K-CHIRP MODEL 3310 SUB BOTTOM PROFILER

For Combined Use With

MODEL 3000 SIDE SCAN SONAR



KEY FEATURES

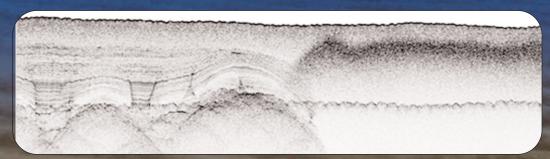
- Cable & Route Surveys
- Geophysical and Geological Surveys
- EEZ Surveys
- Sediment Classification
- Buried objects, Cables and Pipelines
- Dredging Surveys
- Hazards Surveys

The K-Chirp Model 3310 SPB is a "Chirp" sub bottom profiler attachment for the Model 3000 Side Scan Sonar. It mounts directly to the Model 3210 Side Scan towfish and uses the existing physical connections and electrical communications to accommodate this added capability.

This option takes advantage of the existing Model 3000 side scan hardware.

The Model 3310 SBP consists of a subsea assembly which contains the transmit projectors, receive hydrophone, and SBP electronics. There are separate transmit and receive elements. These components are enclosed in a fiberglass shroud with an integrated support structure to allow for combined transducer / electronics mounting and towing. The Model 3210 tow vehicle is installed into the rear portion of the shroud assembly where it interconnects with the SBP electronics through a jumper cable.

The amplifier is able to modulate both amplitude and phase of the transmit waveform for pulse lengths up to 30msec and resolution to 12.5cm.



Sediment layers, Bedrock and Trapped Gas Layer on Right

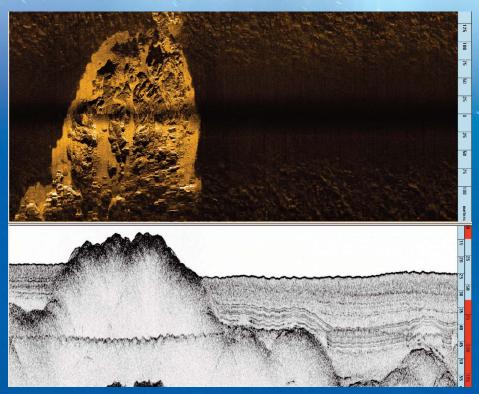
THE DIFFERENCE
IS IN THE IMAGE

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Klein Associates, Inc.

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Model 3310 Specifications	
Host Sonar	3000 Side Scan Sonar
Frequency (Chirp)	2-8 kHz
Beam	@ 5kHz 20° along track and 40° crosstrack
Selected Pulses (sync to sync rate)	to 30 PPS
Selectable Pulse Lengths	2.5, 10,20, 30 msec (limited by side scan range scale)
Resolution	to 12.5 cm
Power	1 KW (peak)
Source Level	204 dB re 1µPa @ 1m
Depth Rating	600 meters
Weight in Air	123 kg, 270 pounds incl. side scan
Software	Sonar Pro®
Tow Cable	Single 50 ohm Coax
Data Format	SDF, XTF, SEG-Y
Sea Bed Penetration	5-50 Meters, Variable depending upon soil density
Digitization	24 bit A/D

Options & Accessories
Model 3310 Sub Bottom Profiler
Pressure Depth Sensor
USBL Responders
Magnetometer Interface
Splashproof Transceiv er Processing Unit
Complete towing arrangements including Winch, Slip Ring, Deck Cable, etc.

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L-3. Headquartered in New York City, L-3 Communications employs over 64,000 people worldwide and is a prime contractor in aircraft modernization and maintenance, C³ISR (Command, Control, Communications, Intelligence, Surveillance and Reconnaissance) systems and government services. L-3 is also a leading provider of high technology products, subsystems and systems.