

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: P990736

Luminaire Tested: **ML3ALSFL9FS1E-TIR4D25NFL-TL3SDMW-750LM-5000K**

Issue Date: 5/13/2025

Tested By:

Approved By:



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Test Information

Test Method: LM-79-08
 Report Number: P990736
 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-5000K
 Description: 3IN SQUARE ML FLEX ADJUSTABLE, SELECTABLE CCT, WITH 25D TIR, MATTE WHITE TRIM
 Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
 Ballast/Driver: -

Summary

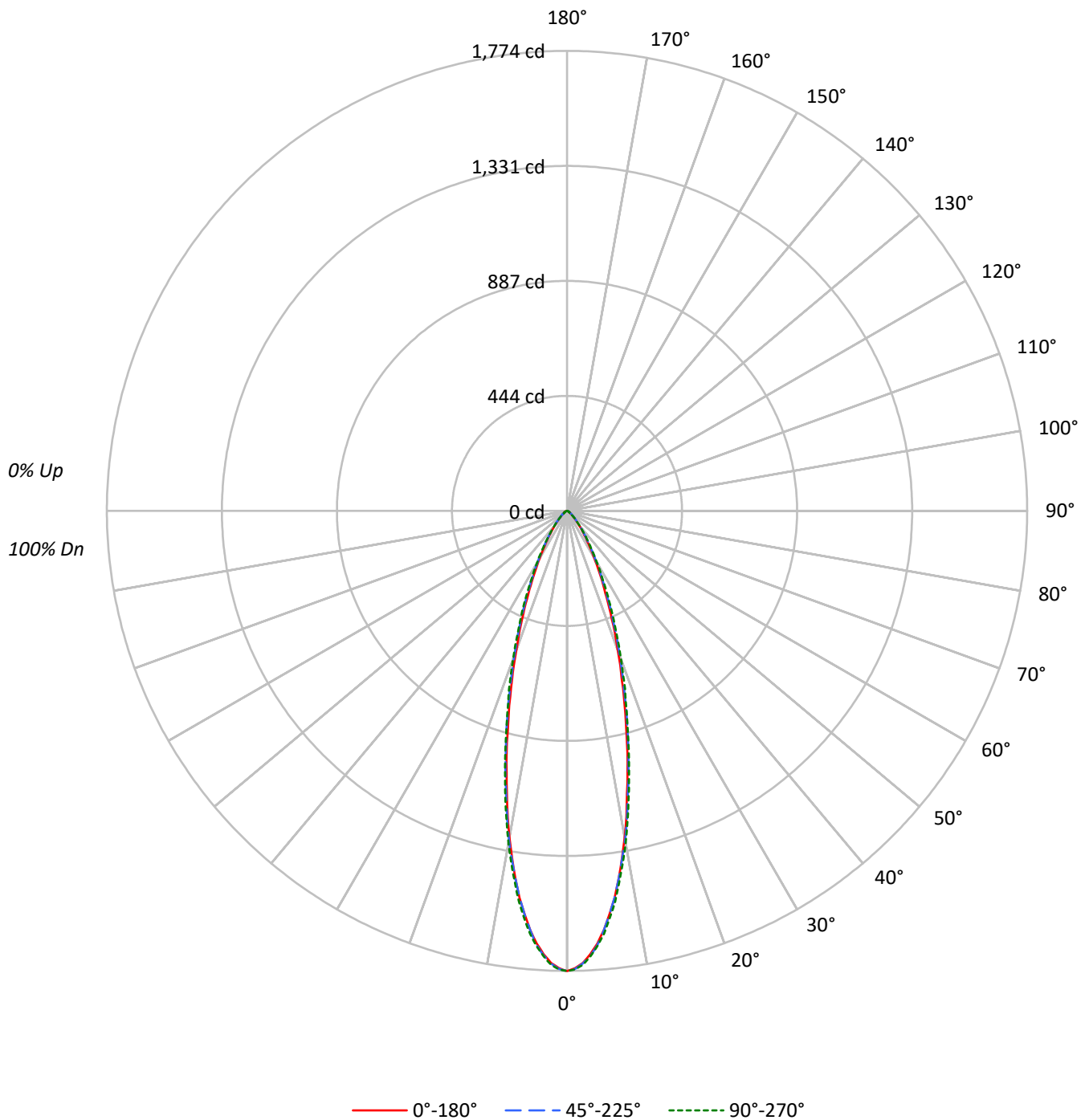
Lumens per Lamp: N/A
 Luminaire Lumens: 713.1 lumens
 Efficiency: N/A
 Efficacy: 73.5 lumens/watt
 Spacing Criteria (0/90/45): 0.5 / 0.5 / 0.54
 Luminous Opening: Rectangular (W 0.25' x L: 0.25' x H: 0')
 CIE Type: Direct

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

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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°	305609	305609	305609
5°	280533	280723	283005
10°	223793	225332	227448
15°	157794	161716	162305
20°	104577	108811	111432
25°	66642	70614	73331
30°	41762	44606	46137
35°	25419	27731	28656
40°	16075	17558	17311
45°	10181	11252	10717
50°	6484	7663	6779
55°	4624	5615	4624
60°	3410	4168	3410
65°	3138	3586	3138
70°	2769	2769	2216
75°	1464	2196	1464
80°	1091	1091	1091
85°	0	0	0

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.0	20.2
10°-20°	248.6	34.9
20°-30°	172.7	24.2
30°-40°	84.6	11.9
40°-50°	36.0	5.0
50°-60°	15.6	2.2
60°-70°	7.9	1.1
70°-80°	3.2	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°	565.3	79.3
0°-40°	649.9	91.1
0°-60°	701.5	98.4
0°-90°	713.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	713.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1774	1774	1774	1774	1774	
5°	1623	1624	1624	1627	1637	144
15°	885	890	907	907	910	244
25°	351	358	372	380	386	165
35°	121	125	132	136	136	79
45°	42	44	46	45	44	34
55°	15	16	19	16	15	14
65°	8	8	9	8	8	7
75°	2	3	3	3	2	3
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°	1774.5	1774.5	1774.5	1774.5	1774.5
1°	1763.5	1766.8	1766.8	1765.7	1769.0
2°	1744.8	1745.9	1747.0	1745.9	1751.4
3°	1711.8	1715.1	1717.3	1715.1	1720.6
4°	1672.2	1676.6	1678.8	1674.4	1682.1
5°	1622.7	1623.8	1623.8	1627.1	1637.0
6°	1563.4	1568.9	1565.6	1567.8	1578.8
7°	1502.9	1500.7	1501.8	1504.0	1519.4
8°	1430.3	1431.4	1431.4	1434.7	1446.8
9°	1353.4	1354.5	1358.9	1360.0	1374.3
10°	1279.7	1275.3	1288.5	1286.3	1300.6
11°	1198.4	1197.3	1209.4	1210.5	1221.4
12°	1112.6	1122.5	1126.9	1134.6	1141.2
13°	1036.7	1041.1	1055.4	1058.7	1063.1
14°	963.1	967.5	977.4	980.7	986.2
15°	885.0	890.5	907.0	907.0	910.3
16°	815.8	820.2	838.9	838.9	840.0
17°	749.8	753.1	770.7	774.0	776.2
18°	684.9	692.6	706.9	713.5	723.4
19°	630.0	634.4	648.7	655.2	661.8
20°	570.6	582.7	593.7	600.3	608.0
22.5°	451.9	457.4	472.7	483.7	483.7
25°	350.7	358.4	371.6	380.4	385.9
27.5°	272.7	276.0	290.2	300.1	299.0
30°	210.0	213.3	224.3	230.9	232.0
32.5°	160.5	162.7	172.6	178.1	178.1
35°	120.9	125.3	131.9	136.3	136.3
37.5°	92.4	95.6	101.1	104.4	102.2
40°	71.5	73.7	78.1	78.1	77.0
42.5°	55.0	57.2	59.4	59.4	57.2
45°	41.8	44.0	46.2	45.1	44.0
47.5°	31.9	34.1	36.3	35.2	33.0
50°	24.2	26.4	28.6	27.5	25.3
52.5°	18.7	20.9	23.1	20.9	19.8
55°	15.4	16.5	18.7	16.5	15.4
57.5°	12.1	13.2	15.4	13.2	12.1
60°	9.9	11.0	12.1	11.0	9.9
62.5°	8.8	8.8	9.9	9.9	8.8
65°	7.7	7.7	8.8	7.7	7.7
67.5°	5.5	6.6	7.7	6.6	5.5
70°	5.5	5.5	5.5	5.5	4.4
72.5°	3.3	4.4	4.4	4.4	3.3
75°	2.2	3.3	3.3	3.3	2.2
77.5°	1.1	2.2	2.2	2.2	1.1
80°	1.1	1.1	1.1	1.1	1.1

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°
82.5°	1.1	1.1	1.1	1.1	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)