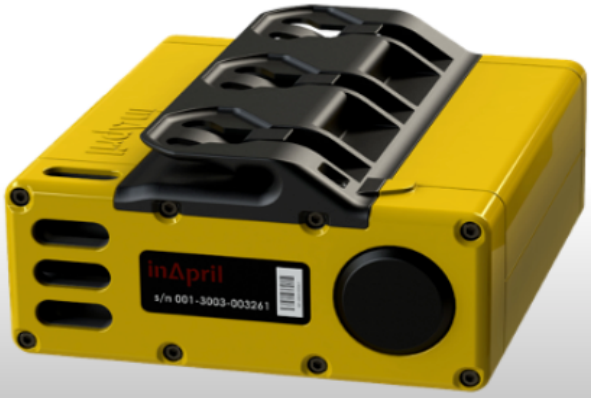

A3000-150

General

Operational time between charge	150 days
Maximum deployment depth	3600 meters
Operating temperature range	-10 to +55 °C

Data acquisition *

Number of channels	4
ADC resolution	24 / 32 bit
Sample interval	0.25, 0.5, 1 and 2 ms
Pre-amplifier gain, adjustable	0 to 36 dB in steps of 6 dB
Gain Relative uncertainty	0.5 %
Recording bandwidth (-3dB)	DC – 0.413 x f_{DATA}
Anti-aliasing filter	206.5 Hz (82.6 % of Nyquist) @ 2ms 2) Sinc+FIR, Linear phase
High pass filter	Programmable 0.1 – 10 Hz, or disabled
High pass filter roll off	6 dB/octave
Maximum input signal	± 2500 mV @ 0 dB ± 625 mV @ 12 dB ± 156 mV @ 24 dB ± 39 mV @ 36 dB
Equivalent Input Noise ***	0.95 µVrms @ 0 dB 0.31 µVrms @ 12 db 0.21 µVrms @ 24 dB 0.20 µVrms @ 36 dB
Dynamic Range @ 0dB gain	130 dB Geophone, 125 dB Hydrophone
Total harmonic distortion (THD)	< -100 dB Geophone @ 0 dB gain <-119 dB Hydrophone @ 0 dB gain
Crossfeed	>120 dB
Common mode rejection ratio (CMRR)	> 90 dB (Geophone) > 90 dB (Hydrophone)

Self-test, diagnostic, and calibration

Impedance test	Yes
Geophone impulse test	Yes
Internal noise (preamp input terminated)	Yes
Internal gain accuracy	Yes
Internal total harmonic distortion (THD)	Yes
Channel separation (crossfeed)	Yes
Common-mode rejection ratio (CMRR)	Yes
Automatic gain and offset calibration	Yes
Clock stability	Yes

Transponder (Optional)

Type (Integrated design)	USBL 26kHz

Geophone

Type	Omnidirectional
Number of Geophones	3
Configuration	Orthogonal
Resonance frequency	14 Hz
Sensitivity	80.0 V/m/s
Damping	0.7

Hydrophone

Frequency response (-3dB)	3 Hz – 30 kHz
Sensitivity	- 201 dB re: 1V/µPa (8.9V/bar)
Equivalent Input self-noise (1-1000Hz)	78 dB re: 1µPa, (0.08µBar)
Spectral:	54 dB re: 1µPa/√Hz @ 10 Hz
	42 dB re: 1µPa/√Hz @ 100 Hz
	42 dB re: 1µPa/√Hz @ 100 Hz

Tilt Sensor

Type	3-axis MEMS inclinometer
Range X and Y (Roll and Pitch)	± 90 °
Relative uncertainty	± 1 °

Magnetometer (azimuth angle)

Range	0 - 360 °
Relative uncertainty	± 5 ° (< ±55 ° from Equator)

Internal Powersupply and Charger

Charger operating voltage range	36–72 VDC
Charger insulation voltage, input/output	1500 VDC
Recharge time to 80% SOC	16 h
Charging temperature range	+4°C - +40°C

Battery and Battery Management System

Chemistry	Li-Ion
BMS	Fuel gauging, diagnostic and protection
Certification	UN38.3

Precision clock

Clock type	Ultra-precise OCXO clock
Time drift correction	inApril's proprietary solution
Typical error (corrected, post-acquisition)	< ± 1.0 ms after 130 days

Data capture memory

Type	Embedded managed NAND flash
Storage capacity total	128 GByte

Communication link; data capture and diagnostic

Ethernet over copper	100 base-TX

Mechanical specification

Position of normal use	±180°
Weight (air / water)	21.2 kg (9,7 kg in seawater)
Dimensions	319mm(L) x 287mm(w) x 115/145mm(h)

Notes

* @ 2ms sampling interval, 25°C, 31.25 Hz, internal test, unless otherwise noted)

** Recording bandwidth = 0.413 x f_{DATA}

f_{DATA}= sampling frequency =1/Sample Interval (Hz)

*** for geophone channel, and hydrophone channel above 10 Hz

**** 1.2 µVrms @ 0 dB for frequency above low cut

11.22

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