

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: P886648

Luminaire Tested: ML310LSFL9FS1E-TIR4D25AWW-TL3RWMW-1000LM-3000K

Issue Date: 7/5/2024

Test Information

Test Method: LM-79-2019
Report Number: P886648
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-3000K
Description: 3IN ROUND ML FLEX, SELECTABLE CCT, WITH WW TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 833.8 lumens
Efficiency: N/A
Efficacy: 60.4 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

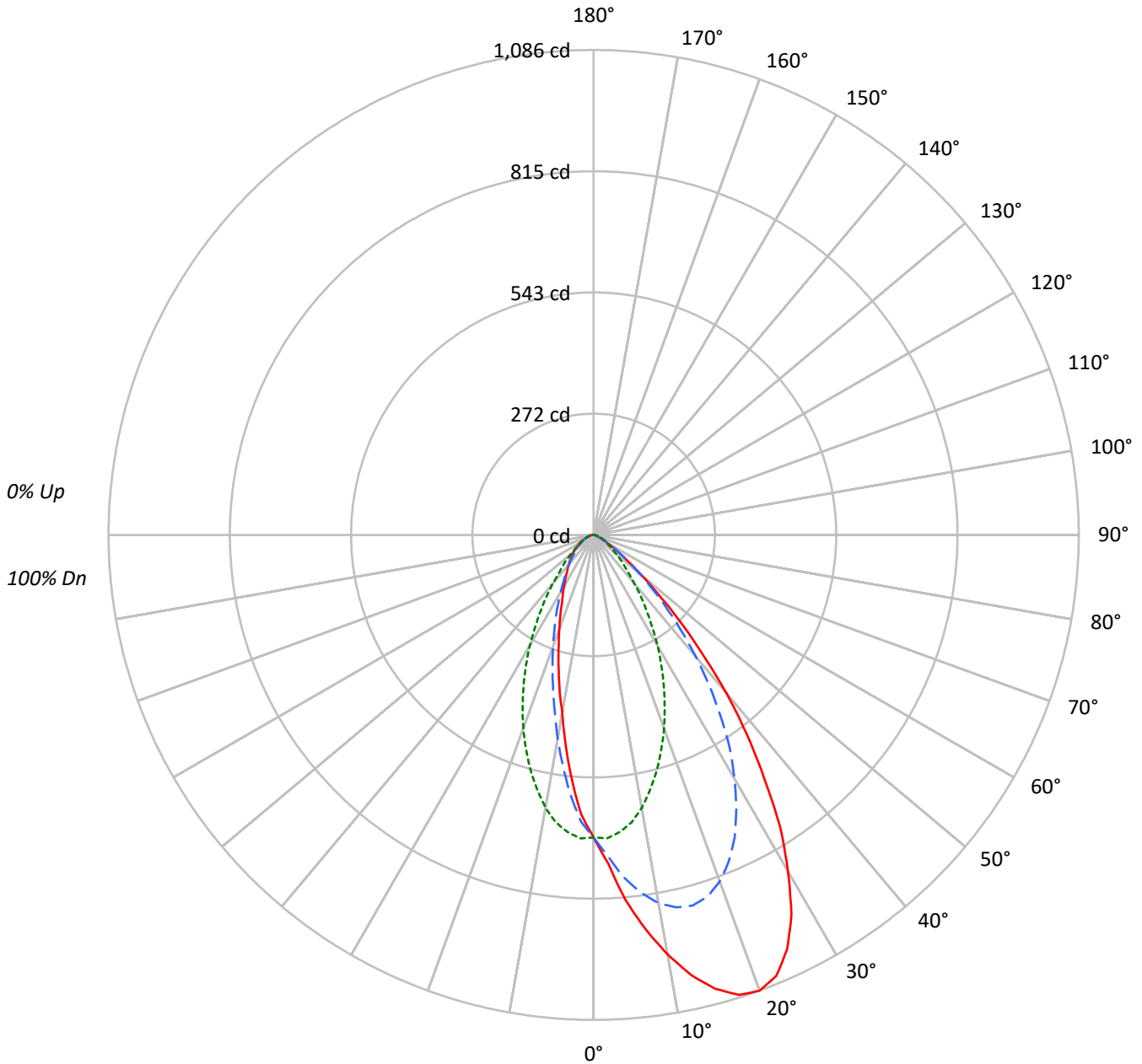
Input Watts (W): 13.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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°	148497	148497	148497	148497	148497
5°	180739	169348	147017	129011	121703
10°	212332	186403	138096	103049	89911
15°	238821	194984	123883	79910	68877
20°	253469	192575	107529	62095	52435
25°	247756	180627	89691	48100	40575
30°	220236	159531	72366	37221	33296
35°	178230	132347	55171	29660	28268
40°	131904	101504	40619	24303	24904
45°	83792	70798	30174	19909	22142
50°	47316	44689	22242	16955	20127
55°	25729	27507	16630	15025	17433
60°	14078	16336	14078	13157	15437
65°	8042	10481	11830	11830	12920
70°	5321	6988	10643	10643	10643
75°	3474	5253	8811	9658	9658
80°	2652	3283	6566	9092	10481
85°	2516	2516	7799	10315	10315

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 83792 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	63.8	7.7
10°-20°	170.6	20.5
20°-30°	218.3	26.2
30°-40°	187.1	22.4
40°-50°	109.9	13.2
50°-60°	49.4	5.9
60°-70°	22.2	2.7
70°-80°	9.7	1.2
80°-90°	2.9	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°	452.7	54.3
0°-40°	639.8	76.7
0°-60°	799.1	95.8
0°-90°	833.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	833.8	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	677	677	677	677	677	
5°	821	769	668	586	553	82
15°	1052	859	546	352	303	297
25°	1024	747	371	199	168	463
35°	666	494	206	111	106	415
45°	270	228	97	64	71	213
55°	67	72	44	39	46	65
65°	16	20	23	23	25	17
75°	4	6	10	11	11	5
85°	1	1	3	4	4	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°	677.2	677.2	677.2	677.2	677.2	677.2	677.2	677.2	677.2	677.2	677.2
2.5°	735.2	735.2	735.2	733.1	722.7	715.5	708.2	698.9	689.6	680.3	658.5
5°	821.1	819.0	805.6	795.2	779.7	759.0	737.2	713.4	690.6	667.9	622.3
7.5°	890.5	885.3	876.0	852.2	824.2	791.1	754.8	718.6	683.4	649.2	579.8
10°	953.6	951.6	930.9	901.9	860.4	813.9	764.2	713.4	663.7	620.2	530.1
12.5°	1009.6	1004.4	978.5	936.0	884.3	824.2	761.0	698.9	638.9	584.0	483.5
15°	1052.0	1041.6	1008.5	957.8	894.6	823.2	749.7	675.1	606.8	545.7	430.7
17.5°	1080.0	1065.5	1025.1	965.0	890.5	807.6	724.8	643.0	568.5	503.2	383.1
20°	1086.2	1070.6	1025.1	954.7	870.8	779.7	691.7	604.7	525.0	460.8	337.6
22.5°	1068.6	1049.9	1005.4	930.9	840.8	741.4	649.2	560.2	482.5	415.2	294.1
25°	1024.0	1009.6	960.9	889.4	797.3	695.8	601.6	515.6	435.9	370.7	253.7
27.5°	958.8	944.3	894.6	830.4	738.3	645.1	549.8	465.9	389.3	327.2	220.5
30°	869.8	859.4	820.1	754.8	675.1	585.0	496.0	412.1	341.7	285.8	189.5
32.5°	777.6	762.1	728.9	677.2	610.9	523.9	440.1	363.4	296.1	242.3	161.5
35°	665.8	662.7	631.6	592.3	530.1	458.7	379.0	309.6	252.6	206.1	138.7
37.5°	563.3	558.1	537.4	503.2	456.6	393.5	325.1	263.0	214.3	172.9	116.0
40°	460.8	457.7	442.1	414.2	381.0	328.2	275.4	217.4	174.0	141.9	96.3
42.5°	356.2	352.0	348.9	336.5	308.6	269.2	224.7	178.1	143.9	114.9	80.8
45°	270.2	268.2	266.1	255.8	242.3	214.3	178.1	141.9	117.0	97.3	68.3
47.5°	193.6	196.7	195.7	196.7	188.4	163.6	136.7	111.8	95.3	80.8	60.1
50°	138.7	137.7	145.0	148.1	139.8	122.2	102.5	87.0	74.6	65.2	50.7
52.5°	97.3	99.4	107.7	109.8	103.5	92.2	77.7	66.3	59.0	52.8	43.5
55°	67.3	68.3	76.6	80.8	75.6	68.3	58.0	50.7	47.6	43.5	36.2
57.5°	45.6	48.7	53.8	56.9	54.9	47.6	42.5	40.4	38.3	37.3	32.1
60°	32.1	33.1	38.3	41.4	39.3	35.2	33.1	32.1	32.1	32.1	29.0
62.5°	21.7	22.8	26.9	29.0	28.0	25.9	24.9	26.9	26.9	26.9	24.9
65°	15.5	15.5	18.6	20.7	20.7	19.7	20.7	21.7	22.8	22.8	21.7
67.5°	10.4	11.4	12.4	14.5	14.5	15.5	16.6	18.6	19.7	19.7	19.7
70°	8.3	8.3	9.3	10.4	10.4	11.4	13.5	14.5	15.5	16.6	16.6
72.5°	6.2	6.2	6.2	7.2	8.3	8.3	10.4	11.4	12.4	13.5	13.5
75°	4.1	4.1	4.1	5.2	6.2	6.2	7.2	8.3	9.3	10.4	11.4
77.5°	3.1	3.1	3.1	3.1	4.1	4.1	5.2	6.2	7.2	7.2	8.3
80°	2.1	2.1	2.1	2.1	2.1	3.1	3.1	4.1	5.2	5.2	6.2
82.5°	1.0	1.0	1.0	2.1	2.1	2.1	3.1	3.1	4.1	4.1	5.2
85°	1.0	1.0	1.0	1.0	1.0	1.0	2.1	2.1	2.1	3.1	4.1
87.5°	0.0	0.0	0.0	0.0	1.0	1.0	1.0	1.0	1.0	1.0	2.1
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°	677.2	677.2	677.2
2.5°	643.0	633.7	627.5
5°	586.1	560.2	552.9
7.5°	523.9	487.7	476.3
10°	462.8	420.4	403.8
12.5°	402.8	361.4	353.1
15°	352.0	313.7	303.4
17.5°	305.5	272.3	260.9
20°	266.1	234.0	224.7
22.5°	228.8	201.9	194.7
25°	198.8	175.0	167.7
27.5°	170.8	150.1	149.1
30°	147.0	133.6	131.5
32.5°	127.4	118.0	118.0
35°	110.8	104.6	105.6
37.5°	97.3	93.2	95.3
40°	84.9	84.9	87.0
42.5°	74.6	76.6	78.7
45°	64.2	70.4	71.4
47.5°	55.9	63.2	65.2
50°	49.7	56.9	59.0
52.5°	44.5	50.7	52.8
55°	39.3	45.6	45.6
57.5°	34.2	39.3	40.4
60°	30.0	34.2	35.2
62.5°	25.9	29.0	30.0
65°	22.8	24.9	24.9
67.5°	19.7	20.7	20.7
70°	16.6	17.6	16.6
72.5°	14.5	14.5	13.5
75°	11.4	11.4	11.4
77.5°	9.3	9.3	9.3
80°	7.2	8.3	8.3
82.5°	6.2	6.2	6.2
85°	4.1	4.1	4.1
87.5°	2.1	2.1	2.1
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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Scaled Data Report



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