

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: P561616

Luminaire Tested: FSR-12-4-LD4-2LO-40-UNV-82-84-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561616
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-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 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3915.0 lumens
Efficiency: N/A
Efficacy: 83.7 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

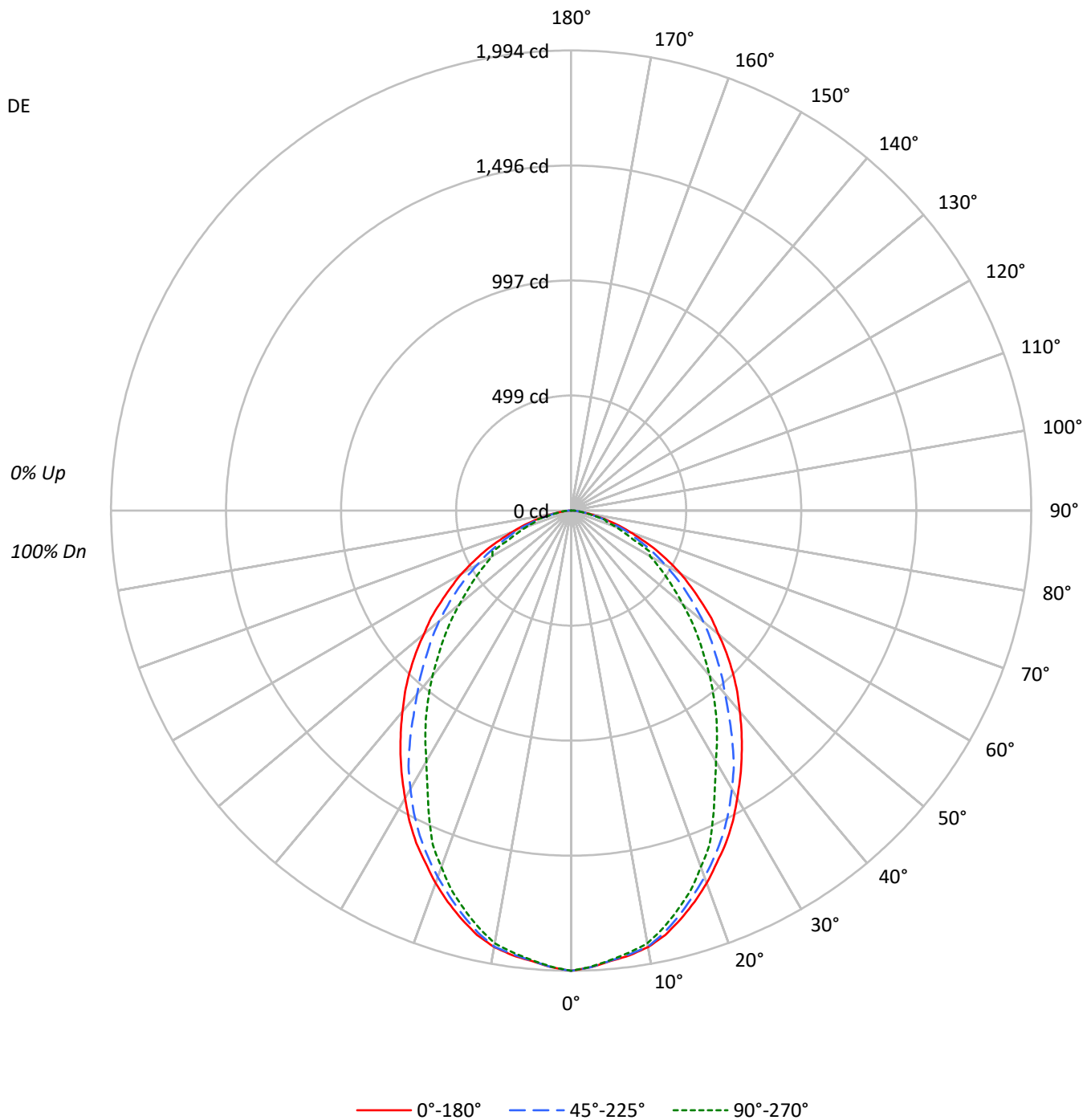
Input Watts (W): 46.8
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	5366	5366	5366
5°	5294	5287	5281
10°	5248	5241	5203
15°	5106	5055	4984
20°	4919	4839	4707
25°	4717	4614	4326
30°	4470	4327	3897
35°	4234	3999	3605
40°	3993	3645	3280
45°	3764	3369	2966
50°	3484	3127	2645
55°	3223	2834	2369
60°	2953	2531	2122
65°	2599	2216	1879
70°	2140	1941	1596
75°	1702	1486	1559
80°	1144	1072	1001
85°	713	855	997

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 3764 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	185.6	4.7
10°-20°	509.5	13.0
20°-30°	705.3	18.0
30°-40°	752.1	19.2
40°-50°	686.1	17.5
50°-60°	537.5	13.7
60°-70°	350.3	8.9
70°-80°	155.2	4.0
80°-90°	33.3	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°	1400.4	35.8
0°-40°	2152.5	55.0
0°-60°	3376.1	86.2
0°-90°	3915.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3915.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1994	1994	1994	1994	1994	
5°	1960	1957	1957	1955	1955	186
15°	1833	1833	1814	1796	1789	515
25°	1588	1579	1554	1499	1457	729
35°	1289	1280	1217	1125	1097	806
45°	989	968	885	812	779	762
55°	687	666	604	533	505	616
65°	408	385	348	355	295	402
75°	164	152	143	136	150	175
85°	23	25	28	30	32	32
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1994.2	1994.2	1994.2	1994.2	1994.2
2.5°	1980.4	1980.4	1980.4	1978.1	1978.1
5°	1959.7	1957.4	1957.4	1955.1	1955.1
7.5°	1943.5	1941.2	1938.9	1936.6	1932.0
10°	1920.5	1920.5	1918.2	1906.6	1904.3
12.5°	1883.6	1881.3	1872.1	1855.9	1851.3
15°	1832.9	1832.9	1814.4	1796.0	1789.1
17.5°	1777.5	1775.2	1752.2	1733.7	1724.5
20°	1717.6	1713.0	1689.9	1660.0	1643.8
22.5°	1650.7	1650.7	1623.1	1583.9	1567.7
25°	1588.5	1579.3	1553.9	1498.6	1457.1
27.5°	1517.0	1503.2	1475.5	1397.1	1348.7
30°	1438.6	1431.7	1392.5	1291.1	1254.2
32.5°	1364.8	1353.3	1311.8	1205.8	1175.8
35°	1288.8	1279.5	1217.3	1125.1	1097.4
37.5°	1212.7	1201.2	1122.8	1049.0	1014.4
40°	1136.6	1122.8	1037.5	970.6	933.7
42.5°	1065.1	1046.7	963.7	892.2	850.7
45°	989.1	968.3	885.3	811.5	779.3
47.5°	913.0	894.5	818.4	742.4	705.5
50°	832.3	816.1	747.0	670.9	631.7
52.5°	765.4	740.1	673.2	597.1	564.8
55°	687.0	666.3	604.0	532.6	504.9
57.5°	615.6	594.8	537.2	470.3	447.3
60°	548.7	518.7	470.3	412.7	394.2
62.5°	474.9	451.9	410.4	362.0	385.0
65°	408.1	385.0	348.1	355.0	295.1
67.5°	334.3	322.8	290.5	258.2	249.0
70°	272.0	258.2	246.7	212.1	202.9
72.5°	216.7	202.9	186.7	168.3	161.4
75°	163.7	152.2	142.9	136.0	149.9
77.5°	113.0	108.4	101.4	94.5	92.2
80°	73.8	71.5	69.2	66.9	64.6
82.5°	43.8	43.8	43.8	43.8	43.8
85°	23.1	25.4	27.7	30.0	32.3
87.5°	13.8	13.8	16.1	18.4	20.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)