

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: P990777

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D40FL-TL3SDSL-750LM-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: P990777
Test Lab: Cooper Lighting Solutions
Issue Date: 5/13/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML3ALSFL9FS1E-TIR4D40FL-TL3SDSL-750LM-2700K
Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR,
METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 761.6 lumens
Efficiency: N/A
Efficacy: 78.5 lumens/watt
Spacing Criteria (0/90/45): 0.63 / 0.63 / 0.64
Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
CIE Type: Direct

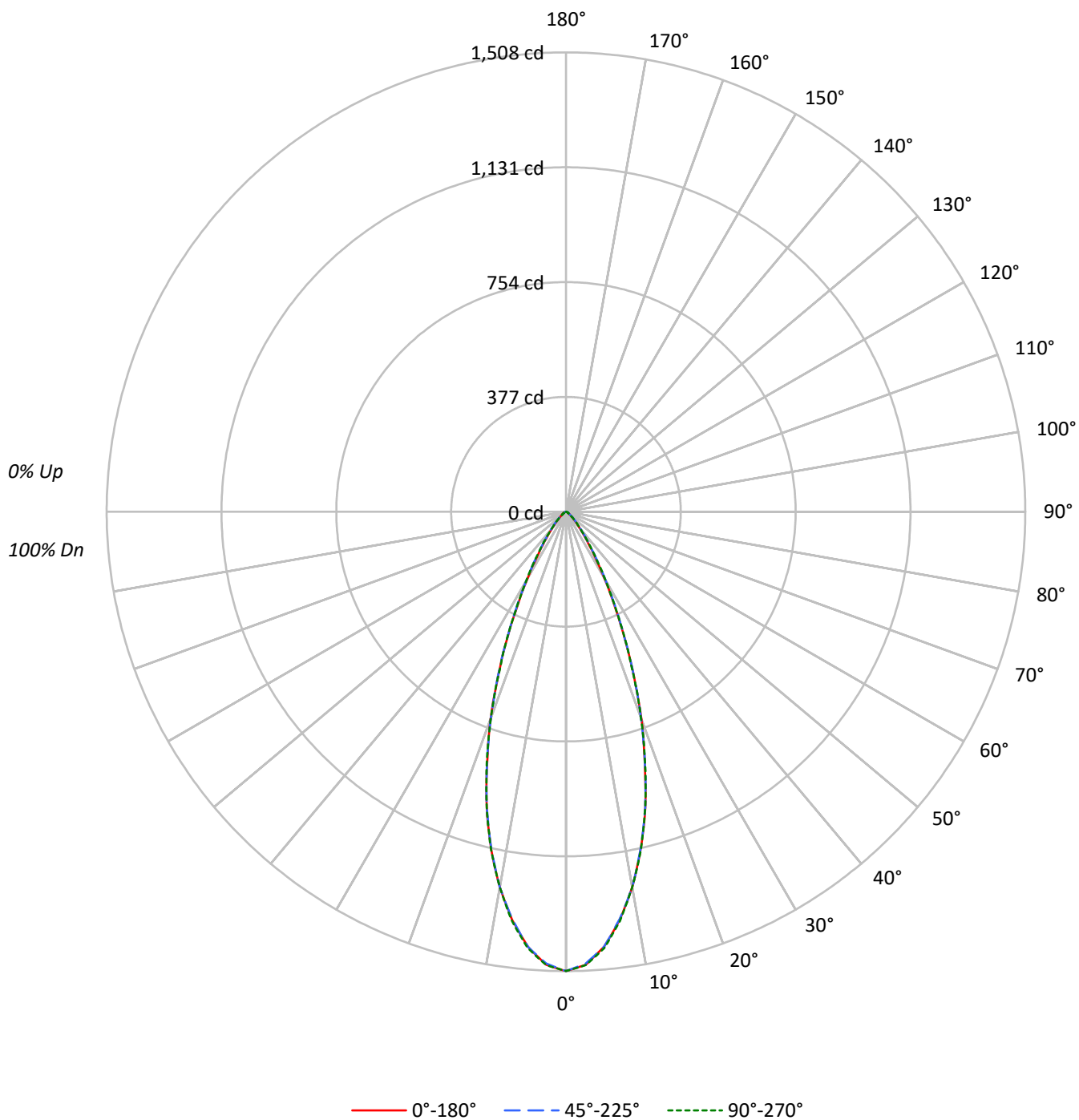
Input Watts (W): 9.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

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: P990777

CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D40FL-TL3SDSL-750LM-2700K

Luminous Intensity Polar Plot



TEST NUMBER: P990777

CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D40FL-TL3SDSL-750LM-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	114	111	109	107	111	109	107	105	105	103	102		101	100	99		98
2	109	104	101	97	107	103	99	96	99	97	94		96	94	92		94
3	104	98	93	90	102	97	92	89	94	91	88		92	89	86		89
4	99	92	87	83	98	91	87	83	89	85	82		87	84	81		85
5	95	87	82	78	93	86	82	78	85	80	77		83	79	76		82
6	91	83	77	74	90	82	77	73	81	76	73		79	75	72		78
7	87	79	73	69	86	78	73	69	77	72	69		76	72	69		75
8	84	75	70	66	82	74	69	66	73	69	65		72	68	65		71
9	80	72	66	63	79	71	66	63	70	66	62		69	65	62		69
10	77	68	63	60	76	68	63	60	67	63	59		66	62	59		66

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	259643	259643	259643
5°	247824	247824	248516
10°	218862	218862	218862
15°	179439	179083	179083
20°	132746	132013	132013
25°	85930	86120	86500
30°	49935	51526	51526
35°	27542	29666	29666
40°	15737	17311	16862
45°	9255	10473	9986
50°	5627	6966	5894
55°	3903	4804	3903
60°	2756	3444	3100
65°	2445	2853	2445
70°	2014	2518	2014
75°	1331	1996	1331
80°	0	0	0
85°	0	0	0

TEST NUMBER: P990777

CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D40FL-TL3SDSL-750LM-2700K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	131.0	17.2
10°-20°	274.8	36.1
20°-30°	209.2	27.5
30°-40°	90.7	11.9
40°-50°	33.8	4.4
50°-60°	13.4	1.8
60°-70°	6.4	0.8
70°-80°	2.3	0.3
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°	615.0	80.7
0°-40°	705.6	92.7
0°-60°	752.9	98.9
0°-90°	761.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	761.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1508	1508	1508	1508	1508	
5°	1434	1432	1434	1432	1438	131
15°	1006	1003	1004	1003	1004	275
25°	452	452	453	456	455	208
35°	131	136	141	143	141	87
45°	38	40	43	42	41	31
55°	13	14	16	14	13	12
65°	6	6	7	6	6	6
75°	2	2	3	2	2	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

TEST NUMBER: P990777

CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D40FL-TL3SDSL-750LM-2700K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1507.6	1507.6	1507.6	1507.6	1507.6
2.5°	1488.6	1486.6	1484.6	1486.6	1489.6
5°	1433.5	1432.5	1433.5	1432.5	1437.5
7.5°	1351.5	1353.5	1348.5	1352.5	1355.5
10°	1251.5	1252.5	1251.5	1251.5	1251.5
12.5°	1134.4	1134.4	1132.4	1132.4	1136.4
15°	1006.4	1003.4	1004.4	1003.4	1004.4
17.5°	859.3	864.3	861.3	861.3	864.3
20°	724.3	722.3	720.3	722.3	720.3
21°	666.2	664.2	663.2	666.2	663.2
22°	607.2	609.2	608.2	604.2	608.2
23°	554.2	556.2	556.2	552.2	550.2
24°	504.2	502.2	506.2	504.2	504.2
25°	452.2	452.2	453.2	456.2	455.2
26°	406.2	407.2	410.2	408.2	408.2
27°	360.1	364.1	367.1	365.1	366.1
28°	323.1	324.1	329.1	327.1	327.1
29°	286.1	287.1	292.1	294.1	291.1
30°	251.1	256.1	259.1	260.1	259.1
31°	223.1	225.1	231.1	231.1	230.1
32°	194.1	199.1	204.1	205.1	204.1
33°	170.1	175.1	181.1	181.1	180.1
34°	150.1	153.1	160.1	160.1	158.1
35°	131.0	136.1	141.1	143.1	141.1
36°	117.0	118.0	125.0	126.0	124.0
37°	102.0	105.0	110.0	111.0	109.0
38°	90.0	93.0	98.0	98.0	97.0
39°	79.0	82.0	86.0	87.0	85.0
40°	70.0	72.0	77.0	77.0	75.0
42.5°	52.0	54.0	58.0	57.0	56.0
45°	38.0	40.0	43.0	42.0	41.0
47.5°	29.0	31.0	33.0	32.0	31.0
50°	21.0	23.0	26.0	24.0	22.0
52.5°	16.0	18.0	20.0	18.0	17.0
55°	13.0	14.0	16.0	14.0	13.0
57.5°	10.0	11.0	13.0	12.0	11.0
60°	8.0	9.0	10.0	9.0	9.0
62.5°	7.0	7.0	9.0	8.0	7.0
65°	6.0	6.0	7.0	6.0	6.0
67.5°	5.0	5.0	6.0	5.0	5.0
70°	4.0	4.0	5.0	4.0	4.0
72.5°	3.0	3.0	4.0	3.0	3.0
75°	2.0	2.0	3.0	2.0	2.0
77.5°	1.0	1.0	1.0	1.0	1.0
80°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P990777

CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D40FL-TL3SDSL-750LM-2700K

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)