

ECHO 81

YOUR SUBSEA SOLUTIONS SPECIALIST



High-Power Series PARAMETRIC SUB-BOTTOM PROFILERS

Innomar's high-power models have larger transducers with increased source levels and operate with lower frequencies for better penetration.

Nevertheless, these pole mounted sub-bottom profilers provide narrow and focused beamwidths less than 4 degrees, which are electronically stabilized.



"Medium-100" SBP



"Medium-70" SBP



"Deep-36" SBP

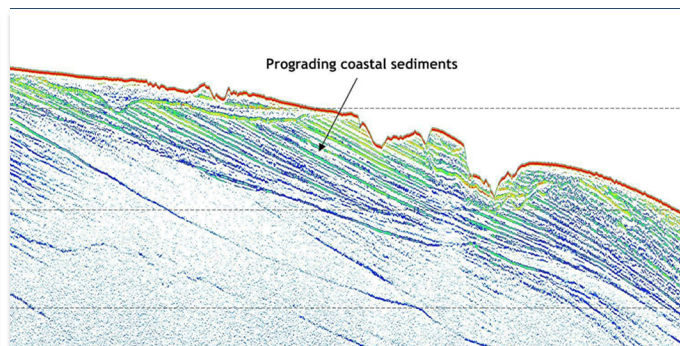
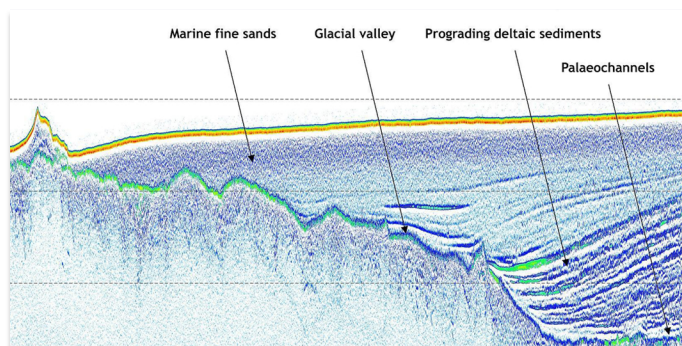


"Deep-15" SBP

Water Depth	2 – 2,000 m	5 – 2,500 m	5 – 6,000 m	10 – 11,000+ m
Penetration	up to 70 m	up to 100 m	up to 150 m	up to 250 m
Frequencies	4 – 15 / 100 kHz	3 – 12 / 70 kHz	2 – 7 / 36 kHz	0.75 – 18 kHz
H / R / P Comp.	• / • / -	• / • / (•)	• / • / (•)	• / • / •

These systems can be applied in shallow areas where high seabed penetration is required or in deep waters for applications, such as oil and gas, reconnaissance and route surveys, scientific programs, deep sea drilling campaigns and others. The narrow beam and small acoustical footprint guarantees very high spatial resolution at greater depths and the beam stabilisation allows for operation even under harsh offshore conditions.

The medium-100 is available as a portable device for small boats and USV installations, whereas the other high-power models are typically hull mounted.



DATASHEET

	Medium-100	Medium-70	Deep-36	Deep-15
Water Depth Range (Below Transducer)	2 – 2,000 m	5 – 2,500 m	5 – 6,000 m	10 – 11,000+ m
Sediment Penetration (Depending on Sediment Type and Noise)	up to 70 m	up to 100 m	up to 150 m	up to 250 m
Sample / Range Resolution (Depending on Pulse Settings)	<1 cm / up to 5 cm	<1 cm / up to 7 cm	c. 1 cm / up to 15 cm	<2 cm / up to 20 cm
Transmit Beam Width (-3dB)	c. ±1° for all frequencies footprint c. 3.5% of water depth	c. ±1.5° for all frequencies footprint c. 5.5% of water depth		c. ±2.3° for all frequencies footprint c. 8% of water depth
Ping Rate	up to 40 Hz (pings/s)			
Heave / Roll / Pitch Compensation (Depending on External Sensor Data)	Heave + Roll (Standard)	Heave + Roll (Standard) Pitch (Optional)		Heave + Roll + Pitch (Standard)
Primary Frequencies (PHF)	c. 100 kHz (Frequency Band 85 – 115 kHz)	c. 70 kHz (Frequency Band 60 – 80 kHz)	c. 36 kHz (Frequency Band 30 – 42 kHz)	c. 15 kHz (Frequency Band 10 – 20 kHz)
PHF Source Level / Acoustic Power	>247 dB//µPa re 1m / c. 5.5 kW	>246 dB//µPa re 1m / c. 7.5 kW	>246 dB//µPa re 1m / c. 9 kW	>243 dB//µPa re 1m / c. 10 kW
Secondary Low Frequency (SLF) (Centre Frequency User Selectable)	4, 5, 6, 8, 10, 12, 15 kHz	3, 4, 5, 6, 8, 10, 12 kHz	2, 3, 4, 5, 6, 7 kHz	0.75 - 3.7 kHz
SLF Total Frequency Band	2 – 22 kHz	1.5 – 15 kHz	1 – 10 kHz	0.5 – 5.5 kHz
SLF Pulse Type	Ricker, CW, LFM Chirp			
Pulse Width (User Selectable)	0.07 – 1.0 ms (CW); 3.5 ms (Chirp)	0.1 – 1.0 ms (CW); 5 ms (Chirp)	0.15 – 1.5 ms (CW); 5 ms (Chirp)	0.25 – 5 ms (CW); 20 ms (Chirp)
Data Acquisition and Recording	Digital 24 bit / 96 kHz (SLF Full Waveform, PHF Envelope)		Digital 24 bit / 75 kHz (SLF Full Waveform, PHF Envelope)	Digital 24 bit / 48 kHz (Full Waveform)
Data File Format	Innomar "SES3" (24 bit), "SEGY" (via SE5convert)			
External Sensor Interfaces	HRP (Motion), GNSS Position, Depth (All RS232 / UDP), Trigger (BNC)			
Bottom Detection	Internal (PHF and SLF Data) or External Depth			
Depth Accuracy	(2 cm @ 100 kHz / 4 cm @ 10 kHz) + 0.02% of water depth	(2.5cm @ 70 kHz / 5 cm @ 8 kHz) + 0.04% of water depth	(5 cm @ 36 kHz / 10 cm @ 4 kHz) + 0.04% of water depth	(12 cm @ 15 kHz / 25 cm @ 1.5 kHz) + 0.08% of water depth
Remote Control / Survey Integration	KVM / Basic Functions via COM or Ethernet (UDP), NMEA			
Topside Unit (Transceiver)	W 52 cm × D 40 cm × H 44 cm (19" / 9U) Weight c. 44 kg	W 52 cm × D 40 cm × H 44/63 cm (19" / 9/13U) Weight c. 52/63 kg	W 52 cm × D 50 cm × H 50/63 cm (19" / 10/13U) Weight c. 56/66 kg	TX: W 52 cm × D 50 cm × H 74 cm (19" / 16U) Weight c. 95 kg RX: W 52 cm × D 40 cm × H 44 cm (19" / 9U) Weight c. 40 kg
Transducer	W 50 cm × D 50 cm × H 12 cm / Weight c. 60 kg (incl. 30 m cable)	W 60 cm × D 60 cm × H 25 cm / Weight c. 140 kg (excl. 30 m cable)	W 88 cm × D 92 cm × H 18 cm / Weight c. 245 kg (excl. 30m cables)	W 140 cm × D 140 cm × H 35 cm / Weight c. 925 kg (excl. 30m cables)
Power Supply	100–240 V AC			
Power Consumption	<400W	<450W	<900W	<1,000 W
Control / Data Storage PC	Integrated PC (MS Windows 10/11 OS) with 10" TFT display	Integrated PC (MS Windows 10/11 OS) with optional 10" TFT display		



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