

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: P886658

Luminaire Tested: ML310LSFL9FS1E-TIR4D25AWW-TL3SWMB-1000LM-3000K

Issue Date: 7/8/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P886658  
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-3000K  
Description: 3IN SQUARE ML FLEX, SELECTABLE CCT, WITH WW TIR, MATTE BLACK TRIM  
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

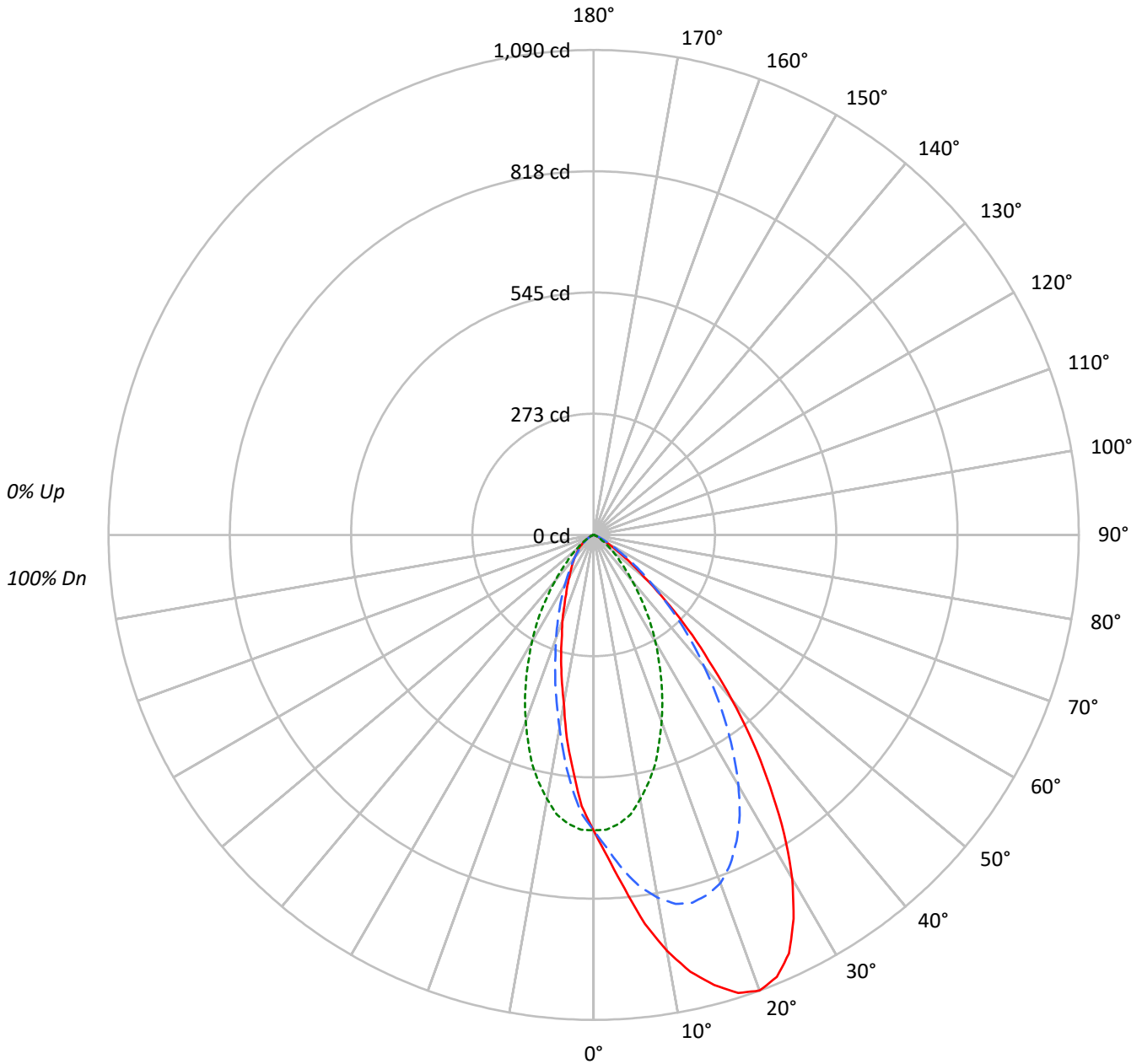
Lumens per Lamp: N/A  
Luminaire Lumens: 800.8 lumens  
Efficiency: N/A  
Efficacy: 58.0 lumens/watt  
Spacing Criteria (0/90/45): 1.14 / 0.8 / 1  
Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')  
CIE Type: Direct

Input Watts (W): 13.8  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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					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	100	98	97	96	95	94	92
	1	113	110	107	104	110	107	105	103	103	101	100	100	98	97	96	95	94	92	92	92	90	87	85	84	84	
	2	106	101	96	92	104	99	95	91	96	92	89	93	90	87	90	87	85	84	84	84	82	79	83	80	78	76
	3	100	92	87	82	98	91	86	82	88	84	80	86	82	79	83	80	78	76	76	76	73	72	78	74	71	69
	4	94	85	79	74	92	84	78	74	82	77	73	80	75	72	78	74	71	69	69	69	65	65	72	68	65	63
	5	88	79	72	67	86	78	71	67	76	70	66	74	69	65	72	68	65	63	63	63	60	60	67	63	60	58
	6	83	73	66	61	81	72	66	61	70	65	60	69	64	60	67	63	60	58	58	58	55	55	63	58	55	53
	7	78	68	61	56	77	67	60	56	66	60	56	64	59	55	63	58	55	53	53	53	51	51	59	54	51	49
	8	74	63	56	52	72	62	56	52	61	55	51	60	55	51	59	54	51	49	49	49	47	47	56	51	47	46
	9	70	59	52	48	69	58	52	48	57	52	48	56	51	47	56	51	47	46	46	46	44	44	52	47	44	43
	10	66	55	49	44	65	55	49	44	54	48	44	53	48	44	52	47	44	43	43	43	41	41	48	43	40	38

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°	135°	180°
0°	114356	114356	114356	114356	114356
5°	137907	130559	112649	98144	91696
10°	165943	144748	105435	76999	67206
15°	186731	152570	95122	59480	50423
20°	199734	152650	81833	45196	37407
25°	197248	144306	68315	34262	27763
30°	177388	129382	55205	25554	21637
35°	145279	109117	42469	19174	17850
40°	108543	86871	30283	14906	14906
45°	72922	65347	20435	11106	12373
50°	40511	45521	14147	8333	9994
55°	21469	28315	8708	6546	7777
60°	10712	15328	5718	4994	5339
65°	5053	7580	3790	2975	3382
70°	2618	3122	2065	1561	1057
75°	665	1397	665	665	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: 73165 cd/sqm



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	62.2	7.8
10°-20°	167.1	20.9
20°-30°	215.6	26.9
30°-40°	186.7	23.3
40°-50°	110.6	13.8
50°-60°	44.6	5.6
60°-70°	12.4	1.6
70°-80°	1.6	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°	444.9	55.6
0°-40°	631.6	78.9
0°-60°	786.7	98.2
0°-90°	800.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	800.8	100.0

**CANDELA DISTRIBUTION:**

	0°	45°	90°	135°	180°	Flux
0°	664	664	664	664	664	
5°	798	755	652	568	530	81
15°	1047	856	534	334	283	296
25°	1038	759	360	180	146	469
35°	691	519	202	91	85	429
45°	299	268	84	46	51	232
55°	72	94	29	22	26	71
65°	12	19	9	7	8	14
75°	1	2	1	1	0	2
85°	0	0	0	0	0	0
90°	0	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°	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0	664.0
2.5°	724.1	714.8	705.5	682.7	663.0	642.3	626.8	614.3	610.2
5°	797.7	790.4	755.2	704.4	651.6	604.0	567.7	542.8	530.4
7.5°	881.6	855.7	797.7	714.8	634.0	560.5	504.5	469.3	461.0
10°	948.9	917.9	827.7	714.8	602.9	514.9	440.3	400.9	384.3
12.5°	1005.9	964.5	849.5	704.4	569.8	465.1	384.3	340.8	330.5
15°	1047.3	998.7	855.7	684.8	533.5	412.3	333.6	294.2	282.8
17.5°	1079.5	1016.3	848.4	658.9	489.0	364.7	284.9	250.7	237.2
20°	1089.8	1018.3	832.9	622.6	446.5	319.1	246.6	213.4	204.1
22.5°	1075.3	1000.7	801.8	586.4	403.0	276.6	211.3	181.3	172.0
25°	1038.0	960.3	759.4	538.7	359.5	238.3	180.3	152.3	146.1
27.5°	972.8	900.2	710.7	491.0	316.0	204.1	152.3	130.5	127.4
30°	892.0	826.7	650.6	441.3	277.6	174.0	128.5	112.9	108.8
32.5°	796.6	743.8	585.3	393.7	239.3	148.1	108.8	97.4	96.3
35°	691.0	653.7	519.0	338.8	202.0	123.3	91.2	83.9	84.9
37.5°	588.4	557.3	451.7	288.0	165.8	100.5	78.7	73.6	74.6
40°	482.8	465.1	386.4	238.3	134.7	81.8	66.3	64.2	66.3
42.5°	382.3	378.1	325.3	197.9	107.7	66.3	55.9	54.9	58.0
45°	299.4	300.4	268.3	158.5	83.9	51.8	45.6	48.7	50.8
47.5°	217.6	231.0	212.4	122.2	68.4	42.5	37.3	42.5	44.5
50°	151.2	170.9	169.9	94.3	52.8	35.2	31.1	37.3	37.3
52.5°	109.8	122.2	129.5	70.4	39.4	28.0	25.9	32.1	31.1
55°	71.5	87.0	94.3	50.8	29.0	20.7	21.8	26.9	25.9
57.5°	47.7	61.1	65.3	35.2	20.7	15.5	17.6	21.8	20.7
60°	31.1	41.4	44.5	24.9	16.6	12.4	14.5	16.6	15.5
62.5°	19.7	28.0	29.0	16.6	12.4	10.4	10.4	12.4	11.4
65°	12.4	17.6	18.6	12.4	9.3	7.3	7.3	9.3	8.3
67.5°	8.3	11.4	11.4	8.3	7.3	5.2	5.2	6.2	5.2
70°	5.2	6.2	6.2	6.2	4.1	4.1	3.1	3.1	2.1
72.5°	3.1	3.1	3.1	3.1	2.1	2.1	2.1	1.0	1.0
75°	1.0	1.0	2.1	1.0	1.0	1.0	1.0	0.0	0.0
77.5°	0.0	1.0	1.0	1.0	1.0	1.0	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
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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Scaled Data Report







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

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