

# K.U.M. Titanium pressure housing with trillium compact OBS seismometer

## Sizes

Inner diameter:	150mm
Outer diameter:	173mm
Height:	226mm plus connector
Weight:	12,5kg (13,6)
Max. operation depth:	6000m (8000m)



## Technical Characteristics of the trillium compact OBS Broadband sensor

The Trillium Compact Ocean Bottom Seismometer (OBS) is an ultra-low power broadband seismometer for ocean bottom deployments to 6000m depth.

The OBS vessel and gimbal design preserves the full performance of the land-based Trillium Compact seismometer, including its exceptional dynamic range and low noise floor.

Incorporating a robust and reliable levelling gimbal that operates over 50° range, the Compact OBS will autolevel from all possible orientations.

A full titanium cylindrical pressure vessel ensures exceptional ruggedness and resistance to corrosion in marine and fresh water environments.

## Specifications

Topology	Symmetric triaxial
Feedback	Force balance with capacitive transducer
Mass Centering	Not required

## Performance

Sensitivity	750 V·s/m nominal $\pm 0.5\%$ precision
Off-axis Sensitivity	$\pm 0.5\%$
Bandwidth	-3dB points at 120 s and 100 Hz
Transfer Function	Lower corner poles within $\pm 0.5\%$ of nominal provided High-frequency response within 1dB of nominal
Clip Level	26 mm/s from 0.1 Hz to 10 Hz
Parasitic Resonances	None below 100 Hz
Operational Tilt Range	$\pm 2.5^\circ$ without re-leveling



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### User Interface

Web browser                      Onboard web server, using industry standard web browsers

### Configuration & Control

Control                              XYZ/UVW mode  
 Leveling                             Initiate immediate leveling check, Automatic iterative cycle mode  
 Download                            Logged state-of-health, Magnetometer readings, Leveling Log,  
    Capacity for >2 years daily recordings

### Levelling and Orientation

Technology                          Dual degree-of-freedom motorized gimbals, Jam-free mechanism  
    Kinematic design preserves full seismometer performance  
 Range                                  $>\pm 45^\circ$  relative to upright case  
 Accuracy                             Levels to within  $\pm 0.5^\circ$  of true vertical  
 Magnetometer                        3-component, mounted on and leveled with seismometer

### Power

Supply voltage                      9 to 29 VDC isolated  
 Power consumption                 $<180$  mW typical (leveled, quiescent)

### Environmental

Depth                                 6000m, fresh and salt water  
 Operating temp.                     $-20^\circ\text{C}$  to  $+60^\circ\text{C}$   
 Storage temp.                         $-40^\circ\text{C}$  to  $+70^\circ\text{C}$

### Physical

Enclosure                             Titanium cylinder, dual O-Ring seal  
 Diameter x Height                 173 mm x 226mm, not including connectors  
 Weight                                 12.5 kg on land, 7.2 kg in water