

Nanometrics industry-leading portfolio of Trillium seismometers now includes  
the highest performance borehole seismometer available



# Trillium BH 360

## Very Broadband Borehole Seismometer

### Better understanding of seismicity on a global scale

The **Trillium BH 360**'s exceptional performance meets GSN operational requirements. It's ideal for earth tide, teleseismic, regional and local studies, offering:

- > an extended low frequency range useful out to beyond a 10 000-second time period
- > the lowest magnetic sensitivity of any broadband seismometer
- > the ability to resolve below Peterson's new low-noise model (NLNM) down to a 300-second time period
- > a wide dynamic range with a clip level of  $\pm 18.2$  mm/s up to 10 Hz and  $\pm 0.17$  g > 10 Hz

The **Trillium BH 360** Borehole is a very broadband seismometer designed for cased boreholes. The instrument is housed in a stainless steel enclosure with an integrated hole-lock mechanism, strain relief and a high-pressure, marine-grade connector. An advanced leveling system allows the instrument to self-correct over a tilt range of  $\pm 5$  degrees. Instrument recovery is aided by a fail-safe hole-lock mechanism that prevents jamming to the casement during removal.

Also available  
in posthole and  
vault versions

 **Nanometrics**





# Trillium BH 360

SPECIFICATIONS

Specifications subject to change without notice.

### TECHNOLOGY

Topology	Symmetric triaxial
Feedback	Force balance with capacitive transducer
Self-leveling	Internal automated leveling +/-5°
Leveling initiation	Control line or serial port command
Mass centering	Motorized re-centering automatically initiated during leveling sequence
Holelock	Motorized single jaw, non-jamming Adaptable to a wide range of hole sizes

### PERFORMANCE

Self-noise	See plot at right
Sensitivity	1100V-s/m ± 0.5% precision
Bandwidth	-3 dB points at 373s and 155 Hz
Clip level	18.2 mm/s up to 10Hz and 0.17g above 10 Hz
Dynamic tilt	Maximum tilt without auto-leveling ±0.025°
Transfer function	Lower corner poles within 0.5% of nominal provided / High-frequency response within 1 dB of nominal up to 50 Hz
Temperature	±10°C without re-centering
Magnetic Sensitivity	<0.03 (m/s²)/T

### INTERFACE

Connector	20-pin marine
Velocity output	40V 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	800 mW typical at 15V input 1.5A to operate holelock
Protection	Reverse-voltage protection Auto-resettable over-current protection (No fuse to replace)

### PHYSICAL

Case design	Stainless steel pressure vessel and holelock
Diameter	146 mm (5.75"), including external magnetic shield
Height	886 mm (34.9") not including connector or actuator guard pipe
Weight	30 Kg
Handling	Eye bolt on lid for lifting cable 1300 lbf (5800 N) rated

### ENVIRONMENTAL

Operating temp.	-20°C to +60°C
Storage temp.	-40°C to +70°C
Water immersion	Rated to IP68 and NEMA6P for prolonged submersion
Shock	20 g half sine, 5ms without damage, 6 axis No mass lock required for transport

### SELF-NOISE PERFORMANCE PLOT

