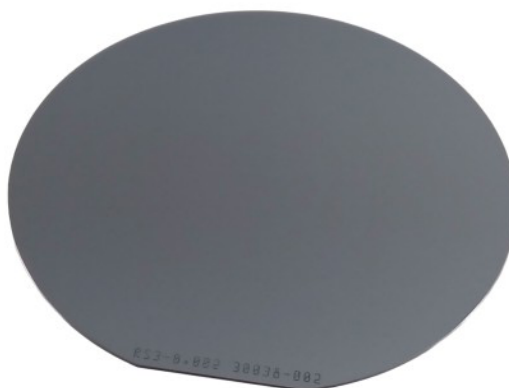


MW-SRS

NIST certified calibration wafer



RESISTANCE NEED NOT BE FUTILE. Resistivity Standards (RS) span 4 decades and are designed for calibrating both contact and non-contact resistivity measuring instruments. The standard contact resistivity measuring instruments. The standard is created by sawing a doped single crystalline ingot into wafers, lapping and chemically cleaning them to VLSI Standards' specifications.

The Resistivity Standard, available in three wafer sizes, is shown in its matte finish.

PRODUCT DESCRIPTION

Resistivity Standards are bare silicon wafers available in 3 in, 8 in and 12 in sizes. The silicon is p-type (Boron) doped to nominal resistivity values, from 0.002 ohm.cm to 3 ohm.cm as available on the 3" model. For enhanced measurement on contact probes, the wafers are lapped and chemically polished. The increased surface roughness allows cleaner penetration through the native oxide layer and better contact.

Each wafer is certified at its center, NIST Traceable for accuracy. Certificates of Calibration are provided with each standard and report the resistivity, sheet resistance and thickness measurement values with calculated uncertainties.

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PRODUCT SPECIFICATIONS

<i>Reference</i>	<i>Wafer Size (mm)</i>	<i>Resistivity (ohm.cm)</i>	<i>Sheet resistance (ohm/sq)</i>	<i>Thickness (μm)</i>
SRS3-0.002	76.2	0.002	0.04	508
SRS3-0.01	76.2	0.01	0.2	508
SRS3-0.03	76.2	0.03	0.6	508
SRS3-0.1	76.2	0.1	2	508
SRS3-0.3	76.2	0.3	6	508
SRS3-0.9	76.2	0.9	18	508
SRS3-3	76.2	3	60	508
SRS3-30	76.2	30	600	508

<i>Reference</i>	<i>Wafer Size (mm)</i>	<i>Resistivity (ohm.cm)</i>	<i>Sheet resistance (ohm/sq)</i>	<i>Thickness (μm)</i>
SRS8-0.01	200	0.01	0.14	710
SRS8-0.03	200	0.03	0.42	710
SRS8-0.1	200	0.1	1.4	710
SRS8-1	200	1	14	710
SRS8-3	200	3	42	710
SRS8-30	200	30	423	710

<i>Reference</i>	<i>Wafer Size (mm)</i>	<i>Resistivity (ohm.cm)</i>	<i>Sheet resistance (ohm/sq)</i>	<i>Thickness (μm)</i>
SRS12-0.02	300	0.02	0.26	760
SRS12-1.5	300	1.5	20	760
SRS12-10	300	10	132	760

IMPORTANT

When performing calibration measurements with a 4-point-probe instrument, you must ensure that the probes and the silicon make solid, repeatable contact. Poor contact is revealed by a high standard deviation of multiple measurements taken from the same area or in some cases, zero-voltage readings. We recommend the use of tungsten carbide probes with a radius of 40 microns, a probe spacing of 1.6 mm, and a loading force of 200 grams per pin. This type of probe is often referred to in literature as “Probe Type E”. Other probes with wider radii may not be able to break through the layer of native oxide on the wafer and may result in poor contacts.

ITO Sheet Resistance Standard



THE FINISHING TOUCH FOR FLAT PANEL METROLOGY. Indium Tin Oxide Sheet Resistance Standards (ITOSRS) from VLSI Standards are traceable to SI units through NIST products, intended for calibration of both contact and non-contact sheet resistance measurement tools used in the LCD, flat panel and touch-screen markets.

The image at right shows the 125 mm x 125 mm ITO Sheet Resistance Standard.

PRODUCT DESCRIPTION

The ITO Sheet Resistance Standard consists of a glass substrate with a thin film of indium tin oxide sputtered on it. The entire surface of the glass substrate is coated with the ITO film, but only the center portion of the substrate, 30 mm in diameter, is certified. The standard is suitable for larger non-contact probes, four point probes, resistivity and other sheet resistance tools and comes with a certificate of calibration.

PRODUCT SPECIFICATIONS

Substrate size	125 mm x 125 mm x 0.7 mm
Nominal Sheet Resistance Values	15 Ω/\square ; 90 Ω/\square
Material	90% In ₂ O ₃ :10% SnO ₂
Certified Area	30 mm diameter in the center of the plate
Sheet Resistance Uniformity (in the Certified Area)	< 1.5% (1σ)