

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: P990937

Luminaire Tested: **ML4ALSFL9FS1E-TIR4D55WFL-TL4RDMW-1000LM-2700K**

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: P990937
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML4ALSFL9FS1E-TIR4D55WFL-TL4RDMW-1000LM-2700K
 Description: 4IN ROUND ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 55D TIR, MATTE WHITE TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
 Ballast/Driver: -

Summary

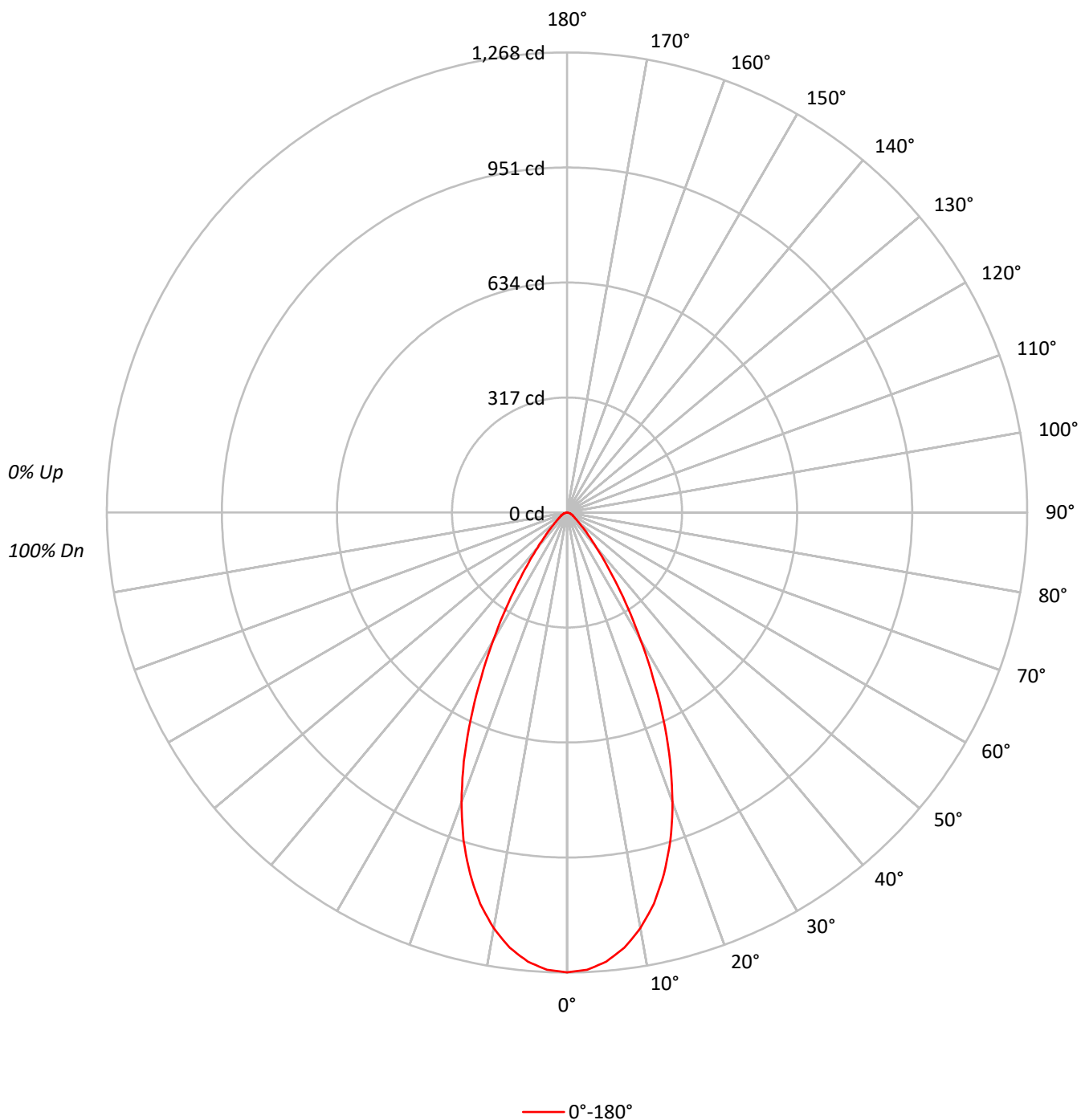
Lumens per Lamp: N/A
 Luminaire Lumens: 940.5 lumens
 Efficiency: N/A
 Efficacy: 72.3 lumens/watt
 Spacing Criteria (0/90/45): 0.79 / 0.79 / 0.77
 Luminous Opening: Circular (Dia: 0.33' x H: 0')
 CIE Type: Direct

Input Watts (W): 13
 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: P990937
CATALOG NUMBER: ML4ALSFL9FS1E-TIR4D55WFL-TL4RDMW-1000LM-2700K

Luminous Intensity Polar Plot



TEST NUMBER: P990937

CATALOG NUMBER: ML4ALSFL9FS1E-TIR4D55WFL-TL4RDMW-1000LM-2700K

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	113	111	108	106	111	108	106	104	104	102	101		101	99	98		97
2	108	103	99	95	105	101	97	94	98	95	92		95	92	90		92
3	102	96	91	87	100	94	90	86	92	88	85		89	86	83		87
4	97	89	84	80	95	88	83	79	86	82	78		84	80	77		82
5	92	84	78	74	91	83	77	73	81	76	73		79	75	72		78
6	88	79	73	69	86	78	72	68	77	72	68		75	71	67		74
7	84	74	68	64	82	74	68	64	72	67	64		71	67	63		70
8	80	70	64	60	78	70	64	60	69	64	60		68	63	60		67
9	76	67	61	57	75	66	61	57	65	60	57		64	60	56		63
10	73	63	57	54	72	63	57	54	62	57	53		61	57	53		60

AVERAGE LUMINANCE (cd/sqm):

	0°
0°	156353
5°	153855
10°	145739
15°	131745
20°	111533
25°	85306
30°	57811
35°	34919
40°	20288
45°	12211
50°	7868
55°	5806
60°	4934
65°	4378
70°	3967
75°	2859
80°	710
85°	0

TEST NUMBER: P990937

CATALOG NUMBER: ML4ALSFL9FS1E-TIR4D55WFL-TL4RDMW-1000LM-2700K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	116.1	12.3
10°-20°	285.4	30.3
20°-30°	284.4	30.2
30°-40°	150.6	16.0
40°-50°	56.9	6.1
50°-60°	25.3	2.7
60°-70°	15.2	1.6
70°-80°	6.3	0.7
80°-90°	0.4	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°	685.8	72.9
0°-40°	836.4	88.9
0°-60°	918.6	97.7
0°-90°	940.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	940.5	100.0

CANDELA DISTRIBUTION:

	0°	Flux
0°	1268	
5°	1243	116
15°	1032	285
25°	627	284
35°	232	151
45°	70	57
55°	27	25
65°	15	15
75°	6	6
85°	0	0
90°	0	

TEST NUMBER: P990937
CATALOG NUMBER: ML4ALSFL9FS1E-TIR4D55WFL-TL4RDMW-1000LM-2700K

CANDELA DISTRIBUTION (FULL):

0°	
0°	1267.6
2.5°	1261.6
5°	1242.6
7.5°	1209.6
10°	1163.6
12.5°	1104.7
15°	1031.7
17.5°	947.7
20°	849.7
22.5°	742.8
25°	626.8
27.5°	512.8
30°	405.9
32.5°	310.9
35°	231.9
37.5°	171.9
40°	126.0
42.5°	93.0
45°	70.0
47.5°	52.0
50°	41.0
52.5°	33.0
55°	27.0
57.5°	23.0
60°	20.0
62.5°	18.0
65°	15.0
67.5°	13.0
70°	11.0
72.5°	9.0
75°	6.0
77.5°	3.0
80°	1.0
82.5°	1.0
85°	0.0
87.5°	0.0
90°	0.0

(END OF REPORT)