

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: P990781

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D40FL-TL3SDSL-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: P990781
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-5000K
Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 40D TIR,
METALLIC SILVER TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

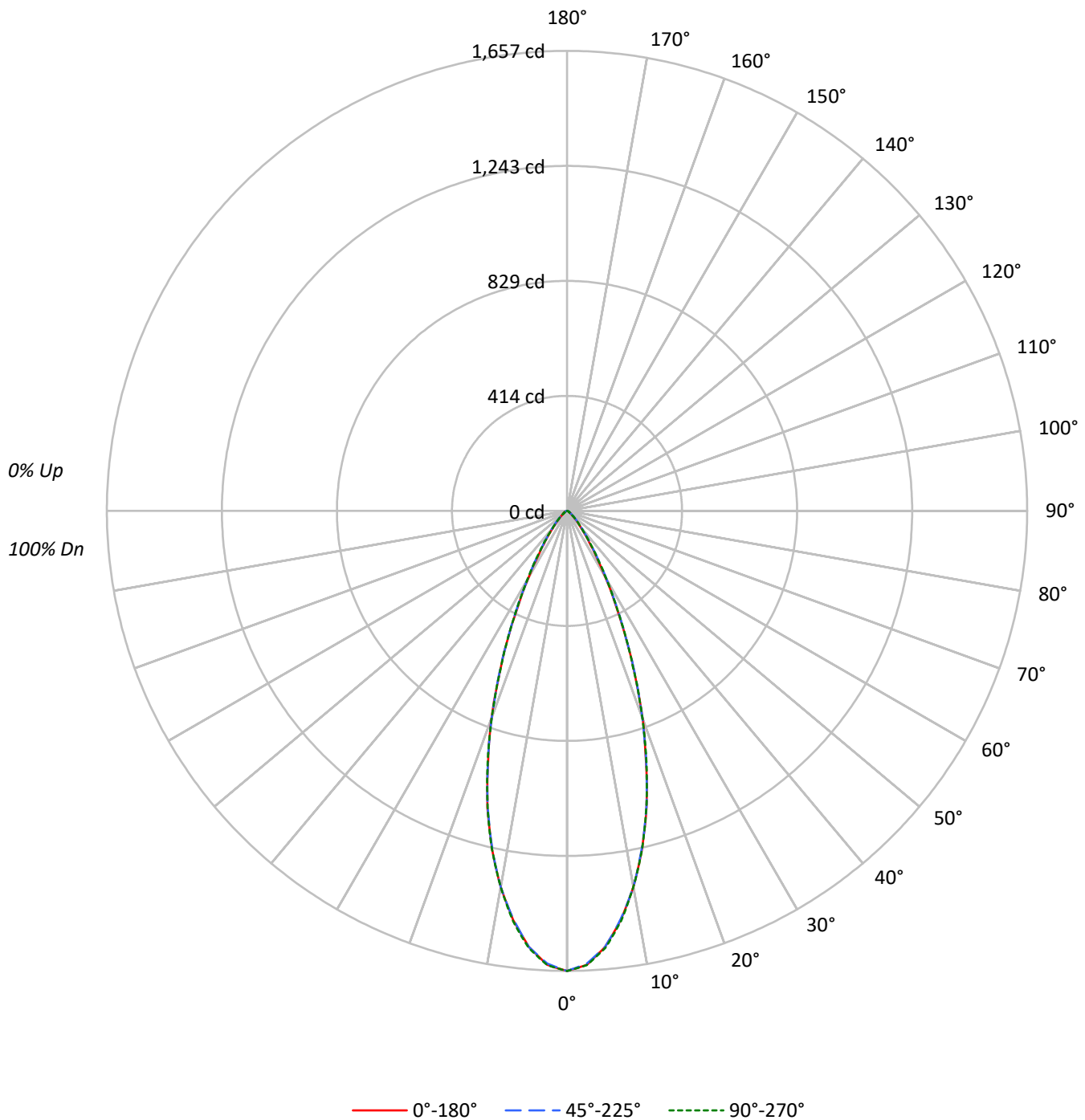
Lumens per Lamp: N/A
Luminaire Lumens: 837.3 lumens
Efficiency: N/A
Efficacy: 86.3 lumens/watt
Spacing Criteria (0/90/45): 0.63 / 0.63 / 0.64
Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
CIE Type: Direct

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	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	102	102	100
1	114	111	109	107	111	109	107	105	105	103	102	101	100	99	98	97	96	96	96	94
2	109	104	101	97	107	103	99	96	99	97	94	96	94	92	94	92	90	90	90	89
3	104	98	93	90	102	97	92	89	94	91	88	92	89	86	89	87	85	85	85	83
4	99	92	87	83	98	91	87	83	89	85	82	87	84	81	85	83	80	80	80	79
5	95	87	82	78	93	86	81	78	85	80	77	83	79	76	82	78	76	76	76	74
6	91	83	77	74	90	82	77	73	81	76	73	79	75	72	78	75	72	72	72	71
7	87	79	73	69	86	78	73	69	77	72	69	76	72	69	75	71	68	68	68	67
8	84	75	70	66	82	74	69	66	73	69	65	72	68	65	71	68	65	65	65	64
9	80	72	66	63	79	71	66	63	70	66	62	69	65	62	69	65	62	62	62	61
10	77	68	63	60	76	68	63	60	67	63	59	66	62	59	66	62	59	59	59	58

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	285425	285425	285425
5°	272442	272442	273203
10°	240599	240599	240599
15°	197251	196859	196859
20°	145924	145118	145118
25°	94462	94671	95089
30°	54887	56637	56637
35°	30296	32609	32609
40°	17311	19042	18548
45°	10181	11520	10985
50°	6189	7663	6484
55°	4294	5285	4294
60°	3031	3789	3410
65°	2690	3138	2690
70°	2216	2769	2216
75°	1464	2196	1464
80°	0	0	0
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.0	17.2
10°-20°	302.1	36.1
20°-30°	229.9	27.5
30°-40°	99.7	11.9
40°-50°	37.2	4.4
50°-60°	14.8	1.8
60°-70°	7.0	0.8
70°-80°	2.5	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°	676.0	80.7
0°-40°	775.7	92.7
0°-60°	827.7	98.9
0°-90°	837.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	837.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1657	1657	1657	1657	1657	
5°	1576	1575	1576	1575	1580	144
15°	1106	1103	1104	1103	1104	302
25°	497	497	498	502	500	229
35°	144	150	155	157	155	95
45°	42	44	47	46	45	34
55°	14	15	18	15	14	13
65°	7	7	8	7	7	7
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°	1657.3	1657.3	1657.3	1657.3	1657.3
2.5°	1636.4	1634.2	1632.0	1634.2	1637.5
5°	1575.9	1574.8	1575.9	1574.8	1580.3
7.5°	1485.7	1487.9	1482.4	1486.8	1490.1
10°	1375.8	1376.9	1375.8	1375.8	1375.8
12.5°	1247.1	1247.1	1244.9	1244.9	1249.3
15°	1106.3	1103.0	1104.1	1103.0	1104.1
17.5°	944.7	950.2	946.9	946.9	950.2
20°	796.2	794.0	791.8	794.0	791.8
21°	732.4	730.2	729.1	732.4	729.1
22°	667.5	669.7	668.6	664.2	668.6
23°	609.3	611.5	611.5	607.1	604.9
24°	554.3	552.1	556.5	554.3	554.3
25°	497.1	497.1	498.2	501.5	500.4
26°	446.5	447.6	450.9	448.7	448.7
27°	395.9	400.3	403.6	401.4	402.5
28°	355.2	356.3	361.8	359.6	359.6
29°	314.5	315.6	321.1	323.3	320.0
30°	276.0	281.5	284.8	285.9	284.8
31°	245.2	247.4	254.0	254.0	252.9
32°	213.3	218.8	224.3	225.4	224.3
33°	187.0	192.5	199.1	199.1	198.0
34°	165.0	168.3	176.0	176.0	173.8
35°	144.1	149.6	155.1	157.3	155.1
36°	128.7	129.8	137.5	138.6	136.4
37°	112.2	115.5	121.0	122.1	119.9
38°	99.0	102.3	107.8	107.8	106.7
39°	86.9	90.2	94.6	95.7	93.5
40°	77.0	79.2	84.7	84.7	82.5
42.5°	57.2	59.4	63.8	62.7	61.6
45°	41.8	44.0	47.3	46.2	45.1
47.5°	31.9	34.1	36.3	35.2	34.1
50°	23.1	25.3	28.6	26.4	24.2
52.5°	17.6	19.8	22.0	19.8	18.7
55°	14.3	15.4	17.6	15.4	14.3
57.5°	11.0	12.1	14.3	13.2	12.1
60°	8.8	9.9	11.0	9.9	9.9
62.5°	7.7	7.7	9.9	8.8	7.7
65°	6.6	6.6	7.7	6.6	6.6
67.5°	5.5	5.5	6.6	5.5	5.5
70°	4.4	4.4	5.5	4.4	4.4
72.5°	3.3	3.3	4.4	3.3	3.3
75°	2.2	2.2	3.3	2.2	2.2
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)