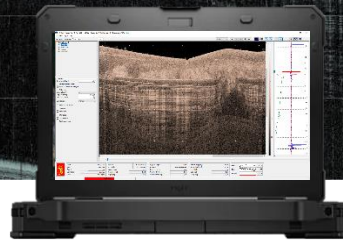


TOPAS PS120



PARAMETRIC SUB-BOTTOM PROFILER FOR SHALLOW WATERS

AT A GLANCE

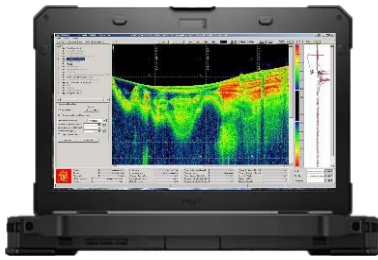
- Operating depths: 2-500 m
- Penetration: >50 m
- Range resolution: 0.5-4 cm
- Sediment layer resolution: <5 cm
- Frequency: 2-30 kHz
- Beam width: $\pm(1.5^\circ \times 2^\circ)$
- Source level: 208 dB
- Pulse types
 - CW
 - Linear FM
 - Hyperbolic FM
 - Ricker
 - User defined
- Max ping rate: 40 Hz
- Heave, roll and pitch stabilized beams
- Dimensions (DxWxH)
 - TRU: 70x53x40 cm
 - Transducer: 32x42x7 cm
- Weight:
 - TRU: 45 kg
 - Transducer: 13 kg
- 15 m transducer cable
- PC-based platform

System specifications

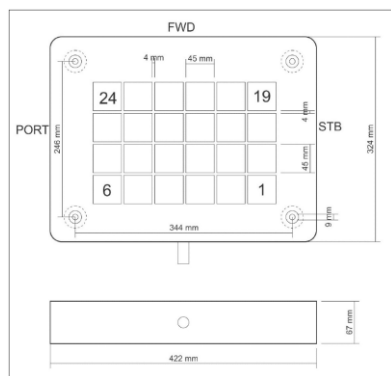
Kongsberg TOPAS PS120 is designed for very high-resolution sub-bottom profiling in water depths from less than 2 meters up to 500 meters. The TOPAS PS 120 transmits high power signals in the frequency range from 70 to 100 kHz using a small and light-weight transducer array of only 32x42 cm and 13 kg. Utilizing the parametric principle, the system generates low sub-bottom frequencies @2-30 kHz with very narrow beams, no side lobes and wide band width, providing clear and crisp imaging.

System parts

- Transducer array with 6x4 elements and 15m transducer cable. The transducer may be hull mounted or fixed temporarily to the hull in other ways, e.g. by an over-the-side pole mount.
- Transceiver unit cabinet with electronics for control and operation of power amplifier, the data acquisition electronics, and the transmit/receive switch. It controls the transmitted signature, output level, ping rate and transmit angles. It has digital interfaces for external vertical reference sensor (roll, pitch and heave) as well as synchronization signal.
The TRU is designed to be portable with integrated shock and vibration absorbers. It connects to the operator station via an Ethernet cable.
- The operator station is a ruggedized high-performance Laptop PC-based workstation. It runs the TOPAS software (MMI), which contains the operator interface, displays the collected data, and logs data to disk. Realtime processing of the data is also performed in this unit. It has digital interfaces for position input and external depths.



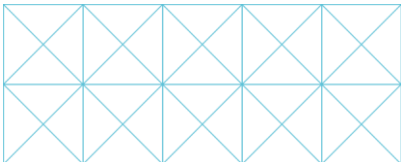
The powerful TOPAS MMI software for realtime acquisition, as well as offline replay and processing. TOPAS PS120 operator station is a ruggedized laptop



PS120 transducer - outline dimensions



PS120 transceiver unit - outline dimensions (lids removed)



TOPAS PS120 TECHNICAL SPECIFICATIONS

Primary source level (max)	>238 dB // μ Pa @ 1 meter
Secondary signal source level	>202 dB @12 kHz // μ Pa @ 1 meter >208 dB @20 kHz // μ Pa @ 1 meter
Pulse types	Ricker, CW (Continuous Wave), Linear FM, Hyperbolic FM, user defined
Pulse lengths	0.01 - 30 ms, adjustable
Beam width	Primary: $3 \times 4^\circ$, Secondary: $\sim 4 \times 5^\circ$
Range resolution	<0.05 m
Electronic beam steering	Across: 12° Along: 8°
Ping rate	Up to 40 pings per second
Ping modes	Multipulse mode, burst mode
Heave, roll and pitch compensation	Yes (depending on external sensor input)
Data acquisition	digital 24bit @ 192 kHz sample rate; SLF full-waveform sub-bottom data
Auxiliary input	GNSS, EM® multibeam echo sounder depth, attitude, trigger
Data export formats	TOPAS raw data format SEGY
Real time processing capabilities	Digital band-pass filter Spiking deconvolution filter Matched filter Time Varying Filter (TVF) Dereverberation Time Variable Gain (TVG) Automatic Volume Control (AVC) Stacking (Trace mixing) Swell filter Manual/automatic gain Attribute processing Statistics Power Spectral Density (PSD) display
Replay and processing	Included in the acquisition software TOPAS MMI
Power supply TRU	220 to 240 VAC, <1kW, 47-63 Hz
Top side unit size and weight	0.53 m x 0.7 m x 0.4 m // 45 kg
Transducer array size and weight	0.32 m x 0.42 m x 0.07 m // 13 kg

Penetration performance depends on sediment characteristics, water depth, transmitted signature etc. With PS120 a demonstrated penetration of more than 50 meters can be achieved in water depths up to more than 400 meters with a range resolution of typically better than 5 cm.

