


Nanometrics brought you the Trillium Compact in 2009 and the evolution continues



# COMPACT Meridian PH

## All-in-one Digital Seismometer



Meridian Compact PH connects to a surface interface unit that provides intuitive diagnostic LEDs enabling installations without the need for a smart device.

Introduced in 2009, the Trillium Compact's small size and portability revolutionized broadband fieldwork. The Meridian Compact PH takes broadband to an entirely new level, by marrying the sensor to the digitizer and recorder. This next-generation seismograph is a marvel of miniaturization, with no compromise in performance.

### As shallow as possible, as deep as necessary

Direct bury installation consistently demonstrates performance gains. And combining technologies in a single unit keeps things simple: the Meridian Compact PH seismograph is extremely easy to deploy, with no mass lock or mass centering required. Its exceptionally small size and generous operational tilt range significantly reduces the time and effort required for site preparation and installation.

**Accurate**  
**Portable**  
**Deployable**  
**Serviceable**

### Metadata you can trust

Instrumentation configuration is made easy with an intuitive user interface. Once configured, the Meridian Compact PH builds its own metadata. With the digitizer and sensor housed in a single unit, data-less seed volume is internally built and guaranteed to be correct every time.

## Specifications for Meridian Compact PH 120s and Meridian Compact PH 20s

Specifications are the same for both products unless otherwise stated. For more detailed specifications, please go to [www.nanometrics.ca](http://www.nanometrics.ca). Specifications subject to change without notice.



SPECIFICATIONS

# Meridian **COMPACT** PH

### SENSOR: Trillium Compact Seismometer

See the Trillium Compact Seismometer specifications for more details.

TECHNOLOGY	
Topology	Symmetric triaxial
Mass centering	None required
Operational tilt range	120s model: $\pm 2.5^\circ$ 20s model: $\pm 10^\circ$

PERFORMANCE	
Bandwidth/120s	-3dB corners at 120s and 108Hz
Bandwidth/20s	-3dB corners at 20s and 108Hz
Clip Level	>27mm/s up to 10Hz and 0.17g above 10Hz

### DIGITAL RECORDER

PERFORMANCE	
Type	24-bit ADC per channel, simultaneous sampling
Dynamic range	142dB @ 100sps (full-scale peak to RMS shorted-input noise)
Sample rates	1, 2, 5, 10, 20, 40, 50, 80, 100, 125, 200, 250, 500, 1000, 2000, 5000sps, plus dual sample rates
Selectable Gain	1, 2, 4, 10
Sensitivity	300, 600, 1200, 3000 counts/ $\mu\text{m/s}$ , 1% accuracy
Anti-alias Filters	Attenuation: 140dB at output Nyquist, 0dB at 80% Nyquist frequency
Digital Filter	User-configurable low-pass and high-pass 1st to 5th order, 0.1mHz - Nyquist

CALIBRATION	
Signal Source	16-bit DAC with 30ksps output
Attenuator	Selectable 1, 10, 100, 1000 attenuation
Waveforms	Playback standard .wav files (step and sine wave provided) Custom waveforms may be used

RECORDING (CONTINUOUS)	
Formats	MiniSEED, Nanometrics NP
Internal Media	8 GB flash memory (32 or 64 GB options available)
Removable Media	SD Card up to 64 GB

RECORDING (EVENTS)	
Triggers	Bandpassed STA/LTA, Threshold
Captured Data	MiniSEED, ASCII

DATA RETRIEVAL	
File Transfer	Via Ethernet, Ethernet-connected DSL, VSAT, cellular, radio
Media Exchange	Weather-sealed data cartridge that is field-swappable during continuous recording with no loss of data

DATA STREAMING	
Continuous	Seismic data and State-of-Health data
Formats	SeedLink, Nanometrics NP
Events	Triggered event data: email, secure file transfer, other options available

TIMING	
Timing System	Internal DCXO clock disciplined to GPS (standard) or external PTP timing source (optional)
Timing Accuracy	<5 $\mu\text{s}$ (GPS Always On) <100 $\mu\text{s}$ (GPS duty cycled)
GPS Receiver	Internal 14-channel receiver
GPS Power	Selectable: Always On, or Duty Cycled

COMMUNICATIONS	
Web-based UI	Supports standard PC, tablet and mobile devices
Network interface	10/100 Base-T Ethernet
IP Addressing	Static, dynamic (DHCP) or link-local IP address
Protocols	UDP/IP unicast/multicast, HTTP data streaming (inbound or outbound)

### POWER, ENVIRONMENTAL, PHYSICAL

POWER	
Power Input	9-36VDC isolated input
Consumption	1.0W (1.3W with Ethernet) typical
Protection	Lightning surge protected Reverse-voltage and over-voltage protected Self-resetting over-current protection
Battery Manager	User configurable low voltage shutdown and restart thresholds

ENVIRONMENTAL	
Operating temperature	-20°C to +60°C (Ultra-low temperature option available, including the SIU. Please contact Nanometrics.)
Storage temperature	-40°C to +70°C
Shock	100g half sine, 5ms without damage, 6 axes
Pressure	Insensitive to pressure
Weather/water resistance	Rated to IP68 continuous immersion up to 40m
Humidity	0 to 100%

PHYSICAL	
Max. cable length	40m
Housing	Stainless steel
Weight	3.0kg (6.6lb.)
Height	238mm (9.37in.), including connector
Diameter	97mm (3.8in.)
Removable digitizer	Digital recorder can be removed for servicing
Connector	16-pin, Subconn Micro series, top mounted

### SURFACE INTERFACE UNIT (SIU)

FEATURES	
Status LEDs	Removable media, Archive, Time, Link, Sensor, System
Connectors	Power: 3-pin MIL-Circular Ethernet: 4-pin MIL-Circular Data cartridge: 8-pin MIL-Circular GPS antenna: TNC connector with 3.3V supply for active antenna Meridian: 14-pin MIL-Circular
Data cartridge	Field-swappable, weather-sealed data cartridge that holds replaceable SD card (41mm x 67mm)
Buttons	Media Eject, Shutdown

PHYSICAL/ENVIRONMENTAL	
Housing	Powder coat aluminum with nickel-plated steel base
Weather/water resistance	Rated to IP67
Dimensions	Length: 180mm (7.1 in.) Width: 83mm (3.8 in.) Height: 43mm (1.7 in.) including connectors