

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: P886661

Luminaire Tested: ML310LSFL9FS1E-TIR4D25AWW-TL3SWMB-1000LM-5000K

Issue Date: 7/8/2024

Test Information

Test Method: LM-79-2019
Report Number: P886661
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2402-314-24)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 7/8/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML310LSFL9FS1E-TIR4D25AWW-TL3SWMB-1000LM-5000K
Description: 3IN SQUARE ML FLEX, SELECTABLE CCT, WITH WW TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

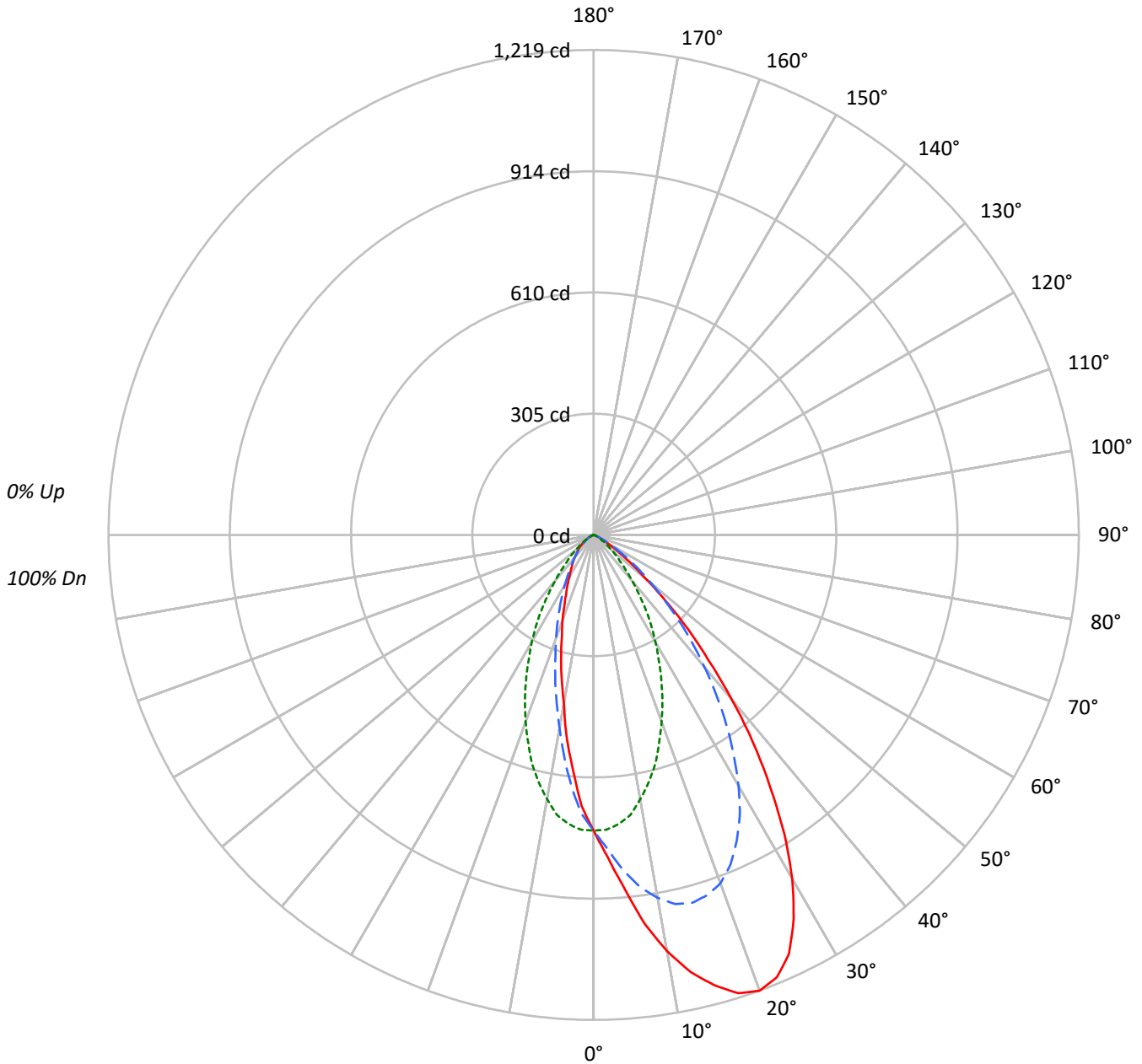
Lumens per Lamp: N/A
Luminaire Lumens: 896.0 lumens
Efficiency: N/A
Efficacy: 64.9 lumens/watt
Spacing Criteria (0/90/45): 1.14 / 0.8 / 1
Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
CIE Type: Direct

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					100			
1	113	110	107	104	110	107	105	103	103	101	100	100	98	97	96	95	94	92					92			
2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	87	85	84					84			
3	100	92	87	82	98	91	86	82	88	84	80	86	82	79	83	80	78	76					76			
4	94	85	79	74	92	84	78	74	82	77	73	80	75	72	78	74	71	69					69			
5	88	79	72	67	86	78	71	67	76	70	66	74	69	65	72	68	65	63					63			
6	83	73	66	61	81	72	66	61	70	65	60	69	64	60	67	63	60	58					58			
7	78	68	61	56	77	67	60	56	66	60	56	64	59	55	63	58	55	53					53			
8	74	63	56	52	72	62	56	52	61	55	51	60	55	51	59	54	51	49					49			
9	70	59	52	48	69	58	52	48	57	52	48	56	51	47	56	51	47	46					46			
10	66	55	49	44	65	55	49	44	54	48	44	53	48	44	52	47	44	43					43			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	127961	127961	127961	127961	127961
5°	154296	146084	126047	109814	102605
10°	185687	161956	117974	86146	75198
15°	208947	170703	106426	66541	56413
20°	223486	170794	91564	50566	41842
25°	220697	161447	76429	38328	31050
30°	198468	144754	61768	28577	24202
35°	162540	122089	47515	21445	19973
40°	121448	97212	33880	16682	16682
45°	81592	73117	22870	12422	13834
50°	45334	50934	15835	9324	11173
55°	24021	31678	9758	7296	8708
60°	11987	17153	6372	5580	5993
65°	5664	8517	4238	3301	3790
70°	2921	3525	2316	1762	1158
75°	799	1530	799	799	0
80°	0	0	0	0	0
85°	0	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 22.5°
 Vertical Angle: 45°
 Luminance: 81860 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	69.6	7.8
10°-20°	186.9	20.9
20°-30°	241.2	26.9
30°-40°	208.9	23.3
40°-50°	123.7	13.8
50°-60°	49.9	5.6
60°-70°	13.9	1.6
70°-80°	1.8	0.2
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°	497.8	55.6
0°-40°	706.7	78.9
0°-60°	880.3	98.2
0°-90°	896.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	896.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	743	743	743	743	743	
5°	892	845	729	635	594	91
15°	1172	957	597	373	316	332
25°	1161	850	402	202	163	525
35°	773	581	226	102	95	480
45°	335	300	94	51	57	260
55°	80	106	32	24	29	79
65°	14	21	10	8	9	16
75°	1	2	1	1	0	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°
0°	743.0	743.0	743.0	743.0	743.0	743.0	743.0	743.0	743.0
2.5°	810.2	799.8	789.4	763.9	741.8	718.7	701.3	687.4	682.7
5°	892.5	884.4	845.0	788.2	729.1	675.8	635.2	607.4	593.5
7.5°	986.4	957.4	892.5	799.8	709.4	627.1	564.5	525.1	515.8
10°	1061.8	1027.0	926.1	799.8	674.6	576.1	492.6	448.6	430.0
12.5°	1125.5	1079.1	950.5	788.2	637.5	520.4	430.0	381.4	369.8
15°	1171.9	1117.4	957.4	766.2	596.9	461.3	373.2	329.2	316.4
17.5°	1207.8	1137.1	949.3	737.2	547.1	408.0	318.8	280.5	265.4
20°	1219.4	1139.4	931.9	696.6	499.6	357.0	275.9	238.8	228.3
22.5°	1203.2	1119.7	897.2	656.1	450.9	309.5	236.5	202.8	192.4
25°	1161.4	1074.5	849.6	602.7	402.2	266.6	201.7	170.4	163.4
27.5°	1088.4	1007.3	795.2	549.4	353.5	228.3	170.4	146.0	142.6
30°	998.0	925.0	727.9	493.8	310.6	194.7	143.7	126.3	121.7
32.5°	891.4	832.3	654.9	440.5	267.8	165.8	121.7	109.0	107.8
35°	773.1	731.4	580.7	379.0	226.0	137.9	102.0	93.9	95.0
37.5°	658.4	623.6	505.4	322.2	185.5	112.4	88.1	82.3	83.5
40°	540.2	520.4	432.4	266.6	150.7	91.6	74.2	71.9	74.2
42.5°	427.7	423.1	364.0	221.4	120.5	74.2	62.6	61.4	64.9
45°	335.0	336.1	300.2	177.3	93.9	58.0	51.0	54.5	56.8
47.5°	243.4	258.5	237.6	136.8	76.5	47.5	41.7	47.5	49.8
50°	169.2	191.3	190.1	105.5	59.1	39.4	34.8	41.7	41.7
52.5°	122.9	136.8	144.9	78.8	44.0	31.3	29.0	35.9	34.8
55°	80.0	97.4	105.5	56.8	32.5	23.2	24.3	30.1	29.0
57.5°	53.3	68.4	73.0	39.4	23.2	17.4	19.7	24.3	23.2
60°	34.8	46.4	49.8	27.8	18.5	13.9	16.2	18.5	17.4
62.5°	22.0	31.3	32.5	18.5	13.9	11.6	11.6	13.9	12.8
65°	13.9	19.7	20.9	13.9	10.4	8.1	8.1	10.4	9.3
67.5°	9.3	12.8	12.8	9.3	8.1	5.8	5.8	7.0	5.8
70°	5.8	7.0	7.0	7.0	4.6	4.6	3.5	3.5	2.3
72.5°	3.5	3.5	3.5	3.5	2.3	2.3	2.3	1.2	1.2
75°	1.2	1.2	2.3	1.2	1.2	1.2	1.2	0.0	0.0
77.5°	0.0	1.2	1.2	1.2	1.2	1.2	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
82.5°	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
87.5°	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

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



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— 0°-180° - - 45°-225° - - - - 90°-270°

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