

# Echoes 10 000

High-resolution sub-bottom profiler for shallow water

Echoes 10 000 is a high-performance sub-bottom profiler offering high-resolution of seismic reflexion profiles. Operating from 1m to 150m water depth, this portable system enables river, lake and ocean surveys regardless of the seabed topography.



## FEATURES

- Widest spectrum coverage (5 - 15 kHz)
- Portable Chirp system
- Vertical resolution < 8cm
- Penetration up to 40 m in clays
- Pole-mounted system

## BENEFITS

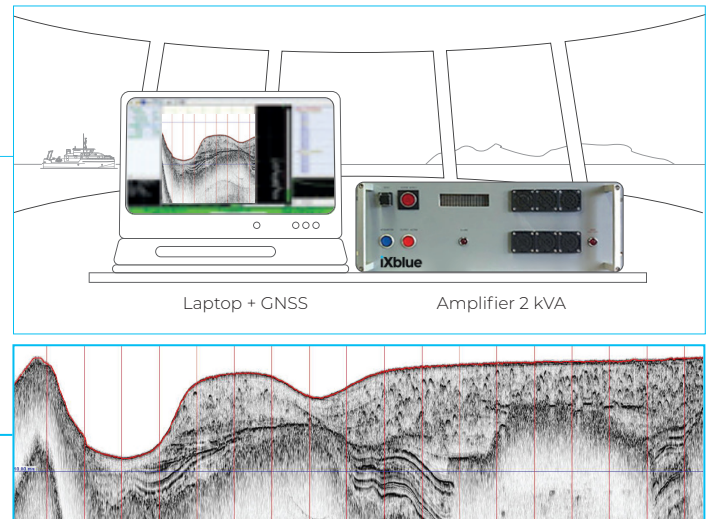
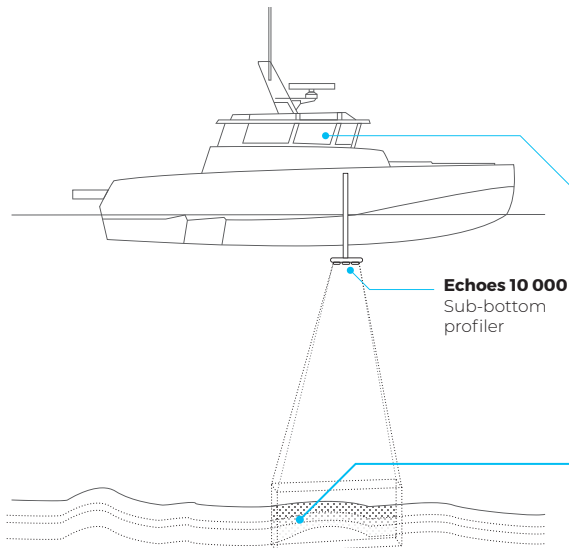
- True flat bandwidth ultimate resolution capacity and power efficiency
- One-man portable system
- Perfect positioning and heave compensation
- Compatible with any bathymetric echosounder

## DELPH SEISMIC SOFTWARE

- All-in-one optimized geophysical processing and interpretation
- Easy access to all data collected for geologists and geophysicists
- Compatible with leading industry sensors and formats
- Best possible 2D/3D QC
- Visualization and reporting capabilities

## APPLICATIONS

- Pre and post dredging
- Sedimentology / Paleoseismology
- Archeology and Geo-archeology
- Buried objects detection (boulders, pipelines)
- De-risking survey



## Technical specifications

Array configuration	7 tonpilz transducers mounted on a plate
Operational frequency range	5000 Hz - 15000 Hz
Mean acoustic level	202 dB (ref 1 $\mu$ Pa@1m) @ 2kVA
RVS (Receiving Voltage Sensitivity) (ref. 1 $\mu$ Pa)	-172 dB
Beam aperture @ 10 kHz	30°
Vertical resolution (c=1500m/s)	8 cm

## Mechanical specifications

Echoes 10 000 Array

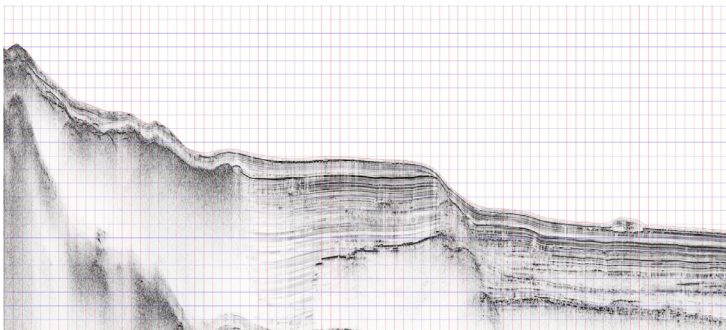
Recommendation for water depth below transducers	1 to 150 m
Height	191 mm
Diameter	380 mm
Weight in air / water	26 kg / 12 kg

Echoes 10 000 Topside unit

Signal emission power / Echoes mean power	2 kVA / 350 W
Length / width / height	486 mm / 483 (19") mm / 177 (4U) mm
Weight	15 kg
Mounting	Rack-mounted
Deck cable length	20 m

## Results

High-resolution sub-bottom profiling data



Bathymetry & layers modeling using Delph

