

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: P561191

Luminaire Tested: FSR-12-4-LD4-1STD-35-UNV-93-87-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561191
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-93-87-EDD
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 3500K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3121.0 lumens
Efficiency: N/A
Efficacy: 93.7 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

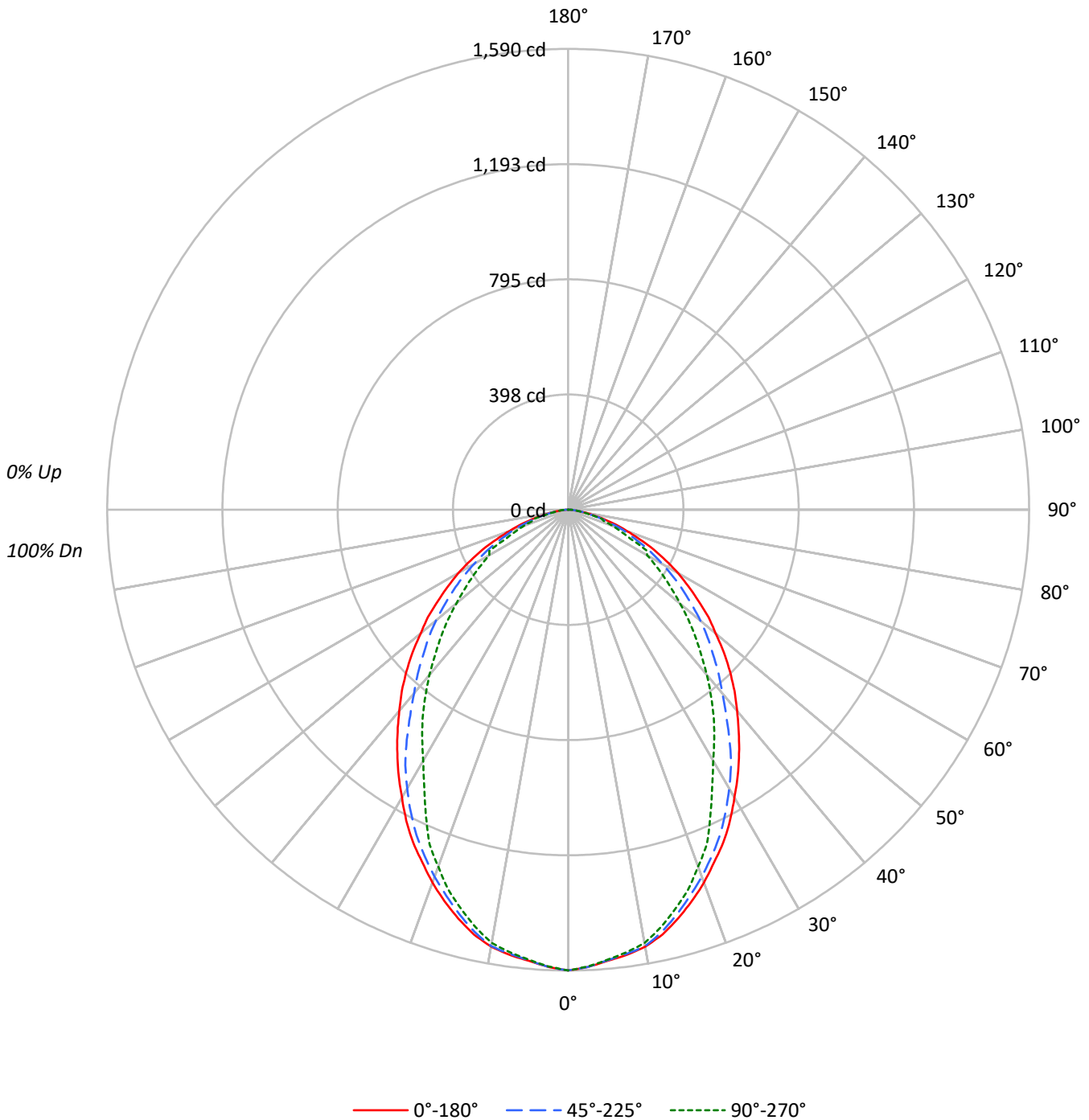
Input Watts (W): 33.3
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	4278	4278	4278
5°	4220	4215	4210
10°	4183	4178	4148
15°	4070	4030	3973
20°	3921	3858	3753
25°	3760	3678	3449
30°	3564	3449	3107
35°	3375	3188	2874
40°	3183	2905	2615
45°	3001	2686	2364
50°	2778	2493	2108
55°	2570	2259	1888
60°	2354	2018	1692
65°	2071	1767	1498
70°	1707	1548	1272
75°	1357	1185	1242
80°	911	854	798
85°	568	682	794

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3001 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	148.0	4.7
10°-20°	406.1	13.0
20°-30°	562.3	18.0
30°-40°	599.6	19.2
40°-50°	547.0	17.5
50°-60°	428.5	13.7
60°-70°	279.3	8.9
70°-80°	123.7	4.0
80°-90°	26.6	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°	1116.4	35.8
0°-40°	1716.0	55.0
0°-60°	2691.4	86.2
0°-90°	3121.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3121.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1590	1590	1590	1590	1590	
5°	1562	1560	1560	1559	1559	148
15°	1461	1461	1446	1432	1426	411
25°	1266	1259	1239	1195	1162	581
35°	1027	1020	970	897	875	642
45°	788	772	706	647	621	607
55°	548	531	482	425	402	491
65°	325	307	278	283	235	321
75°	130	121	114	108	120	140
85°	18	20	22	24	26	25
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1589.8	1589.8	1589.8	1589.8	1589.8
2.5°	1578.8	1578.8	1578.8	1576.9	1576.9
5°	1562.2	1560.4	1560.4	1558.6	1558.6
7.5°	1549.4	1547.5	1545.7	1543.8	1540.2
10°	1531.0	1531.0	1529.1	1520.0	1518.1
12.5°	1501.6	1499.7	1492.4	1479.5	1475.8
15°	1461.1	1461.1	1446.4	1431.7	1426.2
17.5°	1417.0	1415.2	1396.8	1382.1	1374.8
20°	1369.2	1365.6	1347.2	1323.3	1310.4
22.5°	1315.9	1315.9	1293.9	1262.6	1249.8
25°	1266.3	1259.0	1238.8	1194.6	1161.6
27.5°	1209.3	1198.3	1176.3	1113.8	1075.2
30°	1146.9	1141.3	1110.1	1029.2	999.8
32.5°	1088.0	1078.9	1045.8	961.2	937.3
35°	1027.4	1020.0	970.4	896.9	874.8
37.5°	966.7	957.6	895.1	836.3	808.7
40°	906.1	895.1	827.1	773.8	744.4
42.5°	849.1	834.4	768.2	711.3	678.2
45°	788.5	771.9	705.8	646.9	621.2
47.5°	727.8	713.1	652.5	591.8	562.4
50°	663.5	650.6	595.5	534.8	503.6
52.5°	610.2	590.0	536.7	476.0	450.3
55°	547.7	531.2	481.5	424.6	402.5
57.5°	490.7	474.2	428.2	374.9	356.6
60°	437.4	413.5	374.9	329.0	314.3
62.5°	378.6	360.2	327.1	288.6	306.9
65°	325.3	306.9	277.5	283.0	235.3
67.5°	266.5	257.3	231.6	205.8	198.5
70°	216.9	205.8	196.7	169.1	161.7
72.5°	172.8	161.7	148.9	134.2	128.7
75°	130.5	121.3	114.0	108.4	119.5
77.5°	90.1	86.4	80.9	75.4	73.5
80°	58.8	57.0	55.1	53.3	51.5
82.5°	34.9	34.9	34.9	34.9	34.9
85°	18.4	20.2	22.1	23.9	25.7
87.5°	11.0	11.0	12.9	14.7	16.5
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)