

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: P561135

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-93-97-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P561135  
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-LD4-1LO-50-UNV-93-97-EDD  
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR TEMPER  
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 5000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

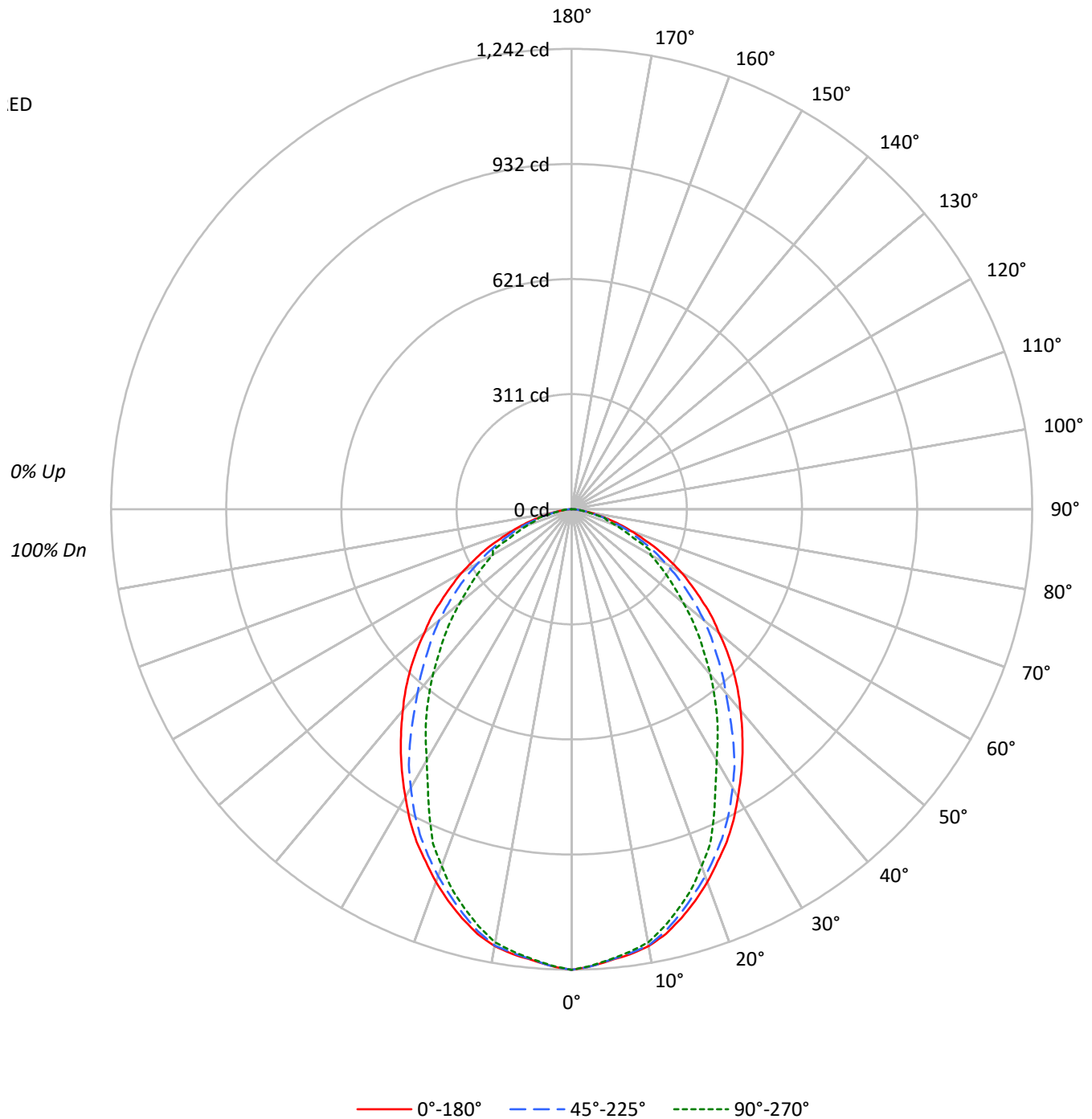
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2439.0 lumens  
Efficiency: N/A  
Efficacy: 104.2 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): 23.4  
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°	3343	3343	3343
5°	3298	3294	3290
10°	3269	3265	3242
15°	3181	3149	3105
20°	3064	3015	2933
25°	2938	2874	2695
30°	2785	2696	2428
35°	2638	2491	2246
40°	2487	2270	2043
45°	2345	2099	1848
50°	2171	1948	1647
55°	2008	1765	1476
60°	1840	1577	1322
65°	1619	1381	1170
70°	1334	1209	995
75°	1061	926	971
80°	713	668	623
85°	445	531	621

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 2345 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	115.6	4.7
10°-20°	317.4	13.0
20°-30°	439.4	18.0
30°-40°	468.5	19.2
40°-50°	427.4	17.5
50°-60°	334.9	13.7
60°-70°	218.3	8.9
70°-80°	96.7	4.0
80°-90°	20.8	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°	872.5	35.8
0°-40°	1341.0	55.0
0°-60°	2103.3	86.2
0°-90°	2439.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2439.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1242	1242	1242	1242	1242	
5°	1221	1219	1219	1218	1218	116
15°	1142	1142	1130	1119	1115	321
25°	990	984	968	934	908	454
35°	803	797	758	701	684	502
45°	616	603	552	506	486	475
55°	428	415	376	332	314	384
65°	254	240	217	221	184	251
75°	102	95	89	85	93	109
85°	14	16	17	19	20	20
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1242.4	1242.4	1242.4	1242.4	1242.4
2.5°	1233.8	1233.8	1233.8	1232.3	1232.3
5°	1220.8	1219.4	1219.4	1218.0	1218.0
7.5°	1210.8	1209.4	1207.9	1206.5	1203.6
10°	1196.4	1196.4	1195.0	1187.8	1186.4
12.5°	1173.5	1172.0	1166.3	1156.2	1153.3
15°	1141.9	1141.9	1130.4	1118.9	1114.6
17.5°	1107.4	1105.9	1091.6	1080.1	1074.3
20°	1070.0	1067.2	1052.8	1034.1	1024.1
22.5°	1028.4	1028.4	1011.2	986.7	976.7
25°	989.6	983.9	968.1	933.6	907.7
27.5°	945.1	936.5	919.2	870.4	840.2
30°	896.2	891.9	867.5	804.3	781.3
32.5°	850.3	843.1	817.3	751.2	732.5
35°	802.9	797.1	758.4	700.9	683.7
37.5°	755.5	748.3	699.5	653.5	632.0
40°	708.1	699.5	646.3	604.7	581.7
42.5°	663.6	652.1	600.4	555.8	530.0
45°	616.2	603.2	551.5	505.6	485.5
47.5°	568.8	557.3	509.9	462.5	439.5
50°	518.5	508.4	465.4	418.0	393.5
52.5°	476.8	461.1	419.4	372.0	351.9
55°	428.0	415.1	376.3	331.8	314.5
57.5°	383.5	370.6	334.7	293.0	278.6
60°	341.8	323.2	293.0	257.1	245.6
62.5°	295.9	281.5	255.7	225.5	239.9
65°	254.2	239.9	216.9	221.2	183.8
67.5°	208.3	201.1	181.0	160.9	155.1
70°	169.5	160.9	153.7	132.1	126.4
72.5°	135.0	126.4	116.3	104.8	100.5
75°	102.0	94.8	89.1	84.7	93.4
77.5°	70.4	67.5	63.2	58.9	57.5
80°	46.0	44.5	43.1	41.7	40.2
82.5°	27.3	27.3	27.3	27.3	27.3
85°	14.4	15.8	17.2	18.7	20.1
87.5°	8.6	8.6	10.1	11.5	12.9
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)