

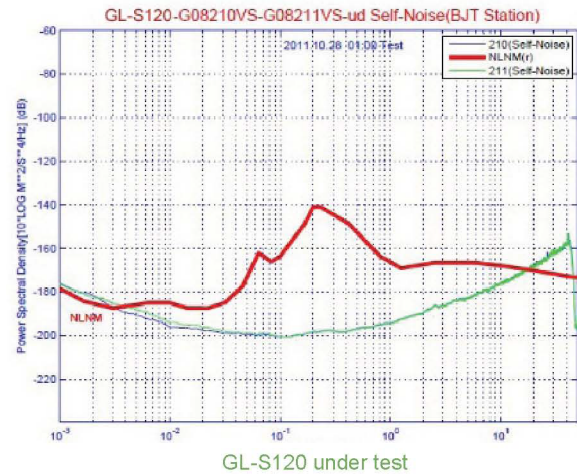
**Very broadband seismometer Model: GL-S120**



and zeroing function as well as a calibration coil and a calibration circuit to realize remote calibration function; it is externally equipped with a unlocking pendulum screws; with small volume and low power consumption, the seismometer can be transported, installed and used conveniently.

**Instrument self-noise curve tested in China-GL-S120**

It is shown from the instrument self-noise test result of GL-S120 broadband seismometer that it is far lower than New Low Noise Model (NLNM) of earth from low frequency 160S to high frequency 10Hz.



GL-S120 under test

**Main features**

- Three-component integrated structure
- Broadband: 120S-50Hz
- Low noise: 160S-10Hz lower than NLNM
- Displacement transduction and force-balance electronic feedback
- Large dynamic range: >140dB
- Remote motor zeroing
- Possessing zero position monitoring signal output

**Brief Introduction**

GL-S120 seismometer with broadband, high sensitivity, large dynamic range and quite stable transfer function is applicable to broadband seismographic observation.

GL-S120 seismometer is integrated and assembled with three-independent-component sensors (one vertical component and two horizontal components). It has the built-in electronic feedback circuit, control circuit, power transfer circuit, calibration circuit, etc. The seismometer uses precise capacitive displacement transducer and force-balance electronic feedback technology to guarantee low noise level and large dynamic range.

GL-S120 seismometer is internally equipped with a motor zeroing mechanism to realize remote zero position monitoring



Device production and development





**Very broadband seismometer Model: GL-S120**

**Major technical parameter**

|                                       |  |
|---------------------------------------|--|
| Structure                             | Three-component integrated installation, displacement transduction and force-balance electronic feedback |
| Frequency band width                  | 120S ~ 50Hz  |
| Sensitivity                           | 2000V/(m/s) (balance output from both ends)  |
| Maximal output signal                 | ±20V (balance output from both ends)   |
| Dynamic range                         | > 140dB  |
| Level of noise                        | 160S~10Hz lower than NLNM  |
| Distortion degree                     | Total harmonic distortion degree is less than -80dB  |
| Output impedance                      | 100Ω   |
| Transverse vibration restraint        | Better than 1%   |
| Calibration function                  | 100mA (maximal value), calibration sensitivity 10m/s/s/A   |
| Minimal parasitic resonance frequency | Greater than 100 Hz  |
| Quiescent current                     | 90mA at 12V power supply voltage   |
| Operating environment                 | Temperature: -20℃ ~ 40℃ ; Humidity: 98%  |
| Overall dimension                     | Maximal OD is about Φ240mm and maximal height is about 270mm   |
| Weight                                | About 12kg (seismometer), about 16kg (including external packing box)                                    |

**About seismometer band 60s / 120s**

1. During the production process, 120s has greater debugging difficulties than 60s.
2. As a user, we must compare noises of 120s and 60s broadband seismometers at first and the seismometer with lower noise has superior quality.
3. VLP output of feedback seismometer is generally used as pendulum bob zero position monitoring. From the use experience, seismometer with less VLP sensitivity has stronger anti-drifting capability (including temperature drifting). However, lower VLP sensitivity is bad for reducing long-period noise.

**Self-Noise Models of Seismic Instruments**

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