

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: P561632

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-93-84-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561632
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-93-84-EDD-90
Description: 1X4 FSR TROFFER WITH .156 CLEAR TEMPERED GLASS FIXTURE SIDE AND .125 CLEAR PC ENVIRONMENTAL SIDE LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4218.0 lumens
Efficiency: N/A
Efficacy: 90.1 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

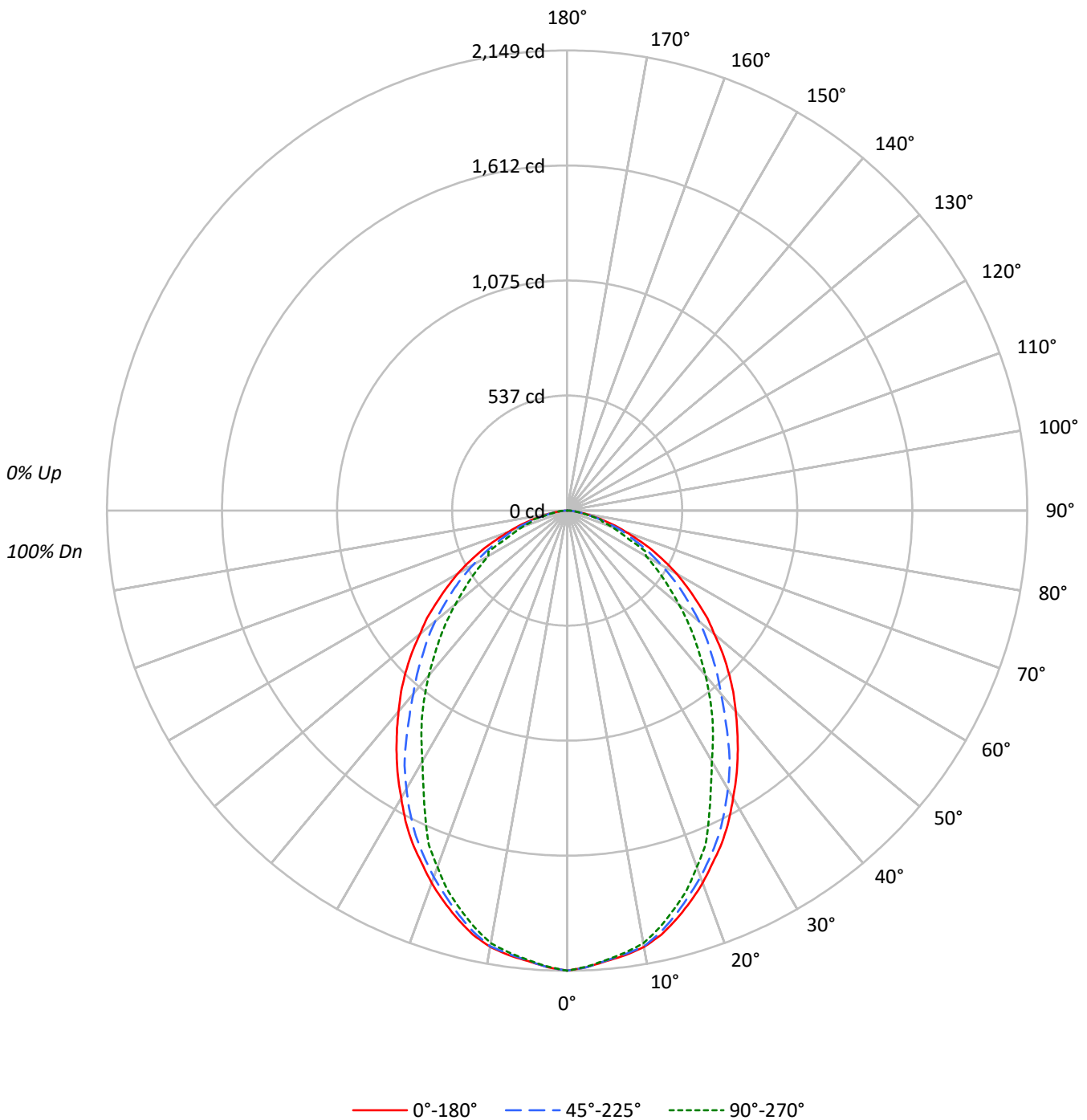
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	5782	5782	5782
5°	5703	5697	5690
10°	5654	5647	5606
15°	5501	5446	5370
20°	5299	5214	5072
25°	5081	4971	4661
30°	4816	4662	4199
35°	4561	4308	3884
40°	4302	3927	3534
45°	4055	3630	3195
50°	3754	3369	2849
55°	3473	3053	2552
60°	3182	2727	2286
65°	2800	2388	2024
70°	2306	2091	1720
75°	1834	1601	1679
80°	1232	1155	1077
85°	766	920	1074

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 4055 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	200.0	4.7
10°-20°	548.9	13.0
20°-30°	759.9	18.0
30°-40°	810.3	19.2
40°-50°	739.2	17.5
50°-60°	579.1	13.7
60°-70°	377.4	8.9
70°-80°	167.2	4.0
80°-90°	35.9	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°	1508.8	35.8
0°-40°	2319.1	55.0
0°-60°	3637.4	86.2
0°-90°	4218.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4218.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	2149	2149	2149	2149	2149	
5°	2111	2109	2109	2106	2106	200
15°	1975	1975	1955	1935	1928	555
25°	1711	1702	1674	1614	1570	786
35°	1388	1379	1312	1212	1182	868
45°	1066	1043	954	874	840	821
55°	740	718	651	574	544	664
65°	440	415	375	382	318	433
75°	176	164	154	147	162	189
85°	25	27	30	32	35	34
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	2148.6	2148.6	2148.6	2148.6	2148.6
2.5°	2133.7	2133.7	2133.7	2131.2	2131.2
5°	2111.3	2108.9	2108.9	2106.4	2106.4
7.5°	2093.9	2091.5	2089.0	2086.5	2081.5
10°	2069.1	2069.1	2066.6	2054.2	2051.7
12.5°	2029.4	2026.9	2016.9	1999.6	1994.6
15°	1974.7	1974.7	1954.8	1935.0	1927.5
17.5°	1915.1	1912.6	1887.8	1867.9	1858.0
20°	1850.5	1845.6	1820.7	1788.4	1771.0
22.5°	1778.5	1778.5	1748.7	1706.5	1689.1
25°	1711.4	1701.5	1674.2	1614.5	1569.8
27.5°	1634.4	1619.5	1589.7	1505.3	1453.1
30°	1550.0	1542.5	1500.3	1391.0	1351.3
32.5°	1470.5	1458.1	1413.4	1299.1	1266.8
35°	1388.5	1378.6	1311.5	1212.2	1182.3
37.5°	1306.5	1294.1	1209.7	1130.2	1092.9
40°	1224.6	1209.7	1117.8	1045.7	1006.0
42.5°	1147.6	1127.7	1038.3	961.3	916.6
45°	1065.6	1043.2	953.8	874.3	839.6
47.5°	983.6	963.8	881.8	799.8	760.1
50°	896.7	879.3	804.8	722.8	680.6
52.5°	824.7	797.3	725.3	643.3	608.6
55°	740.2	717.9	650.8	573.8	544.0
57.5°	663.2	640.9	578.8	506.7	481.9
60°	591.2	558.9	506.7	444.6	424.8
62.5°	511.7	486.8	442.1	390.0	414.8
65°	439.7	414.8	375.1	382.5	317.9
67.5°	360.2	347.7	313.0	278.2	268.3
70°	293.1	278.2	265.8	228.5	218.6
72.5°	233.5	218.6	201.2	181.3	173.9
75°	176.4	163.9	154.0	146.6	161.5
77.5°	121.7	116.7	109.3	101.8	99.4
80°	79.5	77.0	74.5	72.0	69.5
82.5°	47.2	47.2	47.2	47.2	47.2
85°	24.8	27.3	29.8	32.3	34.8
87.5°	14.9	14.9	17.4	19.9	22.4
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)