

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: P990858

Luminaire Tested: **ML4ALSFL9FS1E-TIR4D25NFL-TL4RDMB-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: P990858
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4ALSFL9FS1E-TIR4D25NFL-TL4RDMB-600LM-3000K
 Description: 4IN ROUND ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR, MATTE BLACK TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
 Ballast/Driver: -

Summary

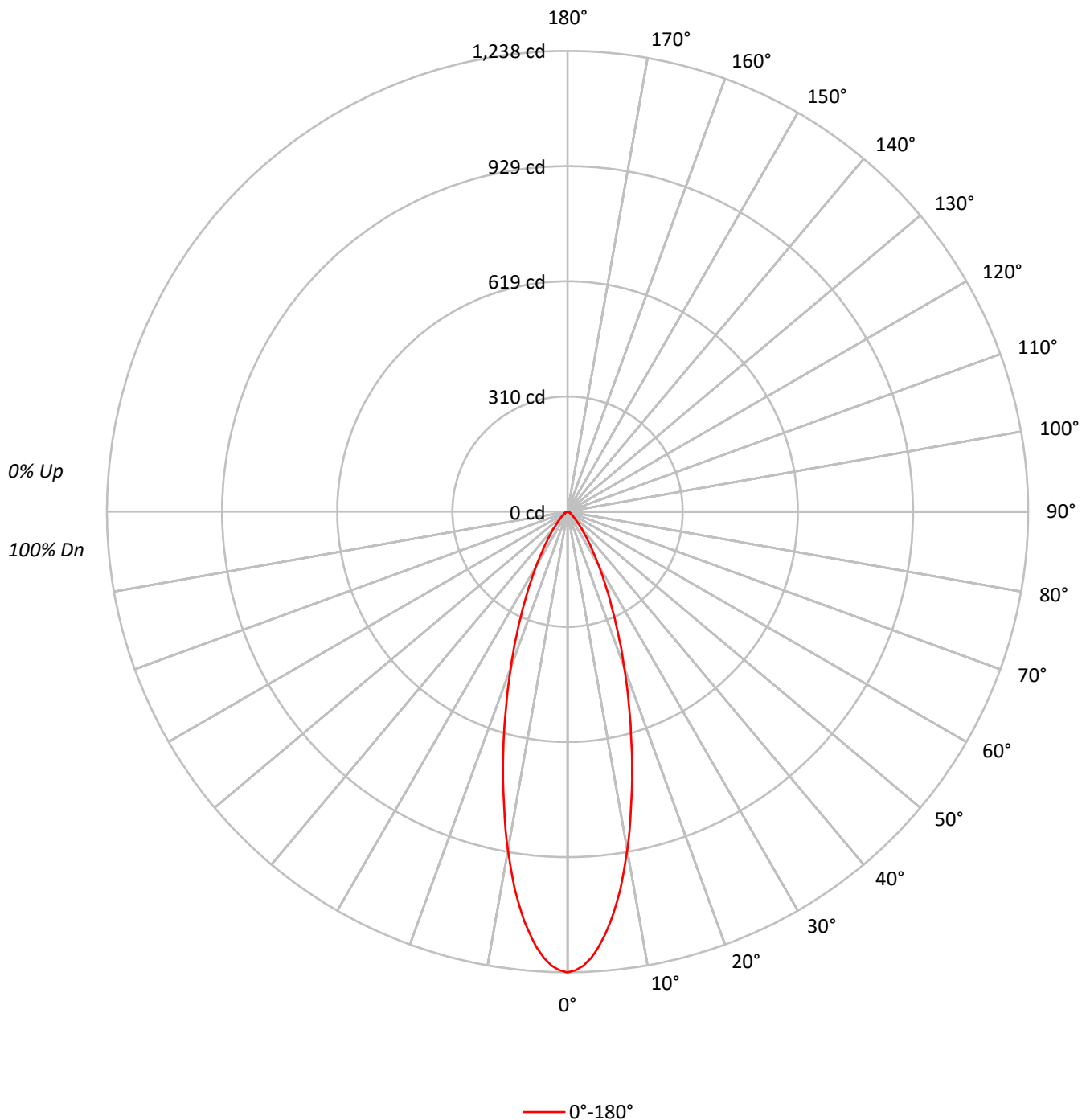
Lumens per Lamp: N/A
 Luminaire Lumens: 524.6 lumens
 Efficiency: N/A
 Efficacy: 68.1 lumens/watt
 Spacing Criteria (0/90/45): 0.52 / 0.52 / 0.56
 Luminous Opening: Circular (Dia: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 7.7
 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: P990858
CATALOG NUMBER: ML4ALSFL9FS1E-TIR4D25NFL-TL4RDMB-600LM-3000K

Luminous Intensity Polar Plot



TEST NUMBER: P990858
 CATALOG NUMBER: ML4ALSFL9FS1E-TIR4D25NFL-TL4RDMB-600LM-3000K

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20				20				20				20
RC	80				70				50				30				10				0				0				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																													
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	102	102	102	102	102	102	102	102	102	100
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	96	96	96	96	96	96	96	96	96	96	96	94
2	109	104	100	97	107	102	99	96	99	96	94	96	94	92	94	92	90	94	92	90	94	92	90	94	92	90	94	92	89
3	104	98	93	90	102	96	92	89	94	90	87	92	89	86	89	87	85	89	87	85	89	87	85	89	87	85	89	87	83
4	99	92	87	83	97	91	86	83	89	85	82	87	84	81	85	82	80	85	82	80	85	82	80	85	82	80	85	82	79
5	95	87	82	78	93	86	81	78	85	80	77	83	79	76	82	78	76	82	78	76	82	78	76	82	78	76	82	78	74
6	91	83	77	74	90	82	77	73	81	76	73	79	75	72	78	75	72	78	75	72	78	75	72	78	75	72	78	75	70
7	87	79	73	70	86	78	73	69	77	72	69	76	72	69	75	71	68	75	71	68	75	71	68	75	71	68	75	71	67
8	84	75	70	66	83	75	69	66	74	69	66	73	68	65	72	68	65	72	68	65	72	68	65	72	68	65	72	68	64
9	80	72	66	63	79	71	66	63	70	66	63	70	65	62	69	65	62	69	65	62	69	65	62	69	65	62	69	65	61
10	77	69	64	60	76	68	63	60	68	63	60	67	63	60	66	62	60	66	62	60	66	62	60	66	62	60	66	62	58

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	152751
5°	141535
10°	115642
15°	85314
20°	58438
25°	37957
30°	23771
35°	14531
40°	8824
45°	5547
50°	3704
55°	2688
60°	2146
65°	1985
70°	1587
75°	905
80°	0
85°	0

TEST NUMBER: P990858
 CATALOG NUMBER: ML4ALSFL9FS1E-TIR4D25NFL-TL4RDMB-600LM-3000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.0	19.5
10°-20°	183.5	35.0
20°-30°	130.2	24.8
30°-40°	62.5	11.9
40°-50°	25.9	4.9
50°-60°	11.7	2.2
60°-70°	6.5	1.2
70°-80°	2.2	0.4
80°-90°	0.0	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°	415.8	79.3
0°-40°	478.3	91.2
0°-60°	515.9	98.3
0°-90°	524.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	524.6	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	1238	
5°	1143	102
15°	668	184
25°	279	130
35°	96	62
45°	32	26
55°	12	12
65°	7	7
75°	2	2
85°	0	0
90°	0	

TEST NUMBER: P990858
CATALOG NUMBER: ML4ALSFL9FS1E-TIR4D25NFL-TL4RDMB-600LM-3000K

CANDELA DISTRIBUTION (FULL):

0°	
0°	1238.4
1°	1232.8
2°	1220.9
3°	1201.6
4°	1175.5
5°	1143.1
6°	1107.6
7°	1065.9
8°	1022.9
9°	973.1
10°	923.3
11°	872.3
12°	818.7
13°	767.7
14°	717.2
15°	668.1
16°	618.3
17°	572.8
18°	528.0
19°	486.9
20°	445.2
22.5°	356.1
25°	278.9
27.5°	216.7
30°	166.9
32.5°	126.4
35°	96.5
37.5°	72.8
40°	54.8
42.5°	41.7
45°	31.8
47.5°	24.9
50°	19.3
52.5°	15.6
55°	12.5
57.5°	10.6
60°	8.7
62.5°	7.5
65°	6.8
67.5°	5.6
70°	4.4
72.5°	3.1
75°	1.9
77.5°	1.2
80°	0.0

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



TEST NUMBER: P990858
CATALOG NUMBER: ML4ALSFL9FS1E-TIR4D25NFL-TL4RDMB-600LM-3000K

CANDELA DISTRIBUTION (continued):

	0°
82.5°	0.0
85°	0.0
87.5°	0.0
90°	0.0

(END OF REPORT)