

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: P990989

Luminaire Tested: **ML4ALSFLD2W1E-TIR4D40FL-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: P990989
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4ALSFLD2W1E-TIR4D40FL-TL4SDSL-600LM-3000K
 Description: 4IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR,
 METALLIC SILVER TRIM
 Light Source: (1) D2W LED 90CRI / 3000K CCT
 Ballast/Driver: -

Summary

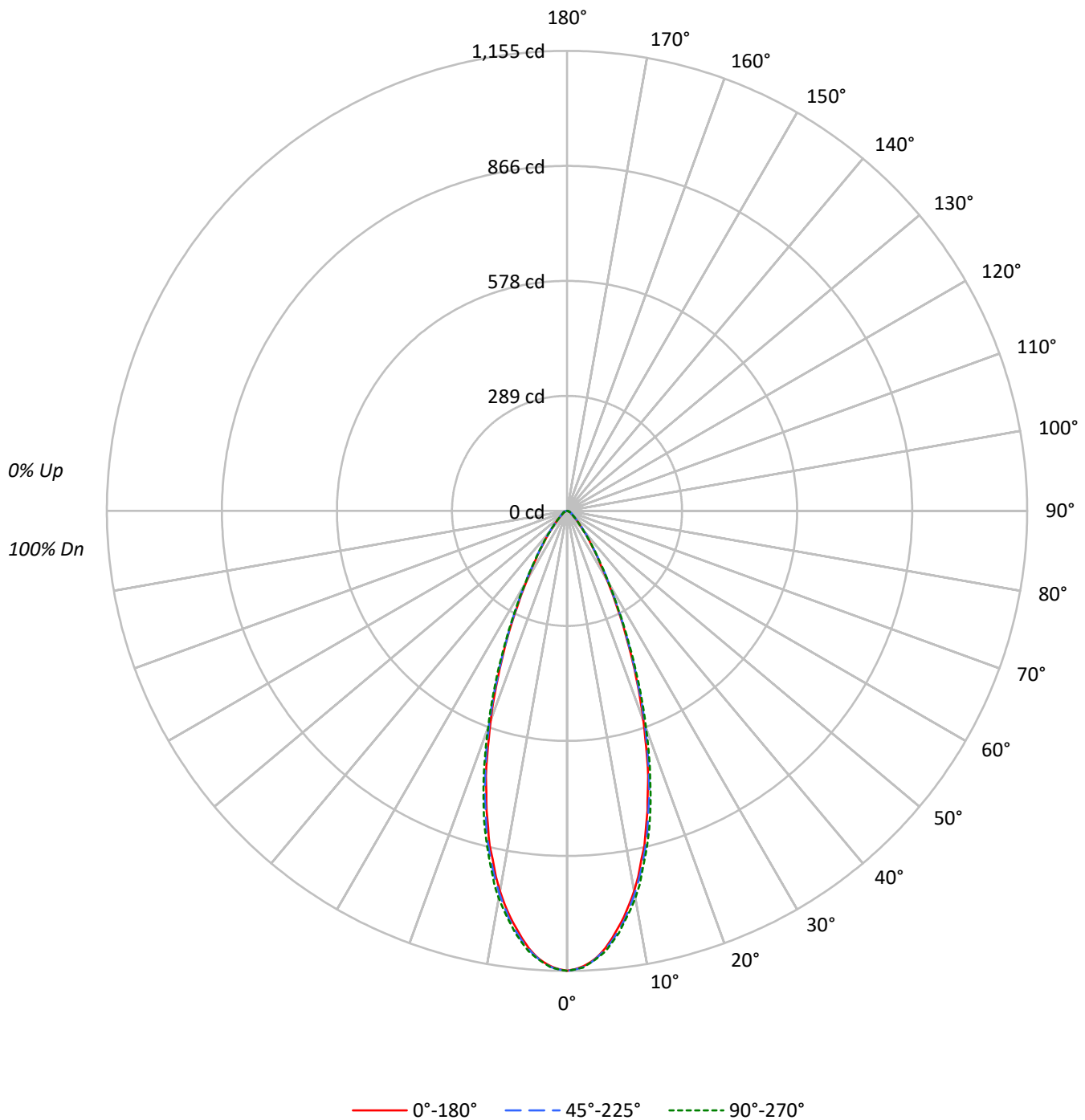
Lumens per Lamp: N/A
 Luminaire Lumens: 619.4 lumens
 Efficiency: N/A
 Efficacy: 74.6 lumens/watt
 Spacing Criteria (0/90/45): 0.64 / 0.65 / 0.64
 Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
 CIE Type: Direct

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

TEST NUMBER: P990989
CATALOG NUMBER: ML4ALSFLD2W1E-TIR4D40FL-TL4SDSL-600LM-3000K

Luminous Intensity Polar Plot



TEST NUMBER: P990989

CATALOG NUMBER: ML4ALSFLD2W1E-TIR4D40FL-TL4SDSL-600LM-3000K

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	96	106	102	98	95	99	96	93		96	93	91		93
3	103	97	92	89	101	96	91	88	93	89	86		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	92	85	80	76	84	79	76		82	78	75		80
6	90	82	76	72	88	81	76	72	79	75	71		78	74	71		77
7	86	77	72	68	85	77	71	68	76	71	67		74	70	67		73
8	82	74	68	64	81	73	68	64	72	67	64		71	67	64		70
9	79	70	65	61	78	70	64	61	69	64	61		68	64	61		67
10	76	67	62	58	75	67	61	58	66	61	58		65	61	58		64

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	111862	111862	111862
5°	107184	107417	107904
10°	95340	96068	97101
15°	78158	79031	80635
20°	57773	58856	59742
25°	38085	38673	39400
30°	22484	23390	23525
35°	13458	13825	13896
40°	8056	8448	8056
45°	5083	5343	5001
50°	3255	3632	3361
55°	2398	2821	2500
60°	2034	2403	2151
65°	1994	2269	2132
70°	1756	2096	1756
75°	1160	1834	1160
80°	335	669	335
85°	0	0	0

TEST NUMBER: P990989

CATALOG NUMBER: ML4ALSFLD2W1E-TIR4D40FL-TL4SDSL-600LM-3000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	101.4	16.4
10°-20°	216.2	34.9
20°-30°	167.3	27.0
30°-40°	75.9	12.3
40°-50°	30.7	5.0
50°-60°	14.5	2.3
60°-70°	9.2	1.5
70°-80°	4.1	0.7
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°	485.0	78.3
0°-40°	560.9	90.6
0°-60°	606.0	97.8
0°-90°	619.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	619.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1155	1155	1155	1155	1155	
5°	1102	1105	1105	1108	1110	101
15°	779	782	788	800	804	213
25°	356	359	362	363	369	164
35°	114	114	117	118	118	74
45°	37	38	39	38	36	30
55°	14	16	17	16	15	13
65°	9	9	10	9	9	8
75°	3	4	5	4	3	3
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

TEST NUMBER: P990989

CATALOG NUMBER: ML4ALSFLD2W1E-TIR4D40FL-TL4SDSL-600LM-3000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1154.7	1154.7	1154.7	1154.7	1154.7
1°	1151.0	1151.6	1151.6	1152.3	1151.6
2°	1144.2	1146.1	1146.1	1146.7	1147.3
3°	1134.3	1135.6	1136.2	1138.0	1136.2
4°	1120.7	1121.3	1121.9	1124.4	1123.8
5°	1102.2	1104.6	1104.6	1107.7	1109.6
6°	1079.3	1084.8	1084.8	1089.2	1089.2
7°	1053.9	1058.9	1062.0	1065.0	1067.5
8°	1028.6	1033.5	1036.6	1038.4	1040.9
9°	1000.1	1002.6	1006.3	1011.9	1014.9
10°	969.2	972.3	976.6	982.2	987.1
11°	935.2	939.5	943.8	949.4	955.6
12°	895.6	902.4	907.9	916.6	916.6
13°	862.8	862.8	871.5	879.5	880.1
14°	819.5	823.8	833.1	838.7	843.0
15°	779.3	782.4	788.0	799.7	804.0
16°	734.2	740.3	748.4	758.9	760.1
17°	696.4	698.9	703.8	712.5	716.2
18°	649.4	652.5	659.3	668.0	671.7
19°	602.4	608.0	615.4	622.8	625.9
20°	560.4	567.2	570.9	576.4	579.5
22.5°	453.4	457.1	460.8	467.6	470.1
25°	356.3	358.7	361.8	363.1	368.6
27.5°	271.5	272.1	277.1	280.2	280.2
30°	201.0	205.3	209.1	209.7	210.3
32.5°	149.7	153.4	155.2	157.7	155.9
35°	113.8	114.4	116.9	117.5	117.5
37.5°	85.4	85.4	89.1	88.4	86.6
40°	63.7	64.3	66.8	66.2	63.7
42.5°	48.2	48.9	50.7	49.5	48.2
45°	37.1	37.7	39.0	37.7	36.5
47.5°	28.5	29.1	30.3	29.7	27.8
50°	21.6	22.9	24.1	23.5	22.3
52.5°	17.3	18.6	19.8	18.6	17.9
55°	14.2	15.5	16.7	15.5	14.8
57.5°	12.4	13.0	14.2	13.6	13.0
60°	10.5	11.1	12.4	11.8	11.1
62.5°	9.3	9.9	11.1	10.5	9.9
65°	8.7	8.7	9.9	9.3	9.3
67.5°	7.4	8.0	8.7	8.7	8.0
70°	6.2	6.8	7.4	7.4	6.2
72.5°	4.9	5.6	6.2	5.6	4.9
75°	3.1	3.7	4.9	3.7	3.1
77.5°	1.2	1.9	3.1	2.5	1.9
80°	0.6	0.6	1.2	0.6	0.6

TEST NUMBER: P990989

CATALOG NUMBER: ML4ALSFLD2W1E-TIR4D40FL-TL4SDSL-600LM-3000K

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)