

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: P990778

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D40FL-TL3SDSL-750LM-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: P990778
 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-3000K
 Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR,
 METALLIC SILVER TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
 Ballast/Driver: -

Summary

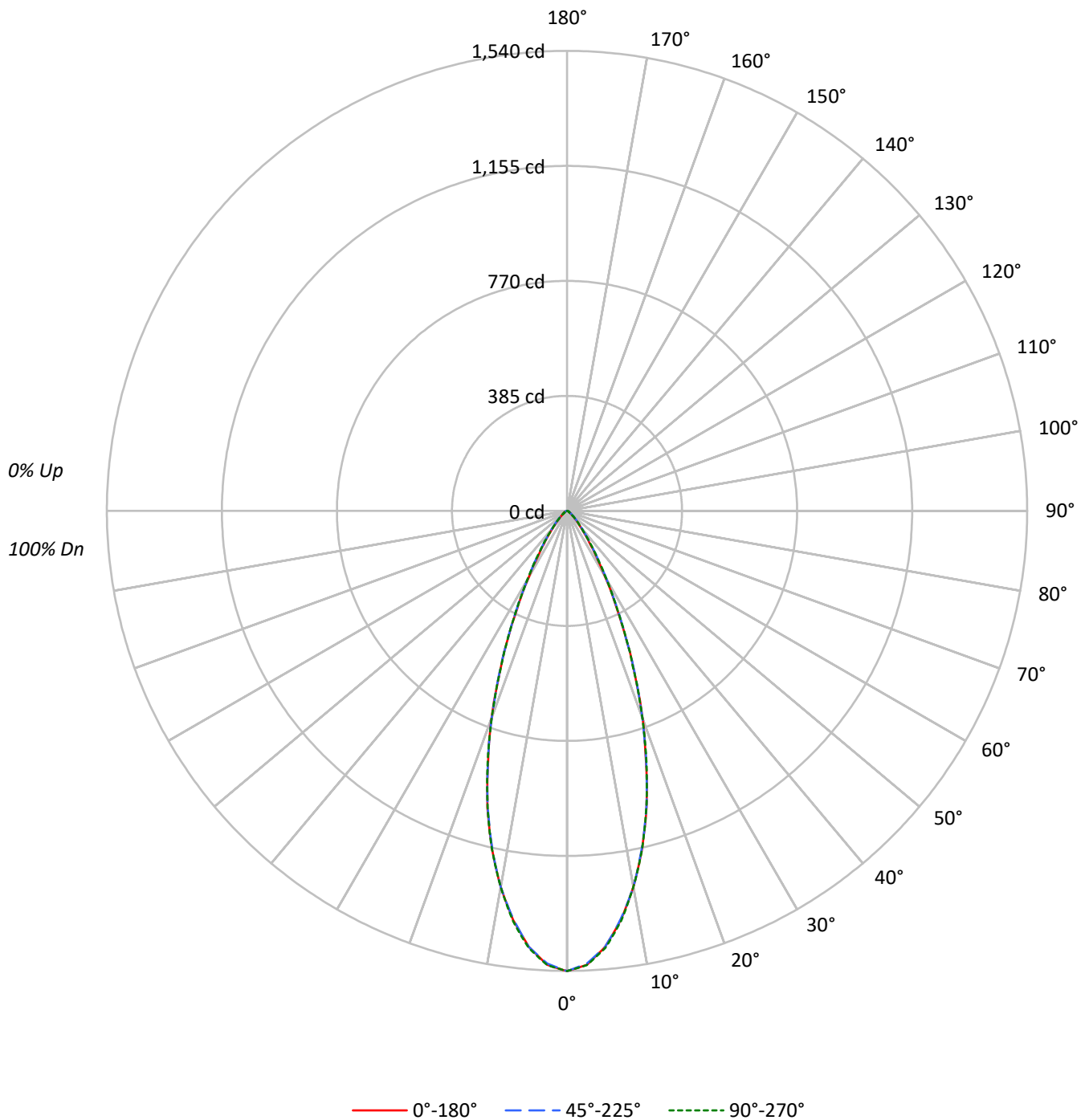
Lumens per Lamp: N/A
 Luminaire Lumens: 778.2 lumens
 Efficiency: N/A
 Efficacy: 80.2 lumens/watt
 Spacing Criteria (0/90/45): 0.63 / 0.63 / 0.64
 Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
 CIE Type: Direct

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°	265292	265292	265292
5°	253218	253218	253927
10°	223618	223618	223618
15°	183344	182969	182969
20°	135624	134872	134872
25°	87792	87982	88381
30°	51029	52640	52640
35°	28152	30296	30296
40°	16075	17693	17244
45°	9450	10717	10205
50°	5761	7127	6028
55°	3993	4924	3993
60°	2824	3513	3169
65°	2486	2934	2486
70°	2065	2568	2065
75°	1331	2063	1331
80°	0	0	0
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.8	17.2
10°-20°	280.8	36.1
20°-30°	213.7	27.5
30°-40°	92.7	11.9
40°-50°	34.6	4.4
50°-60°	13.7	1.8
60°-70°	6.5	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°	628.3	80.7
0°-40°	721.0	92.7
0°-60°	769.3	98.9
0°-90°	778.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	778.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1540	1540	1540	1540	1540	
5°	1465	1464	1465	1464	1469	134
15°	1028	1025	1026	1025	1026	281
25°	462	462	463	466	465	213
35°	134	139	144	146	144	89
45°	39	41	44	43	42	32
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	

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1540.4	1540.4	1540.4	1540.4	1540.4
2.5°	1520.9	1518.9	1516.8	1518.9	1522.0
5°	1464.7	1463.7	1464.7	1463.7	1468.8
7.5°	1380.9	1382.9	1377.8	1381.9	1385.0
10°	1278.7	1279.7	1278.7	1278.7	1278.7
12.5°	1159.1	1159.1	1157.1	1157.1	1161.1
15°	1028.3	1025.2	1026.2	1025.2	1026.2
17.5°	878.0	883.1	880.1	880.1	883.1
20°	740.0	738.0	735.9	738.0	735.9
21°	680.7	678.7	677.7	680.7	677.7
22°	620.4	622.5	621.5	617.4	621.5
23°	566.3	568.3	568.3	564.2	562.2
24°	515.2	513.1	517.2	515.2	515.2
25°	462.0	462.0	463.0	466.1	465.1
26°	415.0	416.0	419.1	417.0	417.0
27°	368.0	372.1	375.1	373.1	374.1
28°	330.1	331.2	336.3	334.2	334.2
29°	292.3	293.4	298.5	300.5	297.4
30°	256.6	261.7	264.7	265.8	264.7
31°	227.9	230.0	236.1	236.1	235.1
32°	198.3	203.4	208.5	209.5	208.5
33°	173.8	178.9	185.0	185.0	184.0
34°	153.3	156.4	163.5	163.5	161.5
35°	133.9	139.0	144.1	146.2	144.1
36°	119.6	120.6	127.8	128.8	126.7
37°	104.3	107.3	112.4	113.5	111.4
38°	92.0	95.1	100.2	100.2	99.1
39°	80.7	83.8	87.9	88.9	86.9
40°	71.5	73.6	78.7	78.7	76.7
42.5°	53.2	55.2	59.3	58.3	57.2
45°	38.8	40.9	44.0	42.9	41.9
47.5°	29.6	31.7	33.7	32.7	31.7
50°	21.5	23.5	26.6	24.5	22.5
52.5°	16.4	18.4	20.4	18.4	17.4
55°	13.3	14.3	16.4	14.3	13.3
57.5°	10.2	11.2	13.3	12.3	11.2
60°	8.2	9.2	10.2	9.2	9.2
62.5°	7.2	7.2	9.2	8.2	7.2
65°	6.1	6.1	7.2	6.1	6.1
67.5°	5.1	5.1	6.1	5.1	5.1
70°	4.1	4.1	5.1	4.1	4.1
72.5°	3.1	3.1	4.1	3.1	3.1
75°	2.0	2.0	3.1	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

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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)