

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: P560877

Luminaire Tested: FSR-12-4-LD4-1HI-40-UNV-93-96-EDD

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P560877
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-LD4-1HI-40-UNV-93-96-EDD
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .250 CLEAR TEMPER
GLASS ENVIRONMENTAL SIDE LENSES WITH, 80 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4087.0 lumens
Efficiency: N/A
Efficacy: 94.6 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

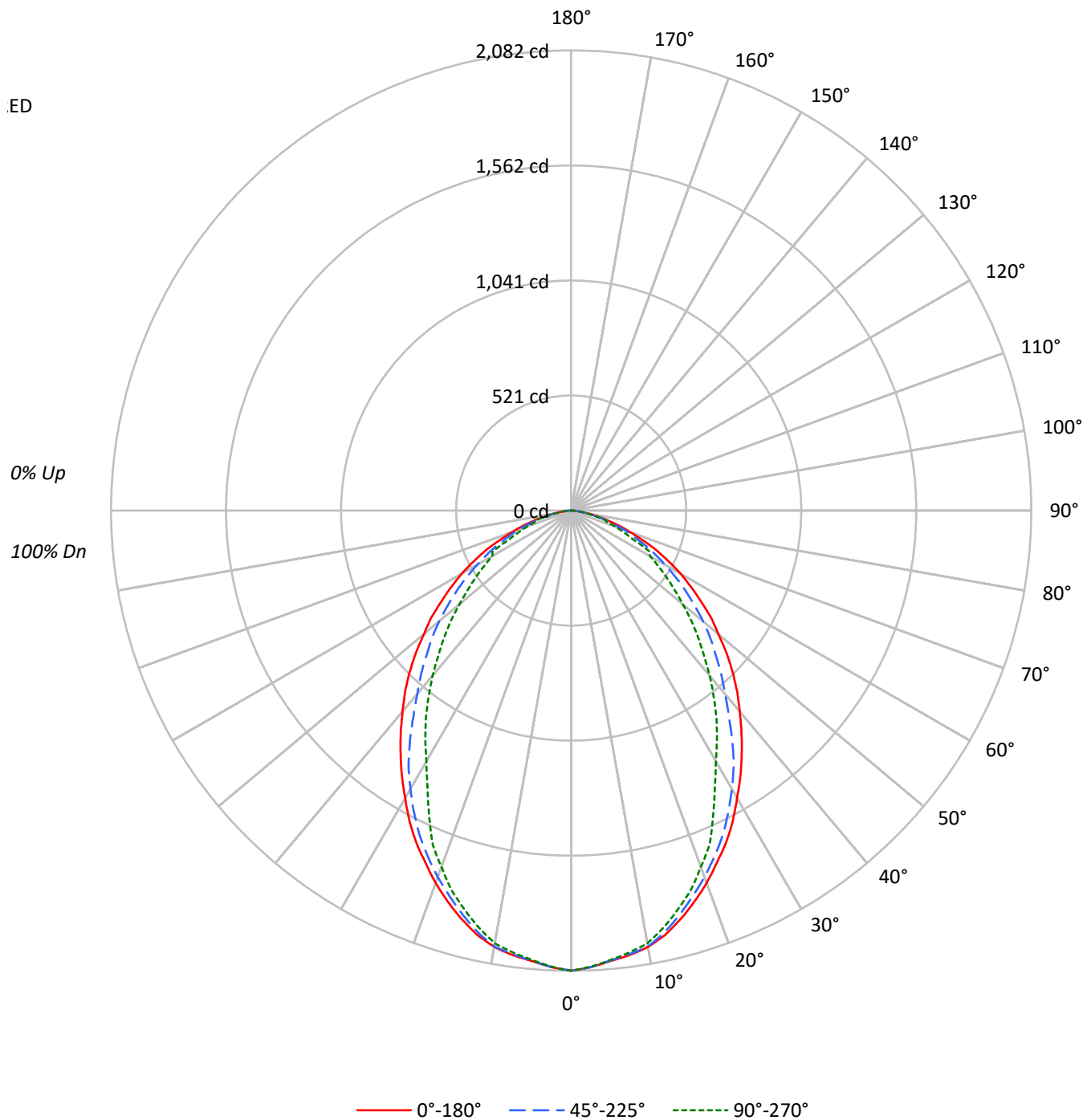
Input Watts (W): 43.2
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5602	5602	5602
5°	5526	5520	5513
10°	5478	5472	5432
15°	5331	5277	5203
20°	5135	5052	4914
25°	4924	4817	4516
30°	4667	4517	4068
35°	4420	4175	3763
40°	4168	3805	3424
45°	3929	3517	3096
50°	3637	3265	2761
55°	3365	2959	2473
60°	3083	2643	2215
65°	2713	2314	1962
70°	2234	2026	1666
75°	1777	1551	1626
80°	1193	1119	1044
85°	744	892	1041

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3929 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	193.8	4.7
10°-20°	531.8	13.0
20°-30°	736.3	18.0
30°-40°	785.1	19.2
40°-50°	716.3	17.5
50°-60°	561.1	13.7
60°-70°	365.7	8.9
70°-80°	162.0	4.0
80°-90°	34.8	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°	1462.0	35.8
0°-40°	2247.1	55.0
0°-60°	3524.5	86.2
0°-90°	4087.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4087.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2082	2082	2082	2082	2082	
5°	2046	2043	2043	2041	2041	194
15°	1913	1913	1894	1875	1868	538
25°	1658	1649	1622	1564	1521	761
35°	1345	1336	1271	1174	1146	841
45°	1032	1011	924	847	814	795
55°	717	696	631	556	527	643
65°	426	402	363	371	308	420
75°	171	159	149	142	156	183
85°	24	26	29	31	34	33
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2081.9	2081.9	2081.9	2081.9	2081.9
2.5°	2067.4	2067.4	2067.4	2065.0	2065.0
5°	2045.8	2043.4	2043.4	2040.9	2040.9
7.5°	2028.9	2026.5	2024.1	2021.7	2016.9
10°	2004.8	2004.8	2002.4	1990.4	1988.0
12.5°	1966.3	1963.9	1954.3	1937.5	1932.6
15°	1913.4	1913.4	1894.1	1874.9	1867.7
17.5°	1855.6	1853.2	1829.2	1809.9	1800.3
20°	1793.0	1788.2	1764.2	1732.9	1716.0
22.5°	1723.3	1723.3	1694.4	1653.5	1636.6
25°	1658.3	1648.6	1622.2	1564.4	1521.1
27.5°	1583.7	1569.2	1540.3	1458.5	1408.0
30°	1501.8	1494.6	1453.7	1347.8	1309.3
32.5°	1424.8	1412.8	1369.5	1258.7	1227.5
35°	1345.4	1335.8	1270.8	1174.5	1145.6
37.5°	1266.0	1253.9	1172.1	1095.1	1059.0
40°	1186.5	1172.1	1083.1	1013.3	974.7
42.5°	1111.9	1092.7	1006.0	931.4	888.1
45°	1032.5	1010.8	924.2	847.2	813.5
47.5°	953.1	933.8	854.4	775.0	736.5
50°	868.8	852.0	779.8	700.4	659.5
52.5°	799.1	772.6	702.8	623.4	589.7
55°	717.2	695.6	630.6	556.0	527.1
57.5°	642.6	620.9	560.8	491.0	466.9
60°	572.8	541.5	491.0	430.8	411.6
62.5°	495.8	471.7	428.4	377.9	401.9
65°	426.0	401.9	363.4	370.6	308.1
67.5°	349.0	336.9	303.3	269.6	259.9
70°	284.0	269.6	257.5	221.4	211.8
72.5°	226.2	211.8	194.9	175.7	168.5
75°	170.9	158.8	149.2	142.0	156.4
77.5°	117.9	113.1	105.9	98.7	96.3
80°	77.0	74.6	72.2	69.8	67.4
82.5°	45.7	45.7	45.7	45.7	45.7
85°	24.1	26.5	28.9	31.3	33.7
87.5°	14.4	14.4	16.8	19.3	21.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)