

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: P990741

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D25NFL-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: P990741
 Test Lab: Cooper Lighting Solutions
 Issue Date: 5/13/2025
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: HALO
 Catalog Number: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDSL-750LM-5000K
 Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR, METALLIC SILVER TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
 Ballast/Driver: -

Summary

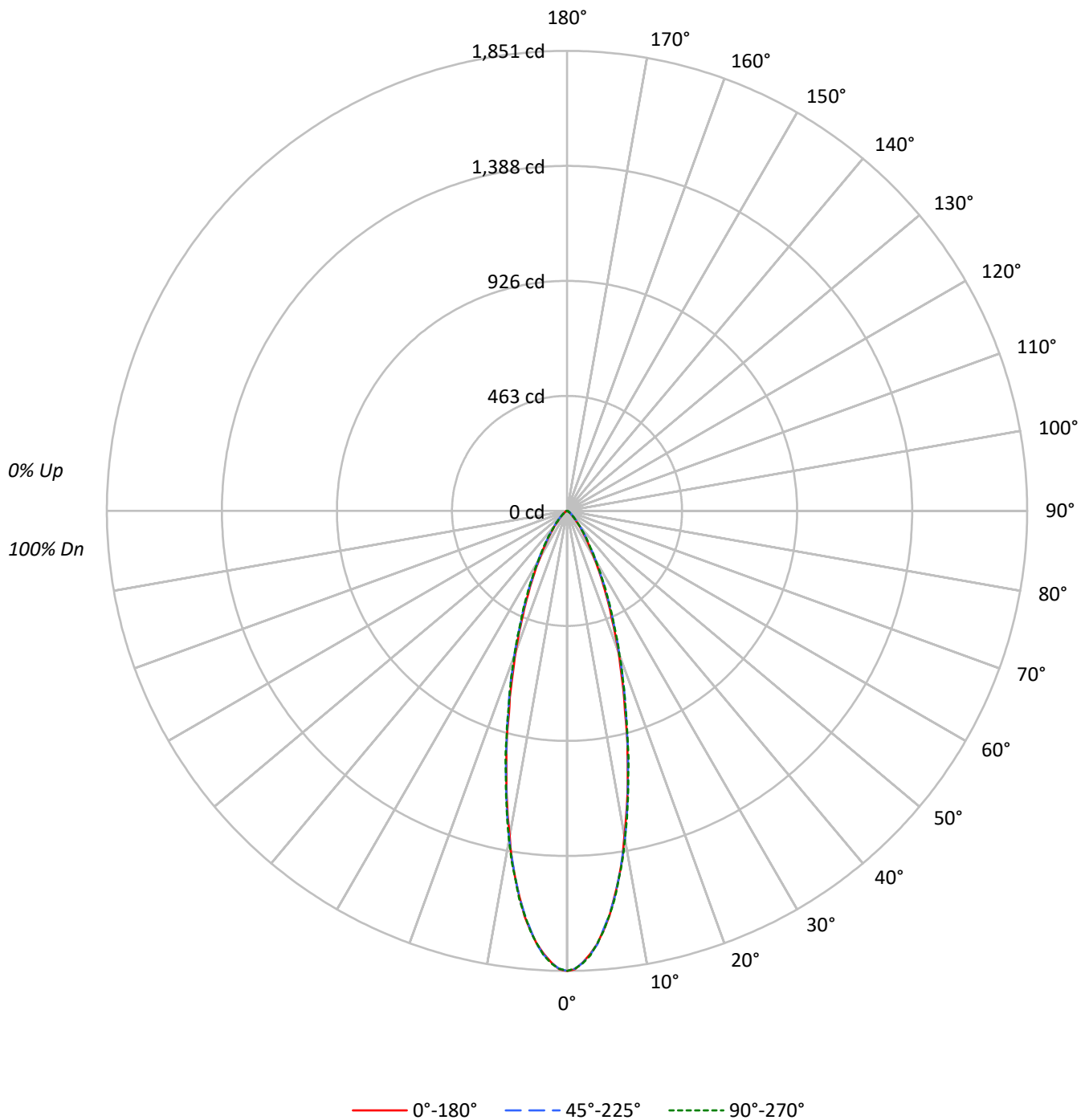
Lumens per Lamp: N/A
 Luminaire Lumens: 730.6 lumens
 Efficiency: N/A
 Efficacy: 75.3 lumens/watt
 Spacing Criteria (0/90/45): 0.5 / 0.5 / 0.54
 Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
 CIE Type: Direct

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: P990741
CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDSL-750LM-5000K

Luminous Intensity Polar Plot



TEST NUMBER: P990741

CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDSL-750LM-5000K

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20			
RC	80				70				50				30				10			0
RW	70	50	30	10	70	50	30	10	50	30	10		50	30	10		50	30	10	0
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111		106	106	106		102	102	102	100
1	114	111	109	107	112	109	107	105	105	104	102		102	100	99		98	97	96	94
2	109	105	101	98	107	103	99	97	100	97	95		97	94	93		94	92	91	89
3	104	98	94	90	102	97	93	90	94	91	88		92	89	87		90	87	85	84
4	100	93	88	84	98	92	87	84	90	86	83		88	84	82		86	83	81	79
5	95	88	83	79	94	87	82	79	85	81	78		84	80	77		82	79	77	75
6	92	84	78	74	90	83	78	74	81	77	74		80	76	73		79	75	73	71
7	88	80	74	71	87	79	74	70	78	73	70		77	73	70		76	72	69	68
8	84	76	71	67	83	75	70	67	74	70	67		73	69	66		73	69	66	65
9	81	73	67	64	80	72	67	64	71	67	64		71	66	63		70	66	63	62
10	78	70	65	61	77	69	64	61	69	64	61		68	64	61		67	63	61	59

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	318801	318801	318801
5°	292652	292082	293032
10°	232555	234478	234863
15°	166299	166887	167475
20°	110662	113283	113283
25°	70234	73369	74205
30°	43313	46157	45938
35°	26133	28446	28677
40°	16322	17806	17064
45°	9645	11252	10449
50°	5894	7368	6484
55°	3963	4954	4294
60°	2652	3410	3031
65°	2241	2690	2241
70°	1662	2216	1662
75°	732	1464	732
80°	0	0	0
85°	0	0	0

TEST NUMBER: P990741
 CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDSL-750LM-5000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.1	20.5
10°-20°	258.2	35.3
20°-30°	178.3	24.4
30°-40°	86.3	11.8
40°-50°	35.4	4.8
50°-60°	14.1	1.9
60°-70°	6.2	0.8
70°-80°	2.1	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°	586.7	80.3
0°-40°	672.9	92.1
0°-60°	722.4	98.9
0°-90°	730.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	730.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1851	1851	1851	1851	1851	
5°	1693	1688	1690	1697	1695	150
15°	933	929	936	943	939	256
25°	370	374	386	388	390	173
35°	124	130	135	138	136	82
45°	40	43	46	45	43	32
55°	13	14	16	15	14	12
65°	6	6	7	7	6	5
75°	1	2	2	2	1	2
85°	0	0	0	0	0	0
90°	0	0	0	0	0	

TEST NUMBER: P990741

CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDSL-750LM-5000K

CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°
0°	1851.1	1851.1	1851.1	1851.1	1851.1
1°	1844.5	1839.0	1842.3	1837.9	1842.3
2°	1818.1	1817.0	1819.2	1819.2	1821.4
3°	1785.1	1784.0	1788.4	1788.4	1790.6
4°	1745.5	1740.0	1747.7	1746.6	1744.4
5°	1692.8	1688.4	1689.5	1697.2	1695.0
6°	1637.8	1629.0	1632.3	1640.0	1634.5
7°	1565.2	1567.4	1567.4	1571.8	1574.0
8°	1494.8	1493.7	1493.7	1499.2	1494.8
9°	1418.9	1417.8	1416.7	1421.1	1424.4
10°	1329.8	1338.6	1340.8	1340.8	1343.0
11°	1248.4	1252.8	1258.3	1256.1	1260.5
12°	1168.1	1165.9	1174.7	1174.7	1179.1
13°	1083.4	1086.7	1091.1	1090.0	1093.3
14°	1006.4	1010.8	1011.9	1014.1	1022.9
15°	932.7	929.4	936.0	942.6	939.3
16°	846.9	857.9	863.4	867.8	866.7
17°	786.4	788.6	798.5	799.6	795.2
18°	719.3	730.3	738.0	735.8	735.8
19°	657.7	665.4	674.2	677.5	675.3
20°	603.8	607.1	618.1	621.4	618.1
22.5°	474.1	478.5	488.4	493.9	491.7
25°	369.6	374.0	386.1	388.3	390.5
27.5°	286.0	289.3	298.1	303.6	302.5
30°	217.8	222.2	232.1	235.4	231.0
32.5°	166.1	168.3	177.1	180.4	178.2
35°	124.3	129.8	135.3	137.5	136.4
37.5°	95.7	97.9	103.4	103.4	101.2
40°	72.6	73.7	79.2	79.2	75.9
42.5°	53.9	56.1	60.5	59.4	57.2
45°	39.6	42.9	46.2	45.1	42.9
47.5°	29.7	31.9	35.2	34.1	31.9
50°	22.0	24.2	27.5	25.3	24.2
52.5°	17.6	18.7	22.0	19.8	17.6
55°	13.2	14.3	16.5	15.4	14.3
57.5°	9.9	11.0	13.2	12.1	11.0
60°	7.7	8.8	9.9	9.9	8.8
62.5°	6.6	7.7	8.8	7.7	6.6
65°	5.5	5.5	6.6	6.6	5.5
67.5°	4.4	4.4	5.5	4.4	4.4
70°	3.3	4.4	4.4	3.3	3.3
72.5°	2.2	3.3	3.3	3.3	2.2
75°	1.1	2.2	2.2	2.2	1.1
77.5°	1.1	1.1	1.1	1.1	1.1
80°	0.0	0.0	0.0	0.0	0.0

TEST NUMBER: P990741

CATALOG NUMBER: ML3ALSFL9FS1E-TIR4D25NFL-TL3SDSL-750LM-5000K

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)