

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: P561561

Luminaire Tested: FSR-12-4-LD4-2LO-35-UNV-82-88-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561561  
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-LD4-2LO-35-UNV-82-88-EDD  
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

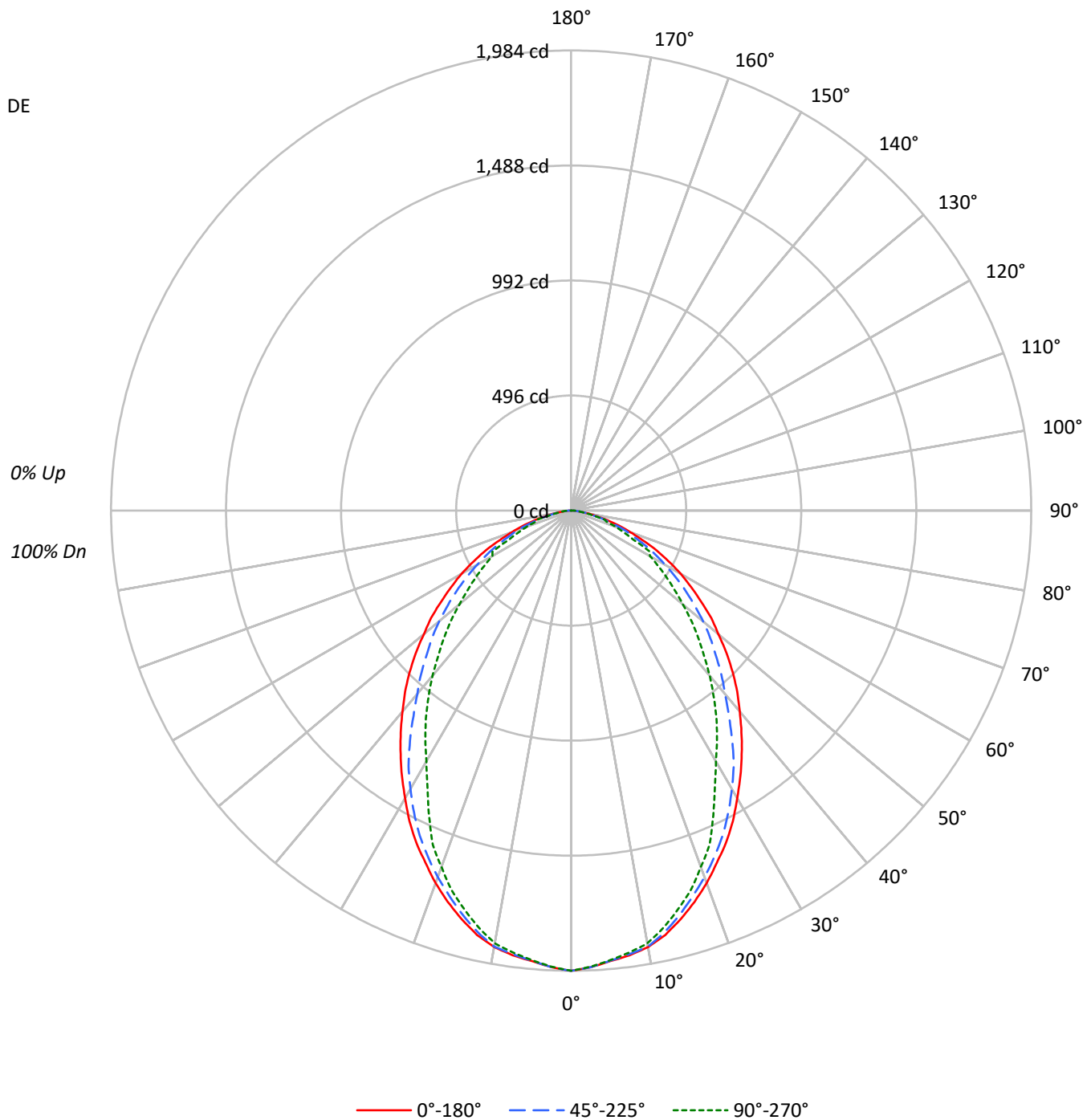
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3895.0 lumens  
Efficiency: N/A  
Efficacy: 83.2 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): 46.8  
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	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°	5339	5339	5339
5°	5267	5260	5254
10°	5221	5215	5177
15°	5080	5029	4959
20°	4893	4815	4683
25°	4692	4590	4304
30°	4447	4305	3877
35°	4212	3979	3587
40°	3972	3626	3263
45°	3745	3352	2950
50°	3466	3111	2631
55°	3207	2820	2357
60°	2938	2518	2111
65°	2585	2206	1869
70°	2130	1931	1588
75°	1694	1478	1550
80°	1137	1066	995
85°	707	849	991

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 3745 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	184.7	4.7
10°-20°	506.9	13.0
20°-30°	701.7	18.0
30°-40°	748.2	19.2
40°-50°	682.6	17.5
50°-60°	534.8	13.7
60°-70°	348.5	8.9
70°-80°	154.4	4.0
80°-90°	33.2	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°	1393.3	35.8
0°-40°	2141.5	55.0
0°-60°	3358.9	86.2
0°-90°	3895.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3895.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1984	1984	1984	1984	1984	
5°	1950	1947	1947	1945	1945	185
15°	1824	1824	1805	1787	1780	513
25°	1580	1571	1546	1491	1450	726
35°	1282	1273	1211	1119	1092	802
45°	984	963	881	807	775	758
55°	684	663	601	530	502	613
65°	406	383	346	353	294	400
75°	163	151	142	135	149	175
85°	23	25	28	30	32	32
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1984.1	1984.1	1984.1	1984.1	1984.1
2.5°	1970.3	1970.3	1970.3	1968.0	1968.0
5°	1949.7	1947.4	1947.4	1945.1	1945.1
7.5°	1933.6	1931.3	1929.0	1926.7	1922.1
10°	1910.7	1910.7	1908.4	1896.9	1894.6
12.5°	1874.0	1871.7	1862.5	1846.4	1841.9
15°	1823.5	1823.5	1805.2	1786.8	1779.9
17.5°	1768.5	1766.2	1743.2	1724.9	1715.7
20°	1708.8	1704.2	1681.3	1651.5	1635.4
22.5°	1642.3	1642.3	1614.8	1575.8	1559.7
25°	1580.4	1571.2	1546.0	1490.9	1449.6
27.5°	1509.3	1495.5	1468.0	1390.0	1341.8
30°	1431.3	1424.4	1385.4	1284.5	1247.8
32.5°	1357.9	1346.4	1305.1	1199.6	1169.8
35°	1282.2	1273.0	1211.1	1119.3	1091.8
37.5°	1206.5	1195.0	1117.0	1043.6	1009.2
40°	1130.8	1117.0	1032.2	965.7	929.0
42.5°	1059.7	1041.3	958.8	887.7	846.4
45°	984.0	963.4	880.8	807.4	775.3
47.5°	908.3	890.0	814.3	738.6	701.9
50°	828.0	812.0	743.2	667.5	628.5
52.5°	761.5	736.3	669.8	594.1	562.0
55°	683.5	662.9	601.0	529.8	502.3
57.5°	612.4	591.8	534.4	467.9	445.0
60°	545.9	516.1	467.9	410.6	392.2
62.5°	472.5	449.6	408.3	360.1	383.0
65°	406.0	383.0	346.4	353.2	293.6
67.5°	332.6	321.1	289.0	256.9	247.7
70°	270.7	256.9	245.4	211.0	201.8
72.5°	215.6	201.8	185.8	167.4	160.6
75°	162.9	151.4	142.2	135.3	149.1
77.5°	112.4	107.8	100.9	94.0	91.7
80°	73.4	71.1	68.8	66.5	64.2
82.5°	43.6	43.6	43.6	43.6	43.6
85°	22.9	25.2	27.5	29.8	32.1
87.5°	13.8	13.8	16.1	18.3	20.6
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)