

**CURRENT SOURCE AND NANOVOLTMETER
FOR THIN FILM RESISTIVITY MEASUREMENT**

Technical specifications

| Sl. No. | PARAMETERS / PARTICULARS REQUIRED |
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| 1 | <p>General requirements: System should have the capability to precisely source current as well as measure voltage for measurement of a wide range of resistances from few mΩ to ~10 GΩ.</p> |
| 2 | <p>Current source should have the following capabilities:</p> <ul style="list-style-type: none"> • Arbitrary waveform Amplitude: at least from 5pA to 200mA peak-peak into loads up to $10^{12} \Omega$ • Resolution at least 100 fA for the range of 2 nA or better • Voltage Compliance: ~-100 V (Better lower range and steps are preferred) • Output Impedance: $\sim 10^{14} \Omega$ • Should have built-in guarded sourcing for faster low current • Automatic reversal of current should be provided • Waveforms: Sine, Square, Ramp, and 4 user defined arbitrary waveforms • Frequency range: 1mHz to 100kHz |
| 3 | <p>Voltmeter should have the following capabilities: _____</p> <ul style="list-style-type: none"> • 7(1/2) Digits Display Resolution • Lower resolution: 1nV resolution @ 10 mV range or better • Noise @ 60 msec response (lowest range) <100 nV p-p • Accuracy @ 10 mV/ 90 day ~50 ppm + 40 nV • Dual channels (Maximum range Ch1 100V and Ch2 10 V) • Input Resistance should be >10 GΩ (~ 10 MΩ for 100 V range). • Ratio mode should be available. |
| 4 | Both systems should have GPIB and Ethernet communication facility |
| 5 | All necessary low noise cables and accessories for electrical measurement should be provided. |
| 6 | System should have capability of Low current sourcing (pA range), resistance measurement (mΩ to ~10 GΩ), conductance measurement, differential conductance measurement. |
| 7 | Warranty: 3 years |

ELIGIBILITY CRITERIA:

- OEM should have authorized service centre in India, functioning minimum for 10 years to provide repair, maintenance, calibration and upgradation facility (OEM should provide necessary service of operation certificate).