

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: P990983

Luminaire Tested: **ML4ALSFLD2W1E-TIR4D40FL-TL4SDMB-600LM-3000K**

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: P990983
 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-3000K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR, MATTE BLACK TRIM
 Light Source: (1) D2W LED 90CRI / 3000K CCT
 Ballast/Driver: -

Summary

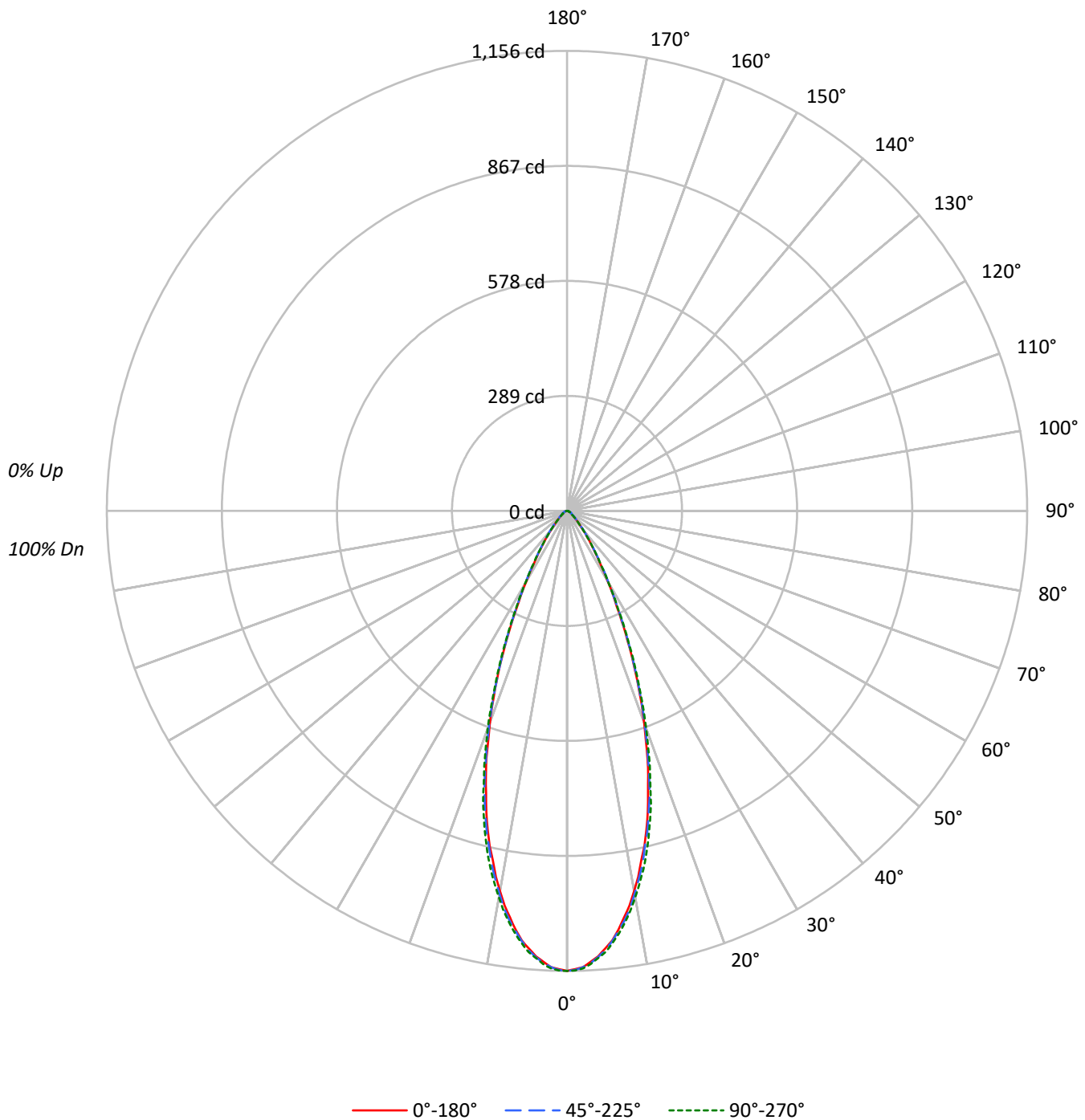
Lumens per Lamp: N/A
 Luminaire Lumens: 618.4 lumens
 Efficiency: N/A
 Efficacy: 74.5 lumens/watt
 Spacing Criteria (0/90/45): 0.64 / 0.65 / 0.64
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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°	111998	111998	111998
5°	107310	107729	108215
10°	95458	96127	97042
15°	78579	79452	80816
20°	58320	58887	60041
25°	38438	38833	39432
30°	22988	23402	23469
35°	13316	13837	13837
40°	7980	8448	8056
45°	5001	5261	4836
50°	3270	3632	3165
55°	2297	2719	2398
60°	2034	2286	2034
65°	1834	2132	1994
70°	1586	2096	1756
75°	1160	1871	1160
80°	335	669	335
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.6	16.4
10°-20°	216.6	35.0
20°-30°	167.6	27.1
30°-40°	75.7	12.2
40°-50°	30.1	4.9
50°-60°	13.9	2.2
60°-70°	8.6	1.4
70°-80°	4.0	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°	485.8	78.6
0°-40°	561.5	90.8
0°-60°	605.5	97.9
0°-90°	618.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	618.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1156	1156	1156	1156	1156	
5°	1104	1107	1108	1108	1113	101
15°	784	785	792	802	806	214
25°	360	360	363	363	369	166
35°	113	114	117	117	117	74
45°	36	37	38	37	35	29
55°	14	15	16	15	14	13
65°	8	9	9	9	9	8
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°	1156.1	1156.1	1156.1	1156.1	1156.1
1°	1151.8	1154.2	1153.6	1152.4	1154.9
2°	1147.4	1147.4	1147.4	1146.8	1150.5
3°	1134.4	1138.8	1137.5	1136.9	1140.6
4°	1122.1	1122.7	1123.9	1123.9	1125.8
5°	1103.5	1106.6	1107.8	1107.8	1112.8
6°	1085.5	1084.9	1087.4	1088.6	1091.7
7°	1060.2	1061.4	1062.7	1067.6	1070.1
8°	1031.1	1033.6	1039.1	1041.6	1045.3
9°	1003.9	1004.5	1010.7	1012.5	1017.5
10°	970.4	972.9	977.2	984.7	986.5
11°	936.4	938.3	943.2	949.4	954.3
12°	896.8	903.0	909.2	915.4	921.5
13°	864.6	865.2	868.3	879.5	885.6
14°	824.4	826.8	833.0	838.0	846.7
15°	783.5	785.4	792.2	802.1	805.8
16°	737.7	743.3	751.3	756.3	765.0
17°	696.9	698.7	708.0	712.4	715.4
18°	654.8	654.8	661.0	667.2	672.1
19°	606.5	611.5	615.8	622.6	625.7
20°	565.7	568.1	571.2	577.4	582.4
22.5°	460.5	458.6	462.3	466.7	469.1
25°	359.6	359.6	363.3	363.3	368.9
27.5°	270.5	272.9	276.6	276.6	279.1
30°	205.5	206.1	209.2	209.8	209.8
32.5°	149.8	153.5	156.6	156.6	155.3
35°	112.6	113.9	117.0	117.0	117.0
37.5°	84.2	85.4	87.9	86.6	84.8
40°	63.1	63.7	66.8	65.0	63.7
42.5°	47.7	48.3	50.1	48.9	47.0
45°	36.5	37.1	38.4	37.1	35.3
47.5°	27.9	28.5	29.7	28.5	27.2
50°	21.7	22.3	24.1	22.3	21.0
52.5°	16.7	17.9	19.2	17.9	16.7
55°	13.6	14.9	16.1	14.9	14.2
57.5°	11.8	12.4	13.6	13.0	12.4
60°	10.5	10.5	11.8	11.1	10.5
62.5°	9.3	9.3	10.5	9.9	9.3
65°	8.0	8.7	9.3	8.7	8.7
67.5°	6.8	7.4	8.0	8.0	7.4
70°	5.6	6.2	7.4	6.8	6.2
72.5°	5.0	5.0	6.2	5.6	5.0
75°	3.1	3.7	5.0	3.7	3.1
77.5°	1.2	2.5	3.1	1.9	1.9
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)