

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: P561620

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-82-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561620
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-LD4-2LO-40-UNV-82-86-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

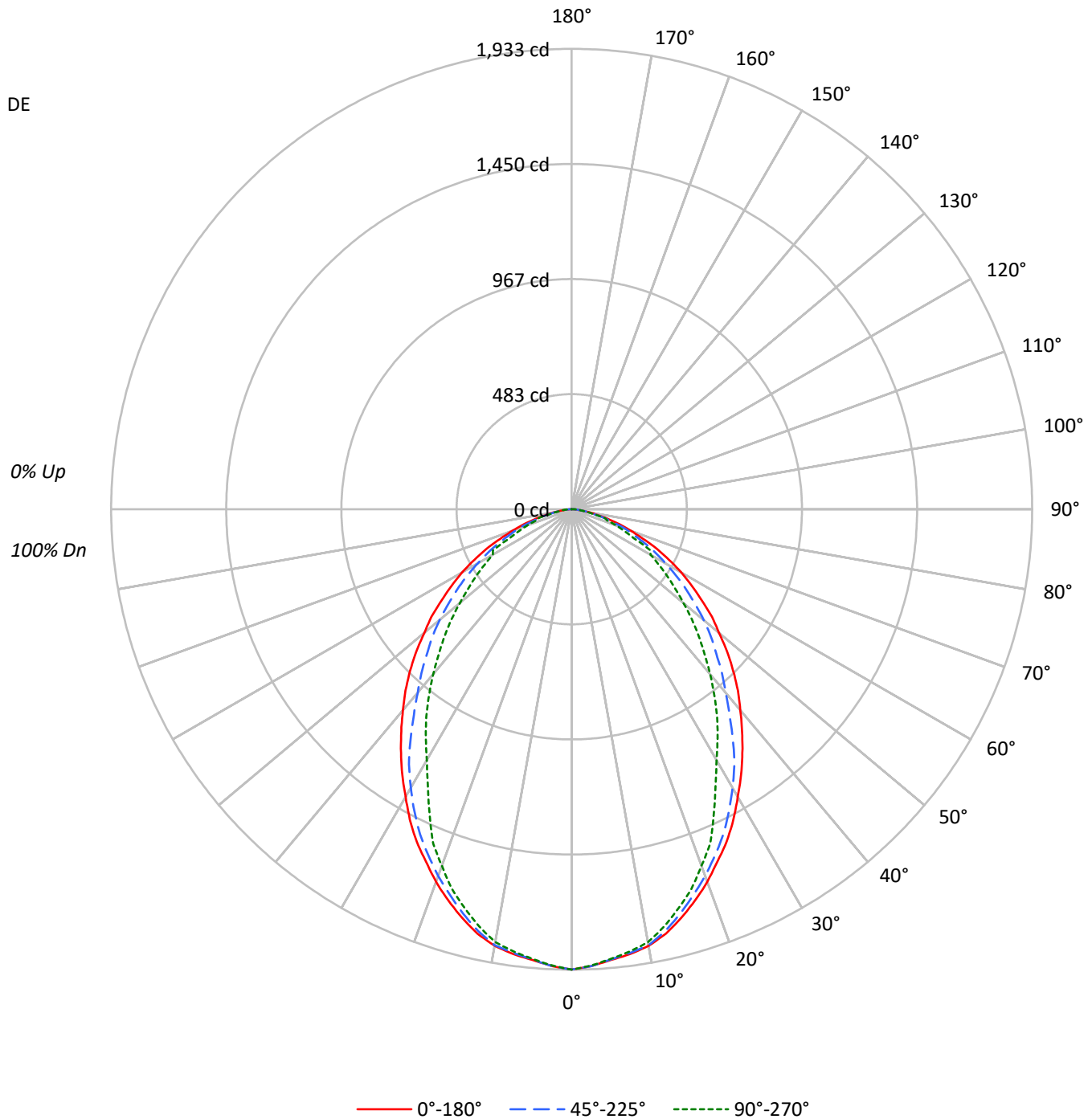
Lumens per Lamp: N/A
Luminaire Lumens: 3794.0 lumens
Efficiency: N/A
Efficacy: 81.1 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 46.8
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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5201	5201	5201
5°	5130	5124	5118
10°	5085	5079	5043
15°	4948	4898	4830
20°	4767	4690	4562
25°	4571	4471	4192
30°	4332	4193	3777
35°	4103	3875	3494
40°	3869	3532	3179
45°	3648	3265	2874
50°	3377	3031	2563
55°	3124	2746	2296
60°	2862	2453	2056
65°	2518	2148	1821
70°	2074	1881	1547
75°	1649	1440	1510
80°	1108	1038	970
85°	689	827	966

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3648 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	179.9	4.7
10°-20°	493.7	13.0
20°-30°	683.5	18.0
30°-40°	728.8	19.2
40°-50°	664.9	17.5
50°-60°	520.9	13.7
60°-70°	339.5	8.9
70°-80°	150.4	4.0
80°-90°	32.3	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°	1357.1	35.8
0°-40°	2086.0	55.0
0°-60°	3271.8	86.2
0°-90°	3794.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3794.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1933	1933	1933	1933	1933	
5°	1899	1897	1897	1895	1895	180
15°	1776	1776	1758	1740	1734	499
25°	1539	1530	1506	1452	1412	707
35°	1249	1240	1180	1090	1064	781
45°	958	938	858	786	755	738
55°	666	646	585	516	489	597
65°	396	373	337	344	286	390
75°	159	148	138	132	145	170
85°	22	25	27	29	31	31
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1932.6	1932.6	1932.6	1932.6	1932.6
2.5°	1919.2	1919.2	1919.2	1917.0	1917.0
5°	1899.1	1896.9	1896.9	1894.6	1894.6
7.5°	1883.5	1881.2	1879.0	1876.8	1872.3
10°	1861.1	1861.1	1858.9	1847.7	1845.5
12.5°	1825.4	1823.1	1814.2	1798.6	1794.1
15°	1776.2	1776.2	1758.3	1740.5	1733.8
17.5°	1722.6	1720.4	1698.0	1680.1	1671.2
20°	1664.5	1660.0	1637.7	1608.6	1593.0
22.5°	1599.7	1599.7	1572.9	1534.9	1519.3
25°	1539.4	1530.5	1505.9	1452.3	1412.0
27.5°	1470.1	1456.7	1429.9	1353.9	1307.0
30°	1394.2	1387.5	1349.5	1251.2	1215.4
32.5°	1322.7	1311.5	1271.3	1168.5	1139.5
35°	1248.9	1240.0	1179.7	1090.3	1063.5
37.5°	1175.2	1164.0	1088.1	1016.6	983.1
40°	1101.5	1088.1	1005.4	940.6	904.9
42.5°	1032.2	1014.3	933.9	864.6	824.4
45°	958.5	938.4	857.9	786.5	755.2
47.5°	884.8	866.9	793.2	719.4	683.7
50°	806.6	790.9	723.9	650.2	612.2
52.5°	741.8	717.2	652.4	578.7	547.4
55°	665.8	645.7	585.4	516.1	489.3
57.5°	596.5	576.4	520.6	455.8	433.4
60°	531.7	502.7	455.8	399.9	382.1
62.5°	460.3	437.9	397.7	350.8	373.1
65°	395.5	373.1	337.4	344.1	286.0
67.5°	324.0	312.8	281.5	250.2	241.3
70°	263.6	250.2	239.1	205.5	196.6
72.5°	210.0	196.6	181.0	163.1	156.4
75°	158.6	147.5	138.5	131.8	145.2
77.5°	109.5	105.0	98.3	91.6	89.4
80°	71.5	69.3	67.0	64.8	62.6
82.5°	42.5	42.5	42.5	42.5	42.5
85°	22.3	24.6	26.8	29.0	31.3
87.5°	13.4	13.4	15.6	17.9	20.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)