

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: P561046

Luminaire Tested: FSR-12-4-LD4-1LO-40-UNV-82-87-EDD-90

Issue Date: 7/20/2021

Test Information

Test Method: LM-79-2019
Report Number: P561046
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-82-87-EDD-90
Description: 1X4 FSR TROFFER WITH .187 CLEAR PC FIXTURE SIDE AND .375 CLEAR PC ENVIRONMENTAL SI
LENSES WITH, 90 CRI AND 4000K CCT LEDS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1835.0 lumens
Efficiency: N/A
Efficacy: 78.4 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

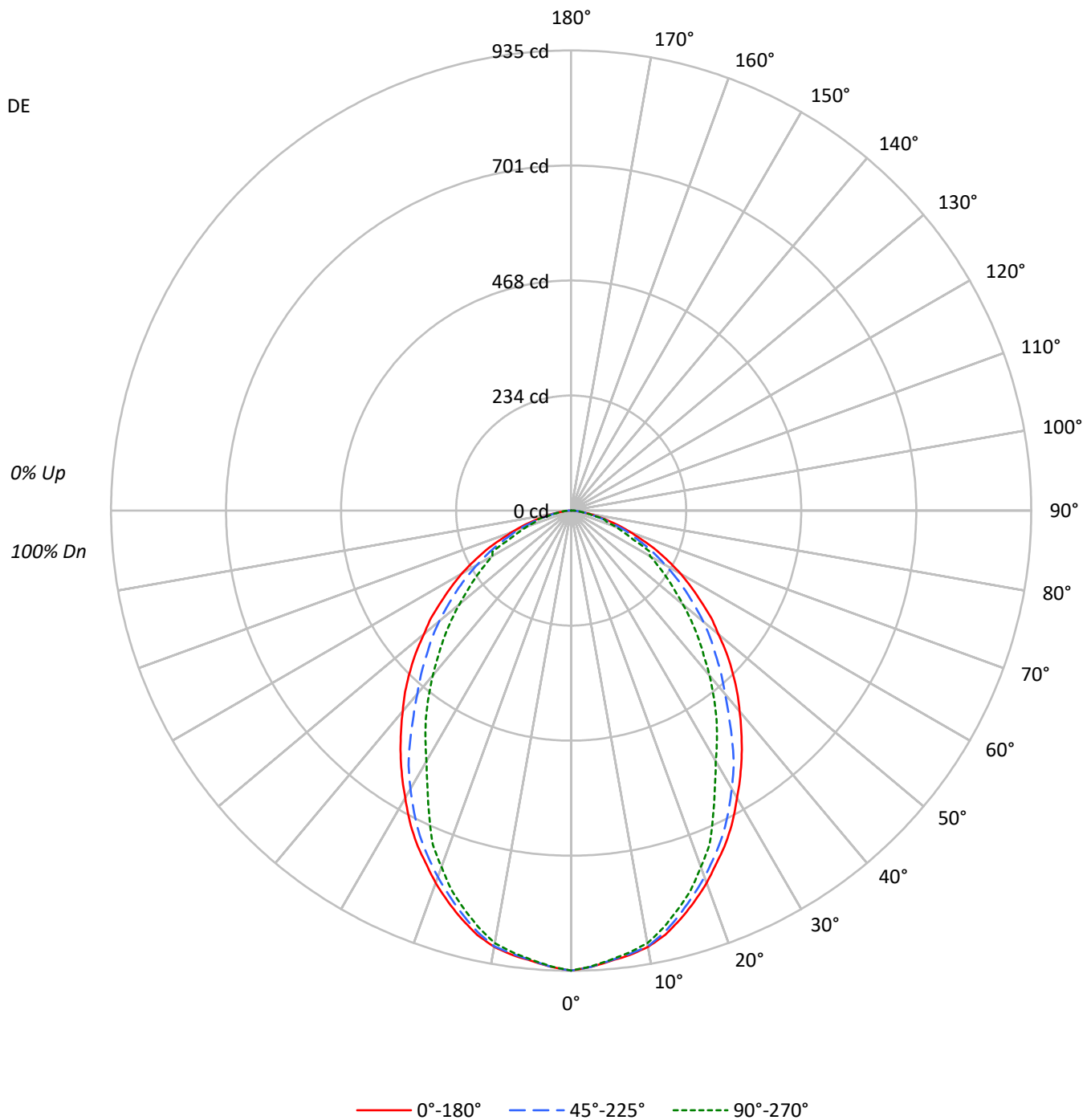
Input Watts (W): 23.4
Input Voltage (V):
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	50	30	10	0																			
RCR																																														
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100																												
1	110	106	102	99	108	104	100	97	100	97	94	96	94	91	92	90	89	87																												
2	101	94	88	83	99	92	87	82	89	84	80	86	82	78	83	79	77	75																												
3	93	84	77	71	91	82	76	70	79	74	69	77	72	68	74	70	67	65																												
4	86	75	67	61	84	74	66	61	72	65	60	69	64	59	67	62	58	56																												
5	80	68	60	54	78	67	59	53	65	58	53	63	57	52	61	56	52	50																												
6	74	62	53	48	72	61	53	47	59	52	47	57	51	47	56	50	46	44																												
7	69	56	48	43	67	56	48	42	54	47	42	53	46	42	51	46	42	40																												
8	65	52	44	38	63	51	44	38	50	43	38	49	42	38	48	42	38	36																												
9	61	48	40	35	59	47	40	35	46	39	35	45	39	34	44	38	34	33																												
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																												

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2515	2515	2515
5°	2481	2478	2475
10°	2460	2457	2439
15°	2393	2369	2336
20°	2306	2268	2206
25°	2211	2162	2028
30°	2095	2028	1826
35°	1985	1874	1690
40°	1871	1708	1537
45°	1764	1579	1390
50°	1633	1466	1240
55°	1511	1328	1110
60°	1384	1186	995
65°	1218	1039	881
70°	1003	910	748
75°	797	697	730
80°	536	502	470
85°	333	401	466

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 1764 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	87.0	4.7
10°-20°	238.8	13.0
20°-30°	330.6	18.0
30°-40°	352.5	19.2
40°-50°	321.6	17.5
50°-60°	251.9	13.7
60°-70°	164.2	8.9
70°-80°	72.7	4.0
80°-90°	15.6	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°	656.4	35.8
0°-40°	1008.9	55.0
0°-60°	1582.4	86.2
0°-90°	1835.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1835.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	935	935	935	935	935	
5°	918	917	917	916	916	87
15°	859	859	850	842	839	242
25°	744	740	728	702	683	342
35°	604	600	571	527	514	378
45°	464	454	415	380	365	357
55°	322	312	283	250	237	289
65°	191	180	163	166	138	189
75°	77	71	67	64	70	82
85°	11	12	13	14	15	15
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	934.7	934.7	934.7	934.7	934.7
2.5°	928.2	928.2	928.2	927.2	927.2
5°	918.5	917.4	917.4	916.4	916.4
7.5°	911.0	909.9	908.8	907.7	905.5
10°	900.1	900.1	899.1	893.7	892.6
12.5°	882.9	881.8	877.5	869.9	867.7
15°	859.1	859.1	850.4	841.8	838.6
17.5°	833.1	832.1	821.3	812.6	808.3
20°	805.1	802.9	792.1	778.0	770.5
22.5°	773.7	773.7	760.7	742.4	734.8
25°	744.5	740.2	728.3	702.4	682.9
27.5°	711.0	704.6	691.6	654.8	632.2
30°	674.3	671.1	652.7	605.1	587.8
32.5°	639.7	634.3	614.9	565.2	551.1
35°	604.1	599.7	570.6	527.3	514.4
37.5°	568.4	563.0	526.3	491.7	475.5
40°	532.7	526.3	486.3	454.9	437.6
42.5°	499.2	490.6	451.7	418.2	398.7
45°	463.6	453.9	415.0	380.4	365.2
47.5°	427.9	419.3	383.6	348.0	330.7
50°	390.1	382.5	350.1	314.5	296.1
52.5°	358.8	346.9	315.5	279.9	264.7
55°	322.0	312.3	283.1	249.6	236.7
57.5°	288.5	278.8	251.8	220.4	209.6
60°	257.2	243.1	220.4	193.4	184.8
62.5°	222.6	211.8	192.3	169.7	180.5
65°	191.3	180.5	163.2	166.4	138.3
67.5°	156.7	151.3	136.2	121.0	116.7
70°	127.5	121.0	115.6	99.4	95.1
72.5°	101.6	95.1	87.5	78.9	75.6
75°	76.7	71.3	67.0	63.8	70.2
77.5°	52.9	50.8	47.5	44.3	43.2
80°	34.6	33.5	32.4	31.3	30.3
82.5°	20.5	20.5	20.5	20.5	20.5
85°	10.8	11.9	13.0	14.0	15.1
87.5°	6.5	6.5	7.6	8.6	9.7
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)