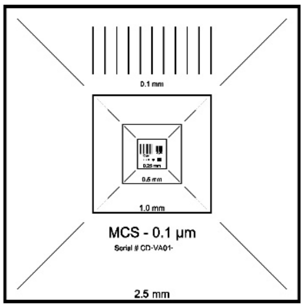
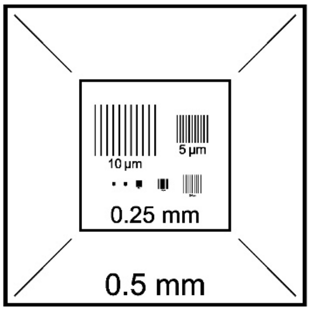
Micro to Nano
Innovative Microscopy Supplies

Certificate of Calibration

Certificate of Calibration for CD-VA01-2008

EM-Tec MCS-0.1 Magnification Calibration Standard





Product Numbers: 31-C32000-U, 31-C32000-1, 31-C32000-2, 31-C32000-4, 31-C32000-8, 31-C32000-10

Product Description: EM-Tec MCS-0.1 Magnification Calibration Standard 2.5mm to 100nm

Product Identifier: CD-VA01-2008

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	Certified average pitch	Number of lines	Certified distance (1σ)	Between	Total expanded uncertainty (3σ)
2.5 mm	2.50 mm	2	2.50 mm ± 0.03%	First and last line	± 0.09%
1.0 mm	1.00 mm	2	1.00 mm ± 0.03%	First and last line	± 0.09%
0.5 mm	0.500 mm	2	0.500 mm ± 0.03%	First and last line	± 0.09%
0.25 mm	0.250 mm	2	0.250 mm ± 0.03%	First and last line	± 0.09%
0.10 mm	0.100 mm	2	0.100 mm ± 0.03%	First and second line	± 0.09%
10 µm	10.00 µm	11	99.97 µm ± 0.03%	First and last line	± 0.09%
5.0 µm	5.00 µm	11	49.98 µm ± 0.03%	First and last line	± 0.09%
2.5 µm	2.50 µm	13	30.00 µm ± 0.03%	First and last line	± 0.09%
1.0 µm	1.00 µm	17	16.00 µm ± 0.03%	First and last line	± 0.09%
500 nm	500.1 nm	20	9.50 µm ± 0.03%	First and last line	± 0.09%
250 nm	250.3 nm	21	5.01 µm ± 0.03%	First and last line	± 0.09%
100 nm	100.2 nm	52	5.11 µm ± 0.03%	First and last line	± 0.09%

* The certified average pitch is derived from the stated certified length that was determined using 10 measurements (taken center-to-center) over the stated number of lines (i.e., length divided by the number of lines minus one). 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	9922557	CD-PG01-0211/June 2016	0.9nm	0.03%

DS Finch

Dudley S Finch______
Certified by

Signature

August 20th 2015__
Date

This certificate shall not be reproduced without the permission of Vof Micro to Nano.

TSB 31-C32000-2008 Certificate of Calibration 2022-05-03 CD-VA01-2008