

MOLECULAR-ELECTRONIC BOREHOLE SEISMOMETERS

The broadband molecular-electronic seismometer model **CME-4111** and **CME-4011** can be made in borehole waterproof cases of stainless steel for installation in flooded boreholes at depth down to 150m under water.

Unlike traditional broadband seismometers, the molecular-electronic seismometers are very rugged and not equipped with arresters and other special devices for handling, packing, unpacking and transportation. Instruments do not require mass centering and thus do not have mass position outputs and centering inputs. The seismometers do not require leveling and will be fully functional with installation tilts of up 15°.

The main features and advantages of the molecular-electronic seismometers, including borehole models are the following:

- the highest-sensitivity molecular-electronic transducer and liquid inertial mass;
- low noise level;
- wide frequency range;
- very rugged, no moving mechanical parts to break or wear out;
- no parasitic mechanical resonances;
- no maintenance, mass locking and centering required;
- low power consumption.

The regular borehole model of the molecular-electronic seismometer is the 3-component model CME-4111-BH150. Below are the main specifications of that model. Some specifications can be modified under customer's request.

THREE-COMPONENT BOREHOLE SEISMOMETER **CME-4111-BH150**





Standard case

- Cost-effective solution for geophysical applications
- 60 sec – 50 Hz standard frequency band
- Low-noise
- Very rugged, no maintenance, no mass locking and centering
- Easy-to-install
- No moving mechanical parts to break or wear out
- Strong waterproof case for down to 150 m underwater installation
- Special strong cable in the delivery set
- Supplied with waterproof cable connector and lifting ring

CME-4111-BH150: standard specifications

Transducer Type	Molecular Electronic (electrochemical)
Sensitivity	4000 V/(m/sec) – differential output
Clip level	± 5 mm/s
Standard bandwidth	0.0167 – 50 Hz
Optional bandwidth	0.5 – 50 Hz (or any other in the range from 0.01 up to 100Hz)
Self-noise	See Plot Below
Mass Lock	NONE REQUIRED
Mass Centering	NONE REQUIRED
Maximum installation tilt	±15 °
Mechanical resonances	NONE
Temperature range	–12..+55°C (option – 40..+55°C;)
Housing material	Stainless steel
Case diameter / height	105 / 500 mm
Weight	7.5 kg
Power – Standard	12 V DC, 20-35 mA
Underwater installation maximum	150 m

