

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: P886656

Luminaire Tested: ML310LSFL9FS1E-TIR4D25AWW-TL3RWSL-1000LM-5000K

Issue Date: 7/5/2024

Test Information

Test Method: LM-79-2019
Report Number: P886656
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: ML310LSFL9FS1E-TIR4D25AWW-TL3RWSL-1000LM-5000K
Description: 3IN ROUND ML FLEX, SELECTABLE CCT, WITH WW TIR, METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

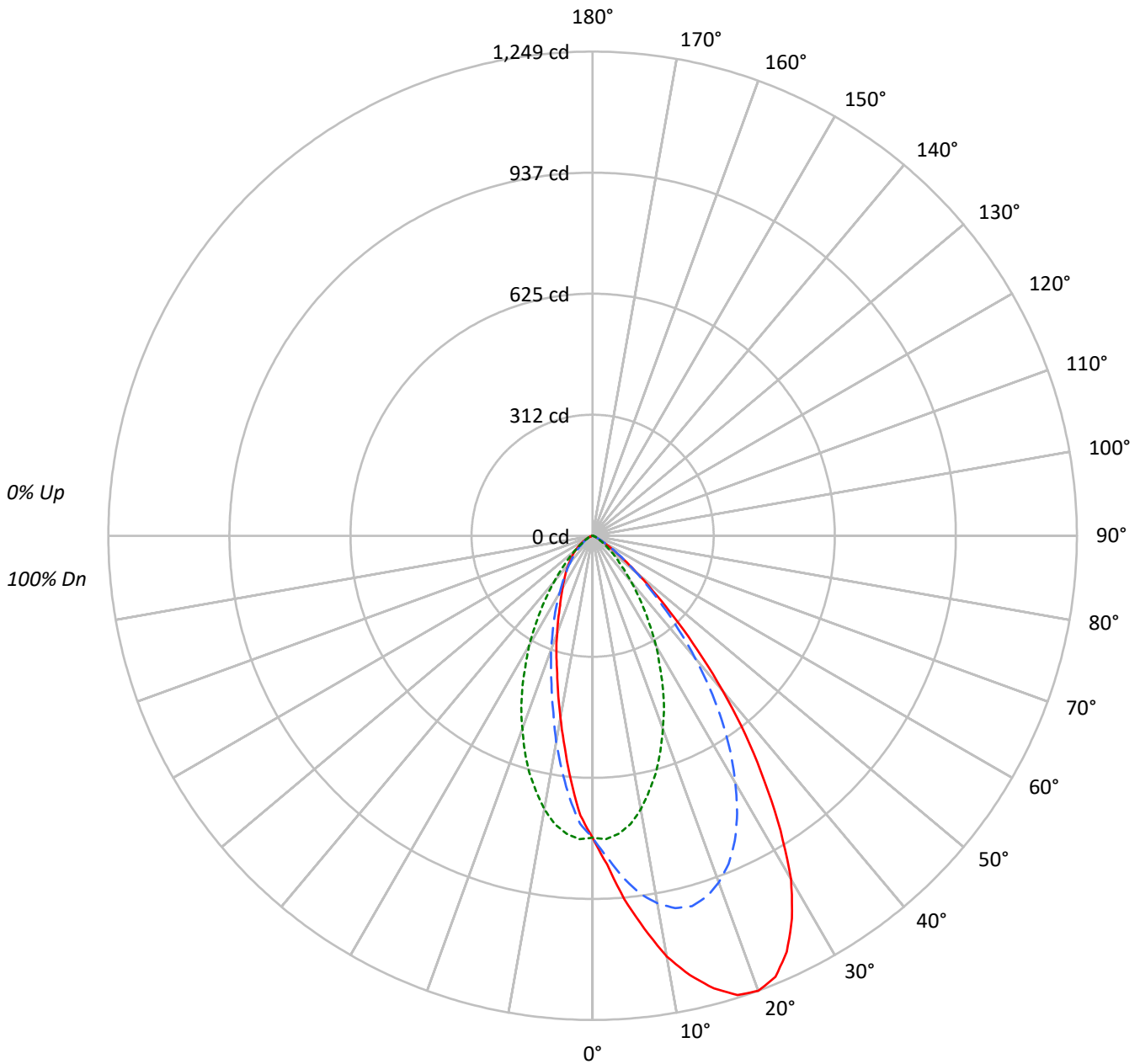
Lumens per Lamp: N/A
Luminaire Lumens: 918.7 lumens
Efficiency: N/A
Efficacy: 66.6 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 0.81 / 0.99
Luminous Opening: Circular (Dia: 0.25' x H: 0')
CIE Type: Direct

Input Watts (W): 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				
RW	70	50	30	10	70	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	113	110	107	104	110	108	105	103	103	101	100	100	98	97	96	95	94	92		
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	88	86	84		
3	100	93	87	83	98	91	86	82	89	84	81	86	82	79	84	81	78	76		
4	94	86	79	75	92	84	79	74	82	77	73	80	76	72	78	74	71	70		
5	89	79	73	68	87	78	72	67	76	71	67	75	70	66	73	69	66	64		
6	83	73	67	62	82	73	66	62	71	65	61	70	65	61	68	64	60	59		
7	79	68	62	57	77	68	61	57	66	61	56	65	60	56	64	59	56	54		
8	74	64	57	52	73	63	57	52	62	56	52	61	56	52	60	55	52	50		
9	70	60	53	49	69	59	53	49	58	52	48	57	52	48	56	51	48	47		
10	67	56	50	45	66	55	49	45	55	49	45	54	49	45	53	48	45	43		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	170754	170754	170754	170754	170754
5°	207131	194375	169887	149482	140039
10°	245397	214414	159472	120238	106055
15°	274394	224530	143383	92600	80500
20°	291505	222013	123584	72736	62469
25°	286541	210000	103458	56640	47954
30°	259103	186472	83051	43121	39323
35°	206899	155569	61730	32873	32873
40°	148936	117592	44111	25534	27537
45°	91637	79249	29833	19754	23351
50°	50591	49022	20161	14635	18967
55°	25270	28138	12845	11087	15063
60°	11710	13990	9166	8113	11183
65°	5396	6615	6590	5396	6590
70°	2244	3334	4488	2949	3719
75°	1017	1949	1949	1949	1949
80°	0	0	1515	1515	1515
85°	0	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 20°
 Vertical Angle: 45°
 Luminance: 92010 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	73.6	8.0
10°-20°	197.3	21.5
20°-30°	253.3	27.6
30°-40°	215.3	23.4
40°-50°	118.7	12.9
50°-60°	44.6	4.9
60°-70°	13.0	1.4
70°-80°	2.7	0.3
80°-90°	0.3	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°	524.2	57.1
0°-40°	739.5	80.5
0°-60°	902.7	98.3
0°-90°	918.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	918.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	779	779	779	779	779	
5°	941	883	772	679	636	94
15°	1209	989	632	408	355	342
25°	1184	868	428	234	198	537
35°	773	581	231	123	123	480
45°	296	256	96	64	75	236
55°	66	74	34	29	39	66
65°	10	13	13	10	13	12
75°	1	2	2	2	2	2
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°	778.7	778.7	778.7	778.7	778.7	778.7	778.7	778.7	778.7	778.7	778.7
2.5°	848.3	848.3	846.0	840.2	832.0	825.1	813.5	804.2	793.8	783.4	760.2
5°	941.0	937.5	927.1	913.2	895.8	870.3	846.0	822.8	796.1	771.8	718.5
7.5°	1022.1	1017.5	1003.6	976.9	949.1	912.0	870.3	828.6	788.0	749.8	669.8
10°	1102.1	1091.6	1070.8	1034.8	989.6	936.3	879.6	823.9	767.2	716.2	618.8
12.5°	1161.2	1151.9	1122.9	1078.9	1017.5	950.2	877.2	805.4	737.0	674.4	560.9
15°	1208.7	1197.1	1160.0	1103.2	1029.0	949.1	861.0	779.9	701.1	631.6	501.8
17.5°	1242.3	1224.9	1179.7	1109.0	1023.3	930.5	839.0	742.8	659.4	581.7	445.0
20°	1249.2	1234.2	1182.0	1103.2	1002.4	900.4	797.3	698.8	609.5	529.6	391.7
22.5°	1231.8	1215.6	1160.0	1076.6	972.3	859.9	753.2	652.4	557.4	480.9	343.0
25°	1184.3	1168.1	1112.5	1030.2	925.9	810.0	695.3	595.6	506.4	427.6	295.5
27.5°	1113.6	1089.3	1045.3	964.2	863.3	750.9	636.2	537.7	447.3	373.1	251.5
30°	1023.3	992.0	954.9	884.2	789.2	683.7	573.6	476.3	392.8	328.0	215.5
32.5°	901.6	890.0	850.6	791.5	711.5	610.7	508.7	418.3	339.5	275.8	184.3
35°	772.9	761.4	740.5	691.8	624.6	537.7	442.7	355.8	287.4	230.6	151.8
37.5°	647.8	636.2	617.7	587.5	529.6	462.4	377.8	302.5	241.0	190.0	126.3
40°	520.3	515.7	500.6	478.6	438.0	383.6	315.2	250.3	195.8	154.1	102.0
42.5°	401.0	398.6	388.2	375.5	350.0	305.9	259.6	201.6	155.3	122.8	81.1
45°	295.5	289.7	296.7	286.2	271.2	239.9	199.3	156.4	119.4	96.2	63.7
47.5°	210.9	212.1	215.5	217.9	206.3	180.8	149.5	114.7	92.7	78.8	52.1
50°	148.3	147.2	155.3	162.2	151.8	135.6	107.8	88.1	70.7	59.1	41.7
52.5°	102.0	103.1	112.4	117.0	114.7	96.2	76.5	61.4	52.1	44.0	32.4
55°	66.1	69.5	76.5	82.3	81.1	66.1	53.3	44.0	39.4	33.6	25.5
57.5°	42.9	44.0	51.0	55.6	54.5	44.0	35.9	32.4	29.0	25.5	18.5
60°	26.7	27.8	32.4	37.1	34.8	29.0	24.3	23.2	22.0	20.9	16.2
62.5°	16.2	17.4	20.9	24.3	22.0	18.5	16.2	17.4	17.4	16.2	12.7
65°	10.4	10.4	12.7	15.1	13.9	11.6	11.6	12.7	13.9	12.7	10.4
67.5°	5.8	7.0	8.1	9.3	8.1	8.1	9.3	10.4	10.4	10.4	8.1
70°	3.5	4.6	4.6	4.6	4.6	5.8	5.8	7.0	8.1	7.0	5.8
72.5°	2.3	2.3	2.3	3.5	3.5	3.5	3.5	4.6	4.6	4.6	4.6
75°	1.2	1.2	1.2	1.2	2.3	2.3	2.3	2.3	2.3	2.3	2.3
77.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2	1.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	1.2	1.2
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°	778.7	778.7	778.7
2.5°	744.0	732.4	722.0
5°	679.1	651.3	636.2
7.5°	608.4	565.5	550.4
10°	540.0	487.9	476.3
12.5°	468.2	425.3	411.4
15°	407.9	367.4	354.6
17.5°	355.8	318.7	310.6
20°	311.7	278.1	267.7
22.5°	268.9	238.7	230.6
25°	234.1	207.4	198.2
27.5°	200.5	178.5	175.0
30°	170.3	156.4	155.3
32.5°	144.9	135.6	137.9
35°	122.8	119.4	122.8
37.5°	106.6	105.5	108.9
40°	89.2	91.5	96.2
42.5°	75.3	81.1	85.8
45°	63.7	71.8	75.3
47.5°	52.1	62.6	66.1
50°	42.9	54.5	55.6
52.5°	34.8	45.2	47.5
55°	29.0	37.1	39.4
57.5°	24.3	30.1	31.3
60°	18.5	23.2	25.5
62.5°	13.9	18.5	18.5
65°	10.4	12.7	12.7
67.5°	7.0	9.3	9.3
70°	4.6	5.8	5.8
72.5°	3.5	3.5	3.5
75°	2.3	2.3	2.3
77.5°	1.2	1.2	1.2
80°	1.2	1.2	1.2
82.5°	1.2	1.2	1.2
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



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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