

LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P990986

Luminaire Tested: **ML4ALSFLD2W1E-TIR4D40FL-TL4SDMW-600LM-2700K**

Issue Date: 5/13/2025

Tested By:

Approved By:



Cooper Lighting Solutions laboratories have been accredited by National Voluntary Laboratory Accreditation Program (NVLAP) that it adheres to the requirements of ISO/IEC 17025:2005 and appropriate IESNA test methods. This report must not be used to claim product certification, approval or endorsement by NVLAP, NIST or any agency of the Federal Government. Results contained in this report are valid for luminaire sample tested, as supplied by requestor. Information related to the luminaire tested has been supplied by requestor and can affect the validity of the test results. Report shall not be reproduced except in full without approval of Cooper Lighting Solutions Lighting Laboratory. Test performed at address noted above.

Test Information

Test Method: LM-79-08
 Report Number: P990986
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4ALSFLD2W1E-TIR4D40FL-TL4SDMW-600LM-2700K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR, MATTE WHITE TRIM
 Light Source: (1) D2W LED 90CRI / 2700K CCT
 Ballast/Driver: -

Summary

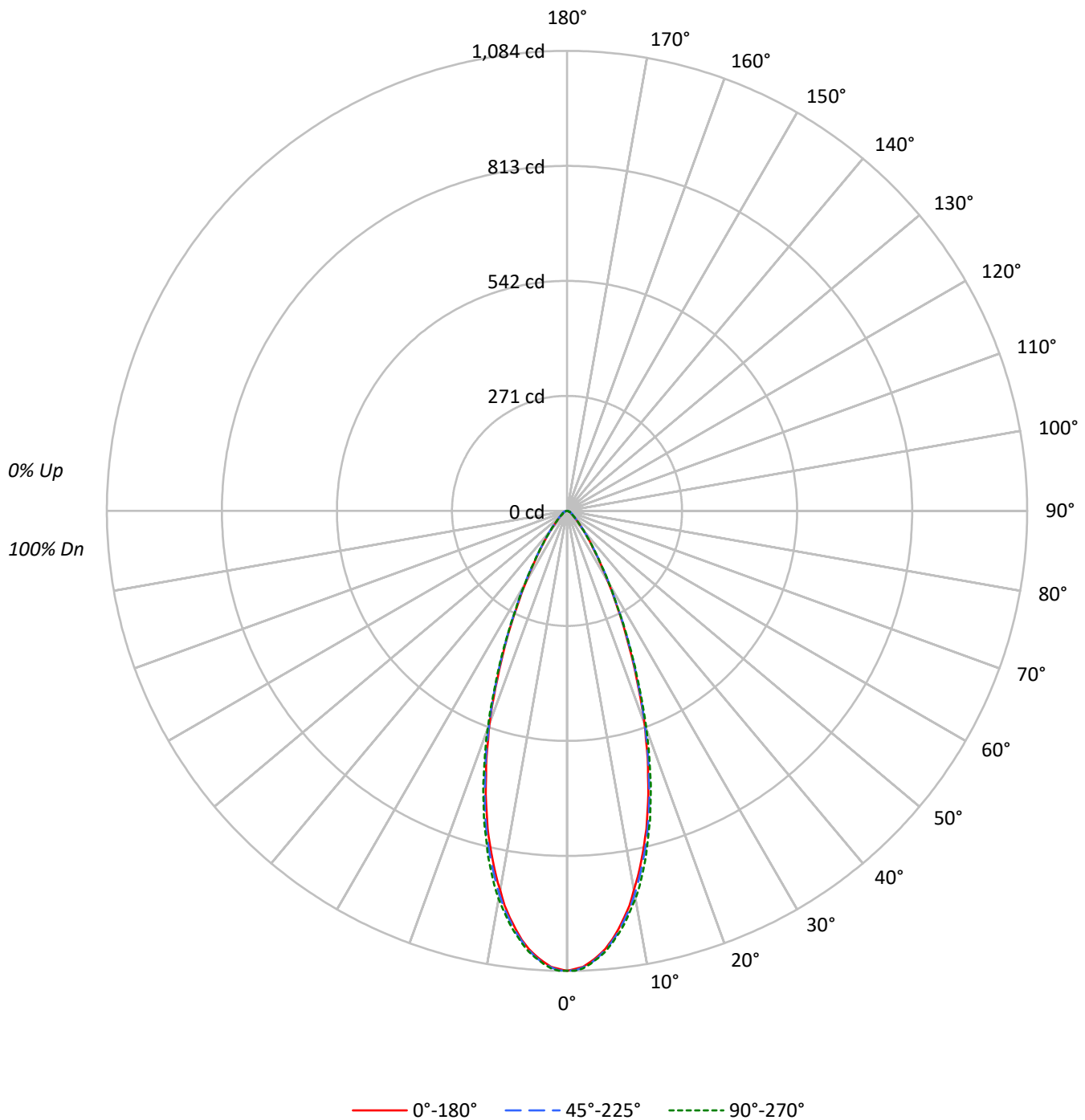
Lumens per Lamp: N/A
 Luminaire Lumens: 584.5 lumens
 Efficiency: N/A
 Efficacy: 70.4 lumens/watt
 Spacing Criteria (0/90/45): 0.64 / 0.65 / 0.65
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 8.3
 Input Voltage (V): NR
 Input Current (Ain): 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: 25 FT

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	GONIO 1 IN0055	4/22/2021	10/22/2021
Power Meter	XITRON 2801 IN0197	12/1/2020	12/1/2021
AC Power Source	CHROMA 61505 IN0196	12/1/2020	12/1/2021
DC Power Supply	AGILENT E3634A IN0198	11/30/2020	11/30/2021
Room Thermometer	ONSET IN0143	12/1/2020	12/1/2021

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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
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50
RCR																	
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102
1	114	111	108	106	111	109	107	105	105	103	101		101	100	98		98
2	108	104	100	96	106	102	98	95	99	96	93		96	93	91		93
3	103	97	92	88	101	96	91	88	93	89	86		91	88	85		88
4	98	91	86	82	97	90	85	81	88	84	81		86	82	80		84
5	94	86	81	76	92	85	80	76	83	79	75		82	78	75		80
6	90	81	76	72	88	81	75	72	79	75	71		78	74	71		77
7	86	77	72	68	85	77	71	68	75	71	67		74	70	67		73
8	82	73	68	64	81	73	68	64	72	67	64		71	67	63		70
9	79	70	65	61	78	70	64	61	69	64	61		68	63	60		67
10	76	67	61	58	75	66	61	58	66	61	58		65	61	58		64

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	104974	104974	104974
5°	100746	100970	101369
10°	89241	90264	91346
15°	73515	74628	75731
20°	55165	55289	56423
25°	36043	36546	36973
30°	21489	22205	22205
35°	12560	13044	13044
40°	7702	7929	7702
45°	4768	5083	4768
50°	3150	3497	3150
55°	2348	2753	2348
60°	2015	2364	2131
65°	1857	2132	1994
70°	1813	2124	1813
75°	1310	1946	1310
80°	335	948	335
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.2	16.3
10°-20°	203.3	34.8
20°-30°	157.8	27.0
30°-40°	71.7	12.3
40°-50°	29.2	5.0
50°-60°	13.9	2.4
60°-70°	8.9	1.5
70°-80°	4.3	0.7
80°-90°	0.3	0.1
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°	456.3	78.1
0°-40°	528.0	90.3
0°-60°	571.0	97.7
0°-90°	584.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	584.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1084	1084	1084	1084	1084	
5°	1036	1034	1038	1040	1042	95
15°	733	735	744	751	755	201
25°	337	338	342	343	346	156
35°	106	107	110	111	110	70
45°	35	36	37	36	35	28
55°	14	14	16	15	14	13
65°	8	9	9	9	9	8
75°	4	4	5	4	4	4
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°
0°	1083.6	1083.6	1083.6	1083.6	1083.6
1°	1079.5	1080.1	1083.0	1081.9	1083.6
2°	1074.9	1074.9	1076.6	1076.1	1079.0
3°	1063.9	1065.0	1067.4	1066.2	1068.5
4°	1051.1	1051.7	1054.6	1054.0	1055.8
5°	1036.0	1033.7	1038.3	1039.5	1042.4
6°	1016.3	1016.9	1019.8	1020.9	1023.2
7°	993.1	994.2	998.3	999.5	1002.4
8°	967.5	968.7	972.8	978.0	980.3
9°	941.4	941.4	947.8	951.9	953.6
10°	907.2	911.8	917.6	924.0	928.6
11°	876.4	879.3	885.7	892.1	898.5
12°	842.2	845.1	852.0	860.2	864.2
13°	806.8	810.2	818.4	823.6	830.0
14°	772.5	774.8	781.8	788.2	789.9
15°	733.0	734.8	744.1	751.0	755.1
16°	694.7	695.3	704.0	709.8	714.5
17°	653.0	656.4	660.5	669.2	674.4
18°	615.2	614.6	621.6	628.0	631.5
19°	570.5	574.6	578.7	585.6	589.7
20°	535.1	533.4	536.3	542.7	547.3
22.5°	428.9	431.2	434.7	438.2	439.4
25°	337.2	338.4	341.9	343.0	345.9
27.5°	257.1	259.4	262.3	260.6	262.3
30°	192.1	193.3	198.5	197.9	198.5
32.5°	142.8	145.1	147.4	147.4	148.0
35°	106.2	107.4	110.3	110.9	110.3
37.5°	80.1	81.3	84.2	83.0	81.3
40°	60.9	60.9	62.7	62.7	60.9
42.5°	45.9	46.4	48.2	47.6	45.9
45°	34.8	36.0	37.1	36.0	34.8
47.5°	26.7	27.9	29.0	27.9	26.7
50°	20.9	22.1	23.2	22.1	20.9
52.5°	16.8	18.0	19.2	18.0	16.8
55°	13.9	14.5	16.3	15.1	13.9
57.5°	11.6	12.8	13.9	12.8	12.2
60°	10.4	11.0	12.2	11.0	11.0
62.5°	9.3	9.9	10.4	9.9	9.3
65°	8.1	8.7	9.3	9.3	8.7
67.5°	7.5	7.5	8.7	8.1	7.5
70°	6.4	6.4	7.5	7.0	6.4
72.5°	5.2	5.2	6.4	5.8	4.6
75°	3.5	4.1	5.2	4.1	3.5
77.5°	1.7	2.3	3.5	2.3	1.7
80°	0.6	1.2	1.7	1.2	0.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
82.5°	0.6	0.6	0.6	0.6	0.0
85°	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0
90°	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)