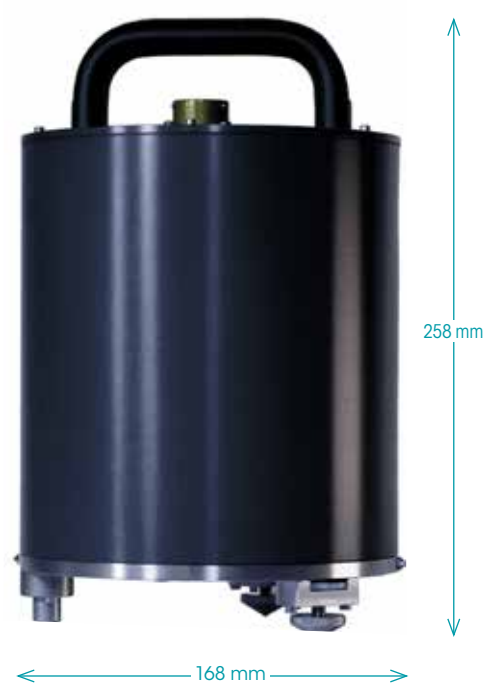
Güralp 3ESPC

COMPACT, PORTABLE, WEAK MOTION SEISMOMETER



Our proven 3ESP design in a highly compact form factor.

The Güralp 3ESP Compact is a development from the well-proven 3ESP seismometer. It is a small, lightweight, broadband, triaxial instrument, offering weak-motion performance, comparable to the 3T, for the price and size of a medium-motion instrument.

Applications

> Surface vault
> Post-hole
> National seismic networks
> Regional research projects
> Rapid temporary deployments e.g. aftershock and volcanic unrest monitoring

Images: Guralp 3ESPC weak motion seismometer

Key features

Covers the complete seismic spectrum with single transfer function

Response from 120 s to 50 Hz (30 s - 50 Hz standard). Options of 1, 60 and 100 s LP corners. Option of 100 Hz high frequency corner

Self noise below the USGS NLNM from > 30 s to 16 Hz

High linearity: > 107 dB horizontal, 111 dB vertical

Over 140 dB dynamic range; low self noice over a wide frequency band

Cross axis rejection over 62 dB; sensor axes orthogonal to within ± 0.05°

Robust automatic mass locking, unlocking and centring

Adjustable feet allow for up to 4 ° tilt (8 ° optional)

Low power consumption (0.6 W from 12 V input)

Truly portable - under 9 kg with lifing handle and convenient access to connectors

Optional stainless steel casing

A digital 3ESPCD model is also available, integrated with the DM24 digitiser and with up to 16 GB storage

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SPECIFICATIONS

SYSTEM	
Configuration / Topology	Triaxial orthogonal (ZNE)
PERFORMANCE	
Frequency Bandwidth	60 s to 50 Hz standard. Options of 1 s, 30 s, 100 s or 120 s corner frequency or with a hybrid response.
Output sensitivity	2000 V/ms^{-1} (2*1000 V/ms^{-1}) differential output. Optional sensitivities from 1500 V/ms^{-1} to 20,000 V/ms^{-1}
Peak / Full scale output	±10 V single-ended or differential (40 V p-p)
Sensor Dynamic Range	> 140 dB
Self-noise below NLNM	>40 s to >16 Hz
Cross axis rejection	> 62 dB
Linearity	> 111 dB vertical; > 107 dB horizontal (USGS figures)
Lowest spurious resonance	> 140 Hz
Transfer function	User manual is available to download from the website. Each sensor is provided with full calibration details including measured sensitivity, measured frequency response and instrument poles and zeros
Calibration controls	Independent signal & enable lines exposed on sensor connector
MASS / MONITORING CONTROL	
Sensor Mass positions	Three independent sensor mass position outputs (single ended)
Locking	Remote auto mass lock/unlock
Mass centre	Remotely controlled automatic mass centring
POWER	
Power consumption (at 12 V DC)	0.765 W
Power voltage range	10– 36 V DC Optional low power supply: 5 V DC (output ± 4.5 V)
ENVIRONMENTAL	
Operating temperature	-20 to +65 °C (–40 °C option)

PHYSICAL	
Diameter	168 mm
Height with handle	258 mm
Height without handle	187 mm
Enclosure/Materials	Hard anodised aluminium (stainless steel option available)
Weight	8.3 kg
Communication / Connectors	Mil-spec connector (optional 1500 psi waterproof connector or user connector)

Güralp Systems Limited
Midas House
Calleva Park
Aldermaston
Reading
RG7 8EA
UK

T +44 118 981 9056
F +44 118 981 9943
E sales@guralp.com

www.guralp.com

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