

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: P561680

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-82-84-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561680
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-50-UNV-82-84-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

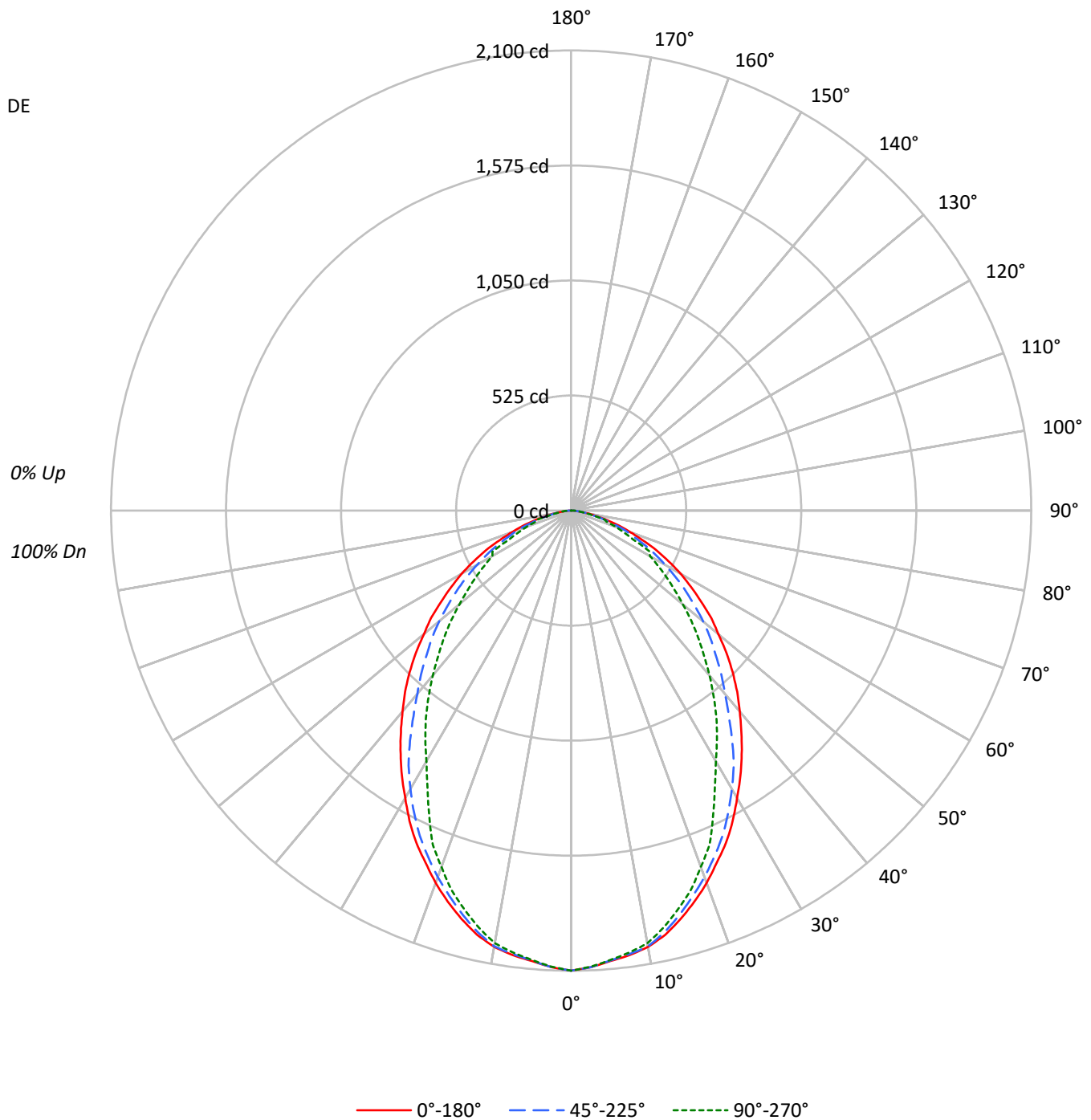
Lumens per Lamp: N/A
Luminaire Lumens: 4122.0 lumens
Efficiency: N/A
Efficacy: 88.1 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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°	5650	5650	5650
5°	5574	5567	5560
10°	5525	5519	5479
15°	5376	5322	5248
20°	5179	5095	4956
25°	4966	4858	4555
30°	4707	4556	4103
35°	4458	4210	3796
40°	4204	3837	3453
45°	3963	3547	3123
50°	3669	3293	2784
55°	3394	2984	2494
60°	3109	2665	2234
65°	2735	2334	1978
70°	2253	2043	1681
75°	1791	1565	1641
80°	1204	1128	1054
85°	750	898	1050

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3963 cd/sqm

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.5	4.7
10°-20°	536.4	13.0
20°-30°	742.6	18.0
30°-40°	791.8	19.2
40°-50°	722.4	17.5
50°-60°	565.9	13.7
60°-70°	368.9	8.9
70°-80°	163.4	4.0
80°-90°	35.1	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°	1474.5	35.8
0°-40°	2266.3	55.0
0°-60°	3554.6	86.2
0°-90°	4122.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4122.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2100	2100	2100	2100	2100	
5°	2063	2061	2061	2058	2058	196
15°	1930	1930	1910	1891	1884	543
25°	1672	1663	1636	1578	1534	768
35°	1357	1347	1282	1185	1155	848
45°	1041	1020	932	854	820	802
55°	723	702	636	561	532	649
65°	430	405	366	374	311	423
75°	172	160	150	143	158	185
85°	24	27	29	32	34	34
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2099.7	2099.7	2099.7	2099.7	2099.7
2.5°	2085.1	2085.1	2085.1	2082.7	2082.7
5°	2063.3	2060.9	2060.9	2058.4	2058.4
7.5°	2046.3	2043.9	2041.4	2039.0	2034.2
10°	2022.0	2022.0	2019.6	2007.5	2005.0
12.5°	1983.2	1980.7	1971.0	1954.0	1949.2
15°	1929.8	1929.8	1910.4	1890.9	1883.7
17.5°	1871.5	1869.1	1844.8	1825.4	1815.7
20°	1808.4	1803.6	1779.3	1747.7	1730.7
22.5°	1738.0	1738.0	1708.9	1667.6	1650.6
25°	1672.5	1662.8	1636.1	1577.8	1534.1
27.5°	1597.2	1582.7	1553.5	1471.0	1420.0
30°	1514.7	1507.4	1466.1	1359.3	1320.5
32.5°	1437.0	1424.9	1381.2	1269.5	1238.0
35°	1356.9	1347.2	1281.7	1184.6	1155.4
37.5°	1276.8	1264.7	1182.1	1104.5	1068.1
40°	1196.7	1182.1	1092.3	1021.9	983.1
42.5°	1121.5	1102.0	1014.6	939.4	895.7
45°	1041.4	1019.5	932.1	854.4	820.5
47.5°	961.2	941.8	861.7	781.6	742.8
50°	876.3	859.3	786.5	706.4	665.1
52.5°	805.9	779.2	708.8	628.7	594.7
55°	723.4	701.5	636.0	560.7	531.6
57.5°	648.1	626.3	565.6	495.2	470.9
60°	577.7	546.2	495.2	434.5	415.1
62.5°	500.0	475.8	432.1	381.1	405.4
65°	429.6	405.4	366.5	373.8	310.7
67.5°	352.0	339.8	305.9	271.9	262.2
70°	286.4	271.9	259.7	223.3	213.6
72.5°	228.2	213.6	196.6	177.2	169.9
75°	172.3	160.2	150.5	143.2	157.8
77.5°	118.9	114.1	106.8	99.5	97.1
80°	77.7	75.2	72.8	70.4	68.0
82.5°	46.1	46.1	46.1	46.1	46.1
85°	24.3	26.7	29.1	31.6	34.0
87.5°	14.6	14.6	17.0	19.4	21.8
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)