

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: P990971

Luminaire Tested: **ML4ALSFLD2W1E-TIR4D25NFL-TL4SDMW-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: P990971
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4ALSFLD2W1E-TIR4D25NFL-TL4SDMW-600LM-3000K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR, MATTE WHITE TRIM
 Light Source: (1) D2W LED 90CRI / 3000K CCT
 Ballast/Driver: -

Summary

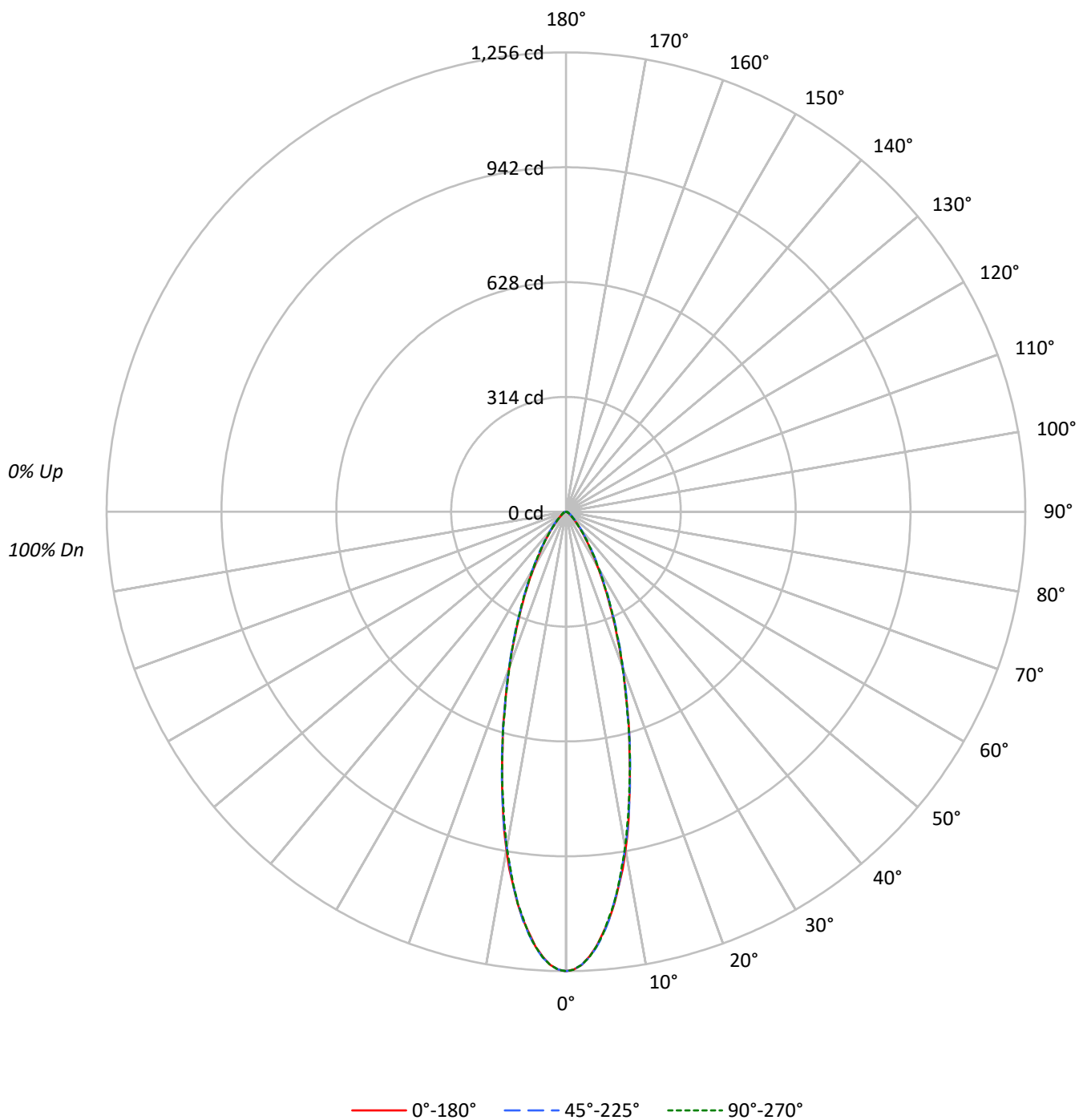
Lumens per Lamp: N/A
 Luminaire Lumens: 549.6 lumens
 Efficiency: N/A
 Efficacy: 66.2 lumens/watt
 Spacing Criteria (0/90/45): 0.52 / 0.52 / 0.57
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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	101		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	86	82	88	84	81		86	83	80		84
5	94	86	81	77	93	85	80	77	84	79	76		82	78	75		81
6	90	82	76	72	89	81	76	72	80	75	72		78	74	71		77
7	86	78	72	68	85	77	72	68	76	71	68		75	71	67		74
8	83	74	69	65	82	73	68	65	72	68	64		71	67	64		71
9	80	71	65	62	78	70	65	62	69	65	61		68	64	61		68
10	76	68	62	59	76	67	62	59	66	62	59		66	61	58		65

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	121676	121676	121676
5°	112455	112873	112756
10°	92281	91730	91612
15°	67226	67788	67417
20°	46670	47051	46536
25°	30603	31137	31201
30°	19162	20337	19990
35°	12063	13021	12429
40°	7588	8283	7588
45°	4822	5425	4740
50°	3165	3723	3165
55°	2297	2821	2398
60°	1918	2267	2034
65°	1696	1994	1834
70°	1586	1926	1586
75°	1160	1609	1160
80°	669	669	335
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.3	18.8
10°-20°	185.5	33.7
20°-30°	135.3	24.6
30°-40°	69.0	12.6
40°-50°	30.1	5.5
50°-60°	14.0	2.6
60°-70°	8.2	1.5
70°-80°	3.9	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°	424.1	77.2
0°-40°	493.1	89.7
0°-60°	537.2	97.7
0°-90°	549.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	549.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1256	1256	1256	1256	1256	
5°	1156	1161	1161	1158	1160	103
15°	670	675	676	673	672	185
25°	286	289	291	292	292	133
35°	102	105	110	109	105	66
45°	35	37	40	37	35	28
55°	14	15	17	15	14	13
65°	7	8	9	9	8	7
75°	3	4	4	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°	1256.0	1256.0	1256.0	1256.0	1256.0
1°	1251.6	1250.4	1251.6	1251.6	1252.2
2°	1239.3	1238.0	1238.6	1238.0	1239.3
3°	1217.6	1218.9	1220.7	1219.5	1219.5
4°	1191.6	1194.7	1193.5	1191.6	1191.6
5°	1156.4	1161.3	1160.7	1158.3	1159.5
6°	1122.4	1123.6	1123.6	1120.5	1118.1
7°	1080.3	1080.3	1077.2	1080.3	1079.7
8°	1034.0	1037.7	1034.0	1033.3	1030.9
9°	989.4	986.3	982.0	982.6	979.5
10°	938.1	935.0	932.5	933.2	931.3
11°	886.8	880.0	884.3	880.6	876.9
12°	828.0	828.0	829.3	823.7	823.7
13°	775.5	775.5	775.5	771.8	771.8
14°	721.7	724.1	724.1	722.9	722.3
15°	670.3	675.3	675.9	673.4	672.2
16°	625.2	628.9	625.8	622.1	624.6
17°	578.8	581.9	577.0	577.6	573.9
18°	532.4	535.5	534.9	533.7	532.4
19°	491.6	494.7	495.3	491.0	490.4
20°	452.7	455.1	456.4	453.9	451.4
22.5°	361.1	366.1	367.9	364.2	364.9
25°	286.3	288.8	291.3	291.9	291.9
27.5°	225.1	225.7	231.9	231.9	228.8
30°	171.3	175.6	181.8	181.8	178.7
32.5°	133.6	136.0	141.6	141.6	138.5
35°	102.0	105.1	110.1	108.8	105.1
37.5°	78.5	80.4	84.1	83.5	80.4
40°	60.0	62.5	65.5	63.7	60.0
42.5°	46.4	48.2	51.3	48.2	45.1
45°	35.2	37.1	39.6	37.1	34.6
47.5°	27.2	29.1	31.5	29.1	26.6
50°	21.0	22.9	24.7	22.9	21.0
52.5°	16.7	17.9	20.4	18.6	17.3
55°	13.6	14.8	16.7	14.8	14.2
57.5°	11.1	12.4	13.6	13.0	11.7
60°	9.9	10.5	11.7	11.1	10.5
62.5°	8.7	9.3	9.9	9.3	8.7
65°	7.4	8.0	8.7	8.7	8.0
67.5°	6.2	6.8	8.0	7.4	6.8
70°	5.6	6.2	6.8	6.2	5.6
72.5°	4.3	4.9	5.6	4.9	4.3
75°	3.1	3.7	4.3	3.7	3.1
77.5°	1.9	2.5	3.1	2.5	1.9
80°	1.2	1.2	1.2	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)