

AQUARIUS

Summary Specification Sheet



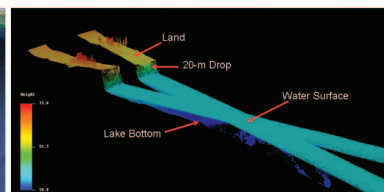
Compact Shallow Water Mapping Sensor

The ALTM Aquarius is an innovative compact solution for mapping coastal and inland waterways. Compatible with the ALTM Gemini system, Aquarius collects simultaneous land and water-depth measurements, enabling wholly complete data sets that span the land/water interface. Designed as a complementary sensor to Optech's full-featured lidar bathymetry systems, Aquarius provides depth information in relatively shallow water environments not previously accessible to conventional topographic mapping sensors alone.

ALTM Aquarius



Aquarius Flight Tests



Aquarius Processed Data



Topographic Land Data

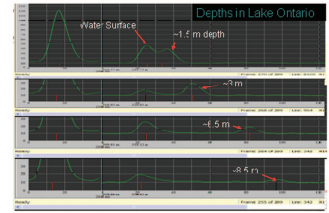


AQUARIUS

Key Features

- Simultaneous land/water depth mapping capability
- Available as a sensor head addition to the ALTM Gemini or as a complete standalone mapping system
- Software workflow similar to ALTM workflow with Optech LMS
- Drop-in sensor design for small portal aircraft installations

Aquarius waveforms showing water surface and lake bottom signals



Lake Ontario data: cross-section along flightline



Parameter	Specification
Shallow water mode	
Operational altitude	300 - 600 m AGL, nominal
Laser pulse repetition rate	30, 50, 70 kHz
Scan rate	0 - 70 Hz
Scan half-angle	0 to $\pm 25^\circ$
Laser footprint on water surface	30 - 60 cm
Maximum depth	> 10 m (for $k < 0.1/m$)
Topographic mode	
Operational altitude	300 - 2500 m
Range capture	Up to 4 range measurements, including 1 st , 2 nd , 3 rd , and last returns
Intensity capture	12-bit dynamic measurement range
Position and orientation system	POS AV™ 510 (OEM) includes embedded 72-channel GNSS receiver (GPS and GLONASS)
Data storage	Ruggedized removable SSD hard disk (SATA II)
Power	28 V; 900 W; 35 A (peak)
Video camera	Internal video camera (NTSC or PAL)
Image capture	Compatible with full line of Optech aerial digital cameras (optional)
Full waveform capture	12 bit IWD-2 Intelligent Waveform Digitizer (optional)
Dimensions and weights	
Control rack	590 W x 490 H x 580 D mm
Weight	55 kg
Sensor head	Top: 250 W x 430 H x 320 D mm Lower: 170 W x 280 H x 230 D mm
Weight	30 kg
Strap-on digitizer	3U rack height
Operating temperature	0-35° C
Relative humidity	0-95% non-condensing



US FDA 21 CFR 1040.10 and 1040.11; IEC/EN 60825-1

Optech Incorporated
300 Interchange Way, Vaughan ON, Canada L4K 5Z8
Tel: +1 905 660 0808 Fax: +1 905 660 0829

www.optech.com

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