

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: P990733

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMW-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: P990733
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-3000K
Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR, MATTE WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

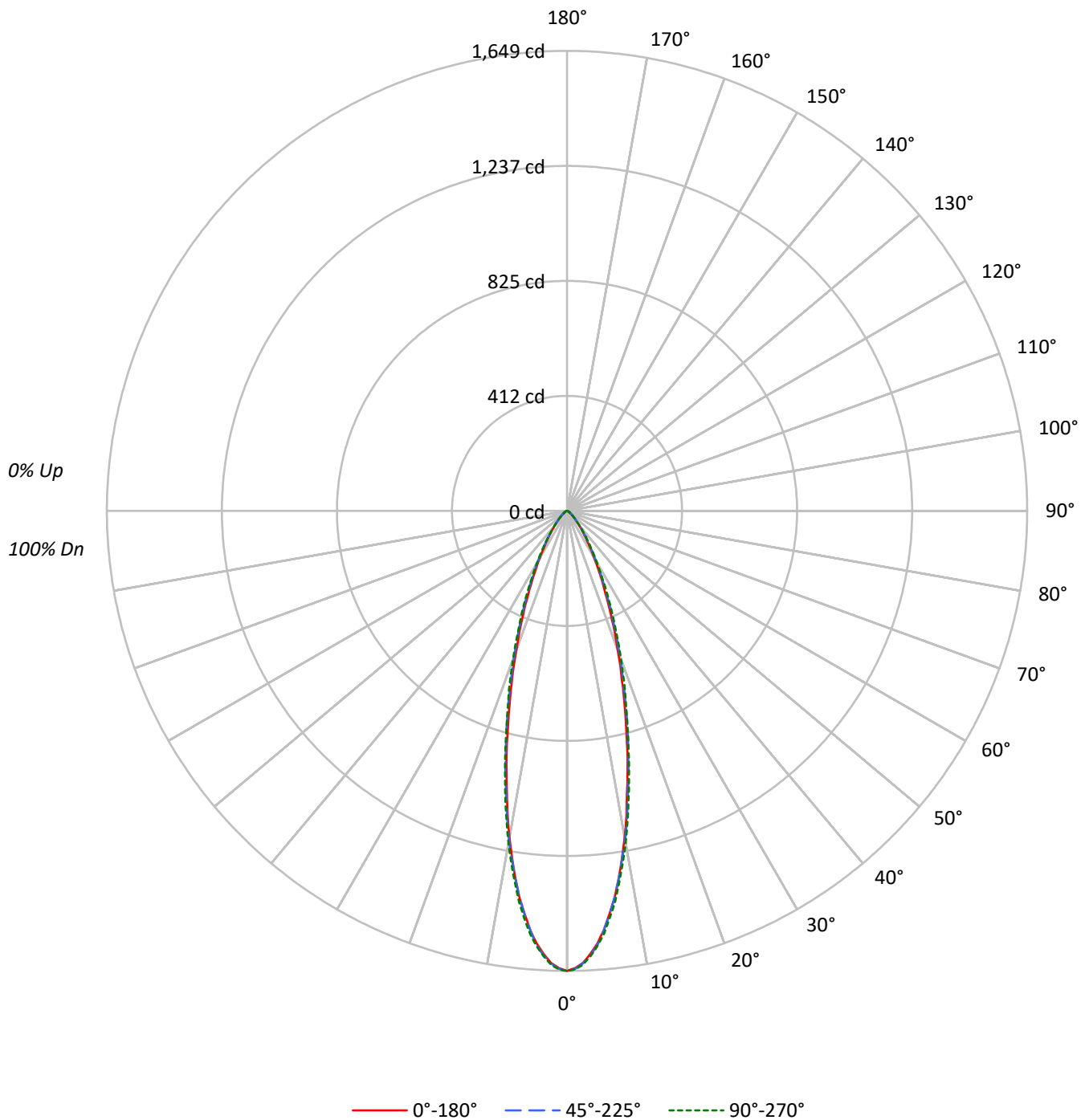
Lumens per Lamp: N/A
Luminaire Lumens: 662.7 lumens
Efficiency: N/A
Efficacy: 68.3 lumens/watt
Spacing Criteria (0/90/45): 0.5 / 0.5 / 0.54
Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
CIE Type: Direct

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: P990733
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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°	284030	284030	284030
5°	260738	260911	263038
10°	208002	209436	211394
15°	146668	150305	150858
20°	97191	101131	103569
25°	61949	65635	68163
30°	38819	41463	42875
35°	23632	25776	26638
40°	14928	16300	16075
45°	9450	10449	9962
50°	6028	7127	6296
55°	4294	5225	4294
60°	3169	3858	3169
65°	2934	3342	2934
70°	2568	2568	2065
75°	1331	2063	1331
80°	992	992	992
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	133.9	20.2
10°-20°	231.0	34.9
20°-30°	160.5	24.2
30°-40°	78.6	11.9
40°-50°	33.4	5.0
50°-60°	14.5	2.2
60°-70°	7.4	1.1
70°-80°	3.0	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°	525.4	79.3
0°-40°	604.0	91.1
0°-60°	652.0	98.4
0°-90°	662.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	662.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1649	1649	1649	1649	1649	
5°	1508	1509	1509	1512	1522	134
15°	823	828	843	843	846	227
25°	326	333	345	354	359	153
35°	112	116	123	127	127	74
45°	39	41	43	42	41	31
55°	14	15	17	15	14	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	

TEST NUMBER: P990733
 CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMW-750LM-3000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1649.2	1649.2	1649.2	1649.2	1649.2
1°	1639.0	1642.1	1642.1	1641.1	1644.1
2°	1621.6	1622.7	1623.7	1622.7	1627.8
3°	1591.0	1594.1	1596.1	1594.1	1599.2
4°	1554.2	1558.3	1560.3	1556.2	1563.4
5°	1508.2	1509.2	1509.2	1512.3	1521.5
6°	1453.0	1458.1	1455.1	1457.1	1467.3
7°	1396.8	1394.8	1395.8	1397.9	1412.2
8°	1329.4	1330.4	1330.4	1333.5	1344.7
9°	1257.9	1258.9	1263.0	1264.0	1277.3
10°	1189.4	1185.3	1197.6	1195.5	1208.8
11°	1113.8	1112.8	1124.0	1125.0	1135.3
12°	1034.1	1043.3	1047.4	1054.5	1060.7
13°	963.6	967.7	981.0	984.0	988.1
14°	895.1	899.2	908.4	911.5	916.6
15°	822.6	827.7	843.0	843.0	846.1
16°	758.2	762.3	779.7	779.7	780.7
17°	696.9	700.0	716.3	719.4	721.4
18°	636.6	643.8	657.0	663.2	672.4
19°	585.5	589.6	602.9	609.0	615.1
20°	530.3	541.6	551.8	557.9	565.1
22.5°	420.0	425.1	439.4	449.6	449.6
25°	326.0	333.1	345.4	353.6	358.7
27.5°	253.4	256.5	269.8	279.0	277.9
30°	195.2	198.2	208.5	214.6	215.6
32.5°	149.2	151.2	160.4	165.5	165.5
35°	112.4	116.5	122.6	126.7	126.7
37.5°	85.8	88.9	94.0	97.1	95.0
40°	66.4	68.5	72.5	72.5	71.5
42.5°	51.1	53.1	55.2	55.2	53.1
45°	38.8	40.9	42.9	41.9	40.9
47.5°	29.6	31.7	33.7	32.7	30.7
50°	22.5	24.5	26.6	25.5	23.5
52.5°	17.4	19.4	21.5	19.4	18.4
55°	14.3	15.3	17.4	15.3	14.3
57.5°	11.2	12.3	14.3	12.3	11.2
60°	9.2	10.2	11.2	10.2	9.2
62.5°	8.2	8.2	9.2	9.2	8.2
65°	7.2	7.2	8.2	7.2	7.2
67.5°	5.1	6.1	7.2	6.1	5.1
70°	5.1	5.1	5.1	5.1	4.1
72.5°	3.1	4.1	4.1	4.1	3.1
75°	2.0	3.1	3.1	3.1	2.0
77.5°	1.0	2.0	2.0	2.0	1.0
80°	1.0	1.0	1.0	1.0	1.0

TEST NUMBER: P990733

CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMW-750LM-3000K

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)