

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: P886649

Luminaire Tested: ML310LSFL9FS1E-TIR4D25AWW-TL3RWMW-1000LM-3500K

Issue Date: 7/5/2024

Test Information

Test Method: LM-79-2019
Report Number: P886649
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-3500K
Description: 3IN ROUND ML FLEX, SELECTABLE CCT, WITH WW TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 861.0 lumens
Efficiency: N/A
Efficacy: 62.4 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

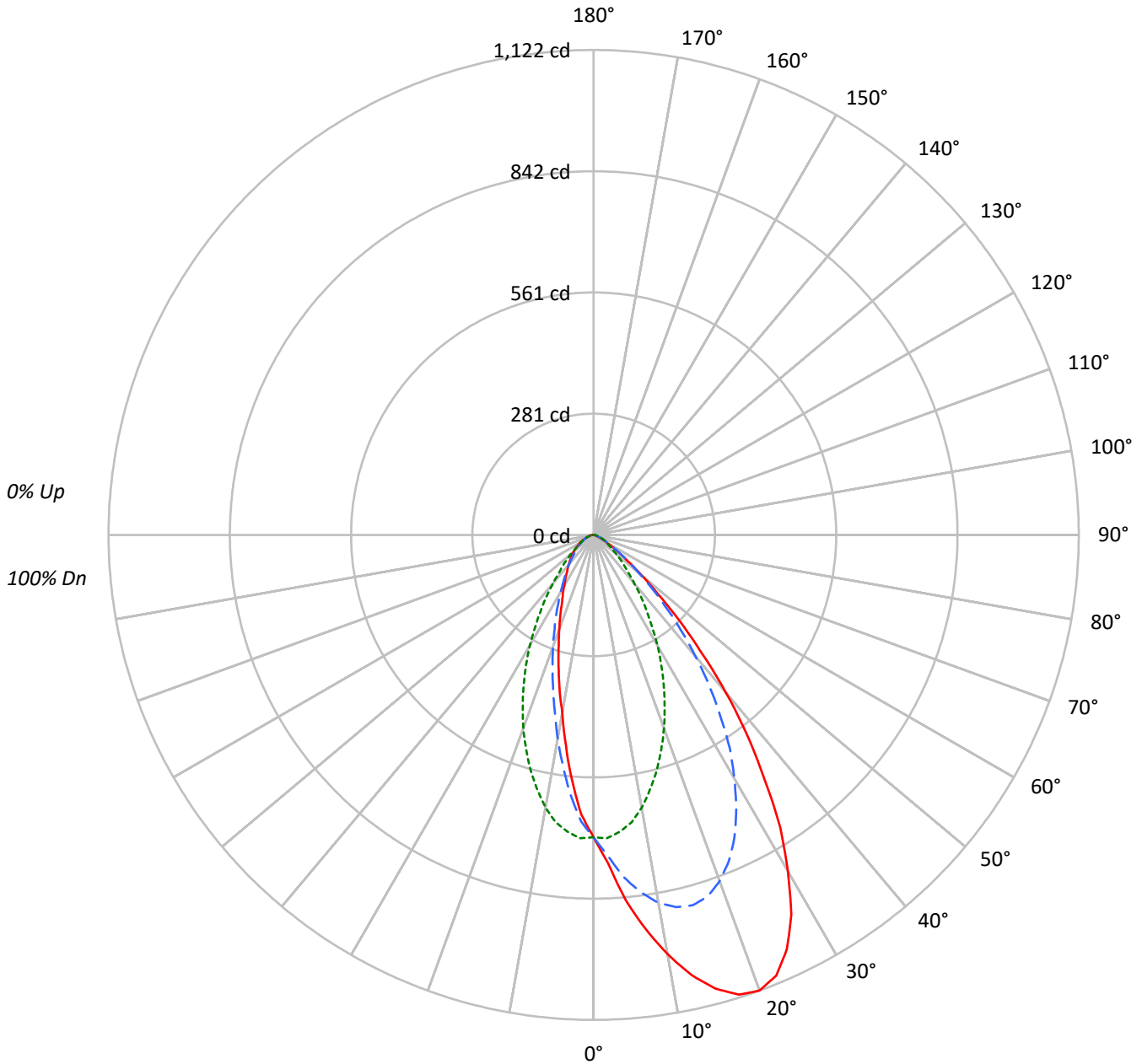
Input Watts (W): 13.8
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	153321	153321	153321	153321	153321
5°	186638	174862	151794	133216	125666
10°	219257	192481	142594	106411	92851
15°	246608	201341	127924	82520	71124
20°	261729	198852	111030	64126	54138
25°	255837	186519	92618	49672	41906
30°	227402	164734	74720	38436	34385
35°	184038	136657	56965	30624	29205
40°	136198	104825	41936	25104	25705
45°	86552	73108	31166	20560	22886
50°	48885	46139	22993	17500	20775
55°	26570	28424	17165	15522	17968
60°	14516	16885	14516	13595	15964
65°	8302	10818	12193	12193	13335
70°	5514	7213	10963	10963	10963
75°	3643	5422	9065	9997	9997
80°	2652	3346	6693	9471	10860
85°	2768	2768	8051	10819	10819

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 86552 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	65.9	7.7
10°-20°	176.2	20.5
20°-30°	225.4	26.2
30°-40°	193.2	22.4
40°-50°	113.5	13.2
50°-60°	51.0	5.9
60°-70°	22.9	2.7
70°-80°	10.0	1.2
80°-90°	3.0	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°	467.5	54.3
0°-40°	660.6	76.7
0°-60°	825.1	95.8
0°-90°	861.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	861.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	699	699	699	699	699	
5°	848	794	690	605	571	85
15°	1086	887	564	364	313	307
25°	1057	771	383	205	173	478
35°	688	510	213	114	109	428
45°	279	236	100	66	74	220
55°	70	74	45	41	47	68
65°	16	21	24	24	26	17
75°	4	6	11	12	12	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°	699.2	699.2	699.2	699.2	699.2	699.2	699.2	699.2	699.2	699.2	699.2
2.5°	759.1	759.1	759.1	757.0	746.3	738.8	731.3	721.7	712.1	702.5	680.0
5°	847.9	845.7	831.8	821.1	805.1	783.7	761.3	736.7	713.1	689.6	642.6
7.5°	919.5	914.2	904.5	879.9	851.1	816.9	779.4	742.0	705.7	670.4	598.7
10°	984.7	982.6	961.2	931.3	888.5	840.4	789.1	736.7	685.3	640.4	547.4
12.5°	1042.5	1037.1	1010.4	966.5	913.1	851.1	785.9	721.7	659.7	603.0	499.3
15°	1086.3	1075.6	1041.4	989.0	923.8	850.0	774.1	697.1	626.5	563.5	444.8
17.5°	1115.2	1100.2	1058.5	996.5	919.5	834.0	748.4	664.0	587.0	519.6	395.6
20°	1121.6	1105.5	1058.5	985.8	899.2	805.1	714.2	624.4	542.1	475.8	348.6
22.5°	1103.4	1084.2	1038.2	961.2	868.2	765.5	670.4	578.4	498.2	428.7	303.6
25°	1057.4	1042.5	992.2	918.4	823.3	718.5	621.2	532.5	450.1	382.8	262.0
27.5°	990.1	975.1	923.8	857.5	762.3	666.1	567.7	481.1	402.0	337.9	227.7
30°	898.1	887.4	846.8	779.4	697.1	604.1	512.1	425.5	352.8	295.1	195.7
32.5°	803.0	786.9	752.7	699.2	630.8	541.0	454.4	375.3	305.8	250.2	166.8
35°	687.5	684.3	652.2	611.6	547.4	473.6	391.3	319.7	260.9	212.8	143.3
37.5°	581.6	576.3	554.9	519.6	471.5	406.3	335.7	271.6	221.3	178.6	119.7
40°	475.8	472.6	456.5	427.7	393.5	338.9	284.4	224.5	179.6	146.5	99.4
42.5°	367.8	363.5	360.3	347.5	318.6	278.0	232.0	183.9	148.6	118.7	83.4
45°	279.1	276.9	274.8	264.1	250.2	221.3	183.9	146.5	120.8	100.5	70.6
47.5°	199.9	203.1	202.1	203.1	194.6	168.9	141.1	115.5	98.4	83.4	62.0
50°	143.3	142.2	149.7	152.9	144.3	126.2	105.8	89.8	77.0	67.4	52.4
52.5°	100.5	102.6	111.2	113.3	106.9	95.2	80.2	68.4	60.9	54.5	44.9
55°	69.5	70.6	79.1	83.4	78.1	70.6	59.9	52.4	49.2	44.9	37.4
57.5°	47.0	50.3	55.6	58.8	56.7	49.2	43.8	41.7	39.6	38.5	33.1
60°	33.1	34.2	39.6	42.8	40.6	36.4	34.2	33.1	33.1	33.1	29.9
62.5°	22.5	23.5	27.8	29.9	28.9	26.7	25.7	27.8	27.8	27.8	25.7
65°	16.0	16.0	19.2	21.4	21.4	20.3	21.4	22.5	23.5	23.5	22.5
67.5°	10.7	11.8	12.8	15.0	15.0	16.0	17.1	19.2	20.3	20.3	20.3
70°	8.6	8.6	9.6	10.7	10.7	11.8	13.9	15.0	16.0	17.1	17.1
72.5°	6.4	6.4	6.4	7.5	8.6	8.6	10.7	11.8	12.8	13.9	13.9
75°	4.3	4.3	4.3	5.3	6.4	6.4	7.5	8.6	9.6	10.7	11.8
77.5°	3.2	3.2	3.2	3.2	4.3	4.3	5.3	6.4	7.5	7.5	8.6
80°	2.1	2.1	2.1	2.1	2.1	3.2	3.2	4.3	5.3	5.3	6.4
82.5°	1.1	1.1	1.1	2.1	2.1	2.1	3.2	3.2	4.3	4.3	5.3
85°	1.1	1.1	1.1	1.1	1.1	1.1	2.1	2.1	2.1	3.2	4.3
87.5°	0.0	0.0	0.0	0.0	1.1	1.1	1.1	1.1	1.1	1.1	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°	699.2	699.2	699.2
2.5°	664.0	654.3	647.9
5°	605.2	578.4	570.9
7.5°	541.0	503.6	491.8
10°	477.9	434.1	417.0
12.5°	415.9	373.1	364.6
15°	363.5	324.0	313.3
17.5°	315.4	281.2	269.4
20°	274.8	241.6	232.0
22.5°	236.3	208.5	201.0
25°	205.3	180.7	173.2
27.5°	176.4	155.0	154.0
30°	151.8	137.9	135.8
32.5°	131.5	121.9	121.9
35°	114.4	108.0	109.1
37.5°	100.5	96.2	98.4
40°	87.7	87.7	89.8
42.5°	77.0	79.1	81.3
45°	66.3	72.7	73.8
47.5°	57.7	65.2	67.4
50°	51.3	58.8	60.9
52.5°	46.0	52.4	54.5
55°	40.6	47.0	47.0
57.5°	35.3	40.6	41.7
60°	31.0	35.3	36.4
62.5°	26.7	29.9	31.0
65°	23.5	25.7	25.7
67.5°	20.3	21.4	21.4
70°	17.1	18.2	17.1
72.5°	15.0	15.0	13.9
75°	11.8	11.8	11.8
77.5°	9.6	9.6	9.6
80°	7.5	8.6	8.6
82.5°	6.4	6.4	6.4
85°	4.3	4.3	4.3
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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