

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: P990779

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D40FL-TL3SDSL-750LM-3500K**

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: P990779
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-3500K
Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR,
METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

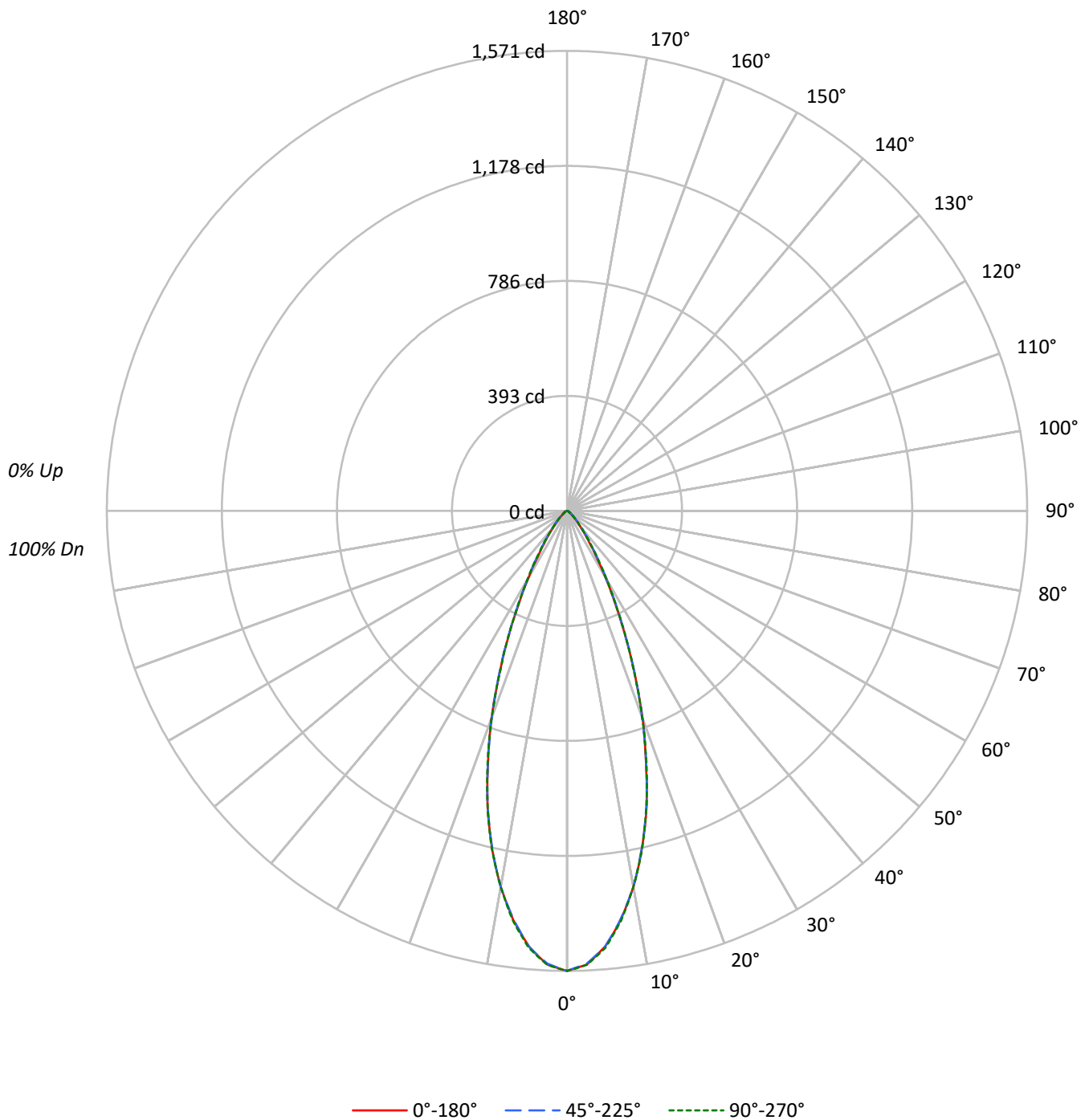
Lumens per Lamp: N/A
Luminaire Lumens: 793.6 lumens
Efficiency: N/A
Efficacy: 81.8 lumens/watt
Spacing Criteria (0/90/45): 0.63 / 0.63 / 0.64
Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
CIE Type: Direct

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

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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	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	81	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°	270545	270545	270545
5°	258232	258232	258958
10°	228043	228043	228043
15°	186963	186589	186589
20°	138318	137548	137548
25°	89541	89731	90130
30°	52023	53694	53694
35°	28719	30906	30906
40°	16412	18053	17581
45°	9645	10911	10400
50°	5868	7261	6136
55°	4084	5014	4084
60°	2859	3582	3238
65°	2567	2975	2567
70°	2115	2618	2115
75°	1397	2063	1397
80°	0	0	0
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.5	17.2
10°-20°	286.3	36.1
20°-30°	218.0	27.5
30°-40°	94.5	11.9
40°-50°	35.3	4.4
50°-60°	14.0	1.8
60°-70°	6.7	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°	640.8	80.7
0°-40°	735.3	92.7
0°-60°	784.6	98.9
0°-90°	793.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	793.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1571	1571	1571	1571	1571	
5°	1494	1493	1494	1493	1498	136
15°	1049	1046	1046	1046	1046	286
25°	471	471	472	475	474	217
35°	137	142	147	149	147	90
45°	40	42	45	44	43	33
55°	14	15	17	15	14	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	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1570.9	1570.9	1570.9	1570.9	1570.9
2.5°	1551.0	1549.0	1546.9	1549.0	1552.1
5°	1493.7	1492.7	1493.7	1492.7	1497.9
7.5°	1408.2	1410.3	1405.1	1409.3	1412.4
10°	1304.0	1305.0	1304.0	1304.0	1304.0
12.5°	1182.0	1182.0	1180.0	1180.0	1184.1
15°	1048.6	1045.5	1046.5	1045.5	1046.5
17.5°	895.4	900.6	897.5	897.5	900.6
20°	754.7	752.6	750.5	752.6	750.5
21°	694.2	692.1	691.1	694.2	691.1
22°	632.7	634.8	633.8	629.6	633.8
23°	577.5	579.6	579.6	575.4	573.3
24°	525.4	523.3	527.4	525.4	525.4
25°	471.2	471.2	472.2	475.3	474.3
26°	423.2	424.2	427.4	425.3	425.3
27°	375.3	379.4	382.6	380.5	381.5
28°	336.7	337.7	342.9	340.9	340.9
29°	298.1	299.2	304.4	306.5	303.3
30°	261.6	266.8	270.0	271.0	270.0
31°	232.4	234.5	240.8	240.8	239.7
32°	202.2	207.4	212.6	213.7	212.6
33°	177.2	182.4	188.7	188.7	187.6
34°	156.4	159.5	166.8	166.8	164.7
35°	136.6	141.8	147.0	149.1	147.0
36°	122.0	123.0	130.3	131.3	129.3
37°	106.3	109.4	114.7	115.7	113.6
38°	93.8	96.9	102.2	102.2	101.1
39°	82.3	85.5	89.6	90.7	88.6
40°	73.0	75.1	80.3	80.3	78.2
42.5°	54.2	56.3	60.5	59.4	58.4
45°	39.6	41.7	44.8	43.8	42.7
47.5°	30.2	32.3	34.4	33.4	32.3
50°	21.9	24.0	27.1	25.0	22.9
52.5°	16.7	18.8	20.8	18.8	17.7
55°	13.6	14.6	16.7	14.6	13.6
57.5°	10.4	11.5	13.6	12.5	11.5
60°	8.3	9.4	10.4	9.4	9.4
62.5°	7.3	7.3	9.4	8.3	7.3
65°	6.3	6.3	7.3	6.3	6.3
67.5°	5.2	5.2	6.3	5.2	5.2
70°	4.2	4.2	5.2	4.2	4.2
72.5°	3.1	3.1	4.2	3.1	3.1
75°	2.1	2.1	3.1	2.1	2.1
77.5°	1.0	1.0	1.0	1.0	1.0
80°	0.0	0.0	0.0	0.0	0.0

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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)