

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: P561044

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-82-86-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561044
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-LD4-1LO-40-UNV-82-86-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .250 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1897.0 lumens
Efficiency: N/A
Efficacy: 81.1 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

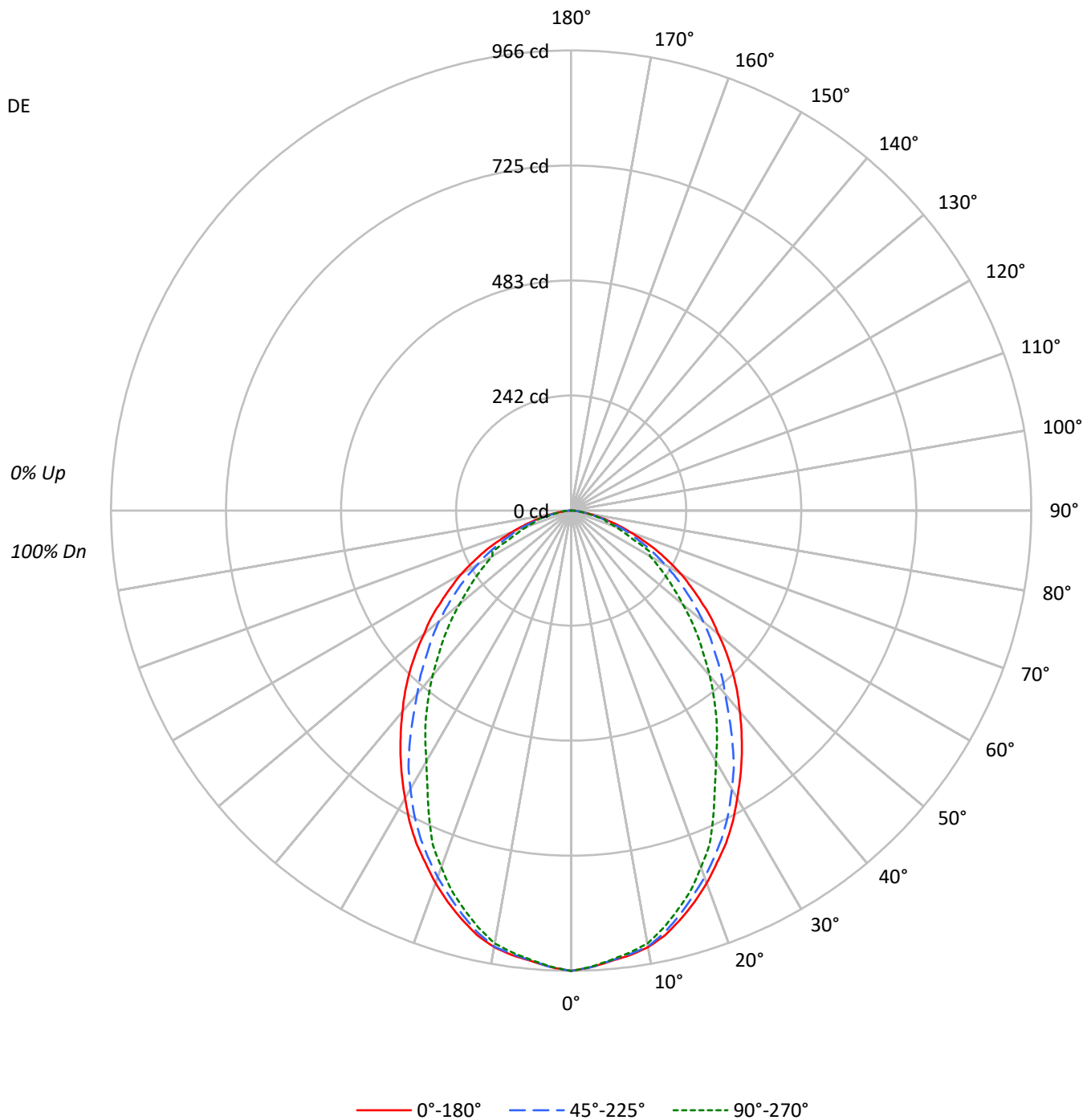
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	2600	2600	2600
5°	2565	2562	2559
10°	2543	2540	2521
15°	2474	2449	2415
20°	2383	2345	2281
25°	2285	2235	2096
30°	2166	2096	1888
35°	2052	1938	1747
40°	1935	1766	1589
45°	1824	1633	1437
50°	1688	1515	1281
55°	1562	1373	1148
60°	1431	1227	1028
65°	1259	1074	911
70°	1037	940	773
75°	824	721	755
80°	553	519	485
85°	346	414	482

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1824 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	89.9	4.7
10°-20°	246.9	13.0
20°-30°	341.8	18.0
30°-40°	364.4	19.2
40°-50°	332.5	17.5
50°-60°	260.5	13.7
60°-70°	169.8	8.9
70°-80°	75.2	4.0
80°-90°	16.1	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°	678.6	35.8
0°-40°	1043.0	55.0
0°-60°	1635.9	86.2
0°-90°	1897.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1897.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	966	966	966	966	966	
5°	950	948	948	947	947	90
15°	888	888	879	870	867	250
25°	770	765	753	726	706	353
35°	624	620	590	545	532	390
45°	479	469	429	393	378	369
55°	333	323	293	258	245	299
65°	198	187	169	172	143	195
75°	79	74	69	66	73	85
85°	11	12	13	14	16	15
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	966.3	966.3	966.3	966.3	966.3
2.5°	959.6	959.6	959.6	958.5	958.5
5°	949.5	948.4	948.4	947.3	947.3
7.5°	941.7	940.6	939.5	938.4	936.1
10°	930.6	930.6	929.4	923.9	922.7
12.5°	912.7	911.6	907.1	899.3	897.0
15°	888.1	888.1	879.2	870.2	866.9
17.5°	861.3	860.2	849.0	840.1	835.6
20°	832.3	830.0	818.8	804.3	796.5
22.5°	799.9	799.9	786.5	767.5	759.6
25°	769.7	765.2	752.9	726.1	706.0
27.5°	735.1	728.4	715.0	677.0	653.5
30°	697.1	693.7	674.7	625.6	607.7
32.5°	661.3	655.7	635.6	584.3	569.7
35°	624.5	620.0	589.8	545.2	531.7
37.5°	587.6	582.0	544.0	508.3	491.5
40°	550.7	544.0	502.7	470.3	452.4
42.5°	516.1	507.2	467.0	432.3	412.2
45°	479.2	469.2	429.0	393.2	377.6
47.5°	442.4	433.4	396.6	359.7	341.8
50°	403.3	395.5	361.9	325.1	306.1
52.5°	370.9	358.6	326.2	289.3	273.7
55°	332.9	322.8	292.7	258.1	244.6
57.5°	298.3	288.2	260.3	227.9	216.7
60°	265.9	251.4	227.9	200.0	191.0
62.5°	230.1	219.0	198.8	175.4	186.6
65°	197.7	186.6	168.7	172.0	143.0
67.5°	162.0	156.4	140.8	125.1	120.6
70°	131.8	125.1	119.5	102.8	98.3
72.5°	105.0	98.3	90.5	81.5	78.2
75°	79.3	73.7	69.3	65.9	72.6
77.5°	54.7	52.5	49.2	45.8	44.7
80°	35.7	34.6	33.5	32.4	31.3
82.5°	21.2	21.2	21.2	21.2	21.2
85°	11.2	12.3	13.4	14.5	15.6
87.5°	6.7	6.7	7.8	8.9	10.1
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)