

# CMG-3ESPD Compact



## Portable weak motion seismometer

The CMG-3ESPD Compact from Guralp Systems is a development from the well-proven CMG-3ESP seismometer. It is a small, lightweight, broadband, triaxial, weak-motion instrument, offering weak-motion performance with a built in digitizer for the price and size of a medium-

### Key Features:

Covers the complete seismic spectrum with a single transfer function

Response from 120s to 50 Hz (60s to 50Hz Standard)  
\* Options of 1s, 30s and 100s LP corners and 100Hz HF corner

Truly portable: under 9 kg, with lifting handle and convenient access to connectors

Highly compact form factor

High linearity: >107 dB horizontal, 111 dB vertical

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

Cross-axis rejection over 62 dB; sensor axes orthogonal to within  $\pm 0.05^\circ$

Robust automatic mass locking, unlocking and centring

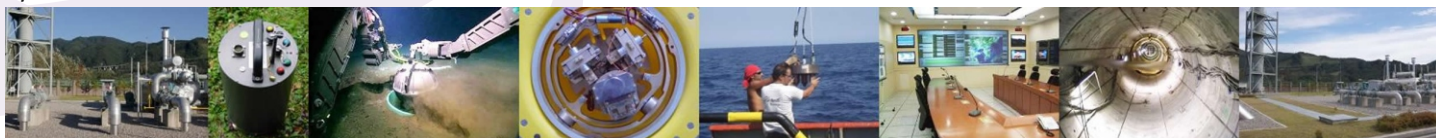
Adjustable feet allow for up to  $4^\circ$  tilt ( $8^\circ$  optional)

Low power consumption (750 mW from 10 – 30 V input power)

On board 24-bit digitizer with configurable output and up to 16 Gb of built in Flash memory

Simple and fast live data download over firewire. Ethernet and Wi-Fi options available

Also available in single-component form and as an analogue instrument for use with your own recording system



# Specifications

## CMG-3ESPD Compact



Standard velocity output band	<i>60 seconds – 50 Hertz standard. Also available with 1 s, 30 s, 100 s or 120 s corner frequency, or with a hybrid response.</i>
Mass position output band	<i>DC – 60 seconds</i>
Output sensitivity	<i><math>2 \times 1000 \text{ V/ms}^{-1}</math>. Also available with any sensitivity in the range <math>2 \times 750 \text{ V/m}^{-1}</math> to <math>2 \times 10,000 \text{ V/m}^{-1}</math>.</i>
Peak output	<i><math>\pm 10 \text{ V differential}</math></i>
Lowest spurious resonance	<i>&gt; 300 Hz (vertical)</i>
Linearity, vertical (USGS)	<i>&gt; 111 dB</i>
Linearity, horizontal (USGS)	<i>&gt; 107 dB</i>
Cross-axis rejection	<i>&gt; 62 dB</i>
Dynamic range	<i>&gt; 140 dB (see plots)</i>
Self-noise below NLNM	<i>&gt; 30 s to 16 Hz</i>
Operating temperature	<i>-20 to +65 °C (-55 °C optional)</i>
Temperature sensitivity	<i>&lt; 0.6 V per 10 °C (standard response) * Optional -20 to +50 °C range without recentring</i>
Mass recentring range	<i><math>\pm 2.5^\circ</math> from horizontal</i>
Materials	<i>Hard anodised aluminium case Mil-spec connector (1500 psi waterproof connector or user-specified connector optional)</i>
Case diameter	<i>168 mm</i>
Case height (with handle)	<i>258 mm</i>
Case height (sensor only)	<i>187 mm</i>
Weight	<i>8.3 kg</i>
Isolating power supply	<i>10 – 36 V DC</i>
Optional low power sensor	<i>5 V DC supply (output <math>\pm 4.5 \text{ V}</math>)</i>
Current at 12 V DC	<i>50 mA</i>
Mass control	<i>Automatic, remotely operable</i>
Calibration controls	<i>Independent signal &amp; enable lines exposed on sensor connector</i>
Optional low pass filter	<i>100 Hz corner frequency</i>

