

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: P990780

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D40FL-TL3SDSL-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: P990780
 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-4000K
 Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR,
 METALLIC SILVER TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 4000K CCT
 Ballast/Driver: -

Summary

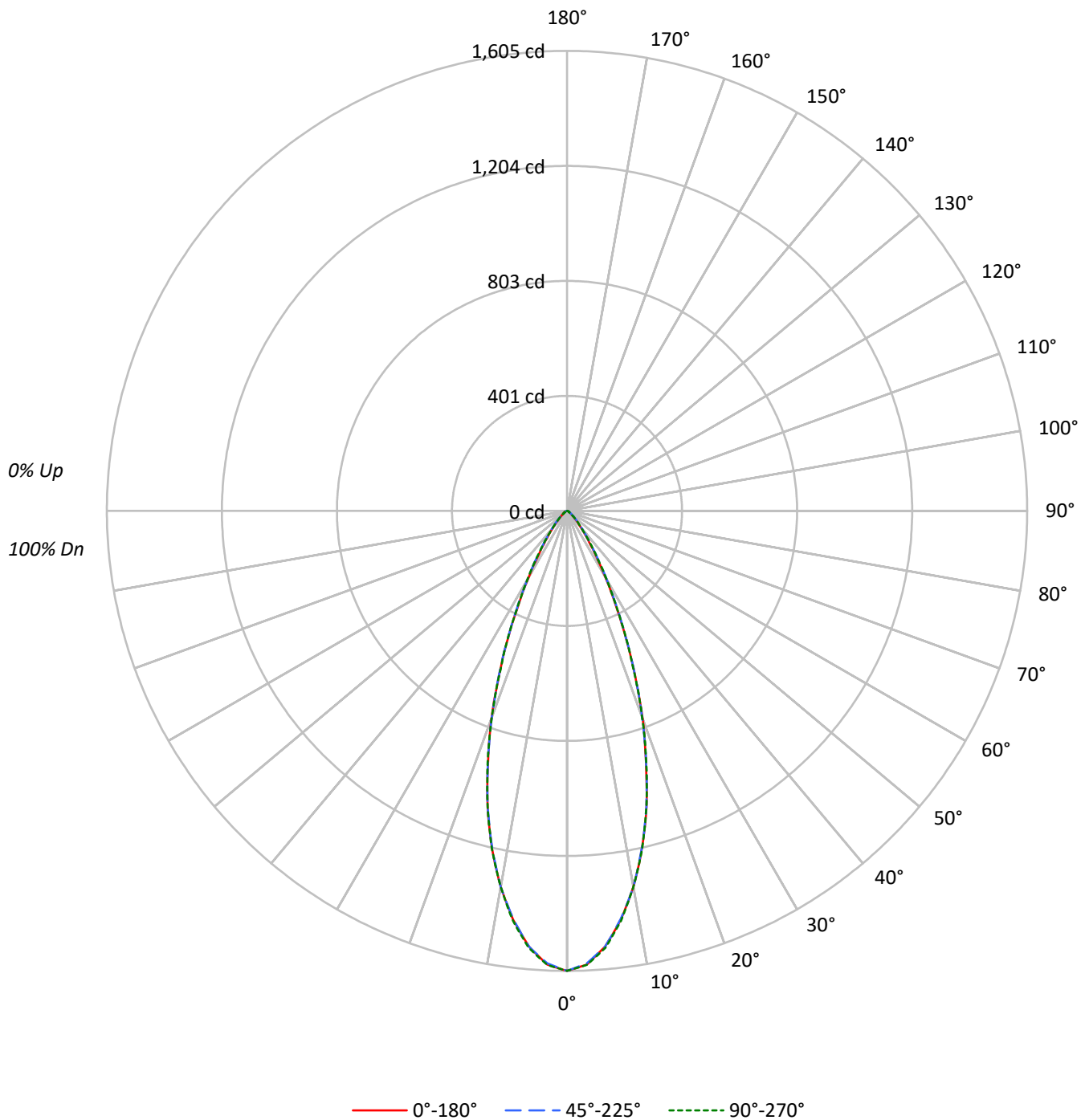
Lumens per Lamp: N/A
 Luminaire Lumens: 810.6 lumens
 Efficiency: N/A
 Efficacy: 83.6 lumens/watt
 Spacing Criteria (0/90/45): 0.63 / 0.63 / 0.64
 Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
 CIE Type: Direct

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°	276348	276348	276348
5°	263781	263781	264507
10°	232939	232939	232939
15°	190975	190601	190601
20°	141287	140499	140499
25°	91460	91650	92068
30°	53137	54847	54847
35°	29329	31558	31558
40°	16749	18435	17963
45°	9864	11155	10644
50°	6002	7422	6270
55°	4144	5104	4144
60°	2928	3651	3307
65°	2608	3056	2608
70°	2165	2669	2165
75°	1397	2129	1397
80°	0	0	0
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.4	17.2
10°-20°	292.5	36.1
20°-30°	222.6	27.5
30°-40°	96.5	11.9
40°-50°	36.0	4.4
50°-60°	14.3	1.8
60°-70°	6.8	0.8
70°-80°	2.4	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°	654.5	80.7
0°-40°	751.1	92.7
0°-60°	801.4	98.9
0°-90°	810.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	810.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1605	1605	1605	1605	1605	
5°	1526	1525	1526	1525	1530	139
15°	1071	1068	1069	1068	1069	293
25°	481	481	482	486	484	222
35°	140	145	150	152	150	92
45°	40	43	46	45	44	33
55°	14	15	17	15	14	13
65°	6	6	8	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°	1604.6	1604.6	1604.6	1604.6	1604.6
2.5°	1584.3	1582.2	1580.1	1582.2	1585.4
5°	1525.8	1524.7	1525.8	1524.7	1530.0
7.5°	1438.5	1440.6	1435.3	1439.5	1442.7
10°	1332.0	1333.1	1332.0	1332.0	1332.0
12.5°	1207.4	1207.4	1205.3	1205.3	1209.5
15°	1071.1	1067.9	1069.0	1067.9	1069.0
17.5°	914.6	919.9	916.7	916.7	919.9
20°	770.9	768.7	766.6	768.7	766.6
21°	709.1	707.0	705.9	709.1	705.9
22°	646.3	648.4	647.4	643.1	647.4
23°	589.9	592.0	592.0	587.7	585.6
24°	536.6	534.5	538.8	536.6	536.6
25°	481.3	481.3	482.3	485.5	484.5
26°	432.3	433.3	436.5	434.4	434.4
27°	383.3	387.6	390.8	388.6	389.7
28°	343.9	345.0	350.3	348.2	348.2
29°	304.5	305.6	310.9	313.0	309.8
30°	267.2	272.6	275.8	276.8	275.8
31°	237.4	239.6	246.0	246.0	244.9
32°	206.6	211.9	217.2	218.3	217.2
33°	181.0	186.3	192.7	192.7	191.7
34°	159.7	162.9	170.4	170.4	168.2
35°	139.5	144.8	150.1	152.3	150.1
36°	124.6	125.6	133.1	134.2	132.0
37°	108.6	111.8	117.1	118.2	116.1
38°	95.8	99.0	104.3	104.3	103.3
39°	84.1	87.3	91.6	92.6	90.5
40°	74.5	76.7	82.0	82.0	79.9
42.5°	55.4	57.5	61.8	60.7	59.6
45°	40.5	42.6	45.8	44.7	43.7
47.5°	30.9	33.0	35.1	34.1	33.0
50°	22.4	24.5	27.7	25.6	23.4
52.5°	17.0	19.2	21.3	19.2	18.1
55°	13.8	14.9	17.0	14.9	13.8
57.5°	10.6	11.7	13.8	12.8	11.7
60°	8.5	9.6	10.6	9.6	9.6
62.5°	7.5	7.5	9.6	8.5	7.5
65°	6.4	6.4	7.5	6.4	6.4
67.5°	5.3	5.3	6.4	5.3	5.3
70°	4.3	4.3	5.3	4.3	4.3
72.5°	3.2	3.2	4.3	3.2	3.2
75°	2.1	2.1	3.2	2.1	2.1
77.5°	1.1	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)