622	1622	1605	1589	1583	456
25°	1406	1397	1375	1326	1289	645
35°	1140	1132	1077	996	971	713
45°	875	857	783	718	690	674
55°	608	590	534	471	447	545
65°	361	341	308	314	261	356
75°	145	135	126	120	133	155
85°	20	22	24	26	29	28
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1764.5	1764.5	1764.5	1764.5	1764.5
2.5°	1752.3	1752.3	1752.3	1750.2	1750.2
5°	1733.9	1731.9	1731.9	1729.8	1729.8
7.5°	1719.6	1717.6	1715.6	1713.5	1709.4
10°	1699.2	1699.2	1697.2	1687.0	1685.0
12.5°	1666.6	1664.6	1656.4	1642.1	1638.0
15°	1621.7	1621.7	1605.4	1589.1	1583.0
17.5°	1572.8	1570.7	1550.3	1534.0	1525.8
20°	1519.7	1515.6	1495.2	1468.7	1454.5
22.5°	1460.6	1460.6	1436.1	1401.4	1387.1
25°	1405.5	1397.3	1374.9	1325.9	1289.2
27.5°	1342.3	1330.0	1305.5	1236.2	1193.3
30°	1272.9	1266.8	1232.1	1142.3	1109.7
32.5°	1207.6	1197.4	1160.7	1066.9	1040.4
35°	1140.3	1132.1	1077.1	995.5	971.0
37.5°	1073.0	1062.8	993.4	928.2	897.6
40°	1005.7	993.4	918.0	858.8	826.2
42.5°	942.4	926.1	852.7	789.4	752.7
45°	875.1	856.8	783.3	718.0	689.5
47.5°	807.8	791.5	724.2	656.8	624.2
50°	736.4	722.1	660.9	593.6	558.9
52.5°	677.2	654.8	595.7	528.3	499.8
55°	607.9	589.5	534.5	471.2	446.7
57.5°	544.7	526.3	475.3	416.1	395.7
60°	485.5	459.0	416.1	365.1	348.8
62.5°	420.2	399.8	363.1	320.3	340.7
65°	361.1	340.7	308.0	314.1	261.1
67.5°	295.8	285.6	257.0	228.5	220.3
70°	240.7	228.5	218.3	187.7	179.5
72.5°	191.8	179.5	165.2	148.9	142.8
75°	144.8	134.6	126.5	120.4	132.6
77.5°	100.0	95.9	89.8	83.6	81.6
80°	65.3	63.2	61.2	59.2	57.1
82.5°	38.8	38.8	38.8	38.8	38.8
85°	20.4	22.4	24.5	26.5	28.6
87.5°	12.2	12.2	14.3	16.3	18.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)