GEOVISTA

PRODUCT CATALOGUE 2027

Intelligent subsurface data acquisition

Borehole geophysical logging, imaging, video and borehole direction survey systems.

Mineral exploration
Resource evaluation
Formation characterisation
Groundwater and environmental
Hydrology
Ground engineering
Borehole inspection
Borehole surveys
Driller operated surveys



ABOUT GEOVISTA

Design, manufacture, sales and rentals of borehole geoscience logging technology

GeoVista offers a comprehensive range of slimhole geophysical logging and imaging equipment, including logging winches, wireline sondes, memory sondes, video cameras, televiewers and borehole survey gyros.

Combinable probes

GeoVista probes can be run alone or connected as a single tool string, according to requirements or convenience.

Real-time or memory logging

Run in standard real-time e-line mode, or in memory mode for logging without a wireline set-up.

Logging While Tripping Out (LWTO)

Collect high-quality logs where borehole instability makes conventional wireline logging risky.

Single or 4-core cable

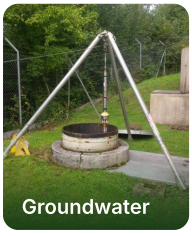
Tools operate on single or 4-core cable, for flexibility with GeoVista logging winches or third-party winches.

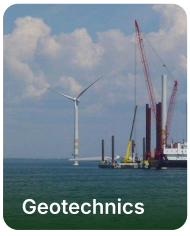
Free software

Free logging software, with free access to updates in perpetuity.

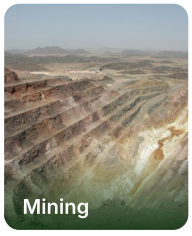
BOREHOLE GEOPHYSICS PROBES FOR

- Mineral exploration
- Resource evaluation
- Formation characterisation
- Groundwater and environmental
- Hydrology
- Ground engineering
- Borehole inspection
- Borehole surveys
- Driller operated surveys


Groundwater


Geotechnics


Exploration


Mining



Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

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Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

QUICK REFERENCE

Probe selection guide

Key dimensions and operating limits for every downhole probe in the range. Values are for the standard versions; high-pressure (HP) and high-temperature (HT) options are listed where available. See each product page for full specifications.

Probe	Diameter	Max. pressure	Max. temp.	HP / HT options	Page
LOGGING SYSTEMS					
Ultra-Slim Logging	16 mm	20 MPa	80 °C	–	12
NUCLEAR					
Natural Gamma Probe	28 / 38 / 42 mm	20 MPa	80 °C	HP 35 MPa · HT 125 °C	14
Spectral Gamma Probe	60 mm	20 MPa	80 °C	–	15
Density Sondes	38 / 45 / 54 / 60 mm	20 MPa	80 °C	HP 35 MPa · HT 125 °C	17
Neutron Porosity Probes	38 / 60 mm	20 MPa	80 °C	–	18
ELECTRICAL AND MAGNETIC					
Normal Resistivity (ELOG) Probe	42 mm	20 MPa	80 °C	HP 35 MPa · HT 125 °C	20
Dual Guard Focused Resistivity Probe	42 mm	20 MPa	80 °C	HP 35 MPa	21
Induced Polarisation Probe	42 mm	20 MPa	80 °C	–	22
EM Dual Induction Probe	45 mm	20 MPa	80 °C	HP 35 MPa · HT 125 °C	23
Magnetic Susceptibility Probe	45 mm	20 MPa	80 °C	HP 35 MPa · HT 125 °C	24
Magnetometer Probe	38 mm	20 MPa	80 °C	–	25
ACOUSTIC AND SEISMIC					
Full Waveform Sonic Probes / CBL	50 / 60 mm	20 MPa	80 °C	HP 35 MPa · HT 100 °C	27
Downhole P and S Sonde	51 / 60 mm	5 MPa	–	HP 20 MPa	28
Seismic Geophone	64 mm	20 MPa	80 °C	–	29

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Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

QUICK REFERENCE — CONTINUED

Probe	Diameter	Max. pressure	Max. temp.	HP / HT options	Page
BOREHOLE IMAGING					
Acoustic Televiewer	42 mm	20 MPa	70 °C	–	32
Optical Televiewer	52 mm	10 MPa	60 °C	–	33
Borehole Video Cameras	45 / 54 / 62 mm	8–15 MPa	70 °C	–	34
BOREHOLE GEOMETRY AND SURVEY					
Caliper Probes	38 / 45 / 80 mm	20 MPa	80 °C	HP 35 MPa · HT 125 °C	36
Casing Collar Locator	38 mm	20 MPa	80 °C	HP 35 MPa · HT 125 °C	37
Borehole Survey Probes	38 mm	20 MPa	80 °C	HP 35 MPa · HT 125 °C	38
GV APEX Gyro	38 mm	20 MPa	85 °C	–	39
GV FOG Gyro	34 mm	20 MPa	80 °C	–	40
Driller Operated Borehole Surveying Probes	42 mm	20 MPa	80 °C	–	41
FLUID AND HYDROGEOLOGY					
Temperature Probe	38 mm	20 MPa	80 °C	HP 35 MPa · HT 125 °C	43
Fluid Temperature and Conductivity Probe	38 mm	20 MPa	80 °C	HP 35 MPa · HT 125 °C	44
pH Probe	38 mm	12 MPa	80 °C	–	45
Nitrate Probe	79 mm	20 MPa	80 °C	–	46
Water Level Indicator Probe	38 mm	20 MPa	80 °C	–	47
Addressable Water Sampler Probe	44 / 60 / 63 mm	20 MPa	80 °C	HT 125 °C	48
Heat Pulse Flowmeter Probe	51 mm	20 MPa	80 °C	–	49
Impeller Flowmeter Probe	50 / 75 / 100 mm (cage)	20 MPa	80 °C	HP 35 MPa · HT 125 °C	50
Quartz Pressure Gauge Probe	38 mm	20 MPa	80 °C	HP 35 MPa · HT 125 °C	51
ACCESSORIES					
Movement Sensor Sub	38 mm	20 MPa	80 °C	–	53

Pressure ratings are shown in MPa (1 MPa = 10 bar). Where a product has several variants, the range across variants is shown.

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

GEOVISTA

01

SECTION 01

Logging Systems

Surface acquisition, winches and deployment options for wireline, memory, LWTO and ultra-slim logging.

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GeoVista Data Acquisition System

A compact, field-proven logger and intuitive software for powering, controlling and acquiring data from GeoVista combinable logging tools and televiewers.



GV Platform Logger (GVPL)

KEY FEATURES

- Sonde power control and communication status
- Depth, speed and cable tension display
- Winch and depth control parameters
- Tool string (stack) configuration
- Tool calibration and performance monitoring
- Telemetry optimisation
- Log header editor
- Analogue log curves with digital values
- Log playback with wide choice of displays
- LAS export; print hard copy or PDF

The Data Acquisition System comprises a logger, which supplies power to the probes and provides bidirectional communication with them, and software providing the user interface.

GVPL – GV Platform Logger

This latest-generation logger supports GeoVista combinable logging tools and televiewers. The field-proven concept of the original logger remains unchanged, while performance is greatly improved, allowing operation on longer cables and faster communication. A higher baud rate allows faster logging speeds with high data-rate tools. Operation is simple, with an on–off switch; all other controls are from the logging software.

GVPS – GV Platform Software

A simple and intuitive user interface for log data acquisition, log playback and data export as LAS files. Its key features are listed above.

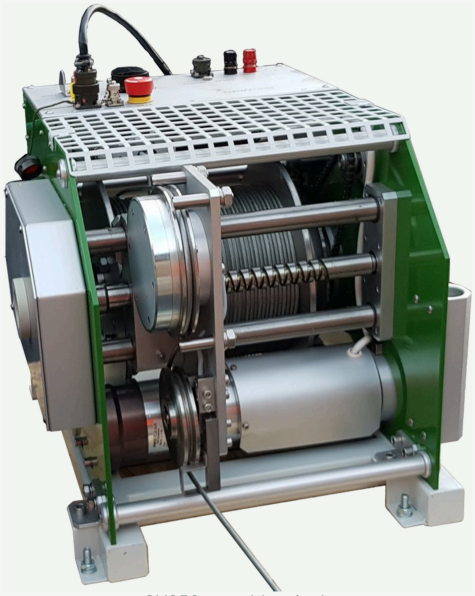
GVPL SPECIFICATIONS

	GV Platform Logger
Weight	2.4 kg
Dimensions (W × L × H)	20 × 20 × 7 cm (8 × 8 × 3 in)
Enclosure	Aluminium; splash- and dust-proof to IP65
Input power	110–240 V AC
PC interface	USB; any Windows PC or notebook
Wireline	Coaxial, mono or multi-conductor
Depth encoder	5–30 V DC encoders; GeoVista or third-party winches

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

GV150 and GV250 Portable Logging Winches

A proven, portable design engineered for safe operation and reliable performance in demanding field environments, wherever you are.



GV250 portable winch

KEY FEATURES

- Portable, rugged and reliable
- Runs from a 12 V DC supply
- Cable tension device
- Motor torque limiter
- Levelwind safety clutch
- Adaptable for third-party probes
- Local and auxiliary controller
- Mechanical brake
- CE certified
- Easy installation in a vehicle

The GV150 and GV250 are reliable, portable and rugged motorised logging winches, ideal for mounting in a vehicle or for use on remote sites.

Both utilitarian winches run from a 12 V DC power supply and share the same motor. The compact GV150 carries 150 m of 1/8" cable, while the GV250 carries 300 m of 3/16" or 650 m of 1/8" cable. Every unit can be adapted to run third-party probes.

SPECIFICATIONS

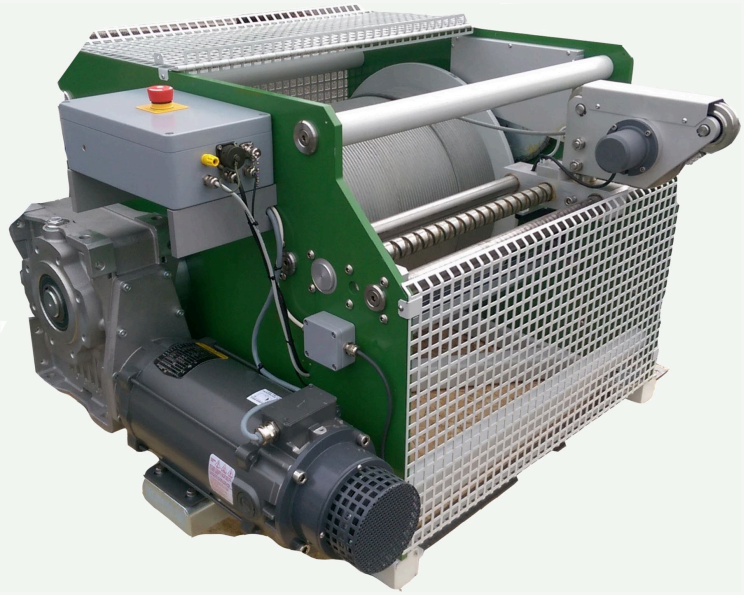
Winch model	GV150	GV250
MAX. CABLE CAPACITY		
3/16" cable	–	300 m
1/8" cable	150 m	650 m
PERFORMANCE		
Speed	0–15 m/min	0–15 m/min
Motor power	170 W	170 W
Power input	12 V DC	12 V DC
DIMENSIONS		
Weight	31 kg (with cable)	50 kg (excl. cable)
Length × width × height	53 × 34 × 34 cm	54 × 46 × 47 cm

Other winches: please contact us for information about manual winches, custom adaptations or changes to existing models.

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

GV500 Series Logging Winches

A proven, heavy-duty design engineered for safe operation and reliable performance in demanding field environments, wherever you are.



GV570 shown

KEY FEATURES

- Models with a range of motor power and cable capacity
- Runs from a 230 V AC supply
- Cable tension device
- Motor torque limiter
- Levelwind safety clutch
- Adaptable for third-party probes
- Local and auxiliary controller
- Floating disc brake
- CE certified

The GV500 series are reliable, heavy-duty logging winches available with a range of motor powers and cable capacities.

Rugged and utilitarian, GV500 winches are trusted by clients worldwide and have been manufactured for almost 30 years. Four models cover cable capacities from 600 m to 3,000 m of 3/16" cable, and every unit can be adapted to run third-party probes.

SPECIFICATIONS

Winch model	GV510	GV530	GV550	GV570
MAX. CABLE CAPACITY				
3/16" cable	600 m	1,100 m	2,100 m	3,000 m
1/4" cable	400 m	600 m	1,100 m	1,900 m
1/8" cable	1,500 m	2,500 m	–	–
PERFORMANCE				
Speed	0–27 m/min	0–30 m/min	0–32 m/min	0–32 m/min
Motor power	0.37 kW	0.75 kW	1.1 kW	1.5 kW
Power input	230 V AC	230 V AC	230 V AC	230 V AC
DIMENSIONS				
Weight (excl. cable)	117 kg	168 kg	186 kg	245 kg
Length × width × height	62 × 62 × 54 cm	72 × 63 × 61 cm	78 × 82 × 59 cm	91 × 94 × 64 cm

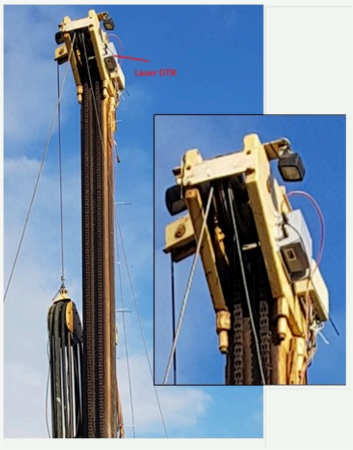
Other winches: please contact us for information about manual winches, custom adaptations or changes to existing models.

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Memory Logging Systems

Log with selected GeoVista probes without an E-line, logger or logging winch – ideal for remote sites, small teams, in-rod and through-bit logging.





APPLICATIONS

- Sites where an E-line logging winch is not practical
- In-pipe or through-bit logging while tripping out
- Unstable or highly deviated boreholes
- Logging in remote areas
- Logging with very small teams
- Any industry

KEY FEATURES

- Compatible with most GeoVista probes
- Suits different tool-string configurations
- In-rod, through-bit, third-party cable or slickline
- Minimal equipment to mobilise
- Programmable with Android app; Bluetooth download
- Connects to third-party depth systems, standalone depth encoders or rig pipe

GeoVista memory logging systems allow operations without the need for an E-line. The logger and winch are replaced by a depth–time recorder (DTR), a sonde battery module and a sonde memory module.

Log parameters are uploaded, and recorded data downloaded, using a field tablet and the GeoVista Android app. The downloaded logging and depth data are merged to produce the equivalent of a traditional log against depth. A typical system includes a depth measuring assembly*, a DTR unit, a battery module, a memory module, any applicable running gear and a field tablet.

**If the rig wireline is used to convey the downhole tools, a depth encoder wheel assembly measures depth. When logging while tripping out, a laser ranging device – typically mounted on the rig mast – tracks the travel of the drill head (and pipe); a sensor must then be fitted to detect whether the foot clamp is engaged.*

Memory Logging Module

A versatile acquisition box that runs downhole with GeoVista combinable probes, logging most GeoVista probes without power or communication from the surface. Logs are set up and downloaded via Bluetooth using the GeoVista Android app. There is no need to transport an E-line winch to remote locations, and the module can also perform LWTO or slickline logging – ideal where a small set of probes is kept at the rig and equipment mobilisation must be minimised.

GV DTR (depth–time recorder) – measures depth against time and communicates with a tablet via Bluetooth. It has inputs for encoder measurements (commonly optical or laser) and for the rig direction pressure switch (LWTO).

In-rod logging

Applications include gyro surveys, natural gamma and density logging. Density logging while tripping out reduces the need for corrections, as the tool remains in the same position in the drill rod.

Through-bit logging

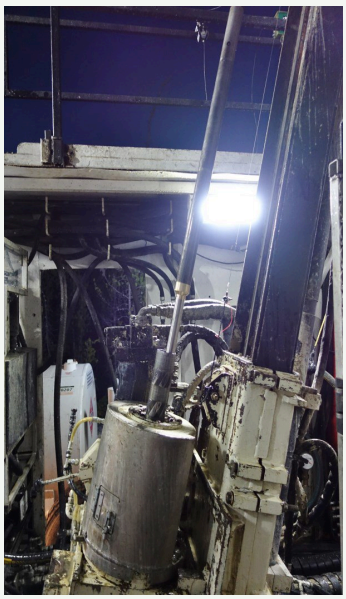
Useful in highly inclined or unstable cored boreholes. Once the borehole is ready, the drill rods are pulled off bottom far enough to accommodate the logging tool string. The memory system is activated and synchronised, then the tools are lowered using the rig's wireline spear and overshot system normally used to convey the core sleeve. The running gear is arranged so that when the landing ring sits on top of the coring bit, the logging tools protrude into the open borehole, which is then logged as the drill rods are tripped out.

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Logging While Tripping Out

A memory-based technique that conveys GeoVista probes through the diamond drill bit, so zones that cannot be reached with traditional wireline can still be logged.





APPLICATIONS

- Deviated logging
- High-risk / collapsible boreholes
- Remote logging
- Any industry

KEY FEATURES

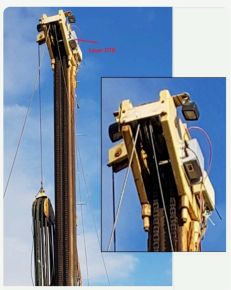
- No need to mobilise a lot of equipment
- Ideal for remote locations
- Usable on third-party cable or slickline
- Easy to use
- Programmable with Android app
- Data download via Bluetooth
- Long battery life
- Run in any environment

Logging While Tripping Out (LWTO) is a memory-based logging technique in which tools are conveyed through the diamond drill bit into an open-hole section. It is ideal for logging zones that cannot otherwise be logged with traditional wireline.

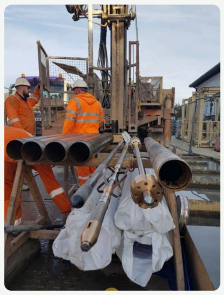
How it works

- The GeoVista memory module and logging probes are lowered inside a wireline core barrel.
- The probe sensors slide through the core bit into the open hole.
- Data can be acquired while pulling out the drill pipe.
- A surface depth system (box encoder) records depth with the depth–time recorder (DTR) as the drill pipe is pulled out; a laser or optical encoder is commonly used.
- Communication is via Bluetooth and an Android/Windows app.
- The logging file and depth file are downloaded and merged to provide a full wireline log.

Contact us to discuss your requirements.



Laser depth encoder for the DTR, mounted on the rig mast



Preparing a memory tool string on site



Handling a memory tool string at the rig

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Ultra-Slim Logging

A range of short 16 mm diameter probes for data acquisition in extremely small boreholes and pipes, including geothermal wells and shallow pipe systems.



The GeoVista range of 16 mm ultra-slim logging probes is designed to allow data acquisition in extremely small boreholes.

Short, small-diameter (16 mm) tools allow in-situ logging inside very small-diameter boreholes or pipes. The logging cable is fitted with a special small-diameter rope socket and cable head. These tools are commonly used in geothermal wells and shallow pipe systems. Three sondes are available:

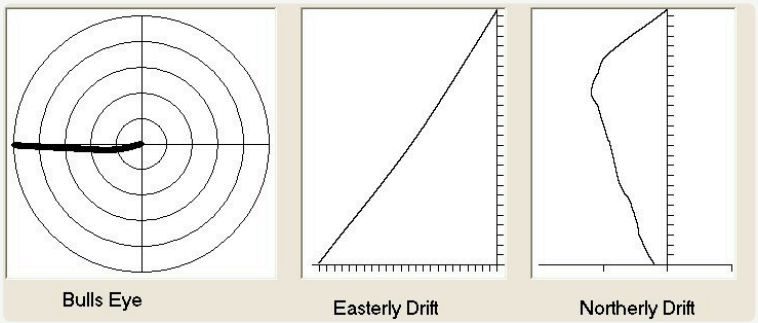
- **Ultra-Slim Density Sonde** – detects variations in cement density around very small-diameter casing or tubes inside a borehole, helping to locate zones of insufficient or inadequate cementation. An internal temperature sensor allows simultaneous measurement of density and temperature.
- **Ultra-Slim Temperature Sonde** – has an external PT100 probe for accurate and instantaneous measurement of the fluid temperature profile inside very small-diameter holes.
- **Ultra-Slim Pipeline Trajectory Sonde** – measures the trajectory profile (azimuth and inclination) of very small-diameter, non-magnetic pipes and boreholes.

APPLICATIONS

- Very small diameter holes
- Geothermal
- Temperature
- Trajectory
- Density

KEY FEATURES

- Short 16 mm diameter tools
- Small-diameter rope socket and cable head
- Simultaneous density and temperature (density sonde)



Example trajectory output: bulls eye, easterly and northerly drift

SPECIFICATIONS

	Ultra-Slim Probes
Weight	< 0.2 kg
Length	0.38–0.42 m (including cable head)
Diameter	16 mm
Max. pressure	20 MPa (200 bar)
Max. temperature	80 °C
Combinability	Stand-alone
Borehole conditions	Any small hole
Centralisation	Not required

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

GEOVISTA

02

SECTION 02

Nuclear

Natural, spectral and active nuclear probes for lithology, correlation, density and porosity.

Natural Gamma Probe 14

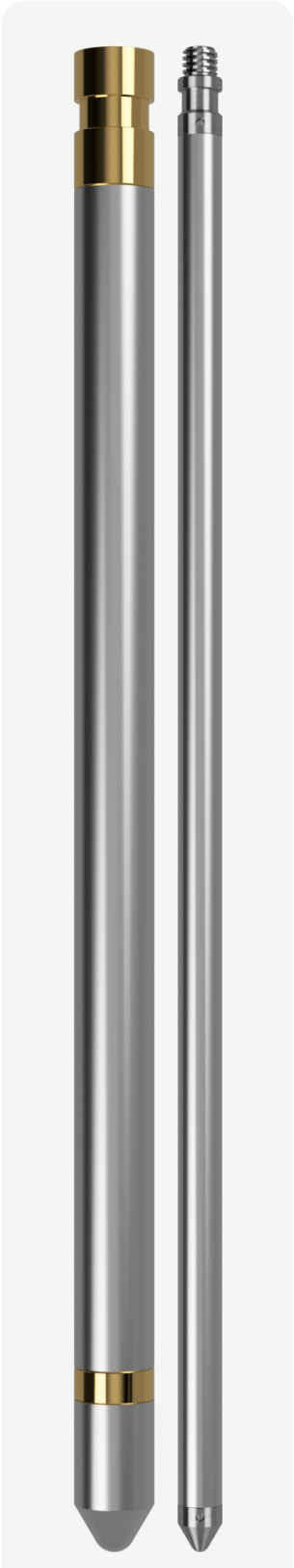
Spectral Gamma Probe 15

Density Sondes 17

Neutron Porosity Probes 18

Natural Gamma Probe

Measures the natural gamma radiation emitted by geological formations, with NaI, Geiger–Müller and filtered sonde options to suit every deployment.



Natural gamma probes measure gamma radiation emitted by geological units, the intensity of which depends on the concentration of radioactive isotopes within them.

Natural gamma logging is one of the most widely used borehole measurements across many sectors, thanks to its value in stratigraphic correlation and as a proxy for lithology. The isotopes most commonly responsible for natural gamma emissions are ^{40}K, ^{238}U and ^{232}Th, together with the radionuclides in their decay chains. Their relative concentrations provide key information on lithology: mudrocks with high clay content contain more U and Th than sandstones or carbonates, and K-rich rocks also exhibit higher gamma counts.

GeoVista's standard Natural Gamma Probe uses a sensitive NaI crystal that counts ionising events over time. For high count-rate environments, a Geiger–Müller (GM) based instrument is available. A shielded (filtered) version removes lower-energy gamma rays for applications such as uranium exploration.

All sondes provide automatic dead-time correction.

APPLICATIONS

- Depth correlation
- Stratigraphic correlation
- Shale / clay content
- Ore resource evaluation
- Geochemistry
- Radioactive tracer detection
- Uranium exploration
- Nuclear geological storage

KEY FEATURES

- Fully combinable digital probes
- Range of detectors and sondes to suit various applications
- Automatic dead-time correction
- High-pressure and high-temperature versions available

SPECIFICATIONS

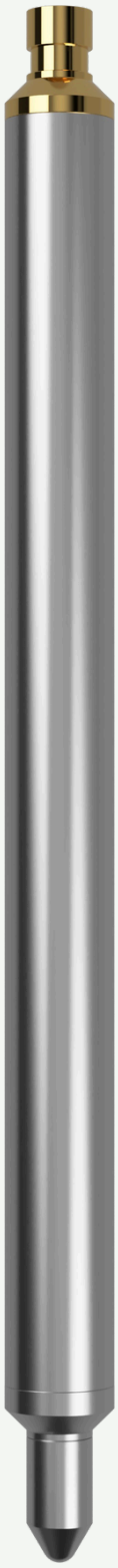
	Natural GR (NaI)	Natural GR (GM)	Natural GR (NaI, filtered)
PHYSICAL			
Weight	3.5 kg	6.3 kg	4.5 kg
Length	0.7 m	0.95 m	0.7 m
Diameter	38 mm	28 mm	42 mm
Other diameter options	28 mm	38 mm	–
DETECTOR			
Detector (D × L)	NaI 25 × 50 mm NaI 20 × 75 mm (option)	GM tube (8 & 15 mm)	NaI 20 × 50 mm
OPERATING LIMITS			
Max. pressure	20 MPa (200 bar)	20 MPa (200 bar)	20 MPa (200 bar)
HP version	35 MPa (350 bar)	–	–
Max. temperature	80 °C	80 °C	80 °C
HT version	125 °C	–	–
Borehole conditions	Any	Any	Any

ACCESSORIES Gamma ray verification blanket

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Spectral Gamma Probe

Identifies and quantifies the gamma-emitting isotopes in strata, giving K, U and Th concentrations for a far more detailed picture of mineralogy than total gamma alone.



The Spectral Gamma sonde measures gamma ray energy to identify and quantify gamma-emitting isotopes in strata. It provides a total counts per second value and (if calibrated) a breakdown of K (%), U (ppm) and Th (ppm), calculated from the measured energy spectrum.

The probe measures the energy and intensity of gamma emissions from the formation. The main radioisotopes in geological strata are ^{238}U, ^{232}Th and ^{40}K, together with the radionuclides in their decay chains. Each isotope emits gamma rays at characteristic energies that can be measured and used to identify the emitting nucleus. The data are presented as a total gamma ray log with the abundance of K (%), U (ppm) and Th (ppm) broken down with depth.

As with the Natural Gamma Probe, total gamma counts provide limited lithological information. With the Spectral Gamma sonde, however, knowing which radioisotopes are responsible for the emissions gives a much more detailed picture of the mineralogy.

Detector crystals

Several detector crystals are available to suit job requirements: NaI, BGO, CeBr and LaBr. LaBr handles high count rates and offers good output linearity with temperature, but can exhibit higher intrinsic background counts. CeBr is an alternative to LaBr with the same form factor as NaI and far fewer intrinsic background counts. BGO is a very efficient gamma ray absorber due to its high Z, but can be susceptible to radiation damage. Crystal properties are summarised on page 2.

Default resolution is 256 channels, with 512, 1,016 or higher optional. Energy range is 100 keV (or lower) to 3 MeV.

APPLICATIONS

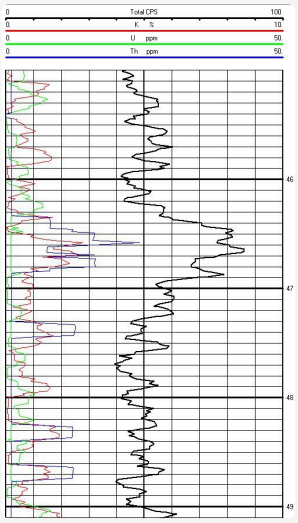
- Depth correlation
- Stratigraphic correlation
- Shale / clay content
- Ore resource evaluation
- Geochemistry
- Radioactive tracer detection
- Uranium exploration
- Nuclear geological storage

KEY FEATURES

- Fully combinable digital probes
- Range of detectors and sondes to suit various applications
- K, U and Th breakdown from the measured energy spectrum
- 256 channels as standard; 512, 1,016 or higher optional

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Spectral Gamma Probe — continued



Example log: total counts with K, U and Th

SPECIFICATIONS

	Natural GR (Spectral)
Weight	6.3 kg
Length	0.95 m
Diameter	60 mm
Other diameter options	42 mm, 73 mm
Detector (D × L)	NaI 38 × 150 mm
Other detectors	CeBr, LaBr or BGO
Channels	256 (512, 1,016 or higher optional)
Energy range	100 keV (or lower) to 3 MeV
Max. pressure	20 MPa (200 bar)
HP version	–
Max. temperature	80 °C
HT version	–
Borehole conditions	Any

DETECTOR CRYSTAL PROPERTIES

Crystal	NaI	BGO	CeBr	LaBr
Density	3.67 g/cc	7.13 g/cc	5.2 g/cc	5.2 g/cc
Resolution at 662 keV	7%	12%	4%	3%
Decay time	260 ns	300 ns	20 ns	16 ns
Photoelectric yield (% of NaI)	100	15–20	120	120
Intrinsic activity	No	Negligible	Negligible	Yes
Hygroscopic	Yes	No	Yes	Yes

ACCESSORIES Calibration service (in calibration pit)

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Density Sondes

Calibrated sidewall and qualitative 2-PI density sondes, in five configurations to suit different data and operational requirements.



GeoVista density logging sondes detect gamma rays emitted by a ^{137}Cs source mounted on the sonde. The intensity of gamma rays reaching the detectors is proportional to the formation bulk density.

Gamma radiation from the source is attenuated and scattered through the formation by Compton scattering, then counted at detectors located at set distances. Denser materials attenuate more gamma rays, resulting in lower intensity at the detectors. Where very high density (>3 g/cc) formations are expected, a higher-energy ^{60}Co source can be used instead.

Sidewall Density Sonde (FDSB)

Provides quantitative, calibrated bulk density measurements. The basic **FDSB** produces a bulk density log and a caliper (borehole diameter) log; an LL3 resistivity detector can be added for extra utility (**FDSB LL3**); and the **FDSB PEF** collects PEF (photoelectric factor) information in addition to density.

2-PI Density Sondes (Trisonde)

Provide uncalibrated (qualitative) density logs using a lower-activity source. The basic version can only be run at the bottom of a sonde stack; the in-line version can be placed anywhere in a sonde stack.

APPLICATIONS

- Mineral exploration
- Coal exploration
- Geotechnical investigations

KEY FEATURES

- Combinable digital probes
- Sidewall (FDSB): three sonde configurations
- 2-PI (Trisonde): two sonde configurations
- ^{60}Co source option for very high-density formations

SPECIFICATIONS

	FDSB	FDSB LL3	FDSB PEF	2-PI	2-PI In-line
Weight	26 kg	29 kg	31 kg	5 kg	5 kg
Length	2.06 m	2.59 m	2.14 m	1.65 m	1.44 m
Diameter	54 mm	54 mm	60 mm	38 mm	45 mm
Detector spacing	47, 25 cm (14 cm opt.)	47, 25 cm (14 cm opt.)	29, 15 cm	46, 24 cm	46, 24 cm
Source type	^{137}Cs or ^{60}Co	^{137}Cs or ^{60}Co	^{137}Cs	^{137}Cs	^{137}Cs
Source activity	80–100 mCi	80–100 mCi	250 mCi	10 mCi	10 mCi
Density range	1 to 3–4 g/cc	1 to 3–4 g/cc	1–4 g/cc	–	–
Caliper range	60–350 mm	60–350 mm	60–350 mm	–	–
Calibration block	Al/Mg	Al/Mg	Al/Mg	–	–
Max. pressure	20 MPa (200 bar); FDSB HP version 35 MPa (350 bar)				
Max. temperature	80 °C; FDSB HT version 125 °C				

ACCESSORIES Radioactive source, source holder, source transport container

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Neutron Porosity Probes

Quantitative compensated porosity from the Dual Neutron Sonde, or qualitative porosity in most boreholes with the slim single-detector Neutron-Neutron probe.



GeoVista offers two neutron sondes. The Dual Neutron Sonde provides quantitative formation porosity measurements in uncased holes; the Neutron-Neutron probe is a single-detector slim probe for qualitative porosity measurements in most boreholes.

Dual Neutron (compensated)

The sonde uses a bottom-loading neutron source and two detectors at different spacings to detect neutrons slowed by hydrogen in the formation. Because the sonde is sensitive to hydrogen, it is used to distinguish between fluid-bearing formations and rock matrix. To optimise performance, the sonde is designed with three main features:

- A side-walling bow spring, so that the detector measures only neutrons slowed by the formation.
- A detector mandrel diameter large enough to minimise the sonde–borehole curvature mismatch and improve sonde-to-formation contact, minimising the effect of the borehole fluid.
- An efficient detector shield to prevent neutrons travelling up inside the sonde body.

Neutron-Neutron

A reduced-diameter version with a single detector for qualitative porosity measurements. It can be run in any environment.

APPLICATIONS

- Quantitative porosity (Dual Neutron only)
- Qualitative porosity (Neutron-Neutron only)
- Lithology identification
- Petrophysical properties
- Correlation
- Aquifer analysis

KEY FEATURES

- Compensated two-detector measurement (Dual Neutron)
- Side-walling bow spring and efficient detector shield
- Slim single-detector option for any environment
- Modular: probes can be connected above

SPECIFICATIONS

	Dual Neutron	Neutron-Neutron
Weight	23 kg	5 kg
Length	1.67 m	1.44 m
Diameter	60 mm	38 mm
Detector	2 × ^{3}He proportional counters	1 × ^{3}He proportional counter
Source	^{241}Am-Be, typically 2.5 Ci	^{241}Am-Be, 1 Ci
Max. pressure	20 MPa (200 bar)	20 MPa (200 bar)
Max. temperature	80 °C	80 °C
Combinability	Modular (can connect probes above only)	Modular (can connect probes above only)
Borehole conditions	Water or mud; open or cased hole	Water or mud; open or cased hole
Centralisation	Ex-centralised	Not required

ACCESSORIES Dual Neutron: bow spring, verification jig, source holder, source handling tool. Neutron-Neutron: source holder.

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

GEOVISTA

03

SECTION 03

Electrical and Magnetic

Resistivity, induction, induced polarisation and magnetic measurements of the formation.

Normal Resistivity (ELOG) Probe	20
Dual Guard Focused Resistivity Probe	21
Induced Polarisation Probe	22
EM Dual Induction Probe	23
Magnetic Susceptibility Probe	24
Magnetometer Probe	25

Normal Resistivity (ELOG) Probe

Records 16" and 64" normal resistivity, single point resistance and spontaneous potential, giving both shallow and deep resistivity measurements.



The GeoVista ELOG probe records 16" and 64" normal resistivity, single point resistance (SPR) and spontaneous potential (SP) measurements. Resistivity logging is widely used in mineral exploration, hydrogeology, formation evaluation and many other applications.

Resistivity is a fundamental property of materials, and resistivity logging is one of the most mature geophysical logging techniques. The electrical resistivity of the strata is measured at 16" and 64", providing a shallow and a deep measurement. A constant, alternating-polarity current of approximately 2 mA is generated at a drive electrode and flows out from the source to the cable armour. The potential between the 16" and 64" electrodes is measured; this voltage is proportional to the formation resistivity in Ω·m.

The SPR is the measured potential between the drive electrode and the 16" electrode; this voltage is proportional to the resistance of the formation in ohms.

The SP measurement is a DC voltage measured in the presence of an AC current injected from the drive electrode. In certain circumstances, the SP is measured with reference to a surface electrode (fish). The ELOG sonde requires a resistivity bridle, which maintains separation between the drive electrode and the cable armour.

A shorter SP/SPR sonde is also available for single point resistance and SP measurements only.

APPLICATIONS

- Stratigraphic correlation
- Formation properties
- Mineralised zone detection
- Aquifer delineation
- Water salinity
- Indication of permeable and porous zones

KEY FEATURES

- Combinable digital probes
- Electrode configuration and measurement options to suit requirements
- 16" and 64" normal resistivity, SPR and SP in one probe

SPECIFICATIONS

	ELOG Sonde	SP/SPR Sonde
Weight	8 kg	3 kg
Length	2.27 m	0.7 m
Diameter	42 mm	42 mm
Resistivity range	0.2–10,000 Ω·m	–
SPR range	0.2–10,000 Ω	0.2–10,000 Ω
SP range	−2,500 to +2,500 mV	−2,500 to +2,500 mV
Current return	Cable armour	Cable armour
Measure return	Bridle electrode	Bridle electrode
Max. pressure	20 MPa (200 bar)	20 MPa (200 bar)
HP version	35 MPa (350 bar)	–
Max. temperature	80 °C	80 °C
HT version	125 °C	–
Borehole conditions	Water-filled, open hole	Water-filled, open hole

ACCESSORIES Resistivity bridle, test and calibration box

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Dual Guard Focused Resistivity Probe

Deep and shallow focused resistivity with spontaneous potential, offering higher vertical resolution and deeper penetration than a conventional ELOG probe.



The Dual Guard Focused Resistivity Probe (DLL3) measures both deep and shallow focused resistivity, as well as spontaneous potential (SP) from the bridle electrode. It has better vertical resolution and depth of penetration than the conventional ELOG probe.

Resistivity is a fundamental property of materials, and resistivity logging is one of the most mature geophysical logging techniques. The DLL3 probe provides deep and shallow resistivity measurements at a higher vertical resolution, and with deeper penetration, than is possible with a standard ELOG probe.

This is achieved by sending a measure current from the drive electrode to the cable armour beyond the isolating bridle. The current is focused by a bucking current flowing from the connected guard electrode pairs, arranged symmetrically above (A1, A2) and below (A'1, A'2) the drive electrode. The potential of these guard pairs is kept equal to that of the drive electrode, which turns the sonde into an equipotential surface and forces the measure current to flow out perpendicular to the sonde.

Resistivity logging is a staple in mineral exploration, water well drilling, formation evaluation and many other applications. After natural gamma logging, it is probably the most widely used logging technique.

APPLICATIONS

- Stratigraphic correlation
- Formation properties
- Mineralised zone detection
- Aquifer delineation
- Water salinity
- Indication of permeable and porous zones

KEY FEATURES

- Combinable digital probes
- Electrode configuration and measurement options to suit requirements
- Simultaneous deep and shallow focused resistivity, plus SP

SPECIFICATIONS

	DLL3 Sonde
Weight	8 kg
Length	2.37 m
Diameter	42 mm
Resistivity range	0.2–30,000 Ω·m (extendable to 100,000 Ω·m)
SPR range	–
SP range	−2,500 to +2,500 mV
Current return	Cable armour
Measure return	Bridle electrode
Max. pressure	20 MPa (200 bar)
HP version	35 MPa (350 bar)
Max. temperature	80 °C
HT version	–
Borehole conditions	Water-filled, open hole

ACCESSORIES Resistivity bridle / bridle substitution sub, test and calibration box

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Induced Polarisation Probe

Measures formation resistivity and chargeability in a single run, highlighting zones of high chargeability and low resistivity that indicate potential mineralisation.



The Induced Polarisation Probe measures formation resistivity and chargeability. Formations with high chargeability and low resistivity indicate potential areas of mineralisation.

The GeoVista Induced Polarisation (IP) Probe comprises four electrodes in an AB–MN Wenner configuration. A high DC voltage of alternating polarity is periodically applied to the two outer electrodes for a fixed time; after a brief delay, the decaying voltage is measured at the two inner electrodes.

The polarisability of different materials depends on their electronic configuration. In strata containing metals, the difference in the rate of electrolytic reactions when a current passes across conductive metal grains causes polarisation. An IP effect is also evident when a current is applied to certain clay minerals with surficial negative charges.

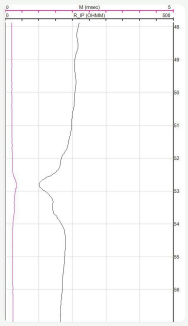
The IP probe is an important tool in mineral exploration and is commonly used when prospecting for elements that typically occur in sulphides, such as iron, copper, nickel, lead, cobalt, silver and zinc.

APPLICATIONS

- Delineation of mineralised formations with disseminated metallic sulphides and oxides
- Pyrite detection
- Identification of clay-rich zones

KEY FEATURES

- Fully combinable digital probe
- Four-electrode Wenner (AB–MN) array
- Time-domain chargeability with resistivity



Example log: chargeability (M, msec) and resistivity (R_IP, ohm·m)

SPECIFICATIONS

	IP Sonde
Weight	8.0 kg
Length	2.08 m
Diameter	42 mm
Electrode spacing	40 cm
Chargeability measurement	Time domain, 220 ms cycle time
Resistivity range	0.2–1,000 Ω·m
Max. pressure	20 MPa (200 bar)
Max. temperature	80 °C
Borehole conditions	Water-filled, open hole

ACCESSORIES Test and calibration box

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

EM Dual Induction Probe

Simultaneous deep and shallow formation conductivity in low-conductivity mud, air-filled and plastic-lined boreholes.



The EM Dual Induction Probe measures deep (ILD) and shallow (ILS) formation conductivity. It can be operated in low-conductivity mud, air-filled and plastic-lined boreholes.

The probe transmits a high-frequency current through a coil and measures the induced electromagnetic field 180° out of phase at the receiver. The sonde has two receiver coils, allowing measurements over two depths of penetration: ILD and ILS.

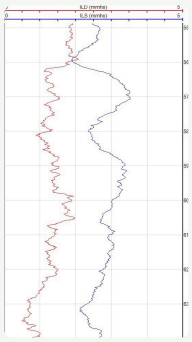
The GeoVista Dual Induction sonde is ideal for helping mineral explorers detect conductive ore bodies. It also has key applications in hydrogeology, where it can easily identify porous and permeable formations from differing ILD and ILS resistivity readings. The sonde performs particularly well in conductive formations and where boreholes contain higher-resistivity mud or just air.

APPLICATIONS

- Formation conductivity in open and plastic-lined boreholes
- Indication of porous and permeable zones
- Detection and delineation of mineralised formations

KEY FEATURES

- Combinable digital probe
- Works in mud, air-filled and plastic-lined boreholes
- Simultaneous deep and shallow measurement



Example log: deep (ILD) and shallow (ILS) conductivity

SPECIFICATIONS

	DILS Sonde
Weight	5.0 kg
Length	1.86 m
Diameter	45 mm
TX–RX spacings	20" and 32"
Operating frequency	100 kHz
Resistivity range	0.2–1,000 Ω·m
Max. pressure	20 MPa (200 bar)
HP version	35 MPa (350 bar)
Max. temperature	80 °C
HT version	125 °C

ACCESSORIES Test and calibration loop, stand-off

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Magnetic Susceptibility Probe

Measures apparent formation magnetic susceptibility for the detection and evaluation of mineral deposits, in mud, air-filled and plastic-lined boreholes.



This probe is a two-coil electromagnetic sonde that measures apparent formation magnetic susceptibility, useful for detecting and evaluating mineral deposits.

The volume magnetic susceptibility of a formation refers to its degree of magnetisation in response to an applied magnetic field. A combination sonde measuring magnetic susceptibility and conductivity together is also available.

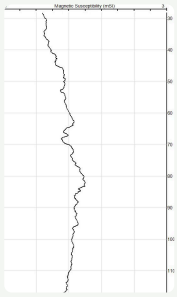
The Magnetic Susceptibility sonde is a useful tool in the exploration and evaluation of mineral deposits and in formation characterisation. It is particularly suited to iron and sulphide deposits.

APPLICATIONS

- Detection and delineation of mineralised formations
- Lithology and ore identification
- Ore quality correlation
- Formation characterisation

KEY FEATURES

- Combinable digital probes
- Works in mud, air-filled and plastic-lined boreholes
- Optional combined conductivity measurement
- HP and HT versions (MSusc sonde)



Example magnetic susceptibility log (0–3 mSI)

SPECIFICATIONS

	MSusc Sonde	MSusc / Conductivity Combination Sonde
Weight	4.5 kg	7 kg
Length	1.37 m	1.5 m
Diameter	45 mm	45 mm
TX–RX spacing	30 cm	MSusc: 25 cm Cond.: 50 cm
Operating frequency	2 kHz	MSusc: 2 kHz Cond.: 100 kHz
Range	10^{-4} to 2 SI units	MSusc: 10^{-5} to 0.5 SI units Cond.: 1–3,000 mS/m
Max. pressure	20 MPa (200 bar)	20 MPa (200 bar)
HP version	35 MPa (350 bar)	–
Max. temperature	80 °C	80 °C
HT version	125 °C	–

ACCESSORIES Test and calibration jig, stand-off

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Magnetometer Probe

Measures the three orthogonal components of the total magnetic field and the dip of the borehole, with a choice of sensor ranges and noise levels.

The Magnetometer Probe measures the three orthogonal components of the total magnetic field in the formation, as well as the dip of the borehole.

The probe combines a high-performance 3-axis fluxgate sensor with a 2-axis accelerometer. The sensors come in three versions according to their measurement noise floor: basic, standard and low noise. They are used to obtain the resultant of the anomalous vector components after removal of the normal field.

The probe is offered with a choice of optional ranges and noise levels, and the accelerometer allows the output to be corrected in inclined boreholes.

APPLICATIONS

- Detection of magnetic disturbances
- Detection of iron ore
- Geophysical exploration

KEY FEATURES

- Choice of low, standard or basic noise-level sensors
- Combinable (base of stack) digital probe
- 3-axis fluxgate sensor with 2-axis accelerometer
- Output correction in inclined boreholes

SPECIFICATIONS

	MAG Sonde
Weight	3.5 kg
Length	0.71 m
Diameter	38 mm
Sensors	3-axis fluxgate; 2-axis accelerometer
Optional range per axis	±70 µT, ±100 µT, ±250 µT, ±500 µT or ±1,000 µT
Optional noise level	<6, 6–10 or 10–20 pT rms/√Hz at 1 Hz
Max. pressure	20 MPa (200 bar)
Max. temperature	80 °C
Combinability	Combinable (base of stack)
Borehole conditions	Water- or air-filled; open hole or PVC-cased

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

GEOVISTA

04

SECTION 04

Acoustic and Seismic

Full waveform sonic, downhole P and S velocity and borehole seismic measurements.

Full Waveform Sonic Probes / CBL 27

Downhole P and S Sonde 28

Seismic Geophone 29

Full Waveform Sonic Probes / CBL

Records sonic velocities and full acoustic waveforms for formation characterisation and cement bond evaluation, in 60 mm and 50 mm sondes with two or four receivers. An HT version rated to 100 °C is available.



GeoVista sonic probes measure sonic velocities together with the associated sonic waveforms. These data can be used for formation characterisation as well as casing cementation evaluation (CBL).

The GeoVista sonic sondes consist of a ceramic piezoelectric transmitter and two or four receivers. The larger 60 mm diameter sonde is particularly suited to deployment in large water wells, while the slimmer 50 mm sonde suits the smaller-diameter boreholes used in mineral exploration and geotechnical work.

For both sondes, the transmitter–receiver combinations allow formation acoustic wave velocities and wave amplitudes to be measured. Compressional (P) wave arrivals are easily identifiable in GV Full Waveform Sonic data; shear (S) wave arrivals can be identified only under certain suitable borehole and formation conditions.

APPLICATIONS

- Lithology identification
- Seismic data correction
- Formation porosity
- Mining
- Geomechanics
- Cement bond evaluation (CBL)

KEY FEATURES

- Fully combinable digital probes
- Two size and diameter options
- Sondes available with 2 or 4 receivers
- High-temperature (HT) version rated to 100 °C

SPECIFICATIONS

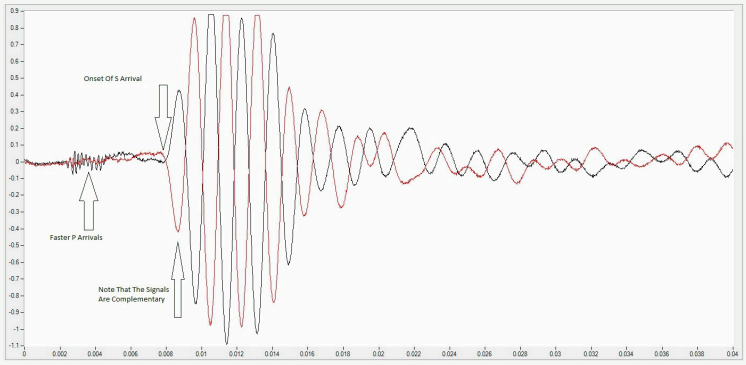
	60 mm Sonde	50 mm Sonde
Weight	25 kg	16.7 kg
Length	2.34 m	2.2 m
Diameter	60 mm	50 mm
Receiver spacing	91 and 152 cm (3 ft and 5 ft)	60, 80, 100 and 120 cm
Sampling rate	Variable (500 samples at 4 µs or slower)	2 µs or 4 µs
Resolution	12 bit; record length min. 2 ms	12 bit; record length 1 or 2 ms
Transducers	Ceramic piezoelectric (23 kHz resonant frequency)	Ceramic piezoelectric (28 kHz resonant frequency)
Gain settings	16 levels with selectable AGC	11 levels, 0–30 dB in 3 dB steps
Max. pressure	20 MPa (200 bar)	20 MPa (200 bar)
HP version	35 MPa (350 bar)	–
Max. temperature	80 °C	80 °C
HT version	100 °C	
Centralisation	Required	Required

ACCESSORIES In-line centralisers

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Downhole P and S Sonde

Logs formation compressional (P) and shear (S) wave velocities, and is particularly effective in slow formations, with no clamping needed for acoustic coupling.



Example DPS waveforms: faster P arrivals and onset of the S arrival (complementary signals)

APPLICATIONS

- Site investigations and ground engineering
- Compressional and shear wave velocity measurements

KEY FEATURES

- Digital probe
- Variable spacing
- No clamping required for acoustic coupling
- One transmitter and two receivers
- SEG2 data output
- HP version rated to 20 MPa (200 bar)

The GeoVista Downhole P&S (DPS) probe logs formation compressional (P) and shear (S) wave propagation velocities. It is particularly effective in 'slow' formations, where shear velocity is lower than borehole-fluid velocity.

Formation P and S wave slowness are among the parameters required to estimate rock properties at the site investigation stage, whether for foundations or for civil engineering projects such as dams.

The DPS probe has one transmitter and two receivers. The transmitter is designed to excite a dispersive flexural mode that propagates at a velocity close to the formation shear velocity. This is currently the only technique available in slow formations where shear velocity is lower than borehole-fluid velocity, and it does not require clamping to achieve acoustic coupling.

SPECIFICATIONS

	DPS Sonde	DPS Sonde – HP version
Weight	14.0 kg	16 kg
Length	4.85 m or 5.85 m	
Diameter	51 mm	60 mm
TX1–RX1 spacing	Typically 200 or 300 cm, depending on length of first isolator section (other lengths available)	
TX1–RX2 spacing	Typically 300 or 400 cm, depending on length of first isolator section (other lengths available)	
Sampling density	2,000 samples/wave	
Resolution	16 bit	
Sampling interval	Selectable 2.5, 5, 10, 20 or 40 µs	
Data file format	SEG2	
Max. pressure	5 MPa (50 bar)	20 MPa (200 bar)
Borehole conditions	Water- or mud-filled; open hole	

ACCESSORIES Stand-offs, P&S simulator test jig

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Seismic Geophone

Three-component borehole geophone with a motorised clamping arm, available as a digital system needing no seismograph or as an analogue sonde for deeper boreholes.



GeoVista offers digital and analogue seismic geophone options with a motorised caliper clamping arm and three SM24 geophones arranged in an X-Y-Z pattern. The clamping arm ensures adequate coupling over a range of borehole diameters.

Digital: the GeoVista borehole geophone system comprises a downhole digital sonde and a compact digital interface unit at the surface, with no requirement for a seismograph. The sonde runs on single-conductor cable on a standard logging winch. The surface interface unit has inputs for the downhole sonde, three surface geophones and the trigger, and outputs collected data to a PC via USB. The acquisition software allows data viewing and stacking, and the SEG2 files it generates can be imported into most commercial seismic processing software.

Analogue: the analogue version has the same geophone in the borehole but sends analogue signals to the surface. It must be run on 4-core or 7-core cable and requires a surface seismograph. This option allows the geophone to be run in deeper boreholes.

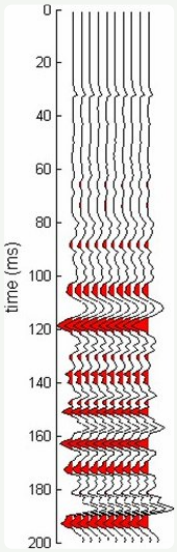
Monitoring geophone: GeoVista can also supply an analogue monitoring geophone.

APPLICATIONS

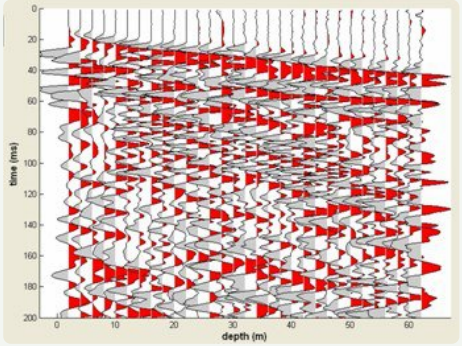
- Seismic profiling
- Correlation with seismic surveys
- Soil dynamics
- Rock mechanics and elasticity

KEY FEATURES

- Three SM24 geophones in X-Y-Z arrangement
- Motorised caliper clamping arm
- Digital version needs no seismograph; SEG2 output
- Analogue version for deeper boreholes



Example seismic record (time, ms)



Example seismic record (time vs depth)

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Seismic Geophone — continued

SPECIFICATIONS

	Digital version	Analogue version
PHYSICAL		
Weight	15 kg	
Length	1.69 m	
Diameter	64 mm	
Clamping	Motorised arm	
MEASUREMENT AND ACQUISITION		
Downhole sensors	3 geophones (SM24, X-Y-Z) with simultaneous recording	
Seismic source	Not included	
Trigger	From suitable source (e.g. surface geophone)	Depends on surface seismograph (not included)
Data acquisition	Max. 16 s record length; 16 bit resolution at 500 µs sample interval. No seismograph required; surface box connects to PC via USB	Requires surface seismograph (not included)
Output file format	SEG2; used with GV Seismic Software	Depends on surface seismograph (not included)
Surface inputs	3 surface geophones	Depends on surface seismograph (not included)
Depth measurement	Real-time depth reading via connection to winch encoder	Third-party system to read depth from winch encoder
Logging cable	1,000 m 3/16" mono or 4-core cable	2,500 m 4-core or 7-core cable
OPERATING LIMITS		
Max. pressure	20 MPa (200 bar)	
Max. temperature	80 °C	
Combinability	Not combinable	
Borehole conditions	Water- or mud-filled; open hole	
Comments	Ideal for VSP measurements in boreholes <1,000 m as part of a complete wireline logging suite. No seismograph needed; depth input from winch	Ideal for deeper VSP surveys and a vibroseis source. Requires a third-party seismograph and surface set-up

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

GEOVISTA

05

SECTION 05

Borehole Imaging

Oriented acoustic and optical images of the borehole wall, and video inspection.

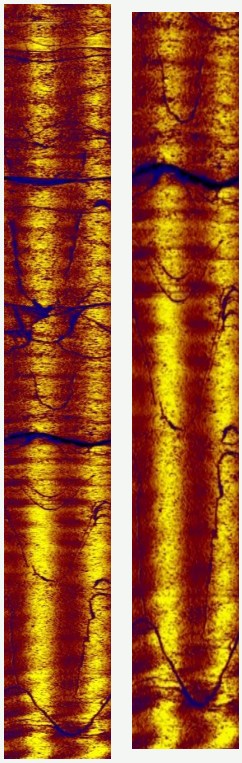
Acoustic Televiewer 32

Optical Televiewer 33

Borehole Video Cameras 34

Acoustic Televiewer

Continuous, oriented false-colour images of the borehole wall, revealing the dip and dip direction of fractures and bedding, acquired at high resolution in real time.



Example acoustic image logs

The Acoustic Televiewer provides continuous false-colour images of the borehole walls, revealing detailed information on fracture and bedding dip direction and orientation.

The operating software acquires this high-resolution data in real time, and the probe can be run in both clear and opaque mud. Log parameters include a 360° oriented travel-time image (12-bit resolution / 100 ns per bit), a 360° oriented amplitude image, and borehole azimuth and dip.

APPLICATIONS

- Oriented structural information
- Breakout analysis
- Borehole deformation analysis
- Thin bed analysis
- Core orientation referencing
- Stratigraphic studies
- Cased hole inspection
- Fracture identification

KEY FEATURES

- 360° oriented travel-time and amplitude images
- Real-time, high-resolution acquisition
- Runs in fluid-filled holes, including mud
- Centralisers supplied with the probe

SPECIFICATIONS

	Acoustic Televiewer Probe
PHYSICAL	
Weight	8.0 kg
Length	2.1 m
Diameter	42 mm
Borehole diameter range	70–400 mm, depending on conditions
ACOUSTIC SUBSYSTEM	
Frequency	1.5 MHz
Beam angle	3° conical
Rotation speed	Up to 20 rev/s
Sampling density	90, 120, 180 or 360 per revolution
Acquisition sampling rate	100 ns
Gain	0–60 dB in 1 dB steps, or automatic gain control (AGC)
Acquisition resolution	8 bits
Typical logging speed	2.5 m/min with 720 pixels horizontal and 1 mm vertical resolution
OPERATING LIMITS	
Max. pressure	20 MPa (200 bar)
Max. temperature	70 °C
Combinability	Not combinable
Borehole conditions	Fluid filled and light mud; open, cased or PVC
Centralisation	Required; centralisers supplied with probe

ACCESSORIES Optional NaI gamma detector installed; commonly used with post-log processing software

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Optical Televiewer

Continuous, oriented, unwrapped colour images of the borehole wall, revealing the dip and dip direction of fractures and bedding, acquired at high resolution in real time.



The Optical Televiewer provides continuous logs of oriented, unwrapped images of the borehole wall, revealing detailed information on fracture and bedding dip direction and orientation.

The operating software acquires real-time, high-resolution 360° images of the borehole wall. The probe can be run in both air-filled and clear water-filled holes. Log parameters include a 360° oriented optical image, and borehole azimuth and dip.

APPLICATIONS

- Oriented structural information
- Breakout analysis
- Thin bed analysis
- Core orientation referencing
- Stratigraphic studies
- Cased hole inspection
- Fracture identification

KEY FEATURES

- 360° oriented, true-colour (24-bit RGB) images
- User-definable image resolution
- Runs in air or clear water
- Centralisers supplied with the probe

SPECIFICATIONS

	Optical Televiewer Probe
PHYSICAL	
Weight	5.0 kg
Length	1.63 m
Diameter	52 mm
Borehole diameter range	70–300 mm, depending on conditions
OPTICAL SUBSYSTEM	
Sensor	1,280 × 1,024 CMOS image sensor
Image resolution	360–1,440 pixels/circumference (user definable)
Colour resolution	24-bit RGB
Data rate	1,500 kbps
Data formats	Structural log and image data: bitmap files Structural and orientation data: ASCII files
Typical logging speed	2.5 m/min with 720 pixels horizontal and 1 mm vertical resolution
OPERATING LIMITS	
Max. pressure	10 MPa (100 bar)
Max. temperature	60 °C
Combinability	Not combinable
Borehole conditions	Clear water or air; open, cased or PVC
Centralisation	Required; centralisers supplied with probe

ACCESSORIES Optional NaI gamma detector installed; commonly used with post-log processing software

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Borehole Video Cameras

High-quality, flexible and reliable borehole inspection, with high-speed data transmission, user-controlled focusing and industry-leading optics and lighting.



Dual View (left) and Axial cameras

GeoVista colour video cameras run on your existing wireline winch alongside your geophysical logging probes, so there is no need to buy and mobilise a second winch just for the camera.

Our camera systems are in use worldwide. Innovative design delivers high-speed data transmission, real-time video and still capture, user-controlled lens focusing, video compression, CCD sensors and advanced image processing. Two camera systems are available:

- **Dual View Camera** – axial and 360° infinitely rotating side view, with real-time depth, speed, comments and title overlay; software-controlled editing, zoom and backlight compensation; variable high/low-intensity lighting; and focus and rotation-speed control. An inclination and deviation sensor can be added to orient the video.
- **Axial Camera** – a smaller diameter and lower cost. With a 0.01 lux sensor and frontal light head, it is ideal for small-diameter wells or wells with tight entry restrictions.

APPLICATIONS

- Wellbore and casing inspection
- Screen and lining condition surveys
- Lost-object and obstruction identification
- Fracture and void observation

KEY FEATURES

- Runs on your existing wireline winch
- Real-time video and still capture
- User-controlled focus and lighting
- Optional orientation sensor (Dual View)

SPECIFICATIONS

	Dual View Colour Camera	Axial Colour Camera
Weight	9.5 kg	2.8 kg
Length	1.4 m	0.66 m
Diameter	62 mm	45 mm (54 mm HP version)
Image sensor	1/4" CCD	1/3" CCD
Min. illumination	0.02 lux	0.01 lux
Lens	2.5 mm & 2.9 mm; automatic iris; user-controllable focus; software-controllable functions	2.6 mm; automatic iris; fixed focus
Max. pressure	15 MPa (150 bar)	8 MPa (80 bar); 15 MPa (150 bar) optional
Max. temperature	70 °C	70 °C
Wireline cable	Connects to your wireline winch like other downhole probes. Max. 650 m on 3/16" coaxial cable; max. 1,500 m on 1/4" coaxial cable.	
Combinability	Not combinable	Not combinable
Borehole conditions	Clear water or air; open, cased or PVC	Clear water or air; open, cased or PVC
Centralisation	Recommended	Recommended

ACCESSORIES Optional orientation (inclination and deviation) sensor

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

GEOVISTA

06

SECTION 06

Borehole Geometry and Survey

Borehole diameter, casing location, verticality and trajectory surveys.

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GV APEX Gyro	39
GV FOG Gyro	40
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Caliper Probes

Continuous logs of borehole diameter or radii from motorised, spring-loaded arms, with 2-, 3- and 4-arm combinable digital probes to suit holes up to 1,500 mm.



4-, 2- and 3-arm (left to right)

The GeoVista range of borehole caliper probes provides a continuous log of borehole diameter or radii, using motorised, spring-loaded arms that follow the profile of the borehole wall as the sonde travels up hole.

GeoVista calipers can be used on their own or in combination with other GeoVista sondes. In addition to the traditional 3-arm caliper, a caliper with two independent arms is available; two of these 2-arm sondes can be coupled to provide a slim 4-arm caliper with independent arms. Alternatively, a single 4-arm caliper with independent arms is available for larger boreholes, up to 1,500 mm with arm extensions. Two 4-arm caliper sondes can be connected to give an 8-arm caliper with independent radii measurements.

Independent caliper arms allow diameters (or radii) to be measured even when the sonde is not centred, avoiding a problem common to sondes with interlinked arms.

APPLICATIONS

- Borehole diameter changes
- Borehole condition and integrity
- Fractures
- Borehole volume calculation
- Log environmental corrections

KEY FEATURES

- Combinable, digital probes
- Motorised, spring-loaded arms
- Independent arms (2- and 4-arm)
- Extendable range (4-arm)

SPECIFICATIONS

	2-arm	3-arm	4-arm
Weight	9.8 kg	8.5 kg	18.0 kg
Length	1.32 m	1.45 m	1.18 m
Diameter	45 mm	38 mm	80 mm
Range	50–400 mm	45–600 mm	85–1,000 mm (1,500 mm with extensions)
Independent arms	Yes	No	Yes
Arm extensions	No	No	Yes
Measurement	X1, X2 radii*	Overall diameter	X1, X2, Y1, Y2 radii
Max. pressure	20 MPa (200 bar) (all models)		
HP version	35 MPa (350 bar) (all models)		
Max. temperature	80 °C (all models)		
HT version	125 °C (all models)		
Combinability	Combinable with other GeoVista sondes		

* Two 2-arm sondes can be combined to give a slim 4-arm caliper with independent arms.
Two 4-arm caliper sondes can be connected to give an 8-arm caliper with independent radii measurements.

ACCESSORIES Calibration jig (all models); arm extensions (4-arm)

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Casing Collar Locator

Accurate pipe collar detection and depth referencing in cased holes, run on its own or in combination with other GeoVista sondes.



The GeoVista Casing Collar Locator (CCL) allows accurate pipe collar detection and depth referencing.

The CCL sonde is used to locate casing joints in a borehole. The probe is sensitive to changes in metal thickness and is most often used for depth control and depth correlation. It can be run on its own or in combination with other GeoVista sondes for correlation purposes in cased holes.

APPLICATIONS

- Casing collar location
- Depth referencing
- Casing shoe identification
- Reference with perforation logs

KEY FEATURES

- Modular: combinable with other GeoVista sondes
- Sensitive to changes in metal thickness
- Runs in water, mud or air
- No centralisation required

SPECIFICATIONS

	CCL
Weight	3.9 kg
Length	0.65 m
Diameter	38 mm
Detector	1" coils and magnets assembly
Max. pressure	20 MPa (200 bar)
HP version	35 MPa (350 bar)
Max. temperature	80 °C
HT version	125 °C
Combinability	Modular
Borehole conditions	Water, mud or air; any hole. Detects casing collars
Centralisation	Not required

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Borehole Survey Probes

Verticality and Inclinometer probes to meet your direction surveying requirements, in open or steel-cased boreholes, in real time or in memory mode.



Verticality Probe

The GeoVista Verticality and Inclinometer probes are designed to meet your direction surveying requirements, be it in open holes or steel-cased boreholes, in real time or in memory mode.

Verticality Probe

The Verticality Probe uses a high-accuracy navigation package, including a 3-axis accelerometer and a 3-axis fluxgate magnetometer, to provide either a punctual direction or a continuous survey of borehole trajectory in non-magnetic environments, as well as continuous inclination data for your borehole. It can also be used to delineate formations with magnetic material, or to detect steel objects buried near the borehole. When used in combination with a 4-arm caliper sonde, it will orientate any detected borehole diameter anisotropy.

Inclinometer Probe

The Inclinometer Probe contains a 3-axis accelerometer and measures only borehole inclination.

The inclination measurements offered by both probes can be obtained in any environment and are not affected by magnetic fields. If azimuth data are required in metallic or magnetic environments, consider a GeoVista Gyro Probe.

APPLICATIONS

- Borehole direction, including inclination and azimuth
- True vertical depth (TVD) of target zone
- Locating magnetic anomalies
- Orientating caliper arms

KEY FEATURES

- Combinable digital probes
- Available for real-time or memory surveying
- Options for gyro or magnetometer azimuth

SPECIFICATIONS

	Verticality Sonde	Inclinometer Sonde
Weight	2.5 kg	2.5 kg
Length	0.6 m	0.6 m
Diameter	38 mm	38 mm
Inclination accuracy	±0.4°	±0.4°
Inclination range	0–180°	0–180°
Azimuth accuracy	±1.0°	Not included
Azimuth range	0–360°	Not included
Max. pressure	20 MPa (200 bar)	20 MPa (200 bar)
HP version	35 MPa (350 bar)	35 MPa (350 bar)
Max. temperature	80 °C	80 °C
HT version	125 °C	125 °C
Combinability	Modular	Modular
Borehole conditions	Water, mud or air; open hole; cased hole (inclination only)	Water, mud or air; open, cased or PVC
Centralisation	Recommended	Recommended

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

GV APEX Gyro

Fast, continuous, all-angle, north-seeking orientation and deviation surveys in any environment, including steel casing and drill pipe, with no field calibration required.



The GeoVista APEX Gyro is an all-angle, north-seeking sonde. It can be run live on an e-line, or in memory mode on a slickline, to provide borehole trajectory data.

The APEX Gyro Sonde provides **fast, continuous** orientation and deviation surveys of boreholes in any environment, including steel casing and drill pipe. Crucially, it can measure in **all directions and inclinations**. It is highly accurate and does not require any field calibration. The GV APEX Gyro can also be combined with other GeoVista sondes, such as the Gamma Ray. It is available for operation in two modes:

- **Real-time** – runs on an e-line and provides real-time trajectory data.
- **Memory** – runs on a slickline and stores data in memory, which can be downloaded once the sonde is back at the surface.

APPLICATIONS

- Borehole trajectory, including inclination and azimuth
- True vertical depth (TVD) of target zone

KEY FEATURES

- Combinable digital probe
- Available for real-time or memory surveying
- Continuous, all-angle inclination and azimuth measurements
- Fast logging speed
- No field calibration required

SPECIFICATIONS

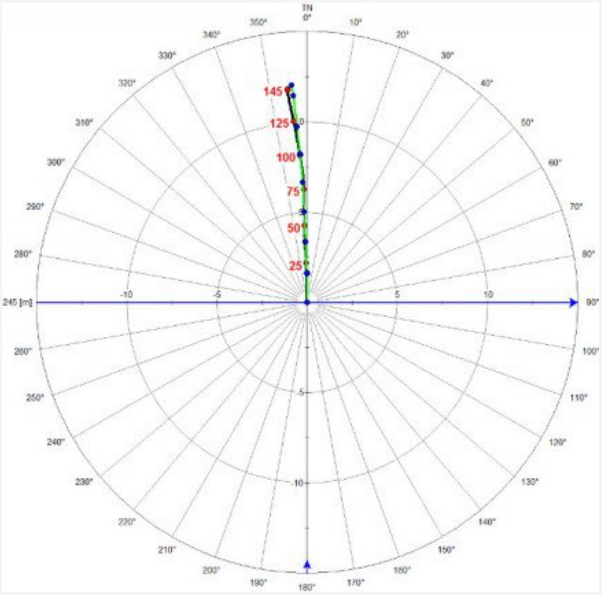
	GV APEX Gyro Sonde
Weight	3.1 kg
Length	0.8 m
Diameter	38 mm
Inclination	0.1° rms (all angle)
North-seeking azimuth	1.0° rms in less than 1 minute
Continuous azimuth	Less than 0.5°/h drift (subject to borehole conditions)
Max. pressure	20 MPa (200 bar)
Max. temperature	85 °C
Combinability	Modular; combinable with other GeoVista sondes
Borehole conditions	Any hole
Centralisation	Recommended
MEMORY CONFIGURATION	
Sonde weight	3.5 kg
Sonde length	0.9 m (1.25 m with GR)
Battery module length	0.6 m
Max. pressure	34 MPa (340 bar)

ACCESSORIES In-line centralisers

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

GV FOG Gyro

North-seeking fibre optic gyro for accurate borehole trajectory surveys in any environment, including steel casing and drill pipe, with no calibration or drift correction.



APPLICATIONS

- Borehole direction, including inclination and azimuth
- True vertical depth (TVD) of target zone

KEY FEATURES

- Combinable digital probe
- Real-time or memory single-shot / multi-shot surveying
- No calibration or drift correction required
- Unaffected by steel casing, drill pipe or magnetic anomalies

The GeoVista North Seeking Fibre Optic Gyro (FOG) Sonde uses an optical fibre coil sensor to provide borehole trajectory data. It requires no calibration or drift correction, and can be run on wireline or in memory mode on slickline.

The GV FOG Gyro provides multi-shot or single-shot orientation and deviation surveys of boreholes in any environment, including steel casing and drill pipe. It incorporates a high-sensitivity sensor that measures the Earth's angular velocity, so it is unaffected by steel or by areas of local magnetic field anomalies, and it does not require any field calibration. No surface equipment is needed other than the GV Logger system.

Like other GeoVista probes, the GV FOG Gyro is combinable: other GeoVista geophysical probes can be connected above it to record a continuous log in a single run, saving time in the borehole. The sonde can be run in either of two modes:

- **Wireline** – real-time data display on the logging PC
- **Memory** – on slickline, with data downloaded on return to the surface

SPECIFICATIONS

	GV FOG Gyro
Weight	3.1 kg
Length	1.11 m
Diameter	34 mm
Inclination	0–70°; accuracy ±0.4°
Azimuth	0–360°; accuracy ±2.0°
Max. pressure	20 MPa (200 bar)
Max. temperature	80 °C
Combinability	Modular; combinable with other GeoVista sondes (connected above)
Borehole conditions	Any hole
Centralisation	Recommended

ACCESSORIES In-line centralisers, bottom-nose shock absorber

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Driller Operated Borehole Surveying Probes

Memory survey probes designed to be run by drillers, supporting directional drilling and drill-hole direction surveys, with Bluetooth data download and optional natural gamma.



GeoVista driller operated memory probes assist with directional drilling operations and drill-hole direction surveys. Two probes are available, the GV DOG gyro and the GV DOV verticality probe, and both have provision for an optional natural gamma detector.

GV DOG – Driller Operated Gyro

- Single-shot / multi-shot north-seeking probe – no need for prior alignment
- Suitable for all environments, magnetic and non-magnetic; can be run in steel pipe and steel casing
- No drift correction, as each reading is independent of the previous one
- Optional integrated gamma ray detector

GV DOV – Driller Operated Verticality

- Single-shot / continuous directional survey probe that measures in all directions
- Suitable for non-magnetic environments only
- No drift correction required

APPLICATIONS

- Drill-hole direction surveys and navigation in all environments, magnetic and non-magnetic
- Support for directional drilling operations

KEY FEATURES

- Driller operated
- North-seeking probe (GV DOG) needs no prior alignment
- No drift correction
- Optional gamma ray detector
- Bluetooth data interface and download

SPECIFICATIONS

	GV DOG	GV DOV
Length	2.24 m	2.24 m
Diameter	42 mm	42 mm
Inclination	0–70°; accuracy ±0.2°	0–90°; accuracy ±0.2°
Azimuth	0–360°; accuracy ±2.0°	0–360°; accuracy ±2.0°
Power	NiMH battery	NiMH battery
Data interface	Bluetooth	Bluetooth
Natural gamma detector	Optional	Optional
Max. pressure	20 MPa (200 bar)	20 MPa (200 bar)
Max. temperature	80 °C	80 °C
Borehole conditions	Any	Non-magnetic

ACCESSORIES Supplied with deployment accessories as required, which can include a depth encoder and depth/time recorder, battery modules and battery charger, centraliser and shock absorber, spear head and field tablet.

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

GEOVISTA

07

SECTION 07

Fluid and Hydrogeology

Borehole fluid, water quality, flow, level, pressure and sampling.

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Temperature Probe

An accurate, continuous temperature profile of the borehole fluid from a fully combinable digital probe that can be run in any borehole.



The GeoVista Temperature Probe gives an accurate temperature profile down the well.

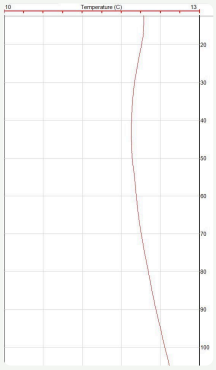
The fully combinable GeoVista Temperature Probe can be run in any borehole to provide an accurate temperature profile. This is useful for a wide range of applications, from geothermal gradient determination and contamination analysis to fault and fracture flow analysis, and it provides the temperature data needed in compensation equations for other logs.

APPLICATIONS

- Fluid temperature
- Compensation equations for other geophysical tools
- Geothermal gradient determination
- Contamination analysis
- Fault / fracture flow analysis

KEY FEATURES

- Fully combinable digital probe
- Can be run in any borehole
- High-pressure and high-temperature versions available



Example temperature log (°C)

SPECIFICATIONS

	Temperature
Weight	2.6 kg
Length	0.53 m
Diameter	38 mm
Temperature accuracy	±0.15 °C to IEC 60751:2008
Max. pressure	20 MPa (200 bar)
HP version	35 MPa (350 bar)
Max. temperature	80 °C
HT version	125 °C
Combinability	Fully combinable
Borehole conditions	Any

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Fluid Temperature and Conductivity Probe

Continuous temperature and conductivity profiles of the borehole fluid, revealing thermal anomalies, water movement, feed zones and salinity variations.



The inline Fluid Temperature and Conductivity Probe (TCIS) measures a continuous temperature and conductivity profile of the borehole fluid.

The TCIS measures fluid temperature using a platinum resistor, the resistance of which varies with temperature in a well-characterised manner. The conductivity of the borehole fluid is measured with a series of electrodes. Fluid enters an inlet near the bottom of the sonde, travels up the centre and exits via an outlet higher up.

TCIS temperature data provide information on thermal anomalies, water movement and the producing formations (feed zones). Under static, equilibrium conditions, temperature changes according to the local geothermal gradient. Where present, temperature anomalies can be associated with groundwater movement, some types of mineralisation (e.g. sulphide oxidation) or radioactive minerals.

Conductivity logs provide information on the concentration of dissolved solids in the fluid column, from which an equivalent NaCl salt concentration can be determined; for meaningful values, a temperature sensor is always included with this sonde. Under conditions of vertical flow, the sonde can show the contribution of separate interstitial water bodies. Under static, equilibrium conditions, the probe can pick out the interface between brine and fresh water. Combinability with a flowmeter is particularly useful for pumping tests.

APPLICATIONS

- Temperature gradient and temperature anomalies
- Correction of electric logs
- Groundwater salinity and salt-water encroachment
- Groundwater movements
- Dewatering
- Groundwater contamination

KEY FEATURES

- Fully combinable digital probes (including with a flowmeter)
- Wide measuring range
- Platinum resistance temperature sensor

SPECIFICATIONS

	TCIS
Weight	4.3 kg
Length	0.76 m
Diameter	38 mm
Temperature accuracy	±0.15 °C to IEC 60751:2008
Conductivity range (standard)	0.05–50 mS/cm
Conductivity accuracy	±0.1% at 1 mS/cm
Conductivity range (extended)	0.05–250 mS/cm
Max. pressure	20 MPa (200 bar)
HP version	35 MPa (350 bar)
Max. temperature	80 °C
HT version	125 °C
Combinability	Fully combinable, including with a flowmeter

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

pH Probe

A full, continuous pH profile of the borehole fluid from an easy-to-use probe, supporting contamination studies and aquifer water quality measurements.



The GeoVista pH Probe measures a continuous pH profile of the borehole fluid. It is easy to use and connects to the bottom of a logging stack.

The full, continuous pH profile is used in a variety of applications, from evaluating contamination associated with, for example, acid mine drainage, to aquifer water quality measurements.

Water pH is affected by the types of gases and minerals the groundwater has interacted with during transport from its source into the borehole. The typical pH range for groundwater systems is 6 to 8.5. Water with lower pH may indicate reaction with trace metals during transport and can be characteristic of acid mine drainage. Water with high pH may record reaction with carbonate-rich rocks, which could affect its taste and its interaction with appliances.

APPLICATIONS

- Water quality profile
- Fluid properties
- Groundwater properties
- Monitoring
- Intrusion and zonal determination
- Contamination analysis
- Groundwater flow

KEY FEATURES

- Fully combinable digital probe
- Measures pH range 1–14
- Bottom of stack only

SPECIFICATIONS

	pH
Weight	1.8 kg
Length	0.54 m
Diameter	38 mm
Measurement range	pH 1–14
Max. pressure	12 MPa (120 bar)
Max. temperature	80 °C
Combinability	Combinable; bottom of stack only

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Nitrate Probe

A continuous profile of nitrate levels in the borehole, measured by UV light attenuation – a more reliable method than selective membranes.



The GeoVista Nitrate Probe logs a continuous profile of nitrate levels in the borehole.

Nitrate contamination of groundwater is an important public health issue. Much of it can be traced back to diffuse pollution from agriculture and from sewage sludge disposal.

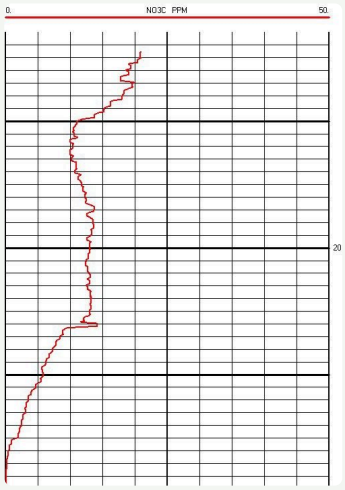
The GeoVista Nitrate Probe measures the attenuation of UV light by NO_3 molecules to track the abundance of nitrate in the water column. This method is more reliable than the selective membrane method.

APPLICATIONS

- Trace metals contamination
- Organic contaminants
- Groundwater quality
- Mining waste
- Landfill leachate

KEY FEATURES

- Combinable digital probe
- UV light attenuation measurement – more reliable than selective membranes



Example nitrate log (NO_3, ppm)

SPECIFICATIONS

	Nitrate
Weight	12 kg
Length	1.2 m
Diameter	79 mm
Measurement range	0–100 mg/L (ppm)
Measurement method	UV light attenuation
Max. pressure	20 MPa (200 bar)
Max. temperature	80 °C

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Water Level Indicator Probe

A simple, fully combinable probe that accurately determines the borehole water level, ideal for monitoring the water table around sites at risk of contamination.



The GeoVista Water Level Indicator Probe measures the borehole water level.

This simple probe accurately determines the water level in the borehole. It is widely used to monitor the level of the water table, particularly around sites where there is a risk of contamination.

APPLICATIONS

- Fluid properties
- Groundwater properties
- Monitoring
- Water table depth
- Intrusion and zonal determination
- Groundwater flow

KEY FEATURES

- Fully combinable digital probe
- Simple and accurate water level determination

SPECIFICATIONS

	Water Level
Weight	2.2 kg
Length	0.35 m
Diameter	38 mm
Max. pressure	20 MPa (200 bar)
Max. temperature	80 °C
Combinability	Fully combinable

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Addressable Water Sampler Probe

Retrieves water samples from boreholes at selected depths, run alone or combined with other GeoVista probes in a single tool string.

The GeoVista Water Sampler sonde retrieves samples from boreholes at selected depths.

The sonde is supplied with a 1 litre (or optionally 2 litre) sample chamber for general sampling. To preserve samples under downhole conditions, the chamber can be replaced by a system of removable, smaller-volume pressurised sample cylinders with individual valves, typically of 300 cc capacity each.

Because it is addressable, the sonde can be run alone or in combination with other GeoVista sondes. This is useful for correlation purposes, or for sampling zones where significant contamination (e.g. nitrates) has been detected.

APPLICATIONS

- Groundwater salinity
- Groundwater contamination

KEY FEATURES

- Combinable digital probe
- 1 L or 2 L sample chamber
- Optional pressurised sample cylinders (typically 300 cc each)

SPECIFICATIONS

	Water Sampler
Weight	3.0 kg
Length	0.45 m (without chamber)
Diameter	44 mm (1 L chamber) 60 mm (2 L chamber) 63 mm (pressurised cylinder)
Sample volume	1 L chamber (2 L optional), or pressurised cylinders of typically 300 cc each
Max. pressure	20 MPa (200 bar)
Max. temperature	80 °C
HT version	125 °C
Combinability	Combinable (addressable)

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Heat Pulse Flowmeter Probe

Detects differential flow rates and flow direction in boreholes, measuring very low velocity flows with the tool held stationary.



The GeoVista Heat Pulse Flowmeter Probe detects differential flow rates and flow direction in boreholes. A heated grid and two thermistors detect water movement in the borehole, making it useful at low flow rates.

The Heat Pulse Flowmeter is suited to very low velocity flow rates, typically less than 2 m/min. Measurements are made with the tool stationary in the borehole.

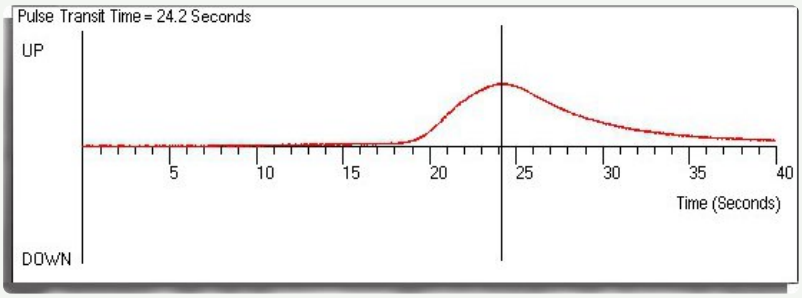
The probe fires a short heat pulse and uses two thermistors, at a fixed distance on either side, to detect the transported heat energy. From the time between the firing of the heat pulse and its detection at the upper or lower thermistor, the fluid velocity is computed and its direction established.

APPLICATIONS

- Flow profile
- Zonal identification
- Casing leak determination
- Location of permeable and flowing zones
- Identification of hydraulic gradients
- Identification of transient fractures and fracture flow
- Qualitative and quantitative aquifer characteristics
- Cross-hole flowmeter profiling

KEY FEATURES

- Combinable digital probe
- Measures very low flow velocities (threshold 0.1 m/min)
- Gives both flow velocity and direction



Example heat pulse response: pulse transit time 24.2 s, upward flow

SPECIFICATIONS

	Heat Pulse Flowmeter
Weight	6.2 kg
Length	0.90 m
Diameter	51 mm
Threshold velocity	0.1 m/min
Data output	Time, direction
Max. pressure	20 MPa (200 bar)
Max. temperature	80 °C
Combinability	Combinable

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Impeller Flowmeter Probe

Real-time measurement of differential flow rates and flow direction in boreholes, with interchangeable impellers to suit different borehole diameters.



The GeoVista Impeller Flowmeter Probe detects differential flow rates and flow direction in boreholes. Primarily used in groundwater applications, it delivers real-time data and can be combined with other GeoVista probes.

The probe uses an interchangeable impeller mounted on jewel bearings, which spins in response to fluid flow. Measurements can be made either as the sonde travels down the borehole at a constant speed, generating a continuous flow profile over the interval of interest, or while the sonde is stationary. The sonde measures over a wide range of flow rates, with a minimum threshold velocity in the region of 1–2 m/min.

The impeller comes in three interchangeable sizes (50, 75 and 100 mm) for different borehole diameters. The probe is often logged at several speeds to detect a wide range of flow rates, and is commonly run with a GeoVista Fluid Temperature and Conductivity Probe to give a complete borehole flow profile.

APPLICATIONS

- Flow profile
- Zonal identification
- Casing leak determination
- Location of permeable and flowing zones
- Identification of hydraulic gradients
- Identification of transient fractures and fracture flow
- Qualitative and quantitative aquifer characteristics
- Cross-hole flowmeter profiling

KEY FEATURES

- Combinable digital probe
- Interchangeable impeller heads
- Continuous or stationary measurement
- Real-time flow rate and direction

SPECIFICATIONS

	Impeller Flowmeter
Weight	3.5 kg
Length	0.48 m
Impeller cage diameter	50, 75 or 100 mm (interchangeable)
Threshold velocity	1–2 m/min, depending on setting and cage size
Data output	Flow rate, direction
Max. pressure	20 MPa (200 bar)
HP version	35 MPa (350 bar)
Max. temperature	80 °C
HT version	125 °C
Combinability	Combinable

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Quartz Pressure Gauge Probe

A simple, fully combinable probe that logs pressure variations within the borehole fluid column with high accuracy.

The GeoVista Quartz Pressure Gauge (QPG) Probe is used to log pressure variations within the borehole fluid column with high accuracy.

This simple yet highly accurate probe detects pressure changes in the borehole fluid column, to ±1 dbar, and is fully combinable with other GeoVista digital probes. High-pressure and high-temperature versions are available.

APPLICATIONS

- Fluid properties
- Groundwater properties
- Monitoring
- Contamination analysis
- Geothermal gradient determination
- Groundwater flow
- Log compensation
- Water column profile

KEY FEATURES

- Fully combinable digital probe
- Accuracy ±1 dbar
- High-pressure and high-temperature versions available

SPECIFICATIONS

	QPG
Weight	4.0 kg
Length	0.73 m
Diameter	38 mm
Accuracy	±1 dbar
Max. pressure	20 MPa (200 bar)
HP version	35 MPa (350 bar)
Max. temperature	80 °C
HT version	125 °C
Combinability	Fully combinable

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GEOVISTA

08

SECTION 08

Accessories

Deployment, verification and recovery accessories to support every logging job.

Movement Sensor Sub 53

Accessories 54

Movement Sensor Sub

An in-line safety sub that tells you immediately whether the logging string is moving or stationary.



The GeoVista Movement Sensor Sub is an in-line probe connected to the logging stack which registers whether the stack is stationary or moving.

It is used mainly as a safety feature. It lets the operator see straight away when the downhole probes have stopped moving even though the winch is still running, minimising the risk of spooling cable into the borehole. Likewise, it indicates if the stack has become stuck while moving up-hole, which can help prevent accidents.

The sub can also be used to confirm measurement readings at depth.

APPLICATIONS

- Safe logging
- Immediate notice if the string is stuck
- Confirmation of readings at depth

KEY FEATURES

- In-line, modular sub
- Detects stalled or stuck tool strings in real time
- No centralisation required

SPECIFICATIONS

	Movement Sensor Sub
Weight	<0.2 kg
Length	0.44 m
Diameter	38 mm
Max. pressure	20 MPa (200 bar)
Max. temperature	80 °C
Combinability	Modular
Borehole conditions	Any hole
Centralisation	Not required

Descriptions and specifications are subject to change without prior notice. Contact GeoVista to discuss your application and configuration requirements.

Accessories

Deployment, protection, verification and retrieval accessories to support borehole logging with GeoVista probes, with or without a rig in place.

GeoVista offers a range of accessories for deploying, protecting, verifying and retrieving borehole logging probes.

Rig-up sheave wheels

Useful when there is a rig in place, allowing safe feeding of the cable and tools into a borehole.

Tripod with sheave wheel

The efficient choice for logging boreholes that do not have a rig in place, and a standard way to deploy the logging cable into a rig-less borehole.

Fishing tool

Retrieves sondes that are stuck in a borehole without cutting the wireline cable. The tool is attached to drill pipe and lowered downhole; the grapple is designed to catch 28 mm diameter sondes. The assembly comprises grapple half-shells, a body with a side-door slit for the cable, and a 2 3/8" EUE box crossover to connect to the fishing string.

Centralisers and standoffs

A range of solutions is available, including in-line centralisers, rubber finger standoffs, over-body centralisers and custom-made centralisers (e.g. for larger holes).

Sinker (weight) bar

Helpful when sondes are too light for the borehole conditions. The sinker bar is through-wired and can be run anywhere in a probe stack.

Shock absorber

A bottom-of-stack shock absorber reduces shock on the tool stack if the probe hits an obstruction – useful in boreholes of unknown condition and for LWTO, memory or gyro operations.

Push rod adapter

To log GeoVista tools at higher deviations, the push rod adapter connects to your logging head and allows rods to be attached so the tool stack can be pushed down the borehole.

Knuckle joint

Adds flexibility within the tool string – ideal for running centralised and eccentralised probes in the same stack. Through-wired and connectable anywhere in a logging combination; especially useful in deviated holes and LWTO memory logging.

Gamma ray verification blanket

A jig to verify and check gamma probe readings. 38 mm and 60 mm blankets are available.

DPS (P&S) verification jig

Used with the Downhole P&S probe. The jig attaches to the receiver section of the DPS probe, and two different signals can be generated to verify that the probe records the correct waveforms.

Cable line wipers

Clean fluid and debris from the cable as you pull out the logging string. A pressure cable line wiper is also available, using an air supply from the rig or a compressor.

Vertical make-up plate (VMP)

Supports the tool string vertically at the borehole collar so that probes can be safely connected (made up) and disconnected.

Other accessories

T-clamp; bespoke transport cases; crossovers and cable heads; winch electronic depth display module; tool boxes; third-party commercial log processing software. Contact us for more information on borehole geophysical accessories.

SINKER BAR

	Sinker (weight) bar
Weight	9.7 kg
Length	1.12 m
Diameter	38 mm

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GEOVISTA

Talk to us about your next logging project

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