Nanometrics industry leading portfolio of **Trillium** seismometers now includes a posthole variant that will revolutionize the way seismologists deploy instruments and collect seismic data

Trillium PH

Posthole Seismometer

The **Trillium Posthole Seismometer** is a very broadband seismometer designed for down-hole deployments. The instrument is housed in a stainless steel enclosure incorporating a high-pressure, marine grade connector making it suitable for uncased buried/ posthole installations. An advanced leveling system allows the instrument to self-correct over a tilt range of +/-5 degrees (+/-10 degrees optional).

The **Trillium PH** is ideal for local, regional and tele-seismic 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.

Benefits

- The ability to get beneath the noise, even in urban environments, and keep your assets secure.
- Automatic leveling can be remotely initiated for corrections of up to +/-5 degrees (+/-10 degrees optional), simplifying down-hole installation.
  - The axis stack is mechanically levelled to ensure that the vertical axis does not couple horizontal noise.
- A robust, waterproof, stainless steel enclosure ensures the sensor is protected from hostile environments.
- Cylindrical down-hole design with 5.6 inch outside diameter facilitates buried deployments.
- Low power consumption of 560 mw minimizes power source requirements at the site.

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SPECIFICATIONS

Trillium PH

Specifications subject to change without notice.

TECHNOLOGY	
Topology	Symmetric triaxial
Feedback	Force balance with capacitive transducer
Self-Leveling	Internal automated leveling +/- 5° (+/- 10° optional)
Leveling Initiation	Control line or serial port command
Mass Centering	Motorized re-centering automatically initiated during leveling sequence
Alignment	N-S line on cover for down-hole sighting Keying features for down-hole alignment rod N-S marks on base for pier installation

PERFORMANCE	
Self-noise	See plot at right
Sensitivity	1200 V-s/m ±0.5% precision
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	±45°C without re-centering

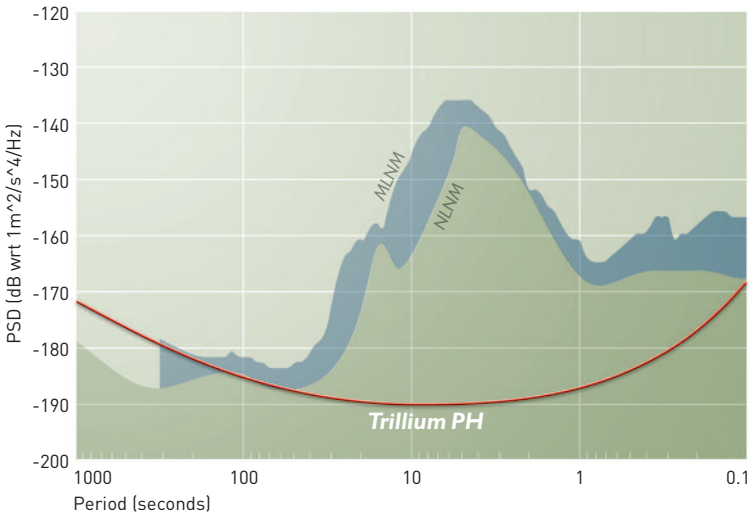
INTERFACE	
Connector	20-pin marine
Velocity Output	40 V peak-to-peak differential Selectable XYZ or UVW mode
Mass Position Output	Three independent voltage outputs
Calibration Input	Single voltage input for all channels, independent calibration enable for each channel Calibration in XYZ or UVW
Control 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: Self-leveling and mass centering, UVW/XYZ mode, short/long period mode, firmware updates, temperature, mass position, instrument status, serial number and factory info

POWER	
Supply Voltage	9 to 36 Volts DC isolated input
Power Consumption	560 mW typical at 15 V input
Protection	Reverse-voltage protection Auto-resettable over-current protection (No fuse to replace)

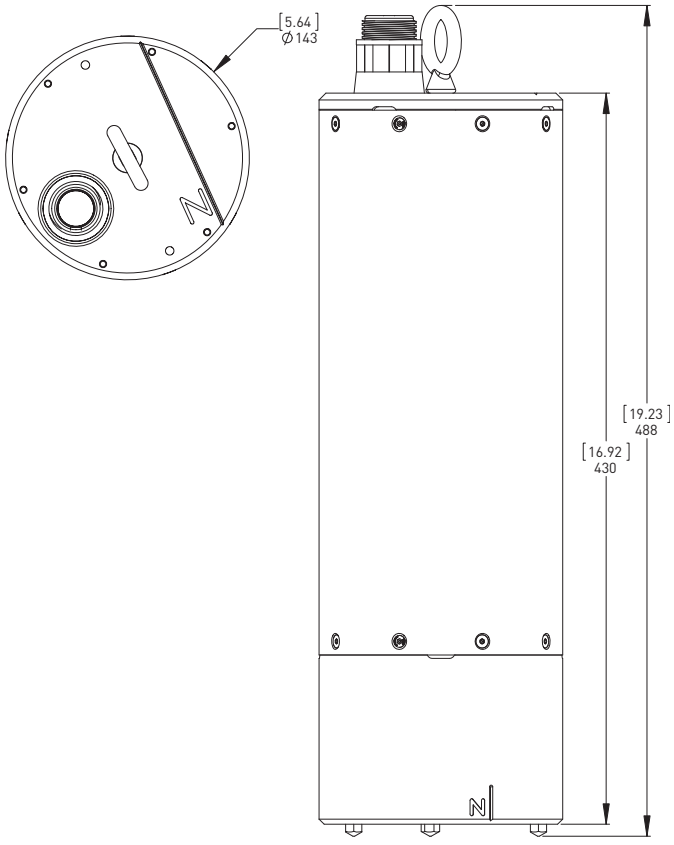
PHYSICAL	
Case Design	Stainless steel pressure vessel, submersible
Diameter	143 mm (5.63")
Height	432 mm (17") not including connector or feet
Weight	16 Kg
Handling	Eye bolt on lid for lifting cable 1300 lbf (5800 N) rated

ENVIRONMENTAL	
Operating Temp.	-40°C to +55°C
Storage Temp.	-60°C to +75°C
Water Immersion	Rated to IP68 and NEMA6P for prolonged submersion
Shock	20 g half sine, 5 ms without damage, 6 axis No mass lock required for transport

SELF-NOISE PERFORMANCE PLOT



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



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