# ROSON 100 UNDERWATER PIEZOCONE

## ROSON 100kN RIGID ROD PCPT SYSTEM

In Situ Site Investigation has the capability to undertake full force underwater seabed / riverbed PCPT Testing, up to an operating depth of 2000m below water level, in accordance with the ISO 22476-1 standard.

The ROSON 100 is a high-tech device for performing piezocone surveys from bed level using a 10cm² digital Icone data acquisition system which penetrates the subsoil at a constant velocity of 2cm/s with a maximum achievable thrust of 100kN. The innovative electrical hydraulic force drive wheel system pushes a pre-assembled CPT string into the seabed / riverbed, which can reach up to 10m penetration depth in ideal soil conditions, utilizing standard 36mm outside diameter rigid steel CPT rods.

The survey operation is controlled and monitored from a support vessel using dedicated Icone software that allows real time data capture and graphical visualization of cone resistance (qc), sleeve friction (fs), excess pore pressure (u2), penetration depth and cone inclination, along with unit inclination at bed level.

The ROSON-100 unit is easily transported by road to site and is lifted directly from a quayside onto an awaiting survey vessel. The seabed units provide very a rapid deployment method allowing multiple PCPT tests to be undertaken within a very short period of time. Each test can also be undertaken without the requirement to deploy a static marine platform or pontoon for shallow water and nearshore investigations.

At each test location, the 10000kg unit can be lowered down to bed level from the deck of a support survey vessel using an onboard mounted crane, hi-ab or deck winch, additional line is then paid out allowing the vessel to hold position without moving the PCPT unit while each test push is completed. Measured digital data from the cone is transferred through a control umbilical cable to the top side system control cabin on the vessel deck, allowing real time observation of the ongoing test parameters. Each test takes approximately 20 minutes to complete then the unit can be safely recovered to the vessel deck, ready to move onto the next test location.

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FOR MORE INFORMATION ON MARINE CPT TESTING, PLEASE VISIT OUR WEBSITE AT:

**www.insitusi.com/marine-services**

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| NEPTUNE 5000 PCPT SYSTEM | |
|---|---|
| **Generic type** | Underwater rigid rod PCPT system |
| **Manufacturer** | A P Van Den Berg NL |
| **Unit dimensions** | Length 2.5m x Width 2.5m x Lifting Point Height 2.9m<br>(Total height with 10m rod mast assembly 13.5m) |
| **Dry weight** | Unit weight 5,800kg, additional ballast plate 3,200kg<br>(Total system weight with rod & mast assembly 10,000kg) |
| **Maximum thrust** | 100kN |
| **Penetration length** | 3.5m, 6m, 10m (rigid rod assembly) |
| **Maximum operational depth** | 2000m below water level (limited to available umbilical length) |
| **Cone type** | 10cm² PCPT digital piezocone |
| **Power requirement** | 400Vac 50hz or 440Vac 60hz |
| **Umbilical voltage** | 400/440Vac |
| **Penetration speed** | 2cm/s +-10% |
| **Unit structure sensors** | Tilt +-30˚, Altimeter, Hydrostatic pressure |
| **Deployment** | Deployed from support vessel to underwater bed level test location via crane, hi-ab or deck winch. (20t minimum lift capacity required) |
| **Preferred ground conditions for use** | Suitable for the majority of superficial deposits. |
| **Limiting ground conditions** | Requires adequate rod support from overlying strata. Unable to penetrate very dense coarse material or weathered rock. |
| **Derived parameters** | Cone tip resistance (qc), Sleeve friction (fs), Excess pore pressure (u2) |