

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: P886651

Luminaire Tested: ML310LSFL9FS1E-TIR4D25AWW-TL3RWMW-1000LM-5000K

Issue Date: 7/5/2024

Test Information

Test Method: LM-79-2019
Report Number: P886651
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-10)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/5/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML310LSFL9FS1E-TIR4D25AWW-TL3RMMW-1000LM-5000K
Description: 3IN ROUND ML FLEX, SELECTABLE CCT, WITH WW TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 933.0 lumens
Efficiency: N/A
Efficacy: 67.6 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 0.81 / 0.99
Luminous Opening: Circular (Dia: 0.25' x H: 0')
CIE Type: Direct

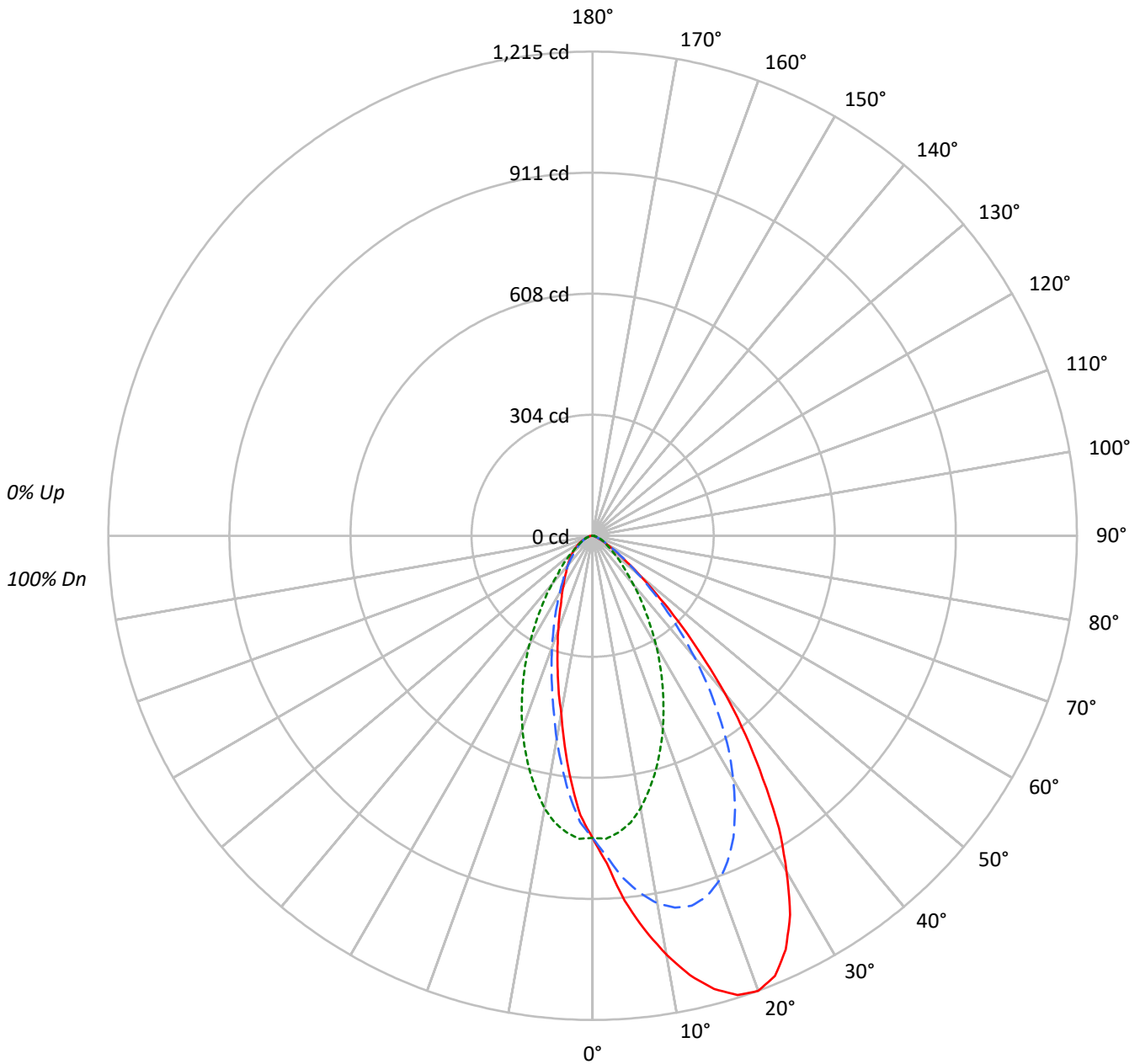
Input Watts (W): 13.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20										
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								
1	112	109	106	103	110	107	104	102	103	101	99	99	97	96	95	94	93	91								
2	105	100	95	91	103	98	93	90	95	91	88	91	88	86	89	86	84	82								
3	99	91	85	81	97	90	84	80	87	82	79	85	81	77	82	79	76	74								
4	93	84	77	72	91	83	77	72	80	75	71	78	74	70	76	73	69	68								
5	87	77	71	66	85	76	70	65	75	69	65	73	68	64	71	67	63	62								
6	82	72	65	60	80	71	64	60	69	63	59	68	63	59	66	62	58	57								
7	77	67	60	55	76	66	59	55	64	59	54	63	58	54	62	57	54	52								
8	73	62	55	50	72	61	55	50	60	54	50	59	54	50	58	53	50	48								
9	69	58	51	47	68	57	51	47	56	51	46	55	50	46	55	50	46	45								
10	65	54	48	43	64	54	48	43	53	47	43	52	47	43	51	46	43	41								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	166149	166149	166149	166149	166149
5°	202223	189478	164494	144332	136187
10°	237582	208569	154528	115317	100599
15°	267221	218162	138616	89422	77072
20°	283595	215467	120317	69469	58665
25°	277226	202100	100361	53810	45414
30°	246418	178508	80974	41652	37246
35°	199404	148087	61730	33194	31641
40°	147591	113584	45428	27194	27852
45°	93777	79218	33771	22266	24778
50°	52945	49994	24903	18967	22515
55°	28788	30795	18618	16821	19498
60°	15744	18288	15744	14736	17279
65°	9028	11726	13231	13231	14424
70°	5963	7790	11861	11861	11861
75°	3897	5931	9828	10760	10760
80°	2904	3662	7324	10229	11744
85°	3019	3019	8806	11573	11573

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 93777 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	71.4	7.7
10°-20°	190.9	20.5
20°-30°	244.2	26.2
30°-40°	209.3	22.4
40°-50°	122.9	13.2
50°-60°	55.3	5.9
60°-70°	24.8	2.7
70°-80°	10.8	1.2
80°-90°	3.2	0.3
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°	506.5	54.3
0°-40°	715.9	76.7
0°-60°	894.1	95.8
0°-90°	933.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	933.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	758	758	758	758	758	
5°	919	861	747	656	619	92
15°	1177	961	611	394	340	332
25°	1146	835	415	222	188	518
35°	745	553	231	124	118	464
45°	302	255	109	72	80	239
55°	75	81	49	44	51	73
65°	17	23	26	26	28	19
75°	5	7	12	13	13	6
85°	1	1	4	5	5	1
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°	757.7	757.7	757.7	757.7	757.7	757.7	757.7	757.7	757.7	757.7	757.7
2.5°	822.6	822.6	822.6	820.3	808.7	800.6	792.4	782.0	771.6	761.2	736.8
5°	918.7	916.4	901.3	889.8	872.4	849.2	824.9	798.2	772.8	747.3	696.3
7.5°	996.3	990.6	980.1	953.5	922.2	885.1	844.6	804.0	764.6	726.4	648.8
10°	1067.0	1064.7	1041.5	1009.1	962.8	910.6	855.0	798.2	742.6	694.0	593.2
12.5°	1129.6	1123.8	1094.8	1047.3	989.4	922.2	851.5	782.0	714.8	653.4	541.0
15°	1177.1	1165.5	1128.4	1071.7	1001.0	921.0	838.8	755.4	678.9	610.6	482.0
17.5°	1208.4	1192.1	1147.0	1079.8	996.3	903.7	811.0	719.5	636.0	563.1	428.7
20°	1215.3	1197.9	1147.0	1068.2	974.3	872.4	773.9	676.6	587.4	515.6	377.7
22.5°	1195.6	1174.8	1124.9	1041.5	940.7	829.5	726.4	626.8	539.9	464.6	329.0
25°	1145.8	1129.6	1075.1	995.2	892.1	778.5	673.1	577.0	487.7	414.8	283.8
27.5°	1072.8	1056.6	1001.0	929.2	826.0	721.8	615.2	521.3	435.6	366.1	246.8
30°	973.2	961.6	917.6	844.6	755.4	654.6	554.9	461.1	382.3	319.8	212.0
32.5°	870.1	852.7	815.6	757.7	683.5	586.2	492.4	406.6	331.3	271.1	180.7
35°	744.9	741.5	706.7	662.7	593.2	513.2	424.0	346.4	282.7	230.6	155.2
37.5°	630.2	624.5	601.3	563.1	510.9	440.2	363.8	294.3	239.8	193.5	129.8
40°	515.6	512.1	494.7	463.4	426.3	367.3	308.2	243.3	194.6	158.7	107.7
42.5°	398.5	393.9	390.4	376.5	345.2	301.2	251.4	199.3	161.0	128.6	90.4
45°	302.4	300.1	297.7	286.2	271.1	239.8	199.3	158.7	130.9	108.9	76.5
47.5°	216.6	220.1	219.0	220.1	210.9	183.1	152.9	125.1	106.6	90.4	67.2
50°	155.2	154.1	162.2	165.7	156.4	136.7	114.7	97.3	83.4	73.0	56.8
52.5°	108.9	111.2	120.5	122.8	115.9	103.1	86.9	74.1	66.0	59.1	48.7
55°	75.3	76.5	85.7	90.4	84.6	76.5	64.9	56.8	53.3	48.7	40.5
57.5°	51.0	54.5	60.2	63.7	61.4	53.3	47.5	45.2	42.9	41.7	35.9
60°	35.9	37.1	42.9	46.3	44.0	39.4	37.1	35.9	35.9	35.9	32.4
62.5°	24.3	25.5	30.1	32.4	31.3	29.0	27.8	30.1	30.1	30.1	27.8
65°	17.4	17.4	20.9	23.2	23.2	22.0	23.2	24.3	25.5	25.5	24.3
67.5°	11.6	12.7	13.9	16.2	16.2	17.4	18.5	20.9	22.0	22.0	22.0
70°	9.3	9.3	10.4	11.6	11.6	12.7	15.1	16.2	17.4	18.5	18.5
72.5°	7.0	7.0	7.0	8.1	9.3	9.3	11.6	12.7	13.9	15.1	15.1
75°	4.6	4.6	4.6	5.8	7.0	7.0	8.1	9.3	10.4	11.6	12.7
77.5°	3.5	3.5	3.5	3.5	4.6	4.6	5.8	7.0	8.1	8.1	9.3
80°	2.3	2.3	2.3	2.3	2.3	3.5	3.5	4.6	5.8	5.8	7.0
82.5°	1.2	1.2	1.2	2.3	2.3	2.3	3.5	3.5	4.6	4.6	5.8
85°	1.2	1.2	1.2	1.2	1.2	1.2	2.3	2.3	2.3	3.5	4.6
87.5°	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2	1.2	1.2	2.3
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°	757.7	757.7	757.7
2.5°	719.5	709.0	702.1
5°	655.7	626.8	618.7
7.5°	586.2	545.7	532.9
10°	517.9	470.4	451.8
12.5°	450.7	404.3	395.1
15°	393.9	351.0	339.5
17.5°	341.8	304.7	292.0
20°	297.7	261.8	251.4
22.5°	256.0	225.9	217.8
25°	222.4	195.8	187.7
27.5°	191.2	168.0	166.8
30°	164.5	149.5	147.1
32.5°	142.5	132.1	132.1
35°	124.0	117.0	118.2
37.5°	108.9	104.3	106.6
40°	95.0	95.0	97.3
42.5°	83.4	85.7	88.0
45°	71.8	78.8	79.9
47.5°	62.6	70.7	73.0
50°	55.6	63.7	66.0
52.5°	49.8	56.8	59.1
55°	44.0	51.0	51.0
57.5°	38.2	44.0	45.2
60°	33.6	38.2	39.4
62.5°	29.0	32.4	33.6
65°	25.5	27.8	27.8
67.5°	22.0	23.2	23.2
70°	18.5	19.7	18.5
72.5°	16.2	16.2	15.1
75°	12.7	12.7	12.7
77.5°	10.4	10.4	10.4
80°	8.1	9.3	9.3
82.5°	7.0	7.0	7.0
85°	4.6	4.6	4.6
87.5°	2.3	2.3	2.3
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



Report Generated By 670245859 / DESKTOP-T8S5UU9

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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