

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: P990982

Luminaire Tested: **ML4ALSFLD2W1E-TIR4D40FL-TL4SDMB-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: P990982
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4ALSFLD2W1E-TIR4D40FL-TL4SDMB-600LM-2700K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR, MATTE BLACK TRIM
 Light Source: (1) D2W LED 90CRI / 2700K CCT
 Ballast/Driver: -

Summary

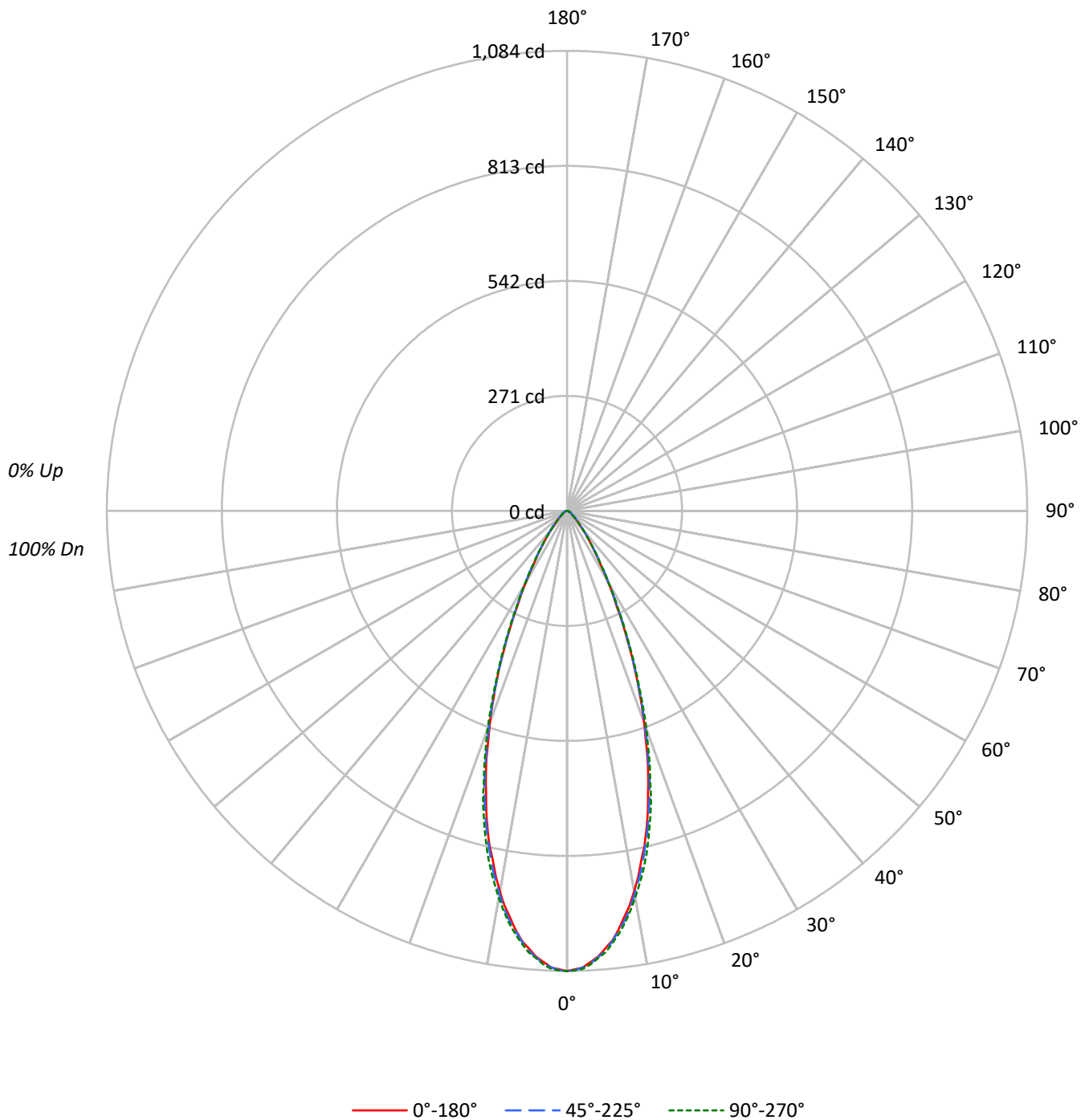
Lumens per Lamp: N/A
 Luminaire Lumens: 580.0 lumens
 Efficiency: N/A
 Efficacy: 69.9 lumens/watt
 Spacing Criteria (0/90/45): 0.64 / 0.65 / 0.64
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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	109	106	111	109	107	105	105	103	102		101	100	98		98
2	108	104	100	97	106	102	98	95	99	96	93		96	93	91		93
3	103	97	92	89	101	96	91	88	93	90	87		91	88	85		89
4	99	91	86	82	97	90	85	82	88	84	81		86	83	80		84
5	94	86	81	77	93	85	80	76	84	79	76		82	78	75		80
6	90	82	76	72	89	81	76	72	79	75	71		78	74	71		77
7	86	78	72	68	85	77	72	68	76	71	67		74	70	67		73
8	83	74	68	64	81	73	68	64	72	67	64		71	67	64		70
9	79	70	65	61	78	70	65	61	69	64	61		68	64	61		67
10	76	67	62	58	75	67	62	58	66	61	58		65	61	58		65

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	105061	105061	105061
5°	100659	101058	101505
10°	89546	90176	91031
15°	73715	74528	75811
20°	54701	55247	56320
25°	36054	36428	36984
30°	21556	21947	22014
35°	12500	12973	12973
40°	7487	7929	7562
45°	4699	4932	4535
50°	3059	3406	2969
55°	2162	2550	2263
60°	1918	2131	1918
65°	1719	1994	1857
70°	1473	1983	1643
75°	1085	1722	1085
80°	335	669	335
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.3	16.4
10°-20°	203.2	35.0
20°-30°	157.2	27.1
30°-40°	71.0	12.2
40°-50°	28.3	4.9
50°-60°	13.0	2.2
60°-70°	8.1	1.4
70°-80°	3.7	0.6
80°-90°	0.2	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°	455.7	78.6
0°-40°	526.7	90.8
0°-60°	568.0	97.9
0°-90°	580.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	580.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1084	1084	1084	1084	1084	
5°	1035	1038	1039	1039	1044	95
15°	735	737	743	752	756	201
25°	337	337	341	341	346	156
35°	106	107	110	110	110	69
45°	34	35	36	35	33	28
55°	13	14	15	14	13	12
65°	8	8	9	8	8	7
75°	3	4	5	4	3	3
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°	1084.5	1084.5	1084.5	1084.5	1084.5
1°	1080.4	1082.7	1082.2	1081.0	1083.3
2°	1076.4	1076.4	1076.4	1075.8	1079.3
3°	1064.2	1068.2	1067.1	1066.5	1070.0
4°	1052.6	1053.1	1054.3	1054.3	1056.0
5°	1035.1	1038.0	1039.2	1039.2	1043.8
6°	1018.3	1017.7	1020.0	1021.2	1024.1
7°	994.5	995.7	996.8	1001.5	1003.8
8°	967.2	969.5	974.8	977.1	980.6
9°	941.7	942.2	948.1	949.8	954.4
10°	910.3	912.6	916.7	923.7	925.4
11°	878.4	880.1	884.8	890.6	895.2
12°	841.2	847.0	852.8	858.6	864.5
13°	811.0	811.6	814.5	825.0	830.8
14°	773.3	775.6	781.4	786.1	794.2
15°	735.0	736.7	743.1	752.4	755.9
16°	692.0	697.3	704.8	709.4	717.6
17°	653.7	655.5	664.2	668.2	671.1
18°	614.2	614.2	620.0	625.8	630.5
19°	568.9	573.6	577.7	584.0	586.9
20°	530.6	533.0	535.9	541.7	546.3
22.5°	431.9	430.2	433.7	437.7	440.1
25°	337.3	337.3	340.8	340.8	346.0
27.5°	253.7	256.0	259.5	259.5	261.8
30°	192.7	193.3	196.2	196.8	196.8
32.5°	140.5	144.0	146.9	146.9	145.7
35°	105.7	106.8	109.7	109.7	109.7
37.5°	79.0	80.1	82.4	81.3	79.5
40°	59.2	59.8	62.7	61.0	59.8
42.5°	44.7	45.3	47.0	45.9	44.1
45°	34.3	34.8	36.0	34.8	33.1
47.5°	26.1	26.7	27.9	26.7	25.5
50°	20.3	20.9	22.6	20.9	19.7
52.5°	15.7	16.8	18.0	16.8	15.7
55°	12.8	13.9	15.1	13.9	13.4
57.5°	11.0	11.6	12.8	12.2	11.6
60°	9.9	9.9	11.0	10.5	9.9
62.5°	8.7	8.7	9.9	9.3	8.7
65°	7.5	8.1	8.7	8.1	8.1
67.5°	6.4	7.0	7.5	7.5	7.0
70°	5.2	5.8	7.0	6.4	5.8
72.5°	4.6	4.6	5.8	5.2	4.6
75°	2.9	3.5	4.6	3.5	2.9
77.5°	1.2	2.3	2.9	1.7	1.7
80°	0.6	0.6	1.2	0.6	0.6

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
82.5°	0.0	0.6	0.6	0.0	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)