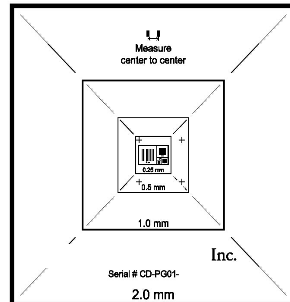
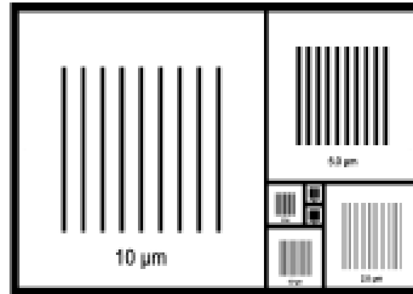
TED PELLA, INC.
Microscopy Products for Science and Industry

Wafer Level Certificate of Traceability for Critical Dimension Standard Pelcotec™ CDMS- 0.1T, 2mm - 100nm, Traceable





Product Number: 683-01 and 683-01A through 683-01Z

Product Description: 2.5x2.5mm Critical Dimension Magnification Standard

Wafer Identifier: CD-UC01

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	2.00mm	2	± 2µm (±0.10%)	± 7µm (±0.35%)
1.0mm	1.00mm	2	± 1µm (±0.10%)	± 3.5µm (±0.35%)
0.5mm	0.500mm	2	± 0.5µm (±0.10%)	± 1.75µm (±0.35%)
0.25mm	0.250mm	2	± 0.25µm (±0.10%)	± 0.9µm (±0.35%)
10µm	10.00µm	9	± 0.01µm (±0.10%)	± 0.035µm (±0.35%)
5µm	5.00µm	12	± 0.01µm (±0.20%)	± 0.035µm (±0.70%)
2µm	2.00µm	10	± 0.004µm (±0.20%)	± 0.014µm (±0.70%)
1µm	1.00µm	10	± 0.002µm (±0.20%)	± 0.007µm (±0.70%)
500nm	500.6nm	10	± 1.00nm (±0.20%)	± 3.5nm (±0.70%)
250nm	249.9nm	10	± 0.50nm (±0.20%)	± 1.75nm (±0.70%)
100nm	100.1nm	10	± 0.20nm (±0.20%)	± 0.75nm (±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 Number	NIST Certified CD/Recalibration	Resolution	Repeatability
FE-SEM	FEI Helios 600i	D9922192	CD-PG01-0211/June 2014	0.9nm	0.03%

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683-01 TN VUC-01 04292014

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