

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: HALO

Report Number: P886777

Luminaire Tested: ML310LSFLD2W1E-TIR4D25AWW-TL3RWSL-600LM-3000K

Issue Date: 7/5/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886777  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-11)  
Test Lab: COOPER LIGHTING SOLUTIONS  
Issue Date: 7/5/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO  
Catalog Number: ML310LSFLD2W1E-TIR4D25AWW-TL3RWSL-600LM-3000K  
Description: 3IN ROUND ML FLEX, SELECTABLE CCT, WITH WW TIR, METALLIC SILVER TRIM  
Light Source: (1) D2W LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 535.7 lumens  
Efficiency: N/A  
Efficacy: 56.4 lumens/watt  
Spacing Criteria (0/90/45): 1.14 / 0.81 / 0.99  
Luminous Opening: Circular (Dia: 0.25' x H: 0')  
CIE Type: Direct

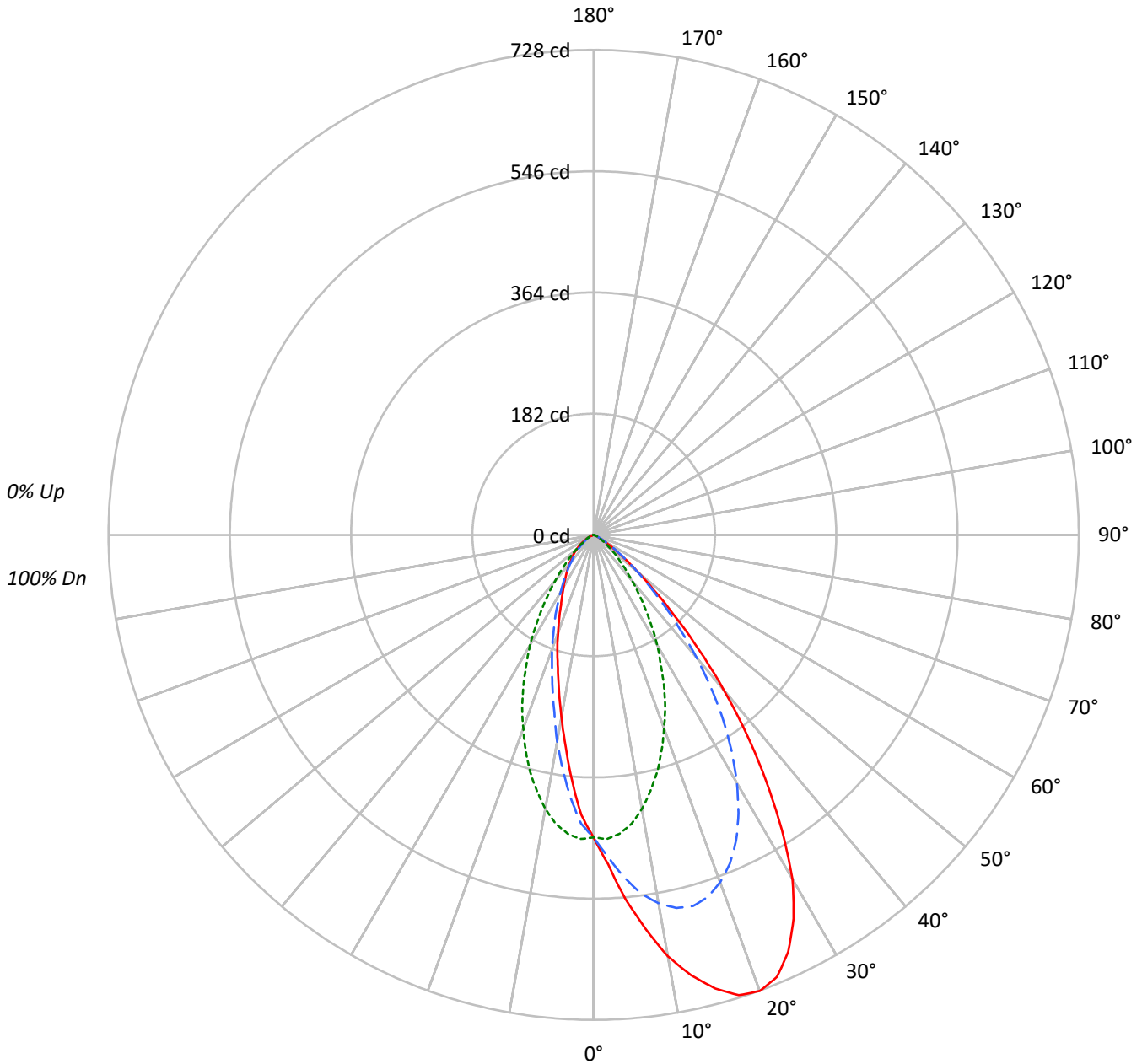
Input Watts (W): 9.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20					20					20					20										
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	113	110	107	104	110	108	105	103	103	101	100	100	98	97	96	95	94	92					92			
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	88	86	84					84			
3	100	93	87	83	98	91	86	82	89	84	81	86	82	79	84	81	78	76					76			
4	94	86	79	75	92	84	79	74	82	77	73	80	76	72	78	74	71	70					70			
5	89	79	73	68	87	78	72	67	76	71	67	75	70	66	73	69	66	64					64			
6	83	73	67	62	82	73	66	62	71	65	61	70	65	61	68	64	60	59					59			
7	79	68	62	57	77	68	61	57	66	61	56	65	60	56	64	59	56	54					54			
8	74	64	57	52	73	63	57	52	62	56	52	61	56	52	60	55	52	50					50			
9	70	60	53	49	69	59	53	49	58	52	48	57	52	48	56	51	48	47					47			
10	67	56	50	45	66	55	49	45	55	49	45	54	49	45	53	48	45	43					43			

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	99575	99575	99575	99575	99575
5°	120779	113350	99053	87167	81664
10°	143084	125037	92984	70117	61834
15°	160001	130932	83610	54007	46947
20°	169998	129465	72060	42424	36427
25°	167090	122451	60318	33026	27969
30°	151087	108738	48413	25143	22915
35°	120649	90708	36005	19167	19167
40°	86848	68571	25734	14885	16059
45°	53432	46206	17397	11536	13614
50°	29509	28588	11769	8529	11053
55°	14719	16401	7493	6461	8793
60°	6798	8157	5350	4736	6535
65°	3165	3866	3840	3165	3840
70°	1282	1955	2629	1731	2180
75°	593	1186	1186	1186	1186
80°	0	0	884	884	884
85°	0	0	0	0	0

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 20°  
 Vertical Angle: 45°  
 Luminance: 53649 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	42.9	8.0
10°-20°	115.0	21.5
20°-30°	147.7	27.6
30°-40°	125.6	23.4
40°-50°	69.2	12.9
50°-60°	26.0	4.9
60°-70°	7.6	1.4
70°-80°	1.6	0.3
80°-90°	0.2	0.0
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°	305.6	57.1
0°-40°	431.2	80.5
0°-60°	526.4	98.3
0°-90°	535.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	535.7	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	454	454	454	454	454	
5°	549	515	450	396	371	55
15°	705	577	368	238	207	199
25°	691	506	249	136	116	313
35°	451	339	134	72	72	280
45°	172	149	56	37	44	138
55°	38	43	20	17	23	38
65°	6	7	7	6	7	7
75°	1	1	1	1	1	1
85°	0	0	0	0	0	0
90°	0	0	0	0	0	0



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**CANDELA DISTRIBUTION (FULL):**

	0°	10°	20°	30°	40°	50°	60°	70°	80°	90°	112.5°
0°	454.1	454.1	454.1	454.1	454.1	454.1	454.1	454.1	454.1	454.1	454.1
2.5°	494.6	494.6	493.3	489.9	485.2	481.1	474.4	469.0	462.9	456.8	443.3
5°	548.7	546.7	540.6	532.5	522.4	507.5	493.3	479.8	464.2	450.0	419.0
7.5°	596.0	593.3	585.2	569.7	553.4	531.8	507.5	483.2	459.5	437.2	390.6
10°	642.6	636.6	624.4	603.4	577.1	546.0	512.9	480.5	447.3	417.6	360.8
12.5°	677.1	671.7	654.8	629.1	593.3	554.1	511.5	469.6	429.8	393.3	327.1
15°	704.8	698.0	676.4	643.3	600.1	553.4	502.1	454.8	408.8	368.3	292.6
17.5°	724.4	714.3	687.9	646.7	596.7	542.6	489.2	433.2	384.5	339.2	259.5
20°	728.5	719.7	689.3	643.3	584.5	525.1	464.9	407.5	355.4	308.8	228.4
22.5°	718.3	708.9	676.4	627.8	566.9	501.4	439.2	380.4	325.0	280.4	200.0
25°	690.6	681.2	648.7	600.7	539.9	472.3	405.4	347.3	295.3	249.3	172.3
27.5°	649.4	635.2	609.5	562.2	503.4	437.9	371.0	313.5	260.8	217.6	146.6
30°	596.7	578.4	556.8	515.6	460.2	398.7	334.5	277.7	229.1	191.2	125.7
32.5°	525.7	519.0	496.0	461.5	414.9	356.1	296.7	243.9	198.0	160.8	107.4
35°	450.7	444.0	431.8	403.4	364.2	313.5	258.1	207.5	167.6	134.5	88.5
37.5°	377.7	371.0	360.2	342.6	308.8	269.6	220.3	176.4	140.6	110.8	73.7
40°	303.4	300.7	291.9	279.1	255.4	223.7	183.8	146.0	114.2	89.9	59.5
42.5°	233.8	232.5	226.4	218.9	204.1	178.4	151.4	117.6	90.5	71.6	47.3
45°	172.3	168.9	173.0	166.9	158.1	139.9	116.2	91.2	69.6	56.1	37.2
47.5°	123.0	123.7	125.7	127.0	120.3	105.4	87.2	66.9	54.1	46.0	30.4
50°	86.5	85.8	90.5	94.6	88.5	79.1	62.8	51.4	41.2	34.5	24.3
52.5°	59.5	60.1	65.5	68.3	66.9	56.1	44.6	35.8	30.4	25.7	18.9
55°	38.5	40.5	44.6	48.0	47.3	38.5	31.1	25.7	23.0	19.6	14.9
57.5°	25.0	25.7	29.7	32.4	31.8	25.7	20.9	18.9	16.9	14.9	10.8
60°	15.5	16.2	18.9	21.6	20.3	16.9	14.2	13.5	12.8	12.2	9.5
62.5°	9.5	10.1	12.2	14.2	12.8	10.8	9.5	10.1	10.1	9.5	7.4
65°	6.1	6.1	7.4	8.8	8.1	6.8	6.8	7.4	8.1	7.4	6.1
67.5°	3.4	4.1	4.7	5.4	4.7	4.7	5.4	6.1	6.1	6.1	4.7
70°	2.0	2.7	2.7	2.7	2.7	3.4	3.4	4.1	4.7	4.1	3.4
72.5°	1.4	1.4	1.4	2.0	2.0	2.0	2.0	2.7	2.7	2.7	2.7
75°	0.7	0.7	0.7	0.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4
77.5°	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7	0.7
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	135°	157.5°	180°
0°	454.1	454.1	454.1
2.5°	433.8	427.1	421.0
5°	396.0	379.8	371.0
7.5°	354.8	329.8	321.0
10°	314.9	284.5	277.7
12.5°	273.0	248.0	239.9
15°	237.9	214.2	206.8
17.5°	207.5	185.8	181.1
20°	181.8	162.2	156.1
22.5°	156.8	139.2	134.5
25°	136.5	121.0	115.6
27.5°	116.9	104.1	102.0
30°	99.3	91.2	90.5
32.5°	84.5	79.1	80.4
35°	71.6	69.6	71.6
37.5°	62.2	61.5	63.5
40°	52.0	53.4	56.1
42.5°	43.9	47.3	50.0
45°	37.2	41.9	43.9
47.5°	30.4	36.5	38.5
50°	25.0	31.8	32.4
52.5°	20.3	26.4	27.7
55°	16.9	21.6	23.0
57.5°	14.2	17.6	18.2
60°	10.8	13.5	14.9
62.5°	8.1	10.8	10.8
65°	6.1	7.4	7.4
67.5°	4.1	5.4	5.4
70°	2.7	3.4	3.4
72.5°	2.0	2.0	2.0
75°	1.4	1.4	1.4
77.5°	0.7	0.7	0.7
80°	0.7	0.7	0.7
82.5°	0.7	0.7	0.7
85°	0.0	0.0	0.0
87.5°	0.0	0.0	0.0
90°	0.0	0.0	0.0

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



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Signify Classified - Internal  
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Scaled Data Report





— 0°-180°    - - 45°-225°    - - - - 90°-270°

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Scaled Data Report



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