

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: P886514

Luminaire Tested: ML310LSFL95FS1E-TIR4D25AWW-TL3RWMB-850LM-3500K

Issue Date: 7/5/2024

Test Information

Test Method: LM-79-2019
Report Number: P886514
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: ML310LSFL95FS1E-TIR4D25AWW-TL3RWMB-850LM-3500K
Description: 3IN ROUND ML FLEX, SELECTABLE CCT, WITH WW TIR, MATTE BLACK TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 95CRI / 3500K CCT
Ballast/Driver: -

Summary

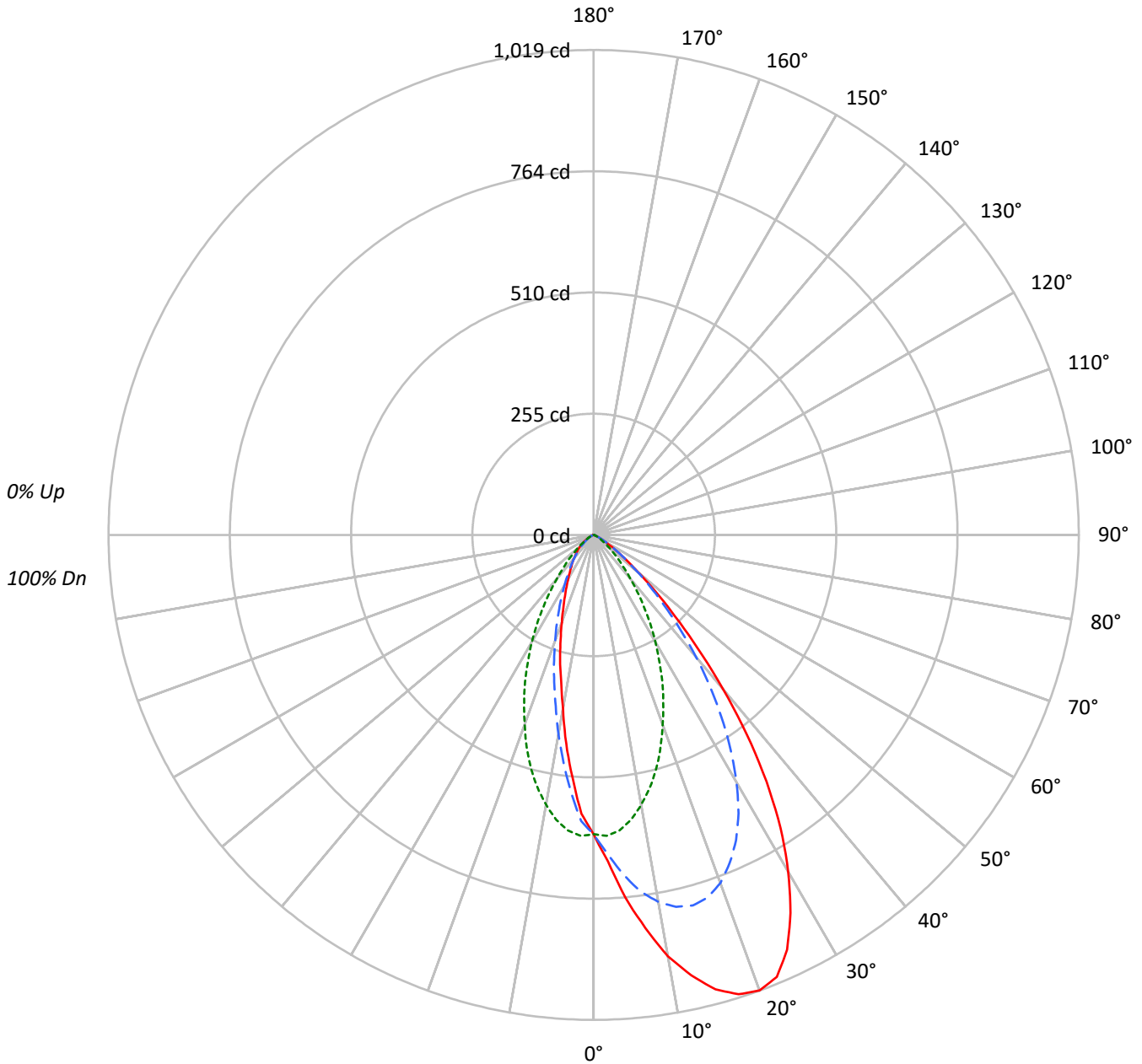
Lumens per Lamp: N/A
Luminaire Lumens: 728.3 lumens
Efficiency: N/A
Efficacy: 53.6 lumens/watt
Spacing Criteria (0/90/45): 1.12 / 0.8 / 0.98
Luminous Opening: Circular (Dia: 0.25' x H: 0')
CIE Type: Direct

Input Watts (W): 13.6
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	113	110	107	105	110	108	105	103	104	102	100	100	98	97	96	95	94	92								
2	106	101	97	93	104	99	95	92	96	93	90	93	90	88	90	88	86	84								
3	100	93	87	83	98	92	86	82	89	85	81	86	83	80	84	81	78	77								
4	94	86	80	75	92	85	79	75	82	78	74	80	76	73	78	75	72	70								
5	89	79	73	68	87	78	72	68	77	71	67	75	70	67	73	69	66	64								
6	84	74	67	62	82	73	67	62	71	66	62	70	65	61	69	64	61	59								
7	79	69	62	57	78	68	62	57	67	61	57	65	60	56	64	60	56	55								
8	75	64	57	53	73	63	57	53	62	57	53	61	56	52	60	56	52	51								
9	71	60	53	49	69	59	53	49	58	53	49	58	52	49	57	52	48	47								
10	67	56	50	46	66	56	50	46	55	49	45	54	49	45	53	49	45	44								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	137906	137906	137906	137906	137906
5°	168390	157693	137156	119612	112546
10°	200219	174345	128143	94587	82475
15°	224428	182941	115415	72600	61794
20°	237717	181584	98895	54885	45597
25°	232610	171216	82553	41398	34575
30°	206994	151871	65706	31017	27067
35°	169396	125293	49175	23423	21870
40°	120769	95579	34493	18091	18377
45°	75047	64813	23506	13273	15381
50°	41449	40118	15249	9620	12281
55°	22671	22843	8908	7073	9290
60°	10657	11315	5964	5131	6403
65°	5033	5033	4047	3009	3528
70°	1859	2180	2500	1218	1218
75°	847	847	847	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: 75667 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	59.4	8.2
10°-20°	158.6	21.8
20°-30°	202.2	27.8
30°-40°	170.8	23.4
40°-50°	93.5	12.8
50°-60°	34.0	4.7
60°-70°	8.8	1.2
70°-80°	1.0	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°	420.2	57.7
0°-40°	591.0	81.1
0°-60°	718.5	98.6
0°-90°	728.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	728.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	629	629	629	629	629	
5°	765	716	623	543	511	77
15°	989	806	508	320	272	279
25°	961	708	341	171	143	435
35°	633	468	184	88	82	390
45°	242	209	76	43	50	193
55°	59	60	23	18	24	57
65°	10	10	8	6	7	11
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°	628.9	628.9	628.9	628.9	628.9	628.9	628.9	628.9	628.9	628.9	628.9
2.5°	686.3	684.3	683.4	682.4	674.6	666.8	657.1	649.3	641.6	632.8	614.4
5°	765.0	764.1	753.4	743.6	726.1	706.7	687.3	664.9	642.5	623.1	580.3
7.5°	833.1	831.1	816.5	798.1	771.8	739.8	706.7	669.8	634.8	603.7	536.6
10°	899.2	892.4	872.0	841.8	804.9	761.1	714.5	665.9	617.3	575.5	493.8
12.5°	947.8	941.0	918.6	877.8	828.2	772.8	712.5	653.2	595.9	544.4	445.2
15°	988.6	976.0	947.8	899.2	839.9	771.8	700.9	631.9	565.7	508.4	396.6
17.5°	1011.9	1000.3	963.3	906.9	837.0	759.2	680.5	602.7	530.8	467.6	349.0
20°	1018.7	1004.2	964.3	900.1	820.4	735.9	651.3	566.7	491.9	423.8	307.2
22.5°	1005.1	988.6	943.9	878.8	792.2	700.9	613.4	527.8	448.1	382.0	264.4
25°	961.4	949.7	903.1	837.0	755.3	660.0	568.7	483.1	406.3	341.2	226.5
27.5°	895.3	884.6	843.8	781.6	702.8	615.3	521.0	435.5	360.6	297.5	194.4
30°	817.5	805.9	772.8	718.4	644.5	555.1	469.5	387.9	316.9	259.5	165.3
32.5°	731.0	719.3	685.3	640.6	575.5	495.8	418.0	339.3	273.2	220.7	140.0
35°	632.8	624.1	599.8	555.1	501.6	434.5	360.6	290.7	229.4	183.7	116.6
37.5°	528.8	519.1	504.5	475.3	430.6	371.3	307.2	243.0	190.5	149.7	93.3
40°	421.9	418.0	410.2	387.9	358.7	309.1	257.6	201.2	154.6	120.5	75.8
42.5°	322.7	321.8	320.8	307.2	286.8	251.8	206.1	159.4	124.4	94.3	60.3
45°	242.0	244.0	242.0	237.2	220.7	197.3	162.3	126.4	96.2	75.8	45.7
47.5°	175.9	177.9	178.9	180.8	172.1	149.7	120.5	96.2	72.9	58.3	36.9
50°	121.5	126.4	129.3	131.2	124.4	110.8	89.4	69.0	53.5	44.7	30.1
52.5°	87.5	88.5	93.3	95.3	91.4	77.8	62.2	46.7	39.9	33.1	23.3
55°	59.3	59.3	66.1	69.0	65.1	54.4	41.8	33.1	28.2	23.3	17.5
57.5°	36.9	38.9	43.7	46.7	43.7	36.0	28.2	23.3	20.4	18.5	12.6
60°	24.3	26.2	28.2	31.1	29.2	22.4	18.5	16.5	15.6	13.6	9.7
62.5°	15.6	16.5	18.5	20.4	17.5	13.6	12.6	11.7	10.7	10.7	7.8
65°	9.7	9.7	11.7	12.6	10.7	8.7	8.7	8.7	8.7	7.8	5.8
67.5°	5.8	5.8	6.8	6.8	5.8	5.8	5.8	5.8	5.8	5.8	3.9
70°	2.9	2.9	3.9	3.9	2.9	3.9	3.9	3.9	3.9	3.9	2.9
72.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	2.9	1.9	1.9
75°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
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°	628.9	628.9	628.9
2.5°	601.7	592.0	586.2
5°	543.4	520.1	511.3
7.5°	483.1	453.0	442.3
10°	424.8	384.9	370.4
12.5°	368.4	330.5	315.0
15°	319.8	282.9	272.2
17.5°	276.1	242.0	230.4
20°	235.2	206.1	195.4
22.5°	202.2	175.9	166.2
25°	171.1	147.8	142.9
27.5°	144.8	126.4	123.5
30°	122.5	107.9	106.9
32.5°	103.0	94.3	93.3
35°	87.5	80.7	81.7
37.5°	74.9	71.0	72.9
40°	63.2	61.2	64.2
42.5°	52.5	53.5	56.4
45°	42.8	46.7	49.6
47.5°	35.0	40.8	42.8
50°	28.2	35.0	36.0
52.5°	22.4	29.2	29.2
55°	18.5	23.3	24.3
57.5°	14.6	18.5	18.5
60°	11.7	14.6	14.6
62.5°	8.7	9.7	10.7
65°	5.8	6.8	6.8
67.5°	3.9	4.9	4.9
70°	1.9	2.9	1.9
72.5°	1.0	1.0	1.0
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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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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