

Product Name :
Determination of the Gravitational Constant

Product Code :
TWL-PWL-0003



Description :

Determination of the Gravitational Constant

Technical Specification :

Description:-

Determination of the Gravitational Constant demonstrates the force of gravity between two masses and allows the gravitational constant to be determined.

When the two large spheres are rotated to a new position, the torsion balance will vibrate about a new rest position.

The rotary motion is measured using a capacitive differential sensor, which largely suppresses noise and vibration components in the signal.

The core of the apparatus is a torsion pendulum made of a light bar with two small lead spheres, which is suspended horizontally from a thin wire.

The apparatus is moved from its rest position by the attraction of the two spheres to two larger lead spheres.

The gravitational constant can be determined within the space of a single lesson with an accuracy of better than 10%.

For subsequent evaluation, the data can be exported to a spreadsheet.

Alternatively, the motion can be demonstrated with the aid of a light pointer.

The output is then recorded using a computer.

Angular resolution: 25 microradians

Torsion wire: Tungsten, 25 μ m

Period of oscillation: 2–4 mins

Sampling rate: 0.5, 1, 2, 5, 10 samples/s

Mass of large lead spheres: 1 kg

Mass of small lead spheres: 15 g

Gravitational attraction: $< 10^{-9}$ N

Weight: 5 kg

Dimensions: 190 x 180 x 200 mm³

Electrical and Electronics

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