

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: P560385

Luminaire Tested: FSR-12-2-LD4-2LO-35-UNV-81-84-EDD

Issue Date: 7/20/2021

**Test Information**

Test Method: LM-79-2019  
Report Number: P560385  
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-35-UNV-81-84-EDD  
Description: 1X2 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI  
LENSES WITH, 80 CRI AND 3500K CCT LEDS  
Light Source: -  
Ballast/Driver: -

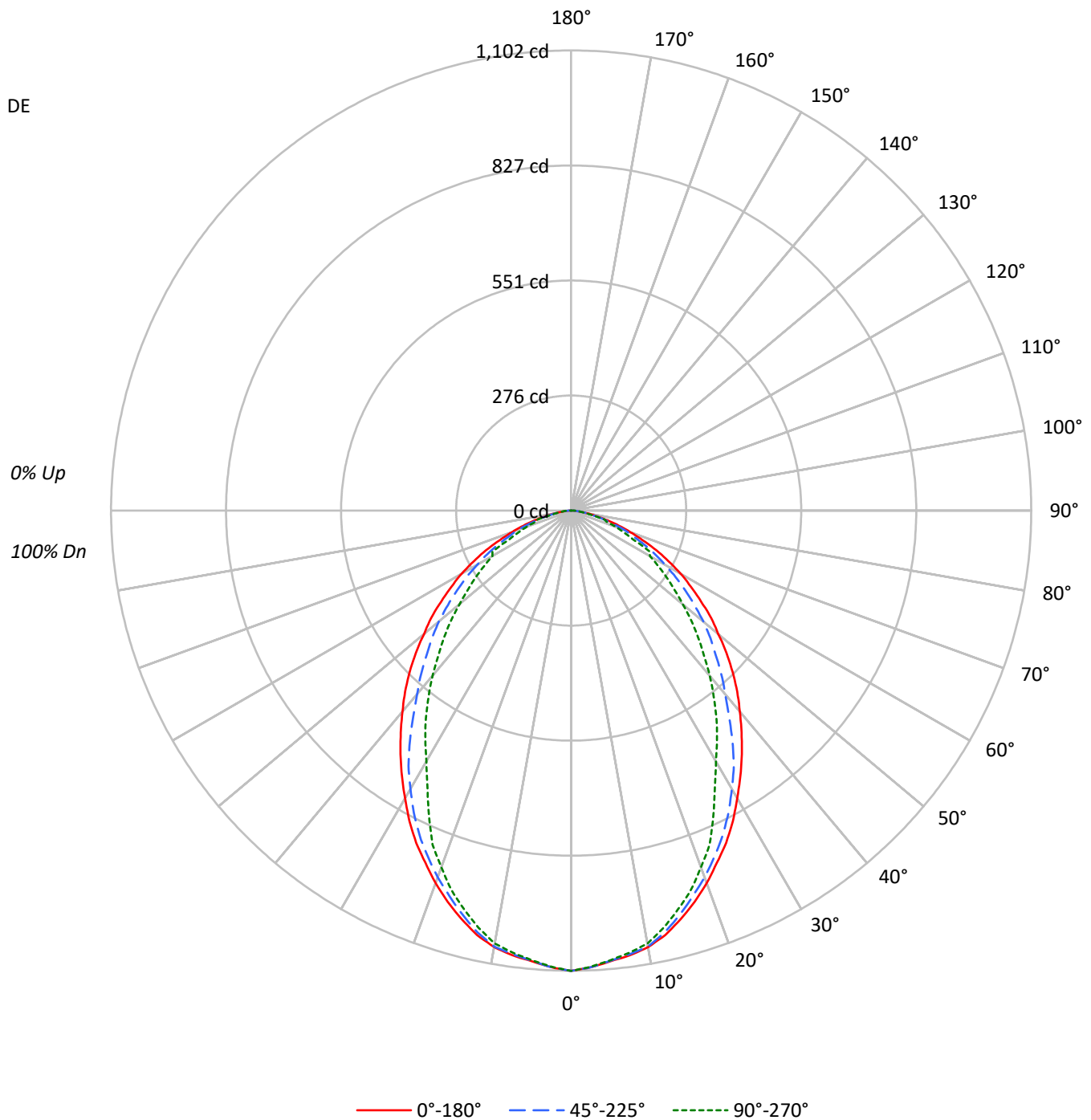
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2164.0 lumens  
Efficiency: N/A  
Efficacy: 92.5 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	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°	5933	5933	5933
5°	5852	5845	5838
10°	5801	5795	5752
15°	5645	5588	5510
20°	5438	5350	5204
25°	5214	5100	4783
30°	4942	4783	4308
35°	4681	4421	3985
40°	4414	4029	3626
45°	4161	3725	3278
50°	3852	3457	2924
55°	3564	3133	2619
60°	3265	2799	2345
65°	2873	2450	2077
70°	2367	2146	1764
75°	1882	1643	1722
80°	1265	1184	1106
85°	784	945	1099

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 4161 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.6	4.7
10°-20°	281.6	13.0
20°-30°	389.9	18.0
30°-40°	415.7	19.2
40°-50°	379.2	17.5
50°-60°	297.1	13.7
60°-70°	193.6	8.9
70°-80°	85.8	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°	774.1	35.8
0°-40°	1189.8	55.0
0°-60°	1866.2	86.2
0°-90°	2164.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2164.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1102	1102	1102	1102	1102	
5°	1083	1082	1082	1081	1081	103
15°	1013	1013	1003	993	989	285
25°	878	873	859	828	805	403
35°	712	707	673	622	607	445
45°	547	535	489	449	431	421
55°	380	368	334	294	279	341
65°	226	213	192	196	163	222
75°	90	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>1102.3</i>	<i>1102.3</i>	<i>1102.3</i>	<i>1102.3</i>	<i>1102.3</i>
2.5°	<i>1094.7</i>	1094.7	1094.7	1093.4	1093.4
5°	<i>1083.2</i>	1081.9	1081.9	1080.6	1080.6
7.5°	<i>1074.3</i>	1073.0	1071.7	1070.5	1067.9
10°	<i>1061.5</i>	1061.5	1060.3	1053.9	1052.6
12.5°	<i>1041.1</i>	1039.9	1034.8	1025.9	1023.3
15°	<i>1013.1</i>	1013.1	1002.9	992.7	988.9
17.5°	<i>982.5</i>	981.2	968.5	958.3	953.2
20°	<i>949.4</i>	946.8	934.1	917.5	908.6
22.5°	<i>912.4</i>	912.4	897.1	875.5	866.6
25°	<i>878.0</i>	872.9	858.9	828.3	805.4
27.5°	<i>838.5</i>	830.9	815.6	772.3	745.5
30°	<i>795.2</i>	791.4	769.7	713.6	693.2
32.5°	<i>754.4</i>	748.0	725.1	666.5	649.9
35°	<i>712.4</i>	707.3	672.9	621.9	606.6
37.5°	<i>670.3</i>	663.9	620.6	579.8	560.7
40°	<i>628.3</i>	620.6	573.5	536.5	516.1
42.5°	<i>588.7</i>	578.6	532.7	493.2	470.2
45°	<i>546.7</i>	535.2	489.4	448.6	430.7
47.5°	<i>504.6</i>	494.4	452.4	410.3	390.0
50°	<i>460.0</i>	451.1	412.9	370.8	349.2
52.5°	<i>423.1</i>	409.1	372.1	330.1	312.2
55°	<i>379.8</i>	368.3	333.9	294.4	279.1
57.5°	<i>340.3</i>	328.8	296.9	260.0	247.2
60°	<i>303.3</i>	286.7	260.0	228.1	217.9
62.5°	<i>262.5</i>	249.8	226.8	200.1	212.8
65°	<i>225.6</i>	212.8	192.4	196.2	163.1
67.5°	<i>184.8</i>	178.4	160.6	142.7	137.6
70°	<i>150.4</i>	142.7	136.4	117.2	112.1
72.5°	<i>119.8</i>	112.1	103.2	93.0	89.2
75°	<i>90.5</i>	84.1	79.0	75.2	82.8
77.5°	<i>62.4</i>	59.9	56.1	52.2	51.0
80°	<i>40.8</i>	39.5	38.2	37.0	35.7
82.5°	<i>24.2</i>	24.2	24.2	24.2	24.2
85°	<i>12.7</i>	14.0	15.3	16.6	17.8
87.5°	<i>7.6</i>	7.6	8.9	10.2	11.5
90°	<i>0.0</i>	0.0	0.0	0.0	0.0

(END OF REPORT)