

CAPACITOR, AIR INSULATED – ‘aepinus’

Cat: EM0938-001 2 sets of square plates

DESCRIPTION: This item includes:

- 2pcs Flat Plate aluminium conductors, 200 x 200 mm square.
- 2pcs Flat Plate aluminium conductors, 283 x 283 mm square.
- 1pce Base with scale up to 160mm gap.
- 1 pce Acrylic plate, 3mm thick, 290x290mm
- 1 pce Glass plate, 3mm thick, 290x290mm

EM0938-001 ‘Aepinus’ square plates



Physical size: 200x200mm plates, 283x283mm plates, 0-160mm gap. Weight: 3.1 kg

Glass and acrylic dielectric: 290x290mm x3mm thick

This instrument is used to study the theory of capacitance and charge whilst using air as the insulation medium. The charge stored in a capacitor depends on the area of the capacitor plates, the distance between the plates and the dielectric material between them. To form an ‘Air Capacitor’, two large plates of known area are required to be positioned parallel to each other with air between them and the distance between the plates must be adjustable.

**Use of the instrument:**

- 1) Push both sliders together and slide the pair as far as they can go. When being used, one slider remains against the end foot and the other slider is pulled back to slide over the scale.
- 2) Pull the front slide back along the scale so there is a big gap between the sliders. Take the pair of plates you require and notice the pillar fixed to the edge of the plate. Slide the pillar up the hole provided in the face of the sliders so that the two plates are facing each other. A strong magnet inside each slider will pull and hold the plates in position. Be sure the bottom edge of the plate is resting on the ledge provided. As the plate is pulled into position by the magnet in the slider, note the small metal pin that presses against the plate to make electrical contact. On the opposite end of each slider, away from the plates, a 4mm socket can be seen for accepting a 4mm banana plug.
- 3) Check that the plates are parallel to one another, fit a banana plug cable into the 4mm socket provided in each slider, connect to your power source and the instrument is now ready to use.

When the two sliders are pushed against each other, there should be no gap between the plates. The slider over the scale should be indicating zero. **NOTE: The holders for the plated have protection devices internally so the power supply is not short circuited by the touching of the plates.** As the slider is moved over the scale the gap between the plates increases and can be measured on the scale.

To remove the plates from the sliders, do not pull the plates from the sliders, but place the thumb and forefinger over the slider body so the fingers press against the rear face of the plate, then squeeze the fingers so they push the plate slightly forward. When the pin releases from the magnet in the slider, the plate can easily be removed.

THE IEC 'Aepinus Air Capacitor':

Flat, rigid aluminium plates are mounted to face each other in a way that permits adjustment of the distance between their faces. Electrical connection to each disc is made by 4mm socket so that a high voltage Power Supply (IEC cat: LB2615-001) can be connected between the plates to deposit an electric charge and subsequently an Electrometer (IEC cat: LB1840-001) can be connected to measure the electric charge between them.

The plates are mounted to the sliders with excellent insulation. The plates are kept in accurate alignment and parallel with one another by the use of strong magnets pulling the plates against two flat and parallel surfaces on the faces of the sliders.

The base rail is fitted with a large and easy to read metric scale to measure the separation of up to 160mm between the two plates and a metal base provides stability on the bench during an experiment.

A sheet of glass and a sheet of acrylic are provided to place between the plates to compare the effect of different dielectric materials between the plates.

Designed and manufactured in Australia