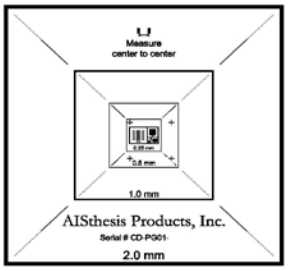
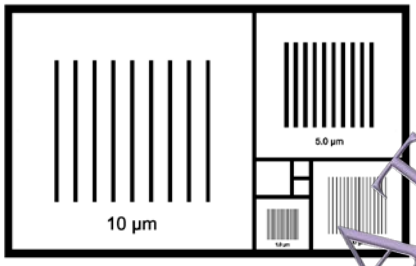
AISthesis Products, Inc.

Advanced Imaging Products for Nanotechnology, Engineering and Life Sciences

Wafer Level Certificate of Traceability for **Pelcotec™** Critical Dimension Standard





Product Number: **Pelcotec™** 682-1 CDMS-1T

Product Description: 2.5x2.5mm **Pelcotec™** 2mm-1µm Critical Dimension Magnification Standard

Wafer Identifier: CD-XE01

Manufactured for and distributed by:

TED PELLA, INC.
Microscopy Products for Science and Industry

The accuracy of these products was determined by reference comparison to working standards traceable to the National Institute of Standards and Technology (NIST), Test No. 861/280822-11.

Line	Average pitch of wafer	Number of lines averaged	Average pitch uniformity (1σ uncertainty)	Total expanded uncertainty (3σ) average pitch for wafer*
2.0mm	2.00 mm	2	± 2µm (±0.10%)	± 7µm (±0.35%)
1.0mm	1.00 mm	2	± 1µm (±0.10%)	± 3.5µm (±0.35%)
0.5mm	0.500 mm	2	± 0.5µm (±0.10%)	± 1.75µm (±0.35%)
0.25mm	0.250 mm	2	± 0.25µm (±0.10%)	± 0.9µm (±0.35%)
10µm	10.00 µm	9	± 0.01µm (±0.10%)	± 0.035µm (±0.35%)
5µm	5.00 µm	12	± 0.01µm (±0.20%)	± 0.035µm (±0.70%)
2µm	2.00 µm	16	± 0.004µm (±0.20%)	± 0.014µm (±0.70%)
1µm	1.00 µm	17	± 0.002µm (±0.20%)	± 0.007µm (±0.70%)

* The 3σ uncertainty (95% confidence interval) average pitch is determined using a minimum of nine die per production wafer. Each average pitch is determined using 100+ measurements on each die averaged over the stated number of lines. The total expanded uncertainty includes both Type A and Type B uncertainties corrected for sample size using an appropriate Student t-factor.

Equipment used:

Instrument	Model number	Serial #	NIST Certified CD/Recalibration	Resolution	Repeatability
FE-SEM	FEI Verios	9922551	CD-PG01-0211/June 2018	0.9nm	0.03%

Certified by _____ Signature _____ Date _____

P.O. Box 1950, Clyde, North Carolina 28721 Tel: 828.627.6555 E-mail: CD@aisthesisproducts.com