CODEVINTEC
Tecnologie per le Scienze della Terra e del Mare

45° 27' 39.384" N
9° 07' 30.145" E

Trillium 120Q/QA
Broadband Seismometer

The Trillium 120Q/QA is an exceptional seismometer having an instrument self-noise within 1 db of the NLNM at 100 seconds and below the NLNM up to 10Hz.

Features

- Improved clip level at high frequencies
- Flattened transfer function
- Lower noise floor
- Lower power consumption
- Very broadband performance from a portable low power seismometer
- Internal seismometer web page assures data quality with increased visibility to state of health and instrument controls (via SLIP to Centaur or Taurus digital recorders)
- Installation simplified with motorized “one touch” mass centring (T120-QA-SV1)
  - Mass centring rarely required after initial installation
  - Local and remote mass centring now possible

Nanometrics
SEISMOLOGICAL INSTRUMENTS

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Trillium 120Q/QA

This new version of the Trillium 120 seismometer (models T120-Q-SV1 & T120-QA-SV1) maintains the high performance of the Trillium 120P/PA while boasting new internal electronics that provide higher clip levels at high frequencies, lower noise floor, lower power consumption and flattened response.
This broadband seismometer technology is deployed world-wide for vault earthquake monitoring in observatories and portable deployments where lower noise floors are required.
This instrument incorporates the same symmetric triaxial design and suspension system as the highly successful Trillium 240. The robustness and reliability of the mechanical suspension is well-proven, with over 2000 Trillium units operating in the field.

Trillium 120Q/QA specifications

Performance

Self-noise	See plot at right
Sensitivity	1200V-s/m ± 0.5% precision (contact factory for other options)
Bandwidth	-3 dB points at 120 s and 150Hz
Clip Level	>16.6mm/s up to 10Hz and 0.17g above 10Hz
Temperature	±45°C without re-centering

Interface

Connector	19-pin MIL-C-26482
Velocity Output	40V peak-to-peak differential Selectable XYZ or UVW mode
Mass Position	Three independent voltage outputs
Calibration Input	Single voltage input with one active-high control signal per channel; Calibration with XYZ or UVW
Control Lines	Auto-level & Mass Center, Calibration Enable, XYZ/UVW mode
Serial Port	RS-232 compatible serial IP (SLIP) Onboard web server standard HTTP For enhanced instrument control and status: 120QA – automatic mass centring / 120Q – manual mass centring, UVW/XYZ mode, short/long period mode, firmware updates, temperature, mass position, case tilt, instrument status, serial number and factory infoentering

Power

Supply Voltage	9 to 36 Volts DC isolated input
Power Consumption	560mW typical at 12 V input
Protection	Reverse-voltage protection Auto-resettable over-current protection (No fuse to replace)

Technology

Topology	Symmetric triaxial
Feedback	Force balance with capacitive transducer
Mass centering	Automatic motorized re-centering, can be remotely initiated (T120-QA-SV1)
Leveling	Integrated bubble level; Adjustable locking leveling feet
Alignment	Vertical scribe marks for (N and S); Precision guide in cover for straight-edge, line or laser level; 5/16" holes for alignment rods (E & W)

Physical

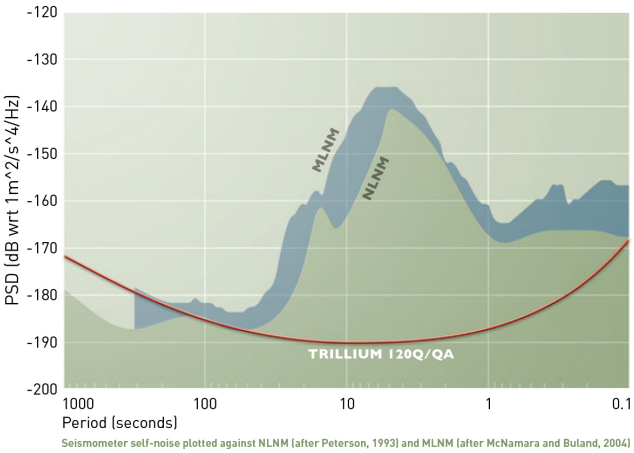
Diameter	21.0cm
Height	21.4cm +/- 0.5cm depending on leveling feet extension
Weight	7.2Kg
Handling	Detachable lifting handle on lid

Environmental

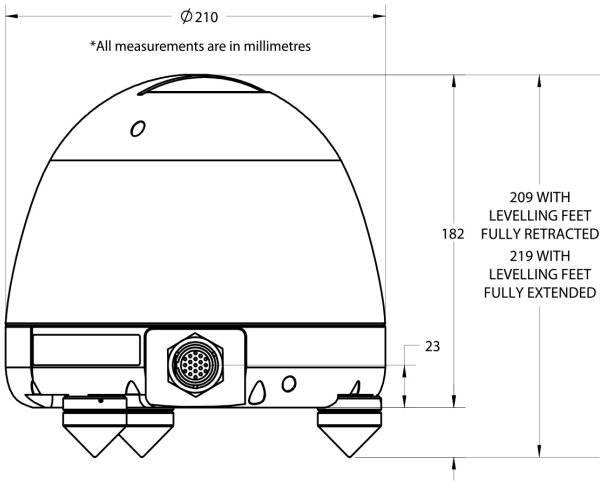
Operating Temp.	-20°C to +60°C
Storage Temp.	-40°C to +70°C
Optional	Insulating cover available for quick and convenient installation
Humidity	0 to 100%
Shock	20g half sine, 5ms without damage, 6 axis No mass lock required for transport
Packaging	Rated to IP68 and NEMA6P for outdoor use

Specifications subject to change without notice.

SELF-NOISE PERFORMANCE PLOT



Seismometer self-noise plotted against NLNM (after Peterson, 1993) and MLNM (after McNamara and Buland, 2004)



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