

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: P990973

Luminaire Tested: **ML4ALSFLD2W1E-TIR4D25NFL-TL4SDSL-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: P990973
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4ALSFLD2W1E-TIR4D25NFL-TL4SDSL-600LM-3000K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR,
 METALLIC SILVER TRIM
 Light Source: (1) D2W LED 90CRI / 3000K CCT
 Ballast/Driver: -

Summary

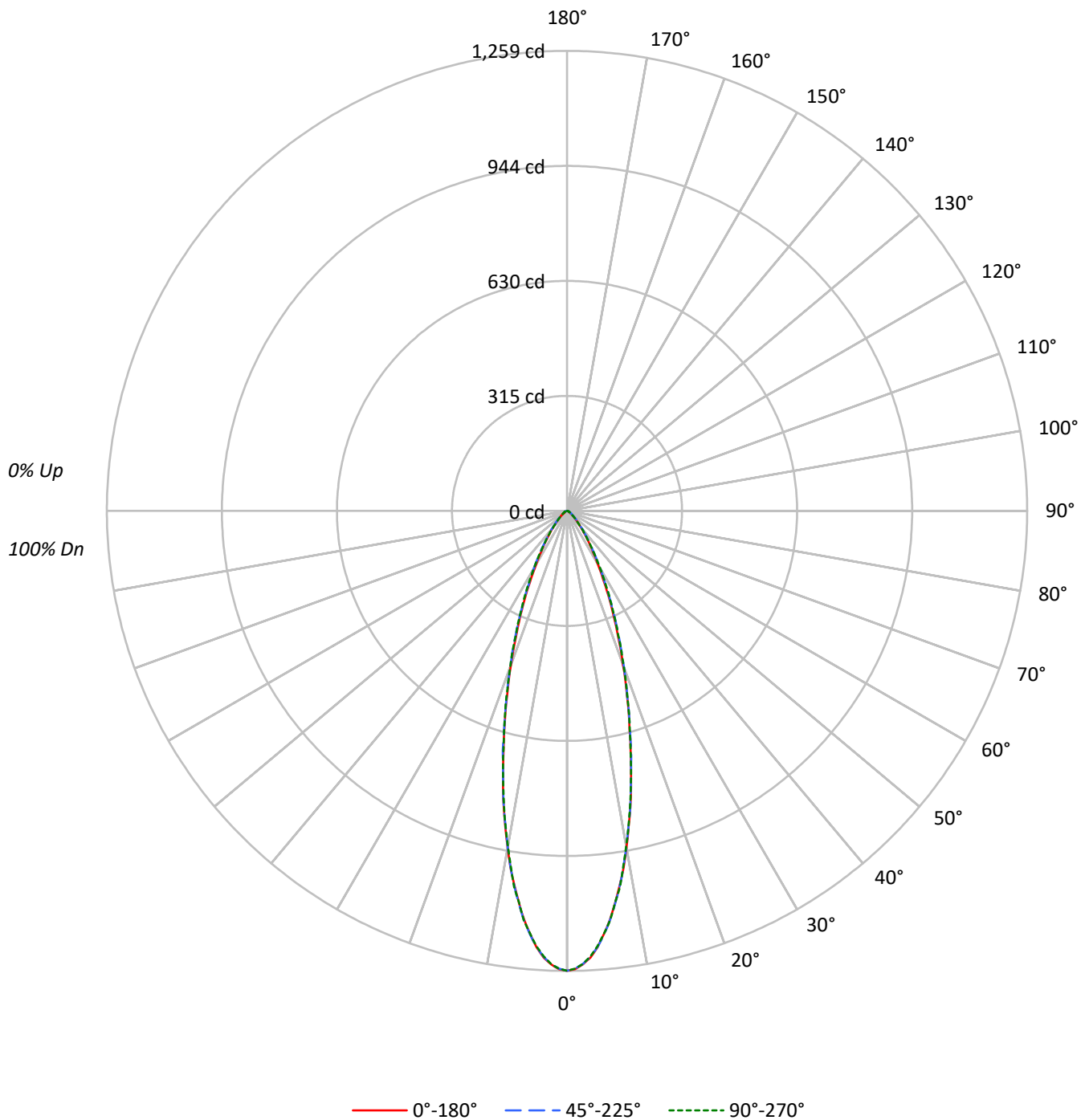
Lumens per Lamp: N/A
 Luminaire Lumens: 546.2 lumens
 Efficiency: N/A
 Efficacy: 65.8 lumens/watt
 Spacing Criteria (0/90/45): 0.52 / 0.52 / 0.56
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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	103	97	93	89	102	96	92	88	93	90	87		91	88	85		89
4	99	92	87	83	97	91	86	82	88	84	81		86	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		78	74	71		77
7	87	78	72	69	85	77	72	68	76	71	68		75	71	68		74
8	83	74	69	65	82	74	69	65	73	68	65		72	67	64		71
9	80	71	66	62	79	70	65	62	70	65	62		69	64	61		68
10	77	68	63	59	76	67	62	59	67	62	59		66	62	59		65

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	121927	121927	121927
5°	112951	113194	112892
10°	92094	91917	91671
15°	67337	68019	67337
20°	46124	46763	46887
25°	30357	31158	31351
30°	18894	20079	20079
35°	11850	12808	12441
40°	7512	8144	7588
45°	4836	5343	4754
50°	3075	3632	3165
55°	2196	2719	2297
60°	1802	2151	1918
65°	1559	1994	1696
70°	1416	1756	1586
75°	936	1385	936
80°	335	669	335
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	103.5	19.0
10°-20°	185.5	34.0
20°-30°	134.6	24.6
30°-40°	68.1	12.5
40°-50°	29.6	5.4
50°-60°	13.5	2.5
60°-70°	7.8	1.4
70°-80°	3.3	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°	423.7	77.6
0°-40°	491.9	90.1
0°-60°	535.0	97.9
0°-90°	546.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	546.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1259	1259	1259	1259	1259	
5°	1162	1163	1164	1160	1161	104
15°	671	672	678	674	671	185
25°	284	286	292	292	293	132
35°	100	103	108	108	105	65
45°	35	36	39	36	35	28
55°	13	14	16	15	14	12
65°	7	7	9	8	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°	1258.6	1258.6	1258.6	1258.6	1258.6
1°	1254.3	1253.1	1253.1	1253.1	1253.1
2°	1241.9	1239.5	1240.7	1240.7	1240.7
3°	1224.6	1221.5	1222.1	1219.0	1220.9
4°	1196.8	1197.4	1196.1	1194.9	1194.3
5°	1161.5	1162.7	1164.0	1160.3	1160.9
6°	1125.0	1123.7	1126.2	1123.7	1127.5
7°	1081.0	1084.1	1082.3	1082.3	1079.2
8°	1034.6	1037.7	1036.5	1036.5	1039.6
9°	988.8	982.0	987.0	985.8	983.9
10°	936.2	931.3	934.4	933.2	931.9
11°	883.0	883.0	879.9	877.5	881.8
12°	832.3	828.6	831.7	828.6	828.6
13°	777.8	775.4	776.0	777.8	776.0
14°	722.8	724.0	724.0	723.4	724.0
15°	671.4	672.0	678.2	674.5	671.4
16°	621.3	624.4	624.4	625.6	623.8
17°	578.0	579.2	579.2	579.2	579.2
18°	529.7	530.9	533.4	535.3	535.9
19°	490.7	491.3	494.4	495.0	493.8
20°	447.4	450.5	453.6	456.1	454.8
22.5°	358.3	360.8	367.6	366.3	364.5
25°	284.0	285.9	291.5	292.1	293.3
27.5°	219.1	224.0	229.0	230.2	232.1
30°	168.9	173.3	179.5	180.7	179.5
32.5°	131.2	133.7	139.2	140.5	138.6
35°	100.2	102.7	108.3	107.7	105.2
37.5°	77.4	79.2	83.5	82.3	79.8
40°	59.4	61.3	64.4	62.5	60.0
42.5°	45.2	47.0	49.5	47.6	45.2
45°	35.3	36.5	39.0	36.5	34.7
47.5°	27.2	28.5	30.3	28.5	26.6
50°	20.4	22.3	24.1	22.3	21.0
52.5°	16.1	17.3	19.2	17.9	16.7
55°	13.0	14.2	16.1	14.9	13.6
57.5°	11.1	11.8	13.0	12.4	11.8
60°	9.3	9.9	11.1	10.5	9.9
62.5°	8.0	8.7	9.9	9.3	8.7
65°	6.8	7.4	8.7	8.0	7.4
67.5°	6.2	6.2	7.4	6.8	6.2
70°	5.0	5.6	6.2	6.2	5.6
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)