

Reliable measurements.



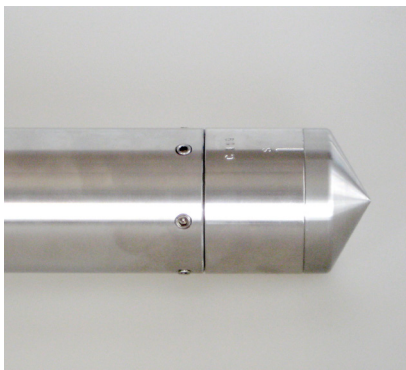
LE-3D/BH(s) MkIII

High performance three-
component 1 Hz downhole
seismometer based on LE-3Dlite MkIII

Quality exists
when the price is long forgotten.

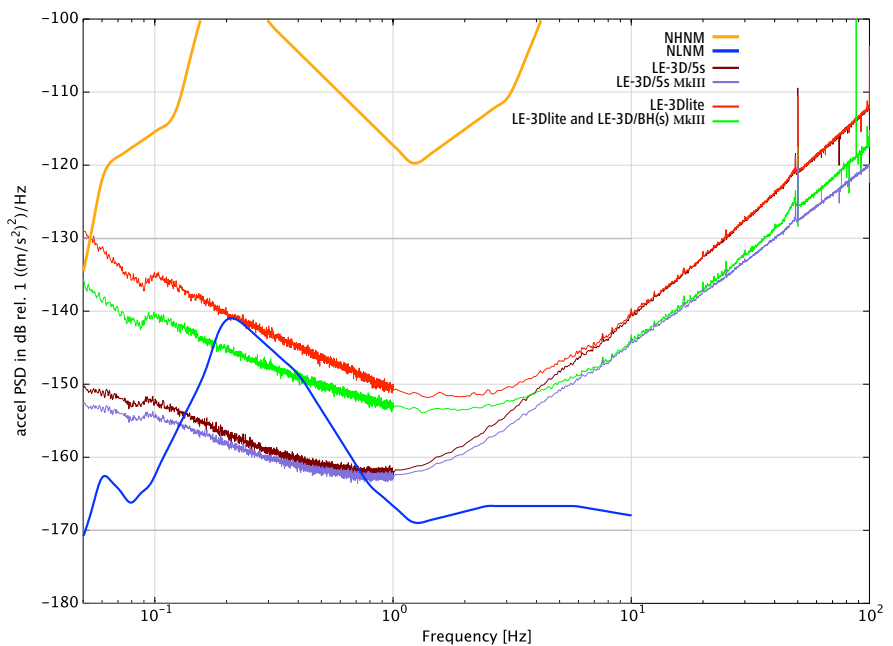
le **lennartz**
electronic

Lennartz seismometers have a 30+ years track record, and it was the **LE-3D** »classic« that started it all. With more than 12,000 components in daily use all over the world, the **LE-xD** concept has set a new standard for short-period sensors. It is now widely accepted that at sites with high ground noise, measurement conditions can be considerably improved by using a borehole seismometer. For those who seek the best possible solution for a challenging site, we offer two perfectly suited instruments: The **LE-3D/BH** and the simplified version **LE-3D/BHs**. The latter is used without a hole lock (typically installed in sand). Unlike the "hole lock and spear" combination used in the /BH model (see front page), the /BHs model has a slightly conical "nose" with no spear attached, as shown below.



Both versions are made entirely from stainless steel and have a special underwater connector. The cable features a ruggedized polyurethane sheath and a Kevlar braid so that it can easily carry its own weight plus that of the sensor, even in a dry borehole without buoyancy. In practice this means that the sensor can be lowered and raised by the cable, without resorting to an extra steel wire.

Lennartz sensors are extremely stable in the long term. Once installed, **LE-3D/BH** will provide



Noise graphic courtesy of Dr. Rudolf Widmer-Schnidrig, BFO (Black Forest Observatory)

reliable measurements for many years. For those who need a written proof of the fact, an affordable recalibration service is offered. Also, contrary to most mechanical sensors, Lennartz sensors do not require any kind of transportation locking, nor do they require excessive settling time. A useful signal is

present just seconds after power-up.

Poles and zeroes of the transfer function are supplied with the instrument, making deconvolution easy. Given a reasonable signal-to-noise ratio, **LE-3D/BH(s)** data can be deconvolved down to 20 seconds and beyond.

Technical data LE-3D/BH(s) MkIII

Power supply:	10...16 V DC unstabilized
Typical power consumption @ 12 V DC:	6 mA
Transduction factor:	±800V/m/s differential, precisely adjusted
Frequency band (-3 dB points):	1...100 Hz
Damping:	.707 critical, precisely adjusted
Dimensions:	58 mm diameter, overall length: 1000 mm (BH), 820 mm (BHs)
Weight:	8.8 kg
Temperature range:	-15...+60 °C
RMS noise @ 1 Hz:	< 3 nm/s
Dynamic range:	139 dB



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