

# Core Logger



## Attention:

Please note that Core Loggers can only be operated upon request. Operations with Core Loggers requires experienced scientific staff on board. The system is not operated by the ship's crew. Announce operations with the Core Loggers to AWI-Geology and AWI-Logistics prior to the cruise and clarify the data transfer after the cruise.

## Summary

Core Loggers capture physical measurands of sediment cores. AWI holds different Geotek Ltd. Core Loggers with different sensor set-ups. Maximum 3 Core Loggers can be stored and operated on FS Polarstern cruises.

- **Manufacturer:** Geotek Ltd.

Page	Description	Sensors								
Multi-Sensor Core Logger (MSCL-S SN*NEU*)	<ul style="list-style-type: none"><li>• <b>Manufacturer:</b> Geotek Ltd.</li><li>• <b>Model:</b> MSCL-S</li><li>• <b>Serial No:</b> NEU</li><li>• <b>Type:</b> Multi-Sensor Core Logger</li></ul>	<b>Sensor Type</b>	Gamma Density Sensor		P-Wave System	Magnetic Susceptibility Loop Sensor MS2C	Magnetic Susceptibility Point Sensor MS2E	CM-700D Spectrophotometer	Geoscan V Linescan Imaging	optional: Natural Gamma Spectrometry
		<b>Manufacturer</b>	Geotek Ltd.		Geotek Ltd.	Bartington Instruments	Bartington Instruments	Konica Minolta Measuring Instruments (Konica)	Geotek Ltd.	Geotek Ltd.
		<b>Components</b>	Gamma ray source (137-Caesium source with energies at 0.662 MeV) detector sensor stand mount (alignment of source/detector with center of core)		Geotek ultrasonic (230 kHz) acoustic transducers Laser micrometer PRT temperature Probe	Magnetic Susceptibility Loop Sensor MS2C	Magnetic Susceptibility Point Sensor MS2E	CM-700D Spectrophotometer	Geoscan V Linescan Imaging Camera specifications: Pixel Sensors: 1x 5K CGD Visible or Ultraviolet light source ADC resolution: 14 bits per colour channel correlated double sampling with exposure control max pixel rate: 3.2M pixels/sec max scan rate: 200 lines/sec down core resolution: up to 10 microns camera control: auto focus, aperture and lighting data transmission: gigabyte ethernet interface Canon lens mount	three 3"x3" NaI(Tl) detectors with photomultiplier tube and Multi-Channel Analyser (MCA) detector housings: 6" diameter lead shields interface and electronics supplied in integrated 19" rack unit
Multi-Sensor Core Logger (MSCL-S SN14)	<ul style="list-style-type: none"><li>• <b>Manufacturer:</b> Geotek Ltd.</li><li>• <b>Model:</b> MSCL-S</li><li>• <b>Serial No:</b> 14</li><li>• <b>Type:</b> Multi-Sensor Core Logger</li></ul>	<b>Sensor Type</b>	Gamma Density Sensor				P-Wave System		Magnetic Susceptibility Loop Sensor MS2C	
		<b>Manufacturer</b>	Geotek Ltd.				Geotek Ltd.		Bartington Instruments	
		<b>Components</b>	Gamma ray source (137-Caesium source with energies at 0.662 MeV) detector sensor stand mount (alignment of source/detector with center of core)				Geotek ultrasonic (230 kHz) acoustic transducers Laser micrometer PRT temperature Probe		Magnetic Susceptibility Loop Sensor MS2C	
Multi-Sensor Core Logger (MSCL-S SN25)	<ul style="list-style-type: none"><li>• <b>Manufacturer:</b> Geotek Ltd.</li><li>• <b>Model:</b> MSCL-S</li><li>• <b>Serial No:</b> 25</li><li>• <b>Type:</b> Multi-Sensor Core Logger</li></ul>	<b>Sensor Type</b>	Gamma Density Sensor		P-Wave System	Magnetic Susceptibility Loop Sensor MS2C	Magnetic Susceptibility Point Sensor MS2F	Non-Contact Resistivity Sensor (NCR)		
		<b>Manufacturer</b>	Geotek Ltd.		Geotek Ltd.	Bartington Instruments	Bartington Instruments	Geotek Ltd.		
		<b>Components</b>	Gamma ray source (137-Caesium source with energies at 0.662 MeV) detector sensor stand mount (alignment of source /detector with center of core)		Geotek ultrasonic (230 kHz) acoustic transducers Laser micrometer PRT temperature Probe		Magnetic Susceptibility Loop Sensor MS2C	Magnetic Susceptibility Point Sensor MS2F	transmitter coil (inducing a high-frequency magnetic field) receiver coil	
Multi-Sensor Core Logger (MSCL-S SN45)	<ul style="list-style-type: none"><li>• <b>Manufacturer:</b> Geotek Ltd.</li><li>• <b>Model:</b> MSCL-S</li><li>• <b>Serial No:</b> 45</li><li>• <b>Type:</b> Multi-Sensor Core Logger</li></ul>	<b>Sensor Type</b>	Gamma Density Sensor				P-Wave System		Magnetic Susceptibility Loop Sensor MS2C	
		<b>Manufacturer</b>	Geotek Ltd.				Geotek Ltd.		Bartington Instruments	
		<b>Components</b>	Gamma ray source (137-Caesium source with energies at 0.662 MeV) detector sensor stand mount (alignment of source/detector with center of core)				Geotek ultrasonic (230 kHz) acoustic transducers Laser micrometer PRT temperature Probe		Magnetic Susceptibility Loop Sensor MS2C	
Multi-Sensor Core Logger (MSCL-S SN51)	<ul style="list-style-type: none"><li>• <b>Manufacturer:</b> Geotek Ltd.</li><li>• <b>Model:</b> MSCL-S</li><li>• <b>Serial No:</b> 51</li><li>• <b>Type:</b> Multi-Sensor Core Logger</li></ul>	<b>Sensor Type</b>	Gamma Density Sensor			P-Wave System	Magnetic Susceptibility Loop Sensor MS2C		Magnetic Susceptibility Point Sensor MS2F	
		<b>Manufacturer</b>	Geotek Ltd.			Geotek Ltd.	Bartington Instruments		Bartington Instruments	
		<b>Components</b>	Gamma ray source (137-Caesium source with energies at 0.662 MeV) detector sensor stand mount (alignment of source/detector with center of core)			Geotek ultrasonic (230 kHz) acoustic transducers Laser micrometer PRT temperature Probe		Magnetic Susceptibility Loop Sensor MS2C		Magnetic Susceptibility Point Sensor MS2F
Multi-Sensor Core Logger (MSCL-XZ SN116)	<ul style="list-style-type: none"><li>• <b>Manufacturer:</b> Geotek Ltd.</li><li>• <b>Model:</b> MSCL-XZ</li><li>• <b>Serial No:</b> 116</li><li>• <b>Type:</b> Multi-Sensor Benchtop Logger</li></ul>	<b>Sensor Type</b>	Olympus Delta handheld X-ray fluorescence (XRF)		Minolta Colour Spectrophotometer		Magnetic Susceptibility Bartington MS2E "point" sensor		Geoscan V Linescan Imaging	
		<b>Manufacturer</b>	Olympus		Minolta		Bartington		Geotek Ltd.	
		<b>Components</b>	Olympus Delta handheld X-ray fluorescence (XRF) mounting counterbalance weight		Minolta colour spectrophotometer (39 spectral bands)		Magnetic Susceptibility Bartington MS2E "point" sensor		Geoscan V Linescan Imaging Camera specifications: Pixel Sensors: 1x 5K CGD Visible or Ultraviolet light source ADC resolution: 14 bits per colour channel correlated double sampling with exposure control max pixel rate: 3.2M pixels/sec max scan rate: 200 lines/sec down core resolution: up to 10 microns camera control: auto focus, aperture and lighting data transmission: gigabyte ethernet interface Canon lens mount	
Multi-Sensor Core Logger Natural Gamma System (MSCL-NG)	<ul style="list-style-type: none"><li>• <b>Manufacturer:</b> Geotek Ltd.</li><li>• <b>Model:</b> MSCL-NG</li><li>• <b>Serial No:</b></li><li>• <b>Type:</b> Multi-Sensor Core Logger-Natural Gamma System</li></ul>	<b>Sensor Type</b>	MSCL-NG Natural Gamma System							
		<b>Manufacturer</b>	Geotek Ltd.							
		<b>Components</b>	three 3"x3" NaI(Tl) detectors with photomultiplier tube and Multi-Channel Analyser (MCA) detector housings: 6" diameter lead shields interface and electronics supplied in integrated 19" rack unit							

Contacts

Role	Name
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Principal Investigator	Frank Niessen
Data Scientist	Catalina Gebhardt
Engineer in Charge	Dietmar Penshorn

## Data logging, storage and archiving

### **Rawdata storage on board**

Local storage on MSCL-S electronic. Operator is in charge of data backup.