

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: P886646

Luminaire Tested: ML310LSFL9FS1E-TIR4D25AWW-TL3RWMB-1000LM-5000K

Issue Date: 7/5/2024

Test Information

Test Method: LM-79-2019
Report Number: P886646
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-12)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/5/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML310LSFL9FS1E-TIR4D25AWW-TL3RWMB-1000LM-5000K
Description: 3IN ROUND ML FLEX, SELECTABLE CCT, WITH WW TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 868.4 lumens
Efficiency: N/A
Efficacy: 62.9 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 0.8 / 0.98
Luminous Opening: Circular (Dia: 0.25' x H: 0')
CIE Type: Direct

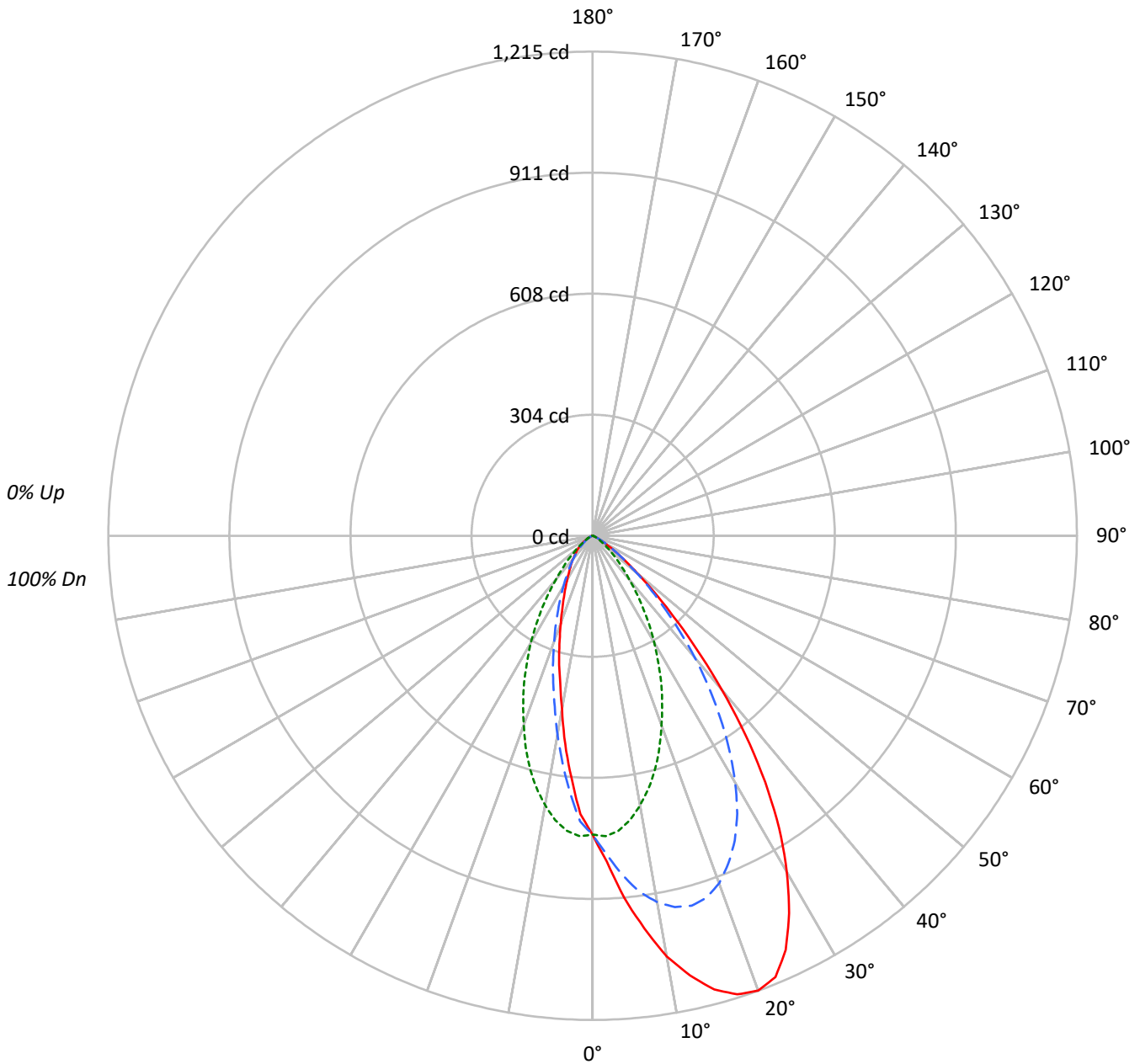
Input Watts (W): 13.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92					92			
2	106	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84					84			
3	100	93	87	83	98	92	86	82	89	85	81	86	83	80	84	81	78	77					77			
4	94	86	80	75	92	85	79	75	82	78	74	80	76	73	78	75	72	70					70			
5	89	79	73	68	87	78	72	68	77	71	67	75	70	67	73	69	66	64					64			
6	84	74	67	62	82	73	67	62	71	66	62	70	65	61	69	64	61	59					59			
7	79	69	62	57	78	68	62	57	67	61	57	65	60	56	64	60	56	55					55			
8	75	64	57	53	73	63	57	53	62	57	53	61	56	52	60	56	52	51					51			
9	71	60	53	49	69	59	53	49	58	53	49	58	52	49	57	52	48	47					47			
10	67	56	50	46	66	56	50	46	55	49	45	54	49	45	53	49	45	44					44			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	164439	164439	164439	164439	164439
5°	200792	188025	163526	142615	134184
10°	238717	207879	152769	112779	98328
15°	267584	218128	137617	86561	73667
20°	283455	216505	117914	65456	54371
25°	277347	204157	98425	49358	41228
30°	246797	181066	78366	36968	32283
35°	201974	149399	58651	27920	26073
40°	143984	113971	41134	21555	21898
45°	89498	77279	28034	15816	18327
50°	49431	47845	18183	11462	14635
55°	27029	27258	10628	8411	11087
60°	12718	13486	7105	6096	7631
65°	6019	5993	4825	3632	4203
70°	2244	2597	2949	1475	1475
75°	1017	1017	1017	0	0
80°	0	0	0	0	0
85°	0	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 10°
 Vertical Angle: 45°
 Luminance: 90211 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	70.8	8.2
10°-20°	189.1	21.8
20°-30°	241.1	27.8
30°-40°	203.6	23.4
40°-50°	111.5	12.8
50°-60°	40.5	4.7
60°-70°	10.5	1.2
70°-80°	1.2	0.1
80°-90°	0.0	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°	501.0	57.7
0°-40°	704.6	81.1
0°-60°	856.7	98.6
0°-90°	868.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	868.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	750	750	750	750	750	
5°	912	854	743	648	610	92
15°	1179	961	606	381	324	332
25°	1146	844	407	204	170	518
35°	754	558	219	104	97	465
45°	289	249	90	51	59	230
55°	71	71	28	22	29	68
65°	12	12	9	7	8	13
75°	1	1	1	0	0	1
85°	0	0	0	0	0	0
90°	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°	749.9	749.9	749.9	749.9	749.9	749.9	749.9	749.9	749.9	749.9	749.9
2.5°	818.3	816.0	814.8	813.6	804.4	795.1	783.5	774.2	765.0	754.5	732.5
5°	912.2	911.0	898.2	886.7	865.8	842.6	819.4	792.8	766.1	742.9	691.9
7.5°	993.3	991.0	973.6	951.6	920.3	882.0	842.6	798.6	756.8	719.8	639.8
10°	1072.1	1064.0	1039.6	1003.7	959.7	907.5	851.9	793.9	736.0	686.1	588.8
12.5°	1130.1	1121.9	1095.3	1046.6	987.5	921.4	849.6	778.9	710.5	649.1	530.8
15°	1178.7	1163.7	1130.1	1072.1	1001.4	920.3	835.7	753.4	674.6	606.2	472.9
17.5°	1206.5	1192.6	1148.6	1081.4	997.9	905.2	811.3	718.6	632.8	557.5	416.1
20°	1214.7	1197.3	1149.8	1073.3	978.2	877.4	776.5	675.7	586.5	505.3	366.3
22.5°	1198.4	1178.7	1125.4	1047.8	944.6	835.7	731.3	629.4	534.3	455.5	315.3
25°	1146.3	1132.4	1076.7	997.9	900.6	787.0	678.0	576.0	484.5	406.8	270.1
27.5°	1067.5	1054.7	1006.0	931.9	838.0	733.7	621.2	519.2	430.0	354.7	231.8
30°	974.7	960.8	921.4	856.5	768.4	661.8	559.8	462.5	377.8	309.5	197.0
32.5°	871.6	857.7	817.1	763.8	686.1	591.1	498.4	404.5	325.7	263.1	166.9
35°	754.5	744.1	715.1	661.8	598.1	518.1	430.0	346.5	273.5	219.1	139.1
37.5°	630.5	618.9	601.5	566.8	513.4	442.7	366.3	289.8	227.2	178.5	111.3
40°	503.0	498.4	489.1	462.5	427.7	368.6	307.1	239.9	184.3	143.7	90.4
42.5°	384.8	383.6	382.5	366.3	341.9	300.2	245.7	190.1	148.4	112.4	71.9
45°	288.6	290.9	288.6	282.8	263.1	235.3	193.6	150.7	114.7	90.4	54.5
47.5°	209.8	212.1	213.3	215.6	205.1	178.5	143.7	114.7	86.9	69.5	44.0
50°	144.9	150.7	154.2	156.5	148.4	132.1	106.6	82.3	63.7	53.3	35.9
52.5°	104.3	105.5	111.3	113.6	108.9	92.7	74.2	55.6	47.5	39.4	27.8
55°	70.7	70.7	78.8	82.3	77.7	64.9	49.8	39.4	33.6	27.8	20.9
57.5°	44.0	46.4	52.2	55.6	52.2	42.9	33.6	27.8	24.3	22.0	15.1
60°	29.0	31.3	33.6	37.1	34.8	26.7	22.0	19.7	18.5	16.2	11.6
62.5°	18.5	19.7	22.0	24.3	20.9	16.2	15.1	13.9	12.7	12.7	9.3
65°	11.6	11.6	13.9	15.1	12.7	10.4	10.4	10.4	10.4	9.3	7.0
67.5°	7.0	7.0	8.1	8.1	7.0	7.0	7.0	7.0	7.0	7.0	4.6
70°	3.5	3.5	4.6	4.6	3.5	4.6	4.6	4.6	4.6	4.6	3.5
72.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	2.3	3.5	2.3	2.3
75°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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°	749.9	749.9	749.9
2.5°	717.4	705.8	698.9
5°	647.9	620.1	609.6
7.5°	576.0	540.1	527.4
10°	506.5	459.0	441.6
12.5°	439.3	394.1	375.5
15°	381.3	337.3	324.5
17.5°	329.2	288.6	274.7
20°	280.5	245.7	233.0
22.5°	241.1	209.8	198.2
25°	204.0	176.2	170.4
27.5°	172.7	150.7	147.2
30°	146.0	128.7	127.5
32.5°	122.9	112.4	111.3
35°	104.3	96.2	97.4
37.5°	89.2	84.6	86.9
40°	75.3	73.0	76.5
42.5°	62.6	63.7	67.2
45°	51.0	55.6	59.1
47.5°	41.7	48.7	51.0
50°	33.6	41.7	42.9
52.5°	26.7	34.8	34.8
55°	22.0	27.8	29.0
57.5°	17.4	22.0	22.0
60°	13.9	17.4	17.4
62.5°	10.4	11.6	12.7
65°	7.0	8.1	8.1
67.5°	4.6	5.8	5.8
70°	2.3	3.5	2.3
72.5°	1.2	1.2	1.2
75°	0.0	0.0	0.0
77.5°	0.0	0.0	0.0
80°	0.0	0.0	0.0
82.5°	0.0	0.0	0.0
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
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





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

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