

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: P990765

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D40FL-TL3SDMB-750LM-4000K**

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: P990765
Test Lab: Cooper Lighting Solutions
Issue Date: 5/13/2025
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: ML3ALSFL9FS1E-TIR4D40FL-TL3SDMB-750LM-4000K
Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR, MATTE BLACK TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT
Ballast/Driver: -

Summary

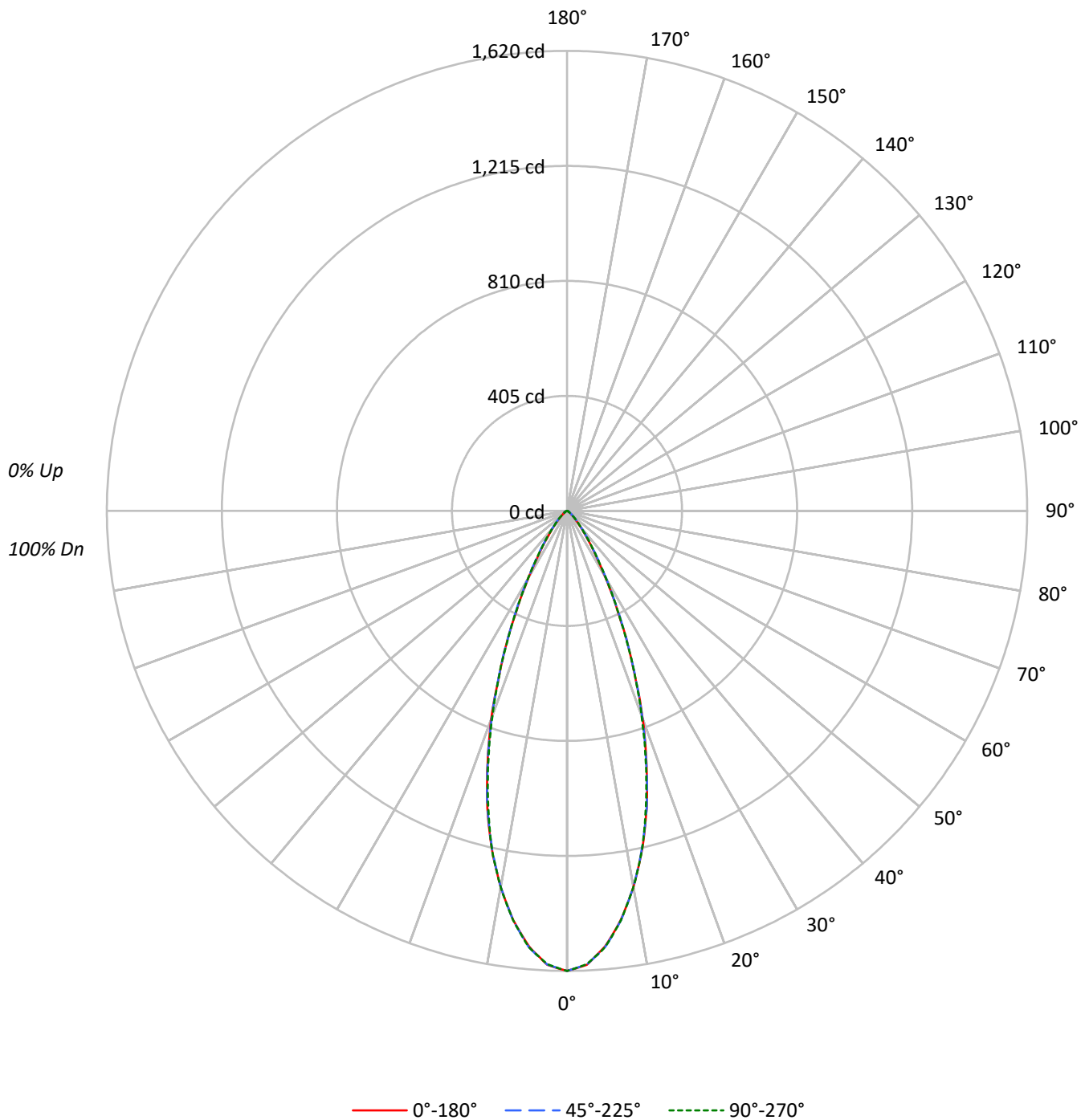
Lumens per Lamp: N/A
Luminaire Lumens: 813.1 lumens
Efficiency: N/A
Efficacy: 83.8 lumens/watt
Spacing Criteria (0/90/45): 0.63 / 0.62 / 0.63
Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
CIE Type: Direct

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	112	109	107	105	105	104	102		101	100	99		98
2	109	104	101	98	107	103	99	96	99	97	94		97	94	92		94
3	104	98	94	90	102	97	93	89	94	91	88		92	89	86		90
4	99	93	88	84	98	91	87	83	89	85	82		87	84	81		86
5	95	88	82	78	94	87	82	78	85	81	77		83	80	77		82
6	91	83	78	74	90	82	77	74	81	76	73		80	76	73		78
7	87	79	74	70	86	78	73	70	77	73	69		76	72	69		75
8	84	75	70	66	83	75	70	66	74	69	66		73	69	65		72
9	80	72	67	63	79	71	66	63	70	66	63		70	65	62		69
10	77	69	63	60	76	68	63	60	67	63	60		67	63	60		66

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	279018	279018	279018
5°	266098	266651	266651
10°	235300	235108	235300
15°	193204	193025	191314
20°	142808	142020	140664
25°	93037	93037	91840
30°	53773	55046	54827
35°	29771	31327	30885
40°	16749	18188	17716
45°	9840	10887	10376
50°	5707	6832	6270
55°	3843	4804	3843
60°	2928	3307	2928
65°	2160	2608	2160
70°	1611	2165	1611
75°	732	1397	732
80°	0	0	0
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	140.8	17.3
10°-20°	295.6	36.4
20°-30°	224.3	27.6
30°-40°	95.8	11.8
40°-50°	35.0	4.3
50°-60°	13.3	1.6
60°-70°	6.1	0.8
70°-80°	2.0	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°	660.8	81.3
0°-40°	756.6	93.1
0°-60°	804.9	99.0
0°-90°	813.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	813.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1620	1620	1620	1620	1620	
5°	1539	1539	1542	1541	1542	141
15°	1084	1082	1083	1079	1073	296
25°	490	490	490	486	483	224
35°	142	143	149	148	147	93
45°	40	42	45	44	43	33
55°	13	14	16	14	13	12
65°	5	5	6	6	5	5
75°	1	2	2	2	1	1
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°	1620.1	1620.1	1620.1	1620.1	1620.1
2.5°	1599.9	1598.8	1598.8	1598.8	1597.7
5°	1539.2	1539.2	1542.4	1541.3	1542.4
7.5°	1453.0	1454.0	1454.0	1454.0	1454.0
10°	1345.5	1347.6	1344.4	1347.6	1345.5
12.5°	1222.0	1222.0	1218.8	1220.9	1222.0
15°	1083.6	1081.5	1082.6	1079.4	1073.0
17.5°	930.3	929.3	928.2	925.0	921.8
20°	779.2	779.2	774.9	773.9	767.5
21°	716.4	717.4	715.3	710.0	708.9
22°	650.4	655.7	652.5	652.5	649.3
23°	594.0	596.1	595.0	595.0	596.1
24°	541.8	541.8	541.8	537.6	538.6
25°	489.6	489.6	489.6	486.5	483.3
26°	434.3	437.5	440.7	436.4	436.4
27°	386.4	389.6	394.9	391.7	388.5
28°	349.1	345.9	351.3	349.1	351.3
29°	306.6	308.7	313.0	309.8	309.8
30°	270.4	272.5	276.8	274.6	275.7
31°	235.2	241.6	244.8	244.8	244.8
32°	208.6	211.8	215.0	215.0	214.0
33°	183.1	186.3	191.6	189.5	189.5
34°	160.7	163.9	169.2	169.2	167.1
35°	141.6	142.6	149.0	148.0	146.9
36°	123.5	124.5	132.0	132.0	130.9
37°	108.6	110.7	117.1	116.0	115.0
38°	95.8	96.9	103.3	103.3	101.1
39°	84.1	86.2	90.5	90.5	89.4
40°	74.5	75.6	80.9	79.8	78.8
42.5°	53.2	56.4	59.6	59.6	57.5
45°	40.4	41.5	44.7	43.6	42.6
47.5°	29.8	30.9	34.1	33.0	30.9
50°	21.3	23.4	25.5	24.5	23.4
52.5°	16.0	18.1	20.2	18.1	17.0
55°	12.8	13.8	16.0	13.8	12.8
57.5°	9.6	10.6	12.8	10.6	10.6
60°	8.5	8.5	9.6	8.5	8.5
62.5°	6.4	7.5	8.5	7.5	6.4
65°	5.3	5.3	6.4	6.4	5.3
67.5°	4.3	5.3	5.3	5.3	4.3
70°	3.2	4.3	4.3	4.3	3.2
72.5°	2.1	3.2	3.2	3.2	2.1
75°	1.1	2.1	2.1	2.1	1.1
77.5°	0.0	1.1	1.1	1.1	1.1
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)