

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: P561609

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-81-88-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561609
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-81-88-EDD
Description: 1X4 FSR TROFFER WITH .156 CLEAR PC FIXTURE SIDE AND .500 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

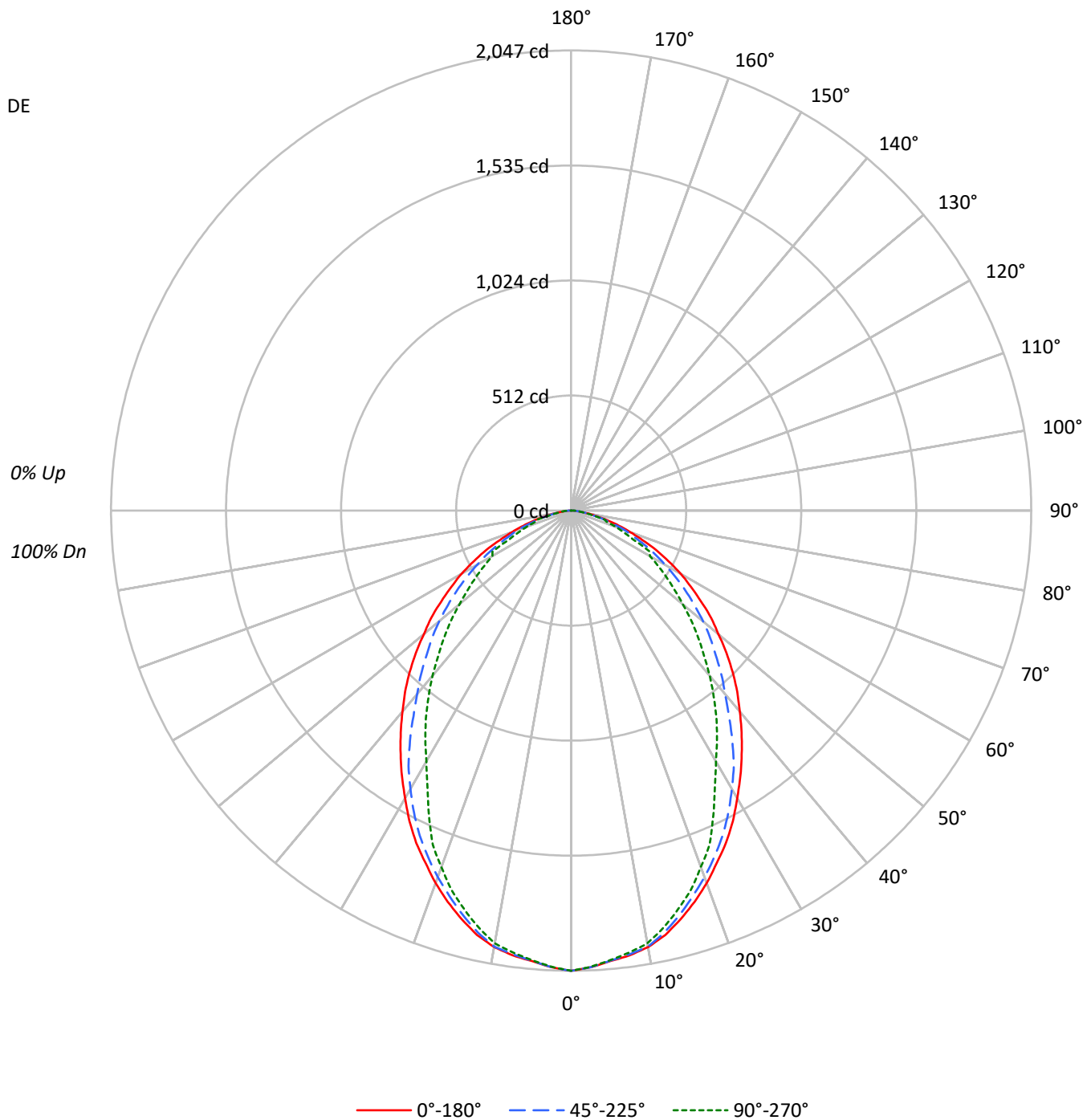
Lumens per Lamp: N/A
Luminaire Lumens: 4019.0 lumens
Efficiency: N/A
Efficacy: 85.9 lumens/watt
Spacing Criteria (0/90/45): 1.1 / 1 / 1.15
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

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																		
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																												
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°	5509	5509	5509
5°	5434	5428	5421
10°	5387	5381	5342
15°	5242	5189	5117
20°	5049	4968	4832
25°	4842	4736	4441
30°	4589	4442	4001
35°	4346	4105	3701
40°	4099	3741	3367
45°	3864	3459	3044
50°	3577	3210	2715
55°	3309	2909	2432
60°	3032	2598	2178
65°	2667	2276	1929
70°	2198	1992	1639
75°	1747	1525	1599
80°	1173	1100	1027
85°	732	877	1022

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3864 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	190.6	4.7
10°-20°	523.0	13.0
20°-30°	724.1	18.0
30°-40°	772.1	19.2
40°-50°	704.3	17.5
50°-60°	551.8	13.7
60°-70°	359.6	8.9
70°-80°	159.3	4.0
80°-90°	34.2	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°	1437.6	35.8
0°-40°	2209.7	55.0
0°-60°	3465.8	86.2
0°-90°	4019.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4019.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2047	2047	2047	2047	2047	
5°	2012	2009	2009	2007	2007	191
15°	1882	1882	1863	1844	1837	529
25°	1631	1621	1595	1538	1496	749
35°	1323	1314	1250	1155	1127	827
45°	1015	994	909	833	800	782
55°	705	684	620	547	518	633
65°	419	395	357	364	303	413
75°	168	156	147	140	154	180
85°	24	26	28	31	33	33
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2047.2	2047.2	2047.2	2047.2	2047.2
2.5°	2033.0	2033.0	2033.0	2030.7	2030.7
5°	2011.7	2009.4	2009.4	2007.0	2007.0
7.5°	1995.2	1992.8	1990.4	1988.1	1983.3
10°	1971.5	1971.5	1969.1	1957.3	1954.9
12.5°	1933.6	1931.3	1921.8	1905.2	1900.5
15°	1881.6	1881.6	1862.6	1843.7	1836.6
17.5°	1824.8	1822.4	1798.7	1779.8	1770.3
20°	1763.2	1758.5	1734.8	1704.0	1687.5
22.5°	1694.6	1694.6	1666.2	1625.9	1609.4
25°	1630.7	1621.2	1595.2	1538.4	1495.8
27.5°	1557.3	1543.1	1514.7	1434.2	1384.5
30°	1476.8	1469.7	1429.5	1325.4	1287.5
32.5°	1401.1	1389.3	1346.7	1237.8	1207.0
35°	1323.0	1313.5	1249.6	1155.0	1126.6
37.5°	1244.9	1233.1	1152.6	1076.9	1041.4
40°	1166.8	1152.6	1065.0	996.4	958.5
42.5°	1093.4	1074.5	989.3	915.9	873.3
45°	1015.3	994.0	908.8	833.1	800.0
47.5°	937.2	918.3	840.2	762.1	724.2
50°	854.4	837.8	766.8	688.7	648.5
52.5°	785.8	759.7	691.1	613.0	579.8
55°	705.3	684.0	620.1	546.7	518.3
57.5°	631.9	610.6	551.4	482.8	459.1
60°	563.3	532.5	482.8	423.6	404.7
62.5°	487.5	463.9	421.3	371.6	395.2
65°	418.9	395.2	357.4	364.5	302.9
67.5°	343.2	331.3	298.2	265.1	255.6
70°	279.3	265.1	253.2	217.7	208.3
72.5°	222.5	208.3	191.7	172.8	165.7
75°	168.0	156.2	146.7	139.6	153.8
77.5°	116.0	111.2	104.1	97.0	94.7
80°	75.7	73.4	71.0	68.6	66.3
82.5°	45.0	45.0	45.0	45.0	45.0
85°	23.7	26.0	28.4	30.8	33.1
87.5°	14.2	14.2	16.6	18.9	21.3
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)