Barometric height formula 1.4.07-00

What you can learn about ...

- ➔ Kinetic gas theory
- ➔ Pressure
- ➔ Equation of state
- ➔ Temperature
- ➔ Gas constant

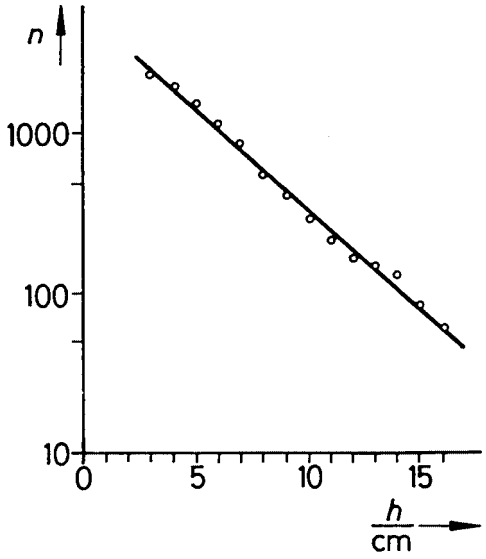
Principle:

Glass or steel balls are accelerated by means of a vibrating plate, and thereby attain different velocities (temperature model). The particle density of the balls is measured as a function of the height and the vibrational frequency of the plate.

What you need:

Kinetic gas theory apparatus	09060.00	1
Power supply var. 15 VAC/12 VDC/5 A	13530.93	1
Light barrier with Counter	11207.08	1
Power supply 5 V DC/0.3 A	11076.93	1
Digital stroboscope	21809.93	1
Stopwatch, digital, 1/100 sec.	03071.01	1
Glass beads, d = 2 mm, 10000 pcs	09060.01	1
Steel balls, d = 2 mm, 1000 pcs	09060.02	1
Tripod base -PASS-	02002.55	2
Support rod -PASS-, square, l = 400 mm	02026.55	1
Right angle clamp -PASS-	02040.55	1
Connecting cord, l = 750 mm, red	07362.01	1
Connecting cord, l = 750 mm, blue	07362.04	1

Complete Equipment Set, Manual on CD-ROM included
Barometric height formula P2140700



Number of steel balls (m = 0.034 g), as a function of the height h, which pass through the volume element ΔV in 30 seconds (vibrational frequency 50 Hz).

Tasks:

Measurement of the particle density as a function of:

1. the height, at fixed frequency
2. the vibrational frequency of the exciting plate, at fixed height.