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 reflection 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

APPLICATIONS

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

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

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Technical specifications

<table>
<thead>
<tr>
<th>Array configuration</th>
<th>7 tonpilz transducers mounted on a plate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operational frequency range</td>
<td>5000 Hz - 15000 Hz</td>
</tr>
<tr>
<td>Mean acoustic level</td>
<td>202 dB (ref 1μPa@1m) @ 2kVA</td>
</tr>
<tr>
<td>RVS (Receiving Voltage Sensitivity) (ref. 1μPa)</td>
<td>-172 dB</td>
</tr>
<tr>
<td>Beam aperture @ 10 kHz</td>
<td>30°</td>
</tr>
<tr>
<td>Vertical resolution (c=1500m/s)</td>
<td>8 cm</td>
</tr>
</tbody>
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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