

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: P990734

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMW-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: P990734
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMW-750LM-3500K
 Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR, MATTE WHITE TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
 Ballast/Driver: -

Summary

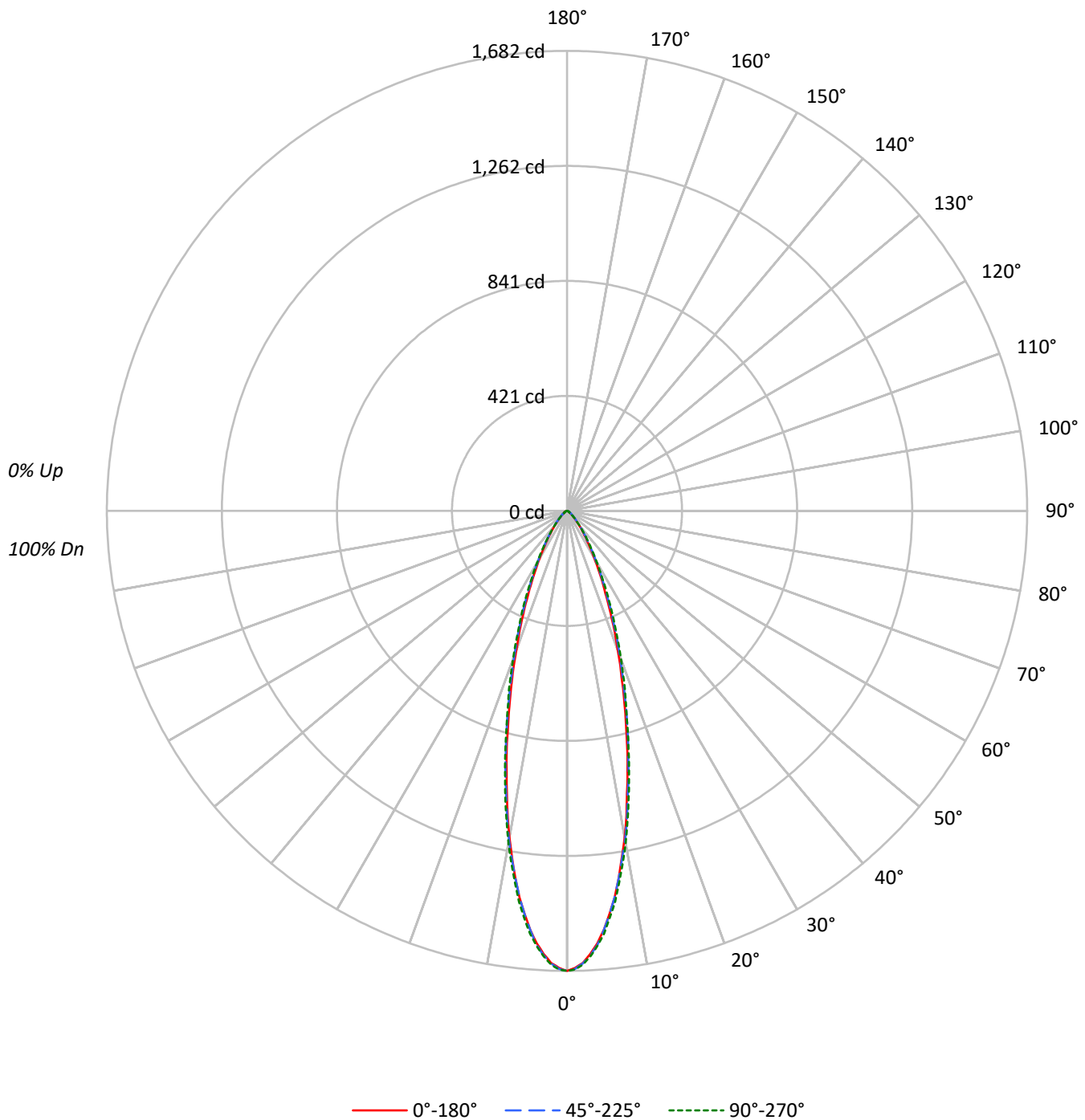
Lumens per Lamp: N/A
 Luminaire Lumens: 675.8 lumens
 Efficiency: N/A
 Efficacy: 69.7 lumens/watt
 Spacing Criteria (0/90/45): 0.5 / 0.5 / 0.54
 Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
 CIE Type: Direct

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

TEST NUMBER: P990734
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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	100	97	107	103	99	96	99	97	94		96	94	92		94
3	104	98	93	90	102	97	92	89	94	90	88		92	89	86		89
4	99	92	87	84	98	91	87	83	89	85	82		87	84	81		85
5	95	87	82	78	94	87	82	78	85	81	77		83	79	77		82
6	91	83	78	74	90	82	77	74	81	76	73		79	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	66		72
9	81	72	67	63	80	72	67	63	71	66	63		70	66	63		69
10	78	69	64	60	77	69	64	60	68	63	60		67	63	60		66

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	289661	289661	289661
5°	265908	266080	268241
10°	212129	213580	215591
15°	149574	153283	153836
20°	99115	103129	105622
25°	63165	66927	69512
30°	39574	42279	43731
35°	24094	26281	27164
40°	15220	16637	16389
45°	9645	10668	10156
50°	6136	7261	6430
55°	4384	5315	4384
60°	3238	3961	3238
65°	2975	3382	2975
70°	2618	2618	2115
75°	1397	2063	1397
80°	992	992	992
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.5	20.2
10°-20°	235.6	34.9
20°-30°	163.6	24.2
30°-40°	80.2	11.9
40°-50°	34.1	5.0
50°-60°	14.8	2.2
60°-70°	7.5	1.1
70°-80°	3.1	0.5
80°-90°	0.4	0.1
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°	535.8	79.3
0°-40°	616.0	91.1
0°-60°	664.9	98.4
0°-90°	675.8	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	675.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1682	1682	1682	1682	1682	
5°	1538	1539	1539	1542	1552	136
15°	839	844	860	860	863	232
25°	332	340	352	361	366	156
35°	115	119	125	129	129	75
45°	40	42	44	43	42	32
55°	15	16	18	16	15	13
65°	7	7	8	7	7	7
75°	2	3	3	3	2	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

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CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMW-750LM-3500K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1681.9	1681.9	1681.9	1681.9	1681.9
1°	1671.5	1674.6	1674.6	1673.5	1676.7
2°	1653.7	1654.8	1655.8	1654.8	1660.0
3°	1622.5	1625.6	1627.7	1625.6	1630.8
4°	1585.0	1589.1	1591.2	1587.1	1594.4
5°	1538.1	1539.1	1539.1	1542.2	1551.6
6°	1481.8	1487.0	1483.9	1486.0	1496.4
7°	1424.5	1422.4	1423.5	1425.5	1440.1
8°	1355.7	1356.8	1356.8	1359.9	1371.4
9°	1282.8	1283.8	1288.0	1289.0	1302.6
10°	1213.0	1208.8	1221.3	1219.2	1232.8
11°	1135.8	1134.8	1146.3	1147.3	1157.7
12°	1054.6	1063.9	1068.1	1075.4	1081.7
13°	982.7	986.8	1000.4	1003.5	1007.7
14°	912.8	917.0	926.4	929.5	934.7
15°	838.9	844.1	859.7	859.7	862.8
16°	773.2	777.4	795.1	795.1	796.1
17°	710.7	713.8	730.5	733.6	735.7
18°	649.2	656.5	670.0	676.3	685.7
19°	597.1	601.3	614.8	621.1	627.3
20°	540.8	552.3	562.7	569.0	576.3
22.5°	428.3	433.5	448.1	458.5	458.5
25°	332.4	339.7	352.2	360.6	365.8
27.5°	258.4	261.6	275.1	284.5	283.4
30°	199.0	202.2	212.6	218.8	219.9
32.5°	152.1	154.2	163.6	168.8	168.8
35°	114.6	118.8	125.0	129.2	129.2
37.5°	87.5	90.7	95.9	99.0	96.9
40°	67.7	69.8	74.0	74.0	72.9
42.5°	52.1	54.2	56.3	56.3	54.2
45°	39.6	41.7	43.8	42.7	41.7
47.5°	30.2	32.3	34.4	33.3	31.3
50°	22.9	25.0	27.1	26.1	24.0
52.5°	17.7	19.8	21.9	19.8	18.8
55°	14.6	15.6	17.7	15.6	14.6
57.5°	11.5	12.5	14.6	12.5	11.5
60°	9.4	10.4	11.5	10.4	9.4
62.5°	8.3	8.3	9.4	9.4	8.3
65°	7.3	7.3	8.3	7.3	7.3
67.5°	5.2	6.3	7.3	6.3	5.2
70°	5.2	5.2	5.2	5.2	4.2
72.5°	3.1	4.2	4.2	4.2	3.1
75°	2.1	3.1	3.1	3.1	2.1
77.5°	1.0	2.1	2.1	2.1	1.0
80°	1.0	1.0	1.0	1.0	1.0

TEST NUMBER: P990734

CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMW-750LM-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
82.5°	1.0	1.0	1.0	1.0	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)