

Resistor Noise Test Set

**Model
 315C**



FEATURES

- Industry standard
- Meets requirements of MIL-STD-202B
- 1 ohm to 100 megohms
- IEEE-488 interface
- Discrete or resistor network scanning
- No lookup tables required

HIGHLIGHTS

QUAN-TECH's new model 315C Resistor Noise Test Set is designed to meet the needs of the laboratory, Q.A., and production departments. The model 315C contains a processor to compute the applied voltage, the INDEX value, and the correction factor for low noise resistors. Faster and easier to operate, yet more versatile with data logging and programming over an

IEEE-488 bus. The major highlights are listed below.

- **Measurement Time** — less than 1 second.
- **Resistance Range** — 1 ohm to 100 megohms.
- **Ohmmeter** — the resistance is measured and displayed.
- **Applied Voltage** — the required voltage for the programmed wattage is calculated and displayed.
- **Noise Index** — the INDEX is calculated and displayed including the correction factor for low noise resistors (normal mode).
- **Channel Select** — up to 99 resistor selections available for resistor network analysis with a remote test station.
- **Processor Controlled IEEE-488 Bus** — instrument programming and data logging over the bus.

APPLICATIONS

The ever increasing demand for greater sensitivity, resolution, product uniformity, and reliability requires careful attention to all circuit elements. The Model 315C has been engineered to simplify the research, development, and product control of resistors and resistor networks.

Since the current noise of resistor is a function of the current density it is a measure of;

1. the noise quality and uniformity of the film;

2. the quality of the trimming process,
3. the quality of the end terminations,
4. and any bridging of the resistor paths.

Continual monitoring of the product is essential to meet today's standards.

Flexibility has been added to the Model 315C for the measurement of components, such as reference diodes, in the OTHER mode of operation.

SPECIFICATIONS

Resistance Range:	1 ohm to 100 Megohms.
Measurement Filter:	1 KHz bandwidth, geometrically centered at 1 KHz per MIL-STD-202B.
Noise Readout:	Microvolts/decade, dB (microvolts/decade, where $1 \mu V = 0 \text{ dB}$), or INDEX. 4 digit display. Accuracy +/- 0.5 dB.
Applied Voltage:	0 to 25.5 volts in 0.1 volt steps, 26 to 255 volts in 1 volt steps. Displayed in volts or dB, where 1 volt = 0 dB. 3 digit display.
Resistance:	1 ohm to 100 Megohms. 4 digit display plus range. Accuracy +/- 0.5%, 100 ohms to 1 Megohm.
Wattage:	0 to 0.5 watts in 0.01 steps up to 255 volts or 0.5A maximum. 2 digit display.
Channel:	1 to 99 positions. 2 digit display. Note: Remote test station for multichannel operation is not included as part of the standard unit.
GPB Interface:	IEEE-488 bus included in standard unit. The subsets included are: SH1, AH1, RL, T6, L4, CO, DTO, PPO, and DC1.
Power:	110/220 volts, 50/60 Hz.
Dimensions:	H = 7", W = 16.25", D = 11.25" plus 2" test fixture. 16.5 lbs, 7.5 Kg.

NOTE: The Quan-Tech Resistor Noise Test Set Model 315C conforms to the recommendations of the National Bureau of Standards and the IEC, and meets the requirements of Method 308 of MIL-STD-202B.

INDEX, the unit of measurement, as defined in the NBS report is "the ratio of the rms noise voltage, in microvolts, to the applied dc voltage, in volts, expressed in decibels, when the associated pass band for the noise is one frequency decade." Or simply $\mu V/V/Dec$ in dB.