

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: P560461

Luminaire Tested: FSR-12-2-LD4-2LO-40-UNV-81-96-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560461  
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-12-2-LD4-2LO-40-UNV-81-96-EDD  
Description: 1X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .250 CLEAR TEMPERED GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

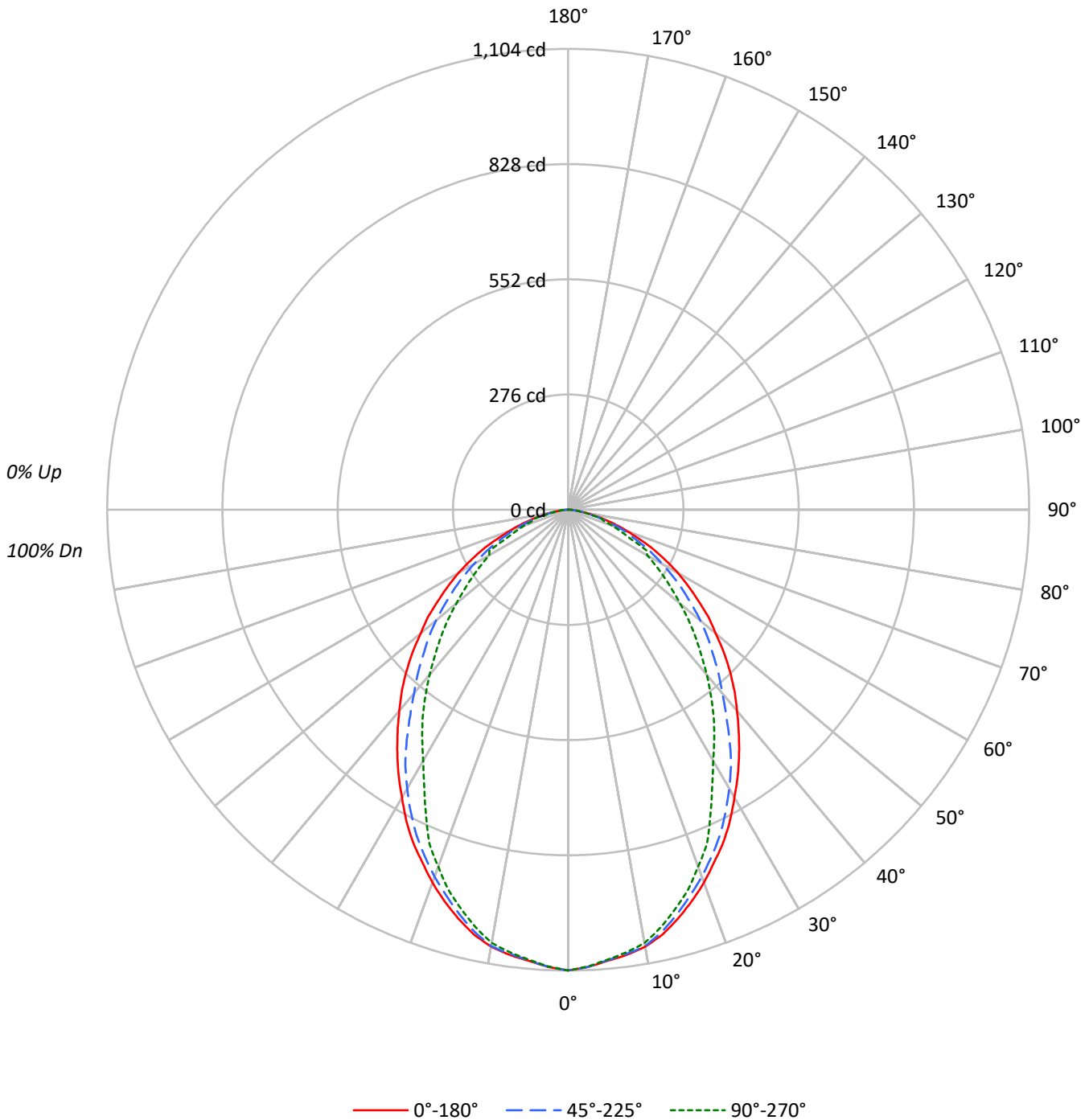
Lumens per Lamp: N/A  
Luminaire Lumens: 2167.0 lumens  
Efficiency: N/A  
Efficacy: 92.6 lumens/watt  
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15  
Luminous Opening: Rectangular (W 1' x L: 2' x H: 0')  
CIE Type: Direct  
  
Input Watts (W): 23.4  
Input Voltage (V):  
Input Current (Ain): NR  
Voltage 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	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100	100		
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87	87	87	87	87	87	87		
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75	75	75	75	75	75	75		
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65	65	65	65	65	65	65		
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56	56	56	56	56	56	56		
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50	50	50	50	50	50	50		
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44	44	44	44	44	44	44		
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40	40	40	40	40	40	40		
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36	36	36	36	36	36	36		
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33	33	33	33	33	33	33		
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30	30	30	30	30	30	30		

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

	0°	45°	90°
0°	5941	5941	5941
5°	5860	5853	5846
10°	5809	5802	5761
15°	5653	5596	5518
20°	5445	5357	5211
25°	5221	5108	4789
30°	4949	4790	4314
35°	4686	4427	3991
40°	4420	4035	3631
45°	4167	3730	3283
50°	3857	3462	2928
55°	3568	3137	2623
60°	3269	2802	2349
65°	2877	2454	2080
70°	2370	2148	1767
75°	1884	1645	1724
80°	1265	1187	1106
85°	790	945	1105

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4167 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.8	4.7
10°-20°	282.0	13.0
20°-30°	390.4	18.0
30°-40°	416.3	19.2
40°-50°	379.8	17.5
50°-60°	297.5	13.7
60°-70°	193.9	8.9
70°-80°	85.9	4.0
80°-90°	18.4	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°	775.1	35.8
0°-40°	1191.4	55.0
0°-60°	1868.7	86.2
0°-90°	2167.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2167.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1104	1104	1104	1104	1104	
5°	1085	1083	1083	1082	1082	103
15°	1014	1014	1004	994	990	285
25°	879	874	860	830	806	404
35°	713	708	674	623	607	446
45°	548	536	490	449	431	422
55°	380	369	334	295	280	341
65°	226	213	193	196	163	223
75°	91	84	79	75	83	97
85°	13	14	15	17	18	18
90°	0	0	0	0	0	



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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	<i>1103.8</i>	<i>1103.8</i>	<i>1103.8</i>	<i>1103.8</i>	<i>1103.8</i>
2.5°	<i>1096.2</i>	1096.2	1096.2	1094.9	1094.9
5°	<i>1084.7</i>	1083.4	1083.4	1082.1	1082.1
7.5°	<i>1075.8</i>	1074.5	1073.2	1071.9	1069.4
10°	<i>1063.0</i>	1063.0	1061.7	1055.3	1054.1
12.5°	<i>1042.6</i>	1041.3	1036.2	1027.3	1024.7
15°	<i>1014.5</i>	1014.5	1004.3	994.1	990.3
17.5°	<i>983.9</i>	982.6	969.8	959.6	954.5
20°	<i>950.7</i>	948.2	935.4	918.8	909.9
22.5°	<i>913.7</i>	913.7	898.4	876.7	867.8
25°	<i>879.2</i>	874.1	860.1	829.5	806.5
27.5°	<i>839.7</i>	832.0	816.7	773.3	746.5
30°	<i>796.3</i>	792.5	770.8	714.6	694.2
32.5°	<i>755.5</i>	749.1	726.1	667.4	650.8
35°	<i>713.3</i>	708.2	673.8	622.7	607.4
37.5°	<i>671.2</i>	664.9	621.5	580.6	561.5
40°	<i>629.1</i>	621.5	574.3	537.2	516.8
42.5°	<i>589.6</i>	579.4	533.4	493.9	470.9
45°	<i>547.5</i>	536.0	490.0	449.2	431.3
47.5°	<i>505.3</i>	495.1	453.0	410.9	390.5
50°	<i>460.7</i>	451.7	413.5	371.3	349.7
52.5°	<i>423.7</i>	409.6	372.6	330.5	312.6
55°	<i>380.3</i>	368.8	334.3	294.8	279.5
57.5°	<i>340.7</i>	329.2	297.3	260.3	247.6
60°	<i>303.7</i>	287.1	260.3	228.4	218.2
62.5°	<i>262.9</i>	250.1	227.1	200.4	213.1
65°	<i>225.9</i>	213.1	192.7	196.5	163.3
67.5°	<i>185.0</i>	178.7	160.8	142.9	137.8
70°	<i>150.6</i>	142.9	136.5	117.4	112.3
72.5°	<i>120.0</i>	112.3	103.4	93.2	89.3
75°	<i>90.6</i>	84.2	79.1	75.3	82.9
77.5°	<i>62.5</i>	60.0	56.1	52.3	51.0
80°	<i>40.8</i>	39.6	38.3	37.0	35.7
82.5°	<i>24.2</i>	24.2	24.2	24.2	24.2
85°	<i>12.8</i>	14.0	15.3	16.6	17.9
87.5°	<i>7.7</i>	7.7	8.9	10.2	11.5
90°	<i>0.0</i>	0.0	0.0	0.0	0.0

(END OF REPORT)