

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: P561702

Luminaire Tested: FSR-12-4-LD4-2LO-50-UNV-93-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561702
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-93-87-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 5000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4165.0 lumens
Efficiency: N/A
Efficacy: 89.0 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

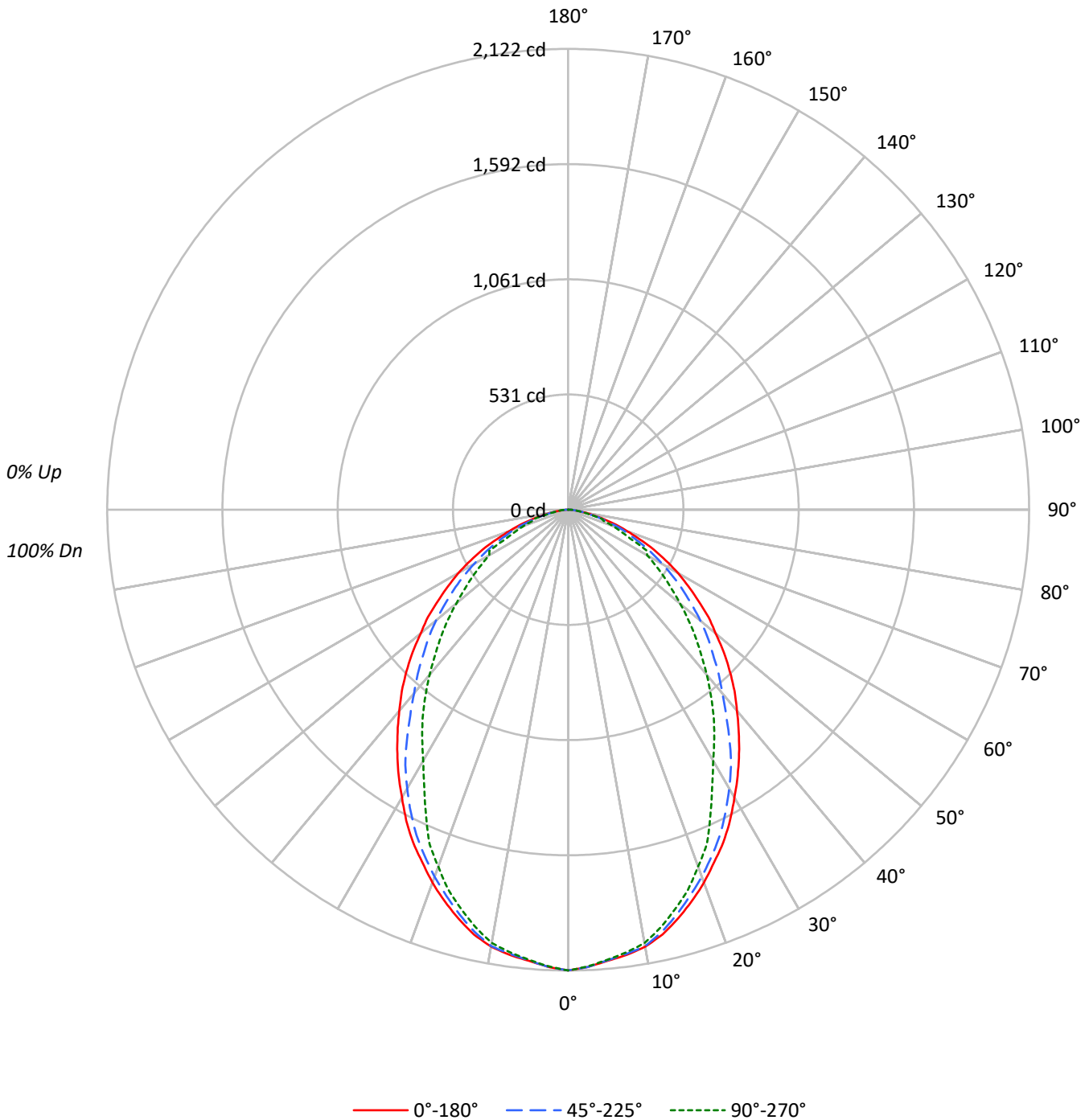
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	5709	5709	5709
5°	5632	5625	5618
10°	5583	5576	5536
15°	5432	5378	5302
20°	5233	5148	5008
25°	5018	4908	4603
30°	4756	4603	4146
35°	4504	4254	3835
40°	4248	3877	3489
45°	4004	3584	3155
50°	3707	3327	2813
55°	3429	3015	2520
60°	3141	2693	2257
65°	2764	2358	1999
70°	2277	2065	1698
75°	1810	1581	1657
80°	1216	1141	1065
85°	756	908	1059

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4004 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	197.5	4.7
10°-20°	542.0	13.0
20°-30°	750.4	18.0
30°-40°	800.1	19.2
40°-50°	729.9	17.5
50°-60°	571.8	13.7
60°-70°	372.7	8.9
70°-80°	165.1	4.0
80°-90°	35.4	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°	1489.9	35.8
0°-40°	2290.0	55.0
0°-60°	3591.7	86.2
0°-90°	4165.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4165.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2122	2122	2122	2122	2122	
5°	2085	2082	2082	2080	2080	198
15°	1950	1950	1930	1911	1903	548
25°	1690	1680	1653	1594	1550	776
35°	1371	1361	1295	1197	1168	857
45°	1052	1030	942	863	829	811
55°	731	709	643	567	537	656
65°	434	410	370	378	314	428
75°	174	162	152	145	159	187
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°	2121.6	2121.6	2121.6	2121.6	2121.6
2.5°	2106.9	2106.9	2106.9	2104.4	2104.4
5°	2084.8	2082.4	2082.4	2079.9	2079.9
7.5°	2067.6	2065.2	2062.7	2060.3	2055.4
10°	2043.1	2043.1	2040.7	2028.4	2025.9
12.5°	2003.9	2001.4	1991.6	1974.4	1969.5
15°	1949.9	1949.9	1930.3	1910.7	1903.3
17.5°	1891.0	1888.6	1864.1	1844.4	1834.6
20°	1827.3	1822.4	1797.8	1766.0	1748.8
22.5°	1756.1	1756.1	1726.7	1685.0	1667.8
25°	1689.9	1680.1	1653.1	1594.3	1550.1
27.5°	1613.9	1599.2	1569.7	1486.3	1434.8
30°	1530.5	1523.1	1481.4	1373.5	1334.3
32.5°	1452.0	1439.7	1395.6	1282.8	1250.9
35°	1371.1	1361.3	1295.0	1196.9	1167.5
37.5°	1290.1	1277.9	1194.5	1116.0	1079.2
40°	1209.2	1194.5	1103.7	1032.6	993.3
42.5°	1133.2	1113.5	1025.2	949.2	905.1
45°	1052.2	1030.1	941.8	863.4	829.0
47.5°	971.3	951.7	870.7	789.8	750.5
50°	885.4	868.3	794.7	713.7	672.0
52.5°	814.3	787.3	716.2	635.3	600.9
55°	730.9	708.8	642.6	566.6	537.1
57.5°	654.9	632.8	571.5	500.4	475.8
60°	583.7	551.9	500.4	439.0	419.4
62.5°	505.3	480.7	436.6	385.1	409.6
65°	434.1	409.6	370.4	377.7	313.9
67.5°	355.6	343.4	309.0	274.7	264.9
70°	289.4	274.7	262.4	225.6	215.8
72.5°	230.6	215.8	198.7	179.0	171.7
75°	174.1	161.9	152.1	144.7	159.4
77.5°	120.2	115.3	107.9	100.6	98.1
80°	78.5	76.0	73.6	71.1	68.7
82.5°	46.6	46.6	46.6	46.6	46.6
85°	24.5	27.0	29.4	31.9	34.3
87.5°	14.7	14.7	17.2	19.6	22.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)