

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: P561096

Luminaire Tested: FSR-12-4-LD4-1LO-50-UNV-81-88-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561096
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-81-88-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

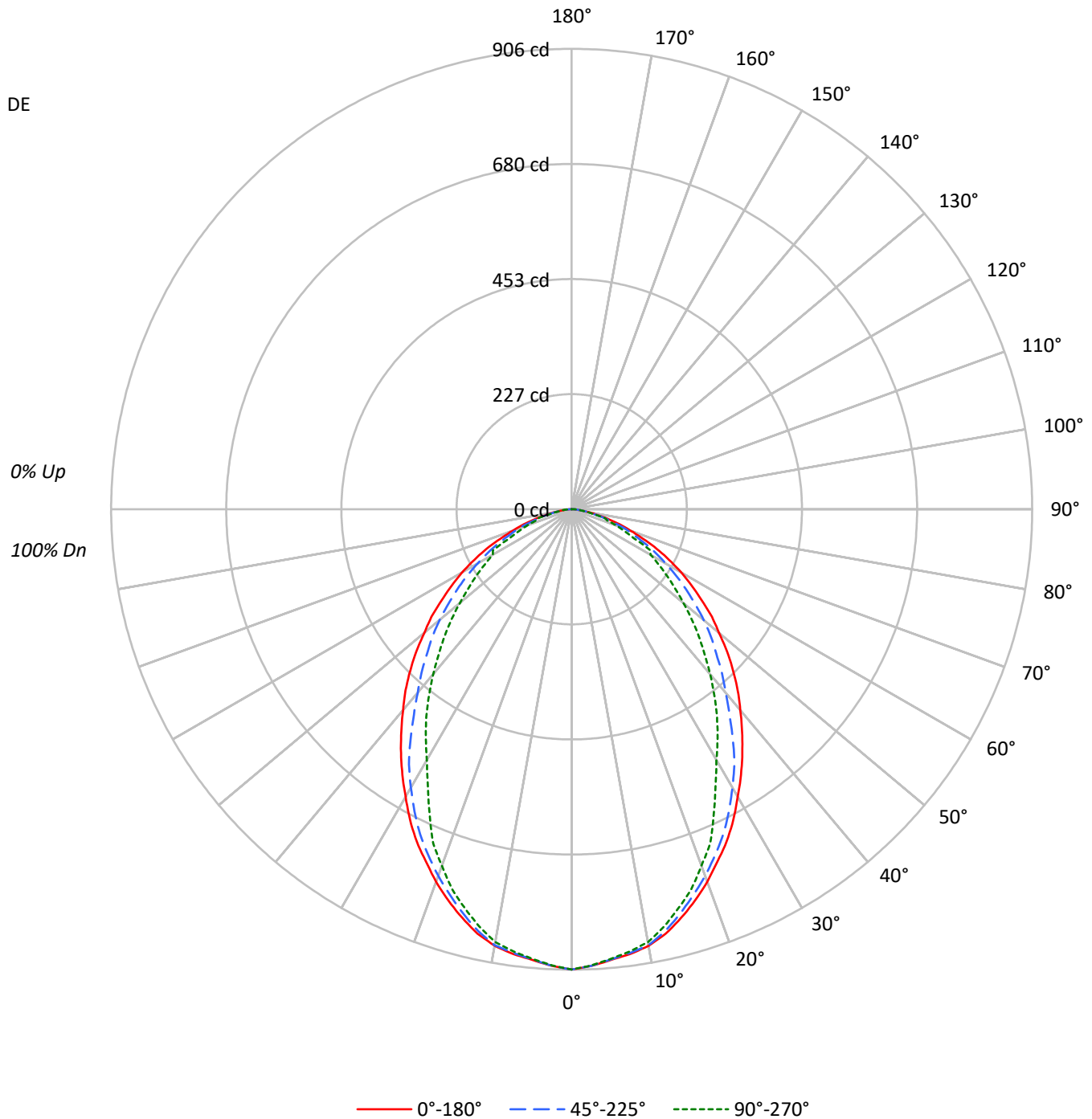
Lumens per Lamp: N/A
Luminaire Lumens: 1778.0 lumens
Efficiency: N/A
Efficacy: 76.0 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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°	2437	2437	2437
5°	2404	2401	2398
10°	2383	2380	2363
15°	2319	2296	2264
20°	2234	2198	2138
25°	2142	2095	1965
30°	2030	1965	1770
35°	1923	1816	1637
40°	1813	1655	1490
45°	1709	1530	1347
50°	1582	1420	1201
55°	1464	1287	1076
60°	1341	1150	963
65°	1180	1007	853
70°	972	881	725
75°	773	675	708
80°	519	487	454
85°	324	389	454

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1709 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	84.3	4.7
10°-20°	231.4	13.0
20°-30°	320.3	18.0
30°-40°	341.6	19.2
40°-50°	311.6	17.5
50°-60°	244.1	13.7
60°-70°	159.1	8.9
70°-80°	70.5	4.0
80°-90°	15.1	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°	636.0	35.8
0°-40°	977.6	55.0
0°-60°	1533.3	86.2
0°-90°	1778.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1778.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	906	906	906	906	906	
5°	890	889	889	888	888	84
15°	832	832	824	816	812	234
25°	721	717	706	681	662	331
35°	585	581	553	511	498	366
45°	449	440	402	369	354	346
55°	312	303	274	242	229	280
65°	185	175	158	161	134	183
75°	74	69	65	62	68	80
85°	10	12	13	14	15	15
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	905.7	905.7	905.7	905.7	905.7
2.5°	899.4	899.4	899.4	898.4	898.4
5°	890.0	888.9	888.9	887.9	887.9
7.5°	882.7	881.6	880.6	879.5	877.4
10°	872.2	872.2	871.1	865.9	864.9
12.5°	855.4	854.4	850.2	842.9	840.8
15°	832.4	832.4	824.0	815.6	812.5
17.5°	807.3	806.2	795.8	787.4	783.2
20°	780.0	778.0	767.5	753.9	746.5
22.5°	749.7	749.7	737.1	719.3	712.0
25°	721.4	717.2	705.7	680.6	661.7
27.5°	689.0	682.7	670.1	634.5	612.5
30°	653.4	650.2	632.4	586.3	569.6
32.5°	619.8	614.6	595.8	547.6	534.0
35°	585.3	581.1	552.8	511.0	498.4
37.5°	550.7	545.5	509.9	476.4	460.7
40°	516.2	509.9	471.2	440.8	424.1
42.5°	483.7	475.4	437.7	405.2	386.4
45°	449.2	439.8	402.1	368.6	353.9
47.5°	414.6	406.3	371.7	337.1	320.4
50°	378.0	370.7	339.2	304.7	286.9
52.5°	347.6	336.1	305.7	271.2	256.5
55°	312.0	302.6	274.3	241.9	229.3
57.5°	279.6	270.1	244.0	213.6	203.1
60°	249.2	235.6	213.6	187.4	179.0
62.5°	215.7	205.2	186.4	164.4	174.9
65°	185.3	174.9	158.1	161.2	134.0
67.5°	151.8	146.6	131.9	117.3	113.1
70°	123.6	117.3	112.0	96.3	92.1
72.5°	98.4	92.1	84.8	76.4	73.3
75°	74.3	69.1	64.9	61.8	68.1
77.5°	51.3	49.2	46.1	42.9	41.9
80°	33.5	32.5	31.4	30.4	29.3
82.5°	19.9	19.9	19.9	19.9	19.9
85°	10.5	11.5	12.6	13.6	14.7
87.5°	6.3	6.3	7.3	8.4	9.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)