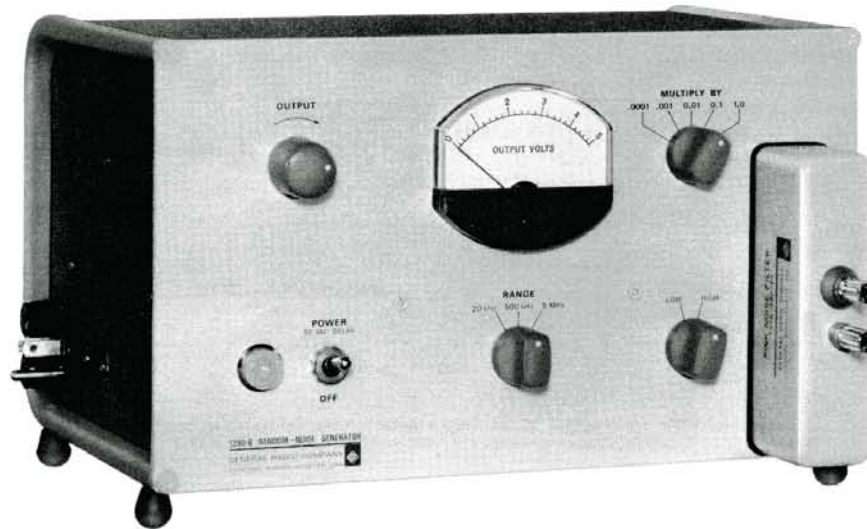


Type 1390-B RANDOM-NOISE GENERATOR

- 5 Hz to 5 MHz
- 30- μ V to 3-V output
- ± 1 -dB audio-spectrum-level uniformity



This instrument generates wide-band noise of uniform spectrum level, particularly useful for noise and vibration testing in electrical and mechanical systems. The noise output of a gas-discharge tube is amplified and shaped with low-pass filters to provide ranges to 20 kHz, 500 kHz, and 5 MHz.

The output level is controlled by a continuous attenuator followed by a 4-step attenuator of 20-dB per step and is metered from over 3 volts to below 30 microvolts. When the attenuator is used, the output impedance remains essentially constant as the output level is adjusted.

Use the 1390-B as a broad-band signal source for:

- frequency response — drive device under test with 1390-B and analyze output with any of several GR analyzers, manually or with the GR 1521-B Graphic Level Recorder.
- intermodulation and cross-talk tests.
- simulation of telephone-line noise.
- measurements on servo amplifiers.

- noise interference tests on radar.
- determining meter response characteristics.
- setting transmission levels in communication circuits.
- statistical demonstrations in classroom and lab.

acoustic measurements:

- frequency response.
- reverberation — use 1390-B with a GR analyzer as source of narrow-band noise.
- sound attenuation of ducts, walls, panels, or floors.
- acoustical properties of materials.
- room acoustics.

or use with an amplifier to drive:

- a loudspeaker for structural fatigue tests in high-level acoustic fields.
- a vibration shake-table.

— For more information, request GR Reprint E-110.

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specifications

Frequency Range: 5 Hz to 5 MHz.

Output Voltage: Max open-circuit output is at least 3 V for 20-kHz range, 2 V for 500-kHz range, and 1 V for 5-MHz range.

Output Impedance: Source impedance for max output is approx 900 Ω . Output is taken from a 2500- Ω potentiometer. Source impedance for attenuated output is 200 Ω . One output terminal is grounded.

Range	Typical Spectrum Level (with 1-V rms output)	Spectrum Level Uniformity *
20 kHz	5 mV for 1-Hz band	within ± 1 dB, 20 Hz to 20 kHz
500 kHz	1.2 mV for 1-Hz band	within ± 3 dB, 20 Hz to 500 kHz;
5 MHz	0.6 mV for 1-Hz band	within ± 3 dB, 20 Hz to 500 kHz; within ± 8 dB, 500 kHz to 5 MHz

* Noise energy also present beyond these limits. Level is down 3 dB at 5 Hz. See plot.



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