

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: P990731

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMB-750LM-5000K**

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: P990731
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMB-750LM-5000K
 Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR, MATTE BLACK TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
 Ballast/Driver: -

Summary

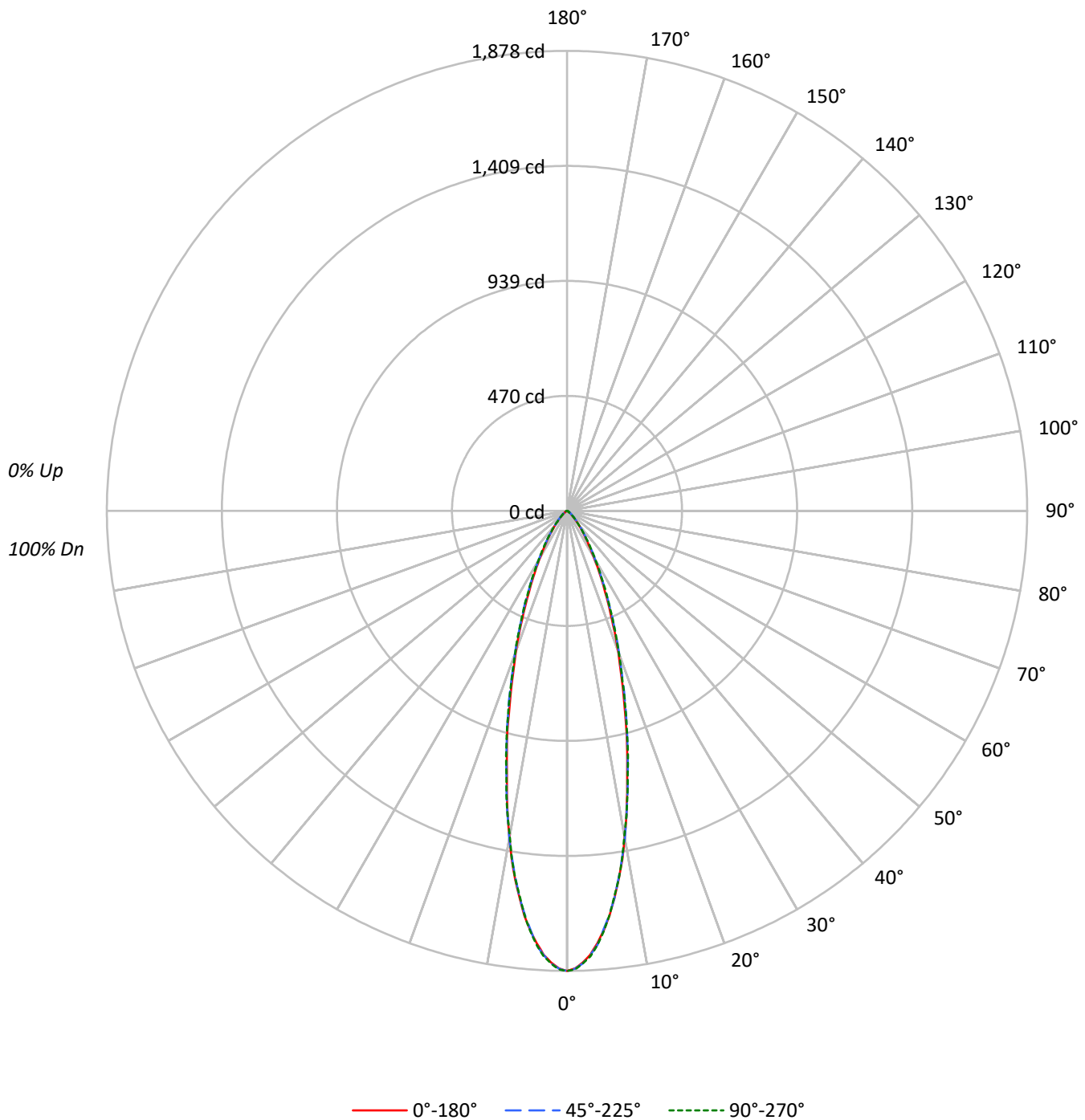
Lumens per Lamp: N/A
 Luminaire Lumens: 732.8 lumens
 Efficiency: N/A
 Efficacy: 75.6 lumens/watt
 Spacing Criteria (0/90/45): 0.49 / 0.5 / 0.54
 Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
 CIE Type: Direct

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		102	100	99		98
2	109	105	101	98	107	103	100	97	100	97	95		97	95	93		94
3	104	99	94	90	102	97	93	90	95	91	88		92	89	87		90
4	100	93	88	84	98	92	87	84	90	86	83		88	85	82		86
5	96	88	83	79	94	87	82	79	86	81	78		84	80	77		82
6	92	84	79	75	90	83	78	74	82	77	74		80	76	74		79
7	88	80	75	71	87	79	74	71	78	74	70		77	73	70		76
8	85	76	71	67	83	76	71	67	75	70	67		74	70	67		73
9	81	73	68	64	80	72	68	64	72	67	64		71	67	64		70
10	78	70	65	61	78	70	65	61	69	64	61		68	64	61		67

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	323451	323451	323451
5°	297130	296559	297700
10°	236909	237294	235370
15°	168028	169205	169401
20°	111651	114071	113667
25°	70424	73559	73559
30°	43293	45699	46356
35°	26596	28215	28677
40°	16075	17558	17064
45°	9645	10985	10181
50°	5894	7368	6189
55°	3633	4624	3963
60°	2652	3410	2652
65°	1793	2241	2241
70°	1662	1662	1662
75°	732	1464	732
80°	0	0	0
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.3	20.8
10°-20°	260.4	35.5
20°-30°	178.8	24.4
30°-40°	86.2	11.8
40°-50°	34.8	4.7
50°-60°	13.2	1.8
60°-70°	5.5	0.7
70°-80°	1.7	0.2
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°	591.5	80.7
0°-40°	677.7	92.5
0°-60°	725.7	99.0
0°-90°	732.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	732.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1878	1878	1878	1878	1878	
5°	1719	1721	1715	1724	1722	152
15°	942	941	949	951	950	258
25°	371	377	387	390	387	174
35°	126	128	134	139	136	82
45°	40	42	45	44	42	32
55°	12	13	15	14	13	12
65°	4	6	6	6	6	5
75°	1	1	2	1	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°	1878.1	1878.1	1878.1	1878.1	1878.1
1°	1868.2	1868.2	1869.3	1868.2	1872.6
2°	1845.1	1846.2	1849.5	1849.5	1849.5
3°	1814.3	1813.2	1815.4	1818.7	1820.9
4°	1769.3	1768.2	1777.0	1774.8	1777.0
5°	1718.7	1720.9	1715.4	1724.2	1722.0
6°	1661.5	1658.2	1656.0	1662.6	1659.3
7°	1590.0	1593.3	1590.0	1597.7	1584.5
8°	1518.6	1516.4	1512.0	1514.2	1517.5
9°	1441.6	1439.4	1435.0	1435.0	1438.3
10°	1354.7	1350.3	1356.9	1351.4	1345.9
11°	1267.8	1264.5	1271.1	1266.7	1270.0
12°	1178.8	1184.3	1186.5	1185.4	1187.6
13°	1090.8	1100.7	1100.7	1102.9	1099.6
14°	1014.9	1022.6	1022.6	1024.8	1028.1
15°	942.4	941.3	949.0	951.2	950.1
16°	859.9	866.5	875.3	876.4	875.3
17°	788.4	795.0	809.3	808.2	804.9
18°	723.5	730.1	738.9	736.7	734.5
19°	659.8	664.2	677.4	679.6	673.0
20°	609.2	609.2	622.4	620.2	620.2
22.5°	476.1	480.5	492.6	494.8	492.6
25°	370.6	377.2	387.1	390.4	387.1
27.5°	285.9	289.2	300.2	302.4	303.5
30°	217.7	219.9	229.8	237.5	233.1
32.5°	164.9	169.3	177.0	181.4	180.3
35°	126.5	127.6	134.2	138.6	136.4
37.5°	94.6	97.9	102.3	104.5	101.2
40°	71.5	72.6	78.1	78.1	75.9
42.5°	52.8	55.0	59.4	59.4	56.1
45°	39.6	41.8	45.1	44.0	41.8
47.5°	28.6	31.9	34.1	33.0	30.8
50°	22.0	23.1	27.5	25.3	23.1
52.5°	16.5	17.6	20.9	18.7	17.6
55°	12.1	13.2	15.4	14.3	13.2
57.5°	8.8	9.9	12.1	11.0	9.9
60°	7.7	7.7	9.9	8.8	7.7
62.5°	5.5	6.6	7.7	6.6	6.6
65°	4.4	5.5	5.5	5.5	5.5
67.5°	3.3	4.4	4.4	4.4	4.4
70°	3.3	3.3	3.3	3.3	3.3
72.5°	2.2	2.2	3.3	2.2	2.2
75°	1.1	1.1	2.2	1.1	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)