

TRILLIUM HORIZON 120 VAULT & DIRECT BURY SEISMOMETER

We've taken the popular and proven **Trillium 120QA technology**, adding more utility to its already low self noise and outstanding broadband performance. The Trillium Horizon 120 is the first-ever instrument designed to ideally suit both direct bury and vault use cases. This lightweight, easy-to-deploy sensor can be direct buried at shallow depth or set on a pier. You'll have access to all the benefits of direct bury (including better performance and lower logistical costs) while still having the option of a vault install.

Local, regional & teleseismic studies

The Trillium Horizon is ideal for local, regional and teleseismic studies having a response flat to velocity from 120 seconds to 150 Hz and a self-noise below the NLNM at 100 seconds. Operators will appreciate the low power consumption, automatic mass centering and robust no-mass lock design inherent in all Trillium seismometers. The Horizon is ideal for instrument pools; it gives you all the versatility you need with a smaller financial investment and less storage space required than purchasing both vault and direct-bury instruments.

A highly integrated station solution

When using the Horizon with our popular Centaur digitizer, you'll have access to a digital leveling bubble through the Centaur GUI. The virtual leveling bubble makes for easy leveling down a dark hole, or once buried, gives you the ability to check levelness at any time.

Our available accessories ensure fast and easy deployment

- Sensor cables
- Transport case
- Alignment and leveling toolkit
- Insulating cover
- Lifting cable



Benefits:

- Designed for both shallow bury and vault installs
- Ideal for regional and teleseismic studies
- Highly portable and easy to deploy
- Features a digital bubble level for easy downhole leveling
- Stainless steel and resistant to the elements
- Offers best-in-class power consumption
- Immersible to 10 m (able to survive indefinitely in a flooded vault)
- Top-mounted connector to facilitate direct bury
- Fully automatic mass centering



Ask us about our
ultra-low temperature
options

TECHNICAL SPECIFICATIONS

*Specifications subject to change without notice

TECHNOLOGY

Topology: Symmetric triaxial

Feedback: Force balance with capacitive transducer

Mass centering: Automatic mechanical recentering, can be remotely initiated

PERFORMANCE

Self-noise: See self-noise graph

Nominal Sensitivity: 1200 V-s/m (reference User Guide for precise value)

Precision: $\pm 0.5\%$ relative to User Guide specification

Bandwidth: -3 dB points at 120 s and 150 Hz

Clip level: >16.6 mm/s up to 10 Hz and 0.17 g above 10 Hz

Temperature: $\pm 45^\circ\text{C}$ without recentering

INTERFACE

Connector: 19-pin UTS7-14D19P32

Velocity Output: ± 20 V peak (40 V peak-to-peak differential)

- Selectable XYZ or UVW mode

Mass Position Output: Three independent ± 4 V outputs

INTERFACE (CONT'D)

Calibration Input: Single voltage input with one active-high control signal for all channels; calibration with XYZ or UVW; individual channels selectable via web interface

Control Lines: 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: automatic mass centering, UVW/XYZ mode, short/long period mode, firmware updates, temperature, mass position, case tilt, digital bubble level, serial number and factory info

LEVELING AND ALIGNMENT

Bubble level: Removable and can be protected by optional cover

Digital bubble level: Graphical bullseye level is available via Centaur digital recorder GUI

Alignment: Vertical scribe marks for (N and S); precision guide in cover for straight-edge, line, or laser level

POWER

Supply Voltage: 9 to 36 V DC isolated input

Power Consumption: 490 mW typical quiescent

Protection: Reverse-voltage protected

- Self-resetting over-current protection
- No fuse to replace

PHYSICAL

Diameter: 170 mm

Height: 174 mm, not including connector, feet

- 241 mm with handle and feet

Weight: 9.7 kg

Handling: Detachable lifting handle included

ENVIRONMENTAL

Operating Temperature: -20°C to 60°C (Ultra-low temperature option available. Please contact Nanometrics.)

Storage Temperature: -40°C to 70°C

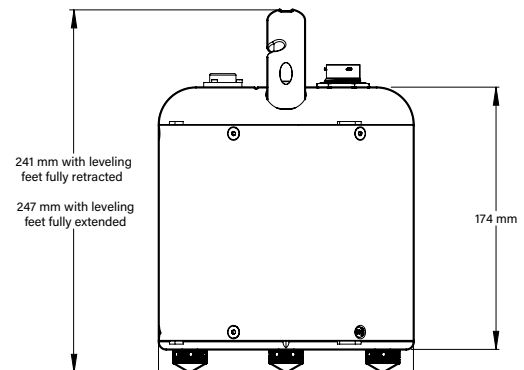
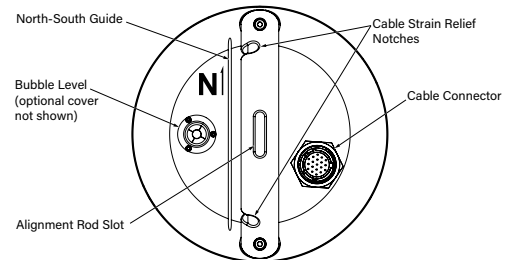
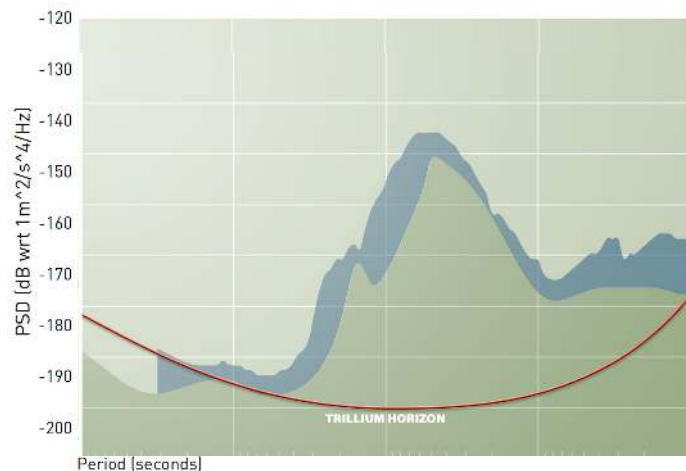
Optional: Insulating cover available for quick and convenient installation

Humidity: 0% to 100%

Shock:

- 20 g half sine, 5 ms without damage, 6 axes
- no mass lock required for transport

Water Immersion: Rated to IP68 and NEMA 6P for prolonged submersion to 10 m



Contact a product expert Toll Free: 1 855 792 6776 | sales_mkt@nanometrics.ca