

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: P990969

Luminaire Tested: **ML4ALSFLD2W1E-TIR4D25NFL-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: P990969
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4ALSFLD2W1E-TIR4D25NFL-TL4SDMB-600LM-3000K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR, MATTE BLACK TRIM
 Light Source: (1) D2W LED 90CRI / 3000K CCT
 Ballast/Driver: -

Summary

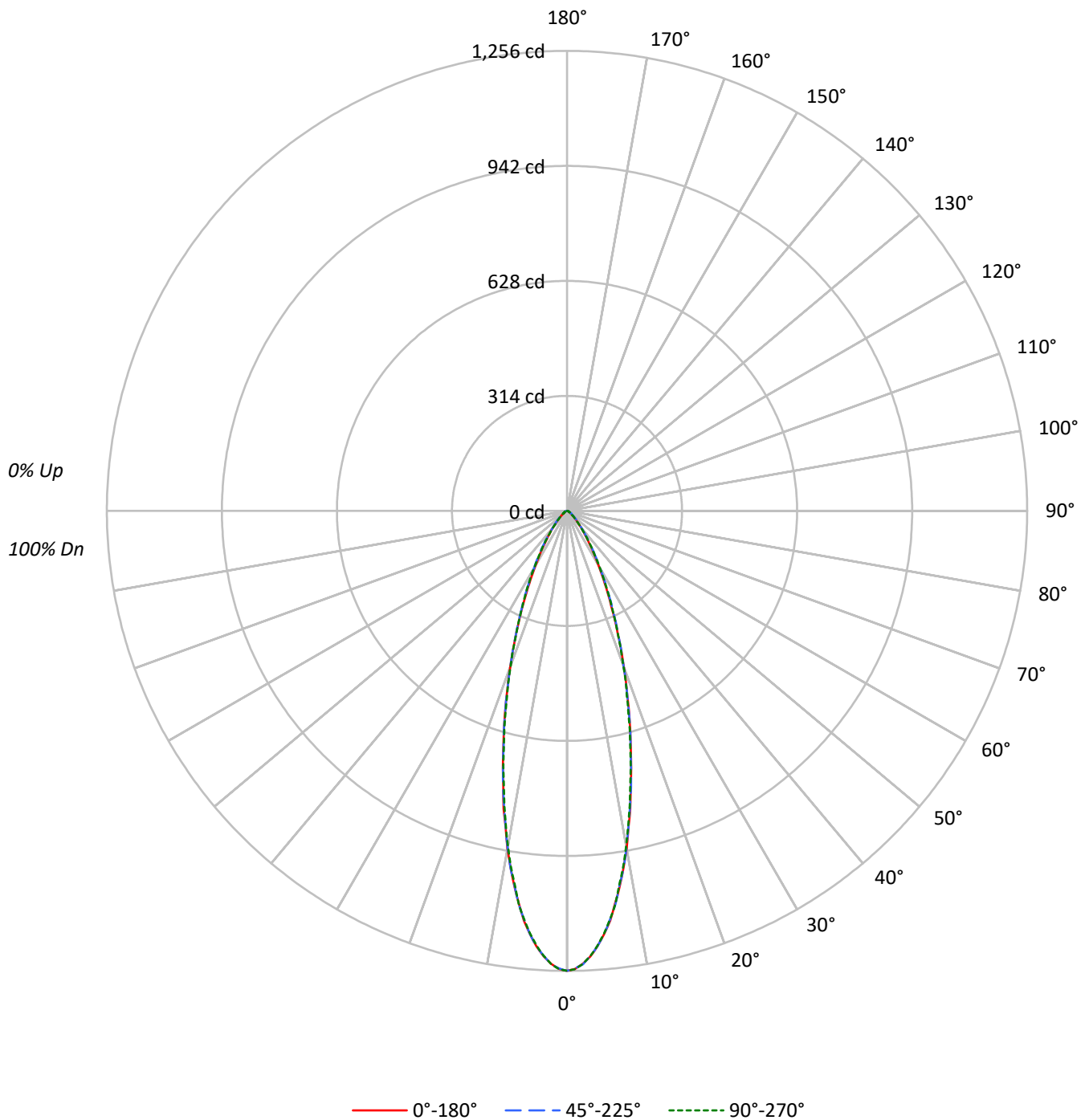
Lumens per Lamp: N/A
 Luminaire Lumens: 543.9 lumens
 Efficiency: N/A
 Efficacy: 65.5 lumens/watt
 Spacing Criteria (0/90/45): 0.52 / 0.52 / 0.56
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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	107	111	109	107	105	105	103	102		101	100	99		98
2	108	104	100	97	106	102	99	96	99	96	94		96	94	92		93
3	104	97	93	89	102	96	92	88	93	90	87		91	88	86		89
4	99	92	87	83	97	91	86	82	89	84	81		87	83	80		85
5	94	87	81	77	93	86	81	77	84	80	76		82	79	76		81
6	90	82	77	73	89	81	76	72	80	75	72		79	75	71		77
7	87	78	73	69	85	77	72	69	76	72	68		75	71	68		74
8	83	74	69	65	82	74	69	65	73	68	65		72	68	64		71
9	80	71	66	62	79	71	65	62	70	65	62		69	65	62		68
10	77	68	63	59	76	68	62	59	67	62	59		66	62	59		65

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	121646	121646	121646
5°	112844	112844	112610
10°	92055	91927	91386
15°	67347	67226	66915
20°	46773	46639	46320
25°	30432	31223	30827
30°	19106	20146	19934
35°	11862	12808	12370
40°	7588	8056	7512
45°	4754	5261	4576
50°	2984	3632	2984
55°	2094	2618	2196
60°	1686	2151	1802
65°	1559	1834	1559
70°	1218	1756	1416
75°	936	1385	936
80°	335	669	335
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.3	19.0
10°-20°	185.0	34.0
20°-30°	134.5	24.7
30°-40°	68.1	12.5
40°-50°	29.2	5.4
50°-60°	13.1	2.4
60°-70°	7.3	1.3
70°-80°	3.2	0.6
80°-90°	0.1	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°	422.8	77.7
0°-40°	491.0	90.3
0°-60°	533.2	98.0
0°-90°	543.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	543.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1256	1256	1256	1256	1256	
5°	1160	1160	1160	1158	1158	103
15°	672	671	670	671	667	186
25°	285	288	292	290	288	133
35°	100	103	108	107	105	65
45°	35	36	38	36	33	28
55°	12	14	16	14	13	12
65°	7	7	8	7	7	7
75°	2	3	4	3	2	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°	1255.7	1255.7	1255.7	1255.7	1255.7
1°	1250.8	1252.0	1249.6	1250.2	1251.4
2°	1237.2	1238.4	1239.0	1236.6	1237.8
3°	1218.0	1221.7	1216.8	1218.6	1216.8
4°	1192.0	1192.6	1192.0	1191.4	1190.1
5°	1160.4	1159.8	1160.4	1158.0	1158.0
6°	1125.2	1122.7	1122.1	1120.8	1121.4
7°	1079.4	1081.8	1082.5	1078.1	1081.8
8°	1034.8	1033.6	1031.1	1032.9	1028.6
9°	985.3	987.8	987.1	977.9	981.6
10°	935.8	937.0	934.5	925.9	929.0
11°	879.5	881.9	878.8	875.1	875.7
12°	831.8	826.2	826.2	826.8	822.5
13°	773.0	775.5	776.7	773.6	766.8
14°	724.1	722.3	721.6	717.9	718.5
15°	671.5	670.9	670.3	670.9	667.2
16°	625.1	622.0	625.7	621.4	620.1
17°	581.1	578.7	578.1	576.2	572.5
18°	534.7	533.5	534.7	530.4	527.9
19°	492.6	490.8	492.0	490.2	492.0
20°	453.7	452.4	452.4	450.6	449.3
22.5°	362.1	361.4	365.1	364.5	360.8
25°	284.7	287.8	292.1	289.6	288.4
27.5°	222.2	226.5	230.8	229.0	230.2
30°	170.8	174.5	180.1	179.5	178.2
32.5°	132.4	134.3	140.5	140.5	136.8
35°	100.3	102.7	108.3	107.1	104.6
37.5°	77.4	79.8	83.6	81.7	79.2
40°	60.0	60.7	63.7	61.9	59.4
42.5°	45.2	47.0	49.5	47.7	44.6
45°	34.7	35.9	38.4	35.9	33.4
47.5°	26.0	27.9	30.3	27.9	25.4
50°	19.8	21.7	24.1	21.7	19.8
52.5°	15.5	16.7	19.2	17.3	16.1
55°	12.4	13.6	15.5	14.2	13.0
57.5°	10.5	11.1	13.0	11.8	11.1
60°	8.7	9.3	11.1	9.9	9.3
62.5°	7.4	8.0	9.3	8.7	8.0
65°	6.8	6.8	8.0	7.4	6.8
67.5°	5.6	6.2	6.8	6.8	6.2
70°	4.3	5.0	6.2	5.6	5.0
72.5°	3.7	4.3	5.0	4.3	3.7
75°	2.5	3.1	3.7	3.1	2.5
77.5°	1.2	1.9	2.5	1.9	1.2
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	0.0	0.0	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)