

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: P561154

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-81-85-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561154
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-LD4-1STD-35-UNV-81-85-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .187 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2588.0 lumens
Efficiency: N/A
Efficacy: 77.7 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

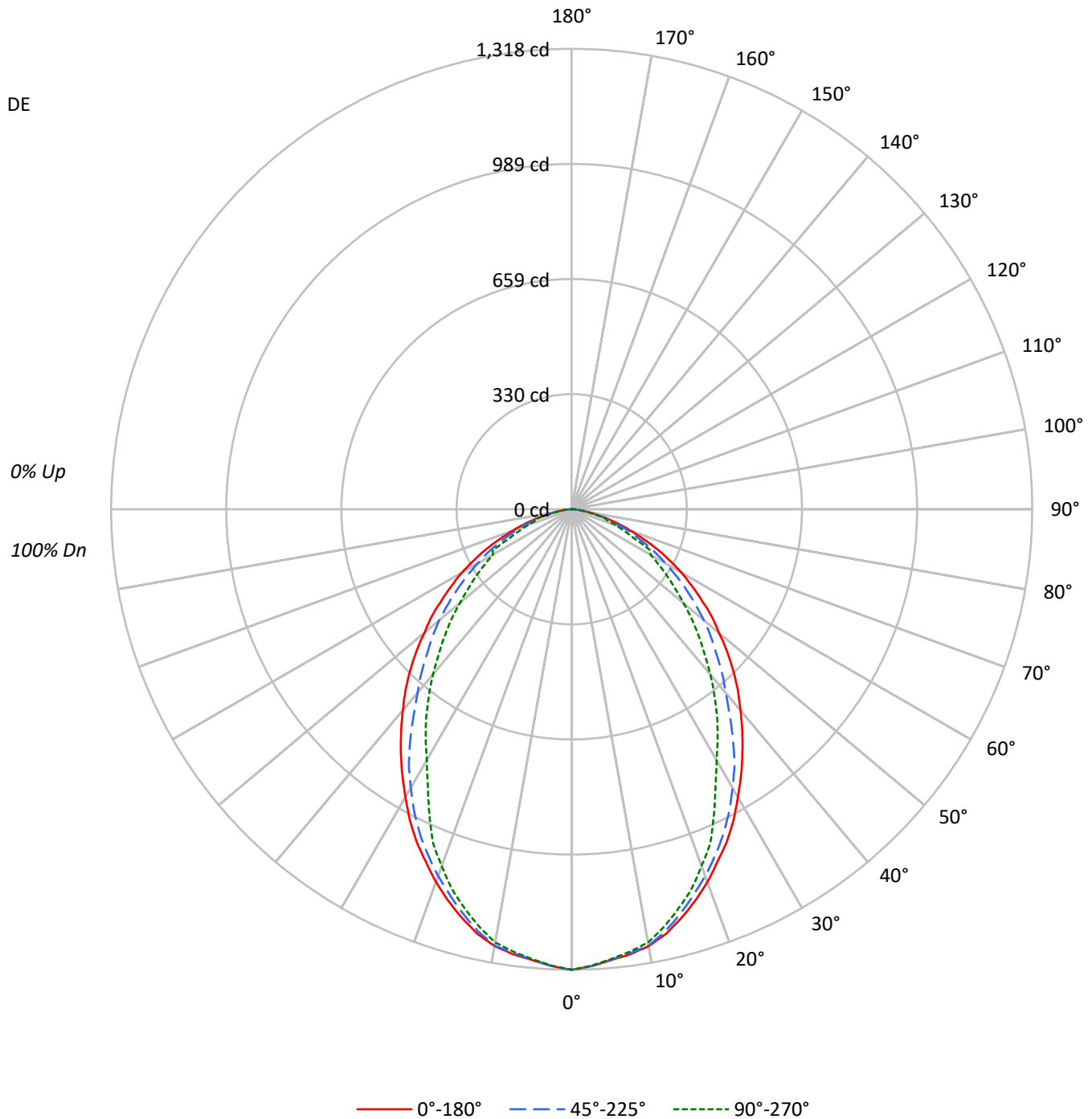
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	3548	3548	3548
5°	3499	3495	3491
10°	3469	3465	3440
15°	3375	3341	3295
20°	3251	3199	3112
25°	3118	3050	2860
30°	2955	2860	2576
35°	2799	2644	2383
40°	2640	2409	2168
45°	2488	2227	1960
50°	2303	2067	1748
55°	2131	1873	1566
60°	1952	1673	1403
65°	1718	1465	1242
70°	1415	1283	1055
75°	1125	983	1030
80°	756	708	662
85°	469	565	658

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 2488 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	122.7	4.7
10°-20°	336.8	13.0
20°-30°	466.3	18.0
30°-40°	497.2	19.2
40°-50°	453.5	17.5
50°-60°	355.3	13.7
60°-70°	231.6	8.9
70°-80°	102.6	4.0
80°-90°	22.0	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°	925.7	35.8
0°-40°	1422.9	55.0
0°-60°	2231.8	86.2
0°-90°	2588.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2588.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1318	1318	1318	1318	1318	
5°	1295	1294	1294	1292	1292	123
15°	1212	1212	1199	1187	1183	341
25°	1050	1044	1027	991	963	482
35°	852	846	805	744	725	533
45°	654	640	585	536	515	504
55°	454	440	399	352	334	407
65°	270	254	230	235	195	266
75°	108	101	94	90	99	116
85°	15	17	18	20	21	21
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	<i>1318.3</i>	<i>1318.3</i>	<i>1318.3</i>	<i>1318.3</i>	<i>1318.3</i>
2.5°	<i>1309.1</i>	1309.1	1309.1	1307.6	1307.6
5°	<i>1295.4</i>	1293.9	1293.9	1292.4	1292.4
7.5°	<i>1284.8</i>	1283.2	1281.7	1280.2	1277.1
10°	<i>1269.5</i>	1269.5	1268.0	1260.4	1258.9
12.5°	<i>1245.1</i>	1243.6	1237.5	1226.9	1223.8
15°	<i>1211.6</i>	1211.6	1199.4	1187.2	1182.7
17.5°	<i>1175.0</i>	1173.5	1158.3	1146.1	1140.0
20°	<i>1135.4</i>	1132.4	1117.1	1097.3	1086.6
22.5°	<i>1091.2</i>	1091.2	1072.9	1047.0	1036.3
25°	<i>1050.1</i>	1044.0	1027.2	990.6	963.2
27.5°	<i>1002.8</i>	993.7	975.4	923.6	891.6
30°	<i>951.0</i>	946.4	920.5	853.5	829.1
32.5°	<i>902.2</i>	894.6	867.2	797.1	777.3
35°	<i>851.9</i>	845.8	804.7	743.7	725.4
37.5°	<i>801.6</i>	794.0	742.2	693.4	670.6
40°	<i>751.4</i>	742.2	685.8	641.6	617.2
42.5°	<i>704.1</i>	691.9	637.0	589.8	562.4
45°	<i>653.8</i>	640.1	585.2	536.5	515.1
47.5°	<i>603.5</i>	591.3	541.0	490.7	466.4
50°	<i>550.2</i>	539.5	493.8	443.5	417.6
52.5°	<i>506.0</i>	489.2	445.0	394.7	373.4
55°	<i>454.2</i>	440.4	399.3	352.1	333.8
57.5°	<i>406.9</i>	393.2	355.1	310.9	295.7
60°	<i>362.7</i>	342.9	310.9	272.8	260.6
62.5°	<i>314.0</i>	298.7	271.3	239.3	254.5
65°	<i>269.8</i>	254.5	230.1	234.7	195.1
67.5°	<i>221.0</i>	213.4	192.0	170.7	164.6
70°	<i>179.8</i>	170.7	163.1	140.2	134.1
72.5°	<i>143.3</i>	134.1	123.4	111.3	106.7
75°	<i>108.2</i>	100.6	94.5	89.9	99.1
77.5°	<i>74.7</i>	71.6	67.1	62.5	61.0
80°	<i>48.8</i>	47.2	45.7	44.2	42.7
82.5°	<i>29.0</i>	29.0	29.0	29.0	29.0
85°	<i>15.2</i>	16.8	18.3	19.8	21.3
87.5°	<i>9.1</i>	9.1	10.7	12.2	13.7
90°	<i>0.0</i>	0.0	0.0	0.0	0.0

(END OF REPORT)