

Measurements are reported with an uncertainty ($k=2$)** of $\pm 0.012 \mu\text{m}$. Statements of Conformity are not provided in this report. Review the results and verify that they meet the requirements for the intended use. Physical damage to or contamination of the CDMS occurring after calibration may invalidate the reported measurements. Use this product at $25^\circ\text{C} \pm 5^\circ\text{C}$ and at less than 80% RH.

** Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k = 2$. The reported expanded measurement uncertainty is stated as the standard measurement uncertainty multiplied by the coverage factor K such that the coverage probability corresponds to approximately 95%.

Below are the Non-ISO 17025:2017 Accredited Certified Pitch Measurements unique to Serial Number CD-BH06-xxxx and traceable to NIST Certified Standard CD-PG01-0211.

Line	Number of Lines	Position of Measurement	Non-ISO 17025:2017 Accredited Measured Distance (first to last line)	Average Pitch
2.0 mm	2	$\pm 1.00\text{mm}$ from center	2.000 mm	2.000 mm
1.0 mm	2	$\pm 0.5\text{mm}$ from center	1.000 mm	1.000 mm
0.5 mm	2	$\pm 0.25\text{mm}$ from center	0.500 mm	0.500 mm
0.25 mm	2	$\pm 0.125\text{mm}$ from center	0.250 mm	0.250 mm
5.0 μm	12	$\pm 20 \mu\text{m}$ from center	55.056 μm	5.005 μm
2.0 μm	16	$\pm 10 \mu\text{m}$ from center	30.025 μm	2.002 μm
1.0 μm	17	$\pm 5 \mu\text{m}$ from center	16.024 μm	1.002 μm

The average pitch is derived from the stated length that was determined using measurements (taken center-to-center) over the stated number of lines (i.e., length divided by the number of lines minus one).

Date of Analysis: December 2nd, 2024

Equipment used:

Instrument	Model	Serial #	Resolution	Repeatability	Temperature	Humidity	Reference
FE-SEM	FEI Apreo2	9958357	0.9nm	0.030%	$21.9 \pm 0.1^\circ\text{C}$	$33.3 \pm 0.8\%$	CD-PG01-0211

Location: AISThesis Products, Inc., PO Box 1950, Clyde North Carolina 28721.

Notes:

D.S. Finch
Certified by

Signature

H. Haehlen
Authorized by

Signature

December 2nd, 2024
Date report issued.

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Non-ISO 17025:2017 Accredited Supplemental Material.

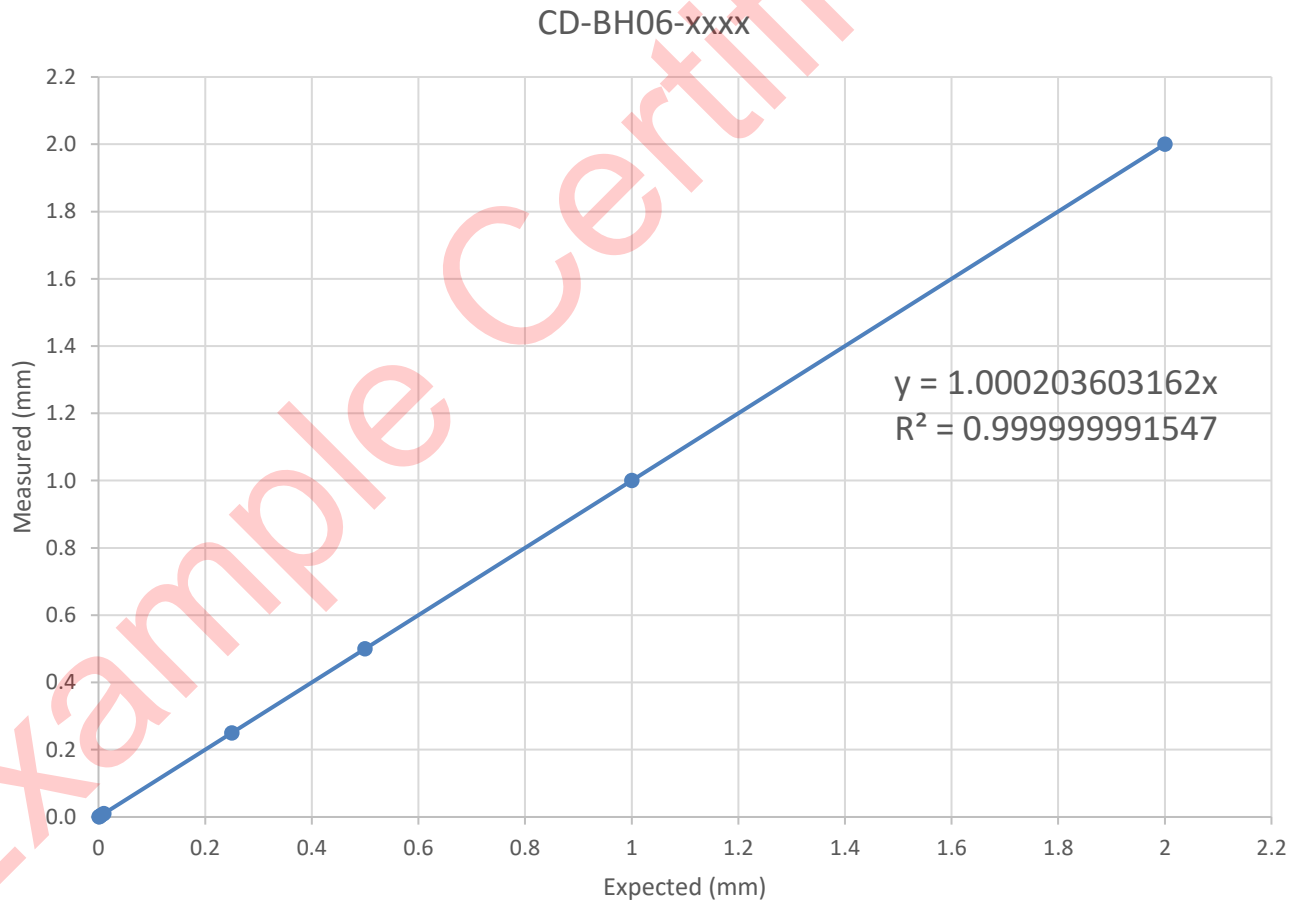


Figure 1. Expected versus actual measurements including all lines with linear regression and R^2 values reported.

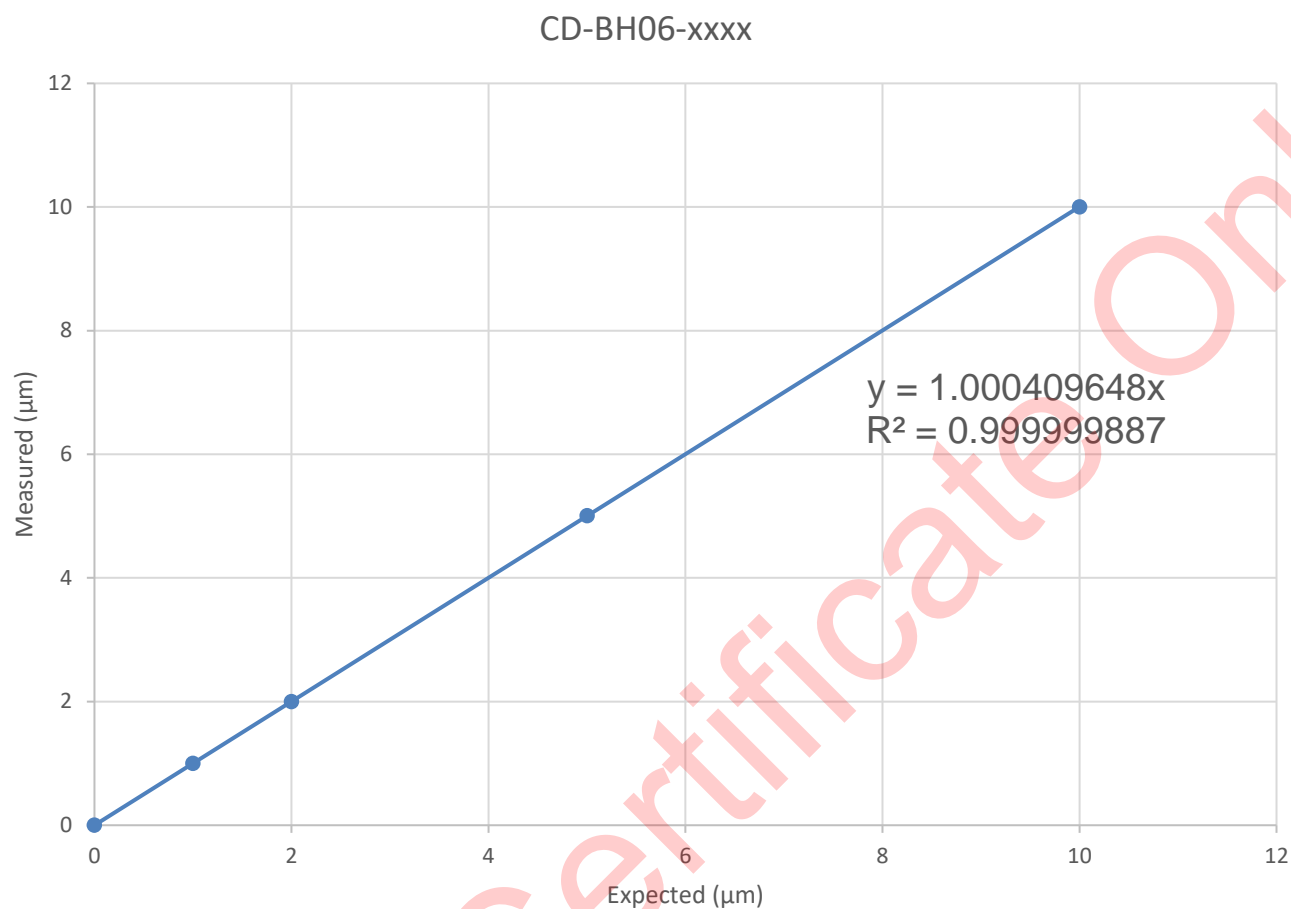


Figure 2. Expected versus actual measurements for the 10 μm , 5 μm , 2 μm and 1 μm pitch lines with linear regression and R^2 values reported.

5 μm Line	Pitch
0-5 μm	5.005 μm
5-10 μm	5.005 μm
10-15 μm	5.005 μm
15-20 μm	5.010 μm
20-25 μm	5.010 μm
25-30 μm	5.005 μm
30-35 μm	5.005 μm
35-40 μm	5.003 μm
40-45 μm	5.000 μm
45-50 μm	5.008 μm
50-55 μm	5.000 μm
Sum	55.056 μm
Average	5.0051 μm
2-Sigma *	0.0075 μm

2 μm Line	Pitch
0-2 μm	2.002 μm
2-4 μm	2.003 μm
4-6 μm	2.001 μm
6-8 μm	2.003 μm
8-10 μm	2.001 μm
10-12 μm	2.001 μm
12-14 μm	2.003 μm
14-16 μm	1.998 μm
16-18 μm	2.003 μm
18-20 μm	2.001 μm
20-22 μm	2.001 μm
22-24 μm	2.001 μm
24-26 μm	2.003 μm
26-28 μm	2.001 μm
28-30 μm	2.003 μm
Sum	30.025 μm
Average	2.0017 μm
2-Sigma *	0.0030 μm

1 μm Line	Pitch
0-1 μm	1.001 μm
1-2 μm	1.001 μm
2-3 μm	1.002 μm
3-4 μm	1.002 μm
4-5 μm	1.001 μm
5-6 μm	1.002 μm
6-7 μm	1.001 μm
7-8 μm	1.001 μm
8-9 μm	1.003 μm
9-10 μm	1.001 μm
10-11 μm	1.000 μm
11-12 μm	1.002 μm
12-13 μm	1.001 μm
13-14 μm	1.001 μm
14-15 μm	1.003 μm
15-16 μm	1.002 μm
Sum	16.024 μm
Average	1.0015 μm
2-Sigma *	0.0017 μm

* Corrected for sample size using the appropriate Student t-factor.

End of report.