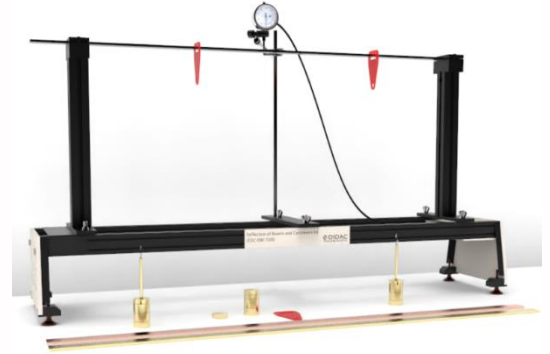


## Deflection of Beams and Cantilevers Kit (EDC-DBCA-530)

### SPECIFICATIONS:

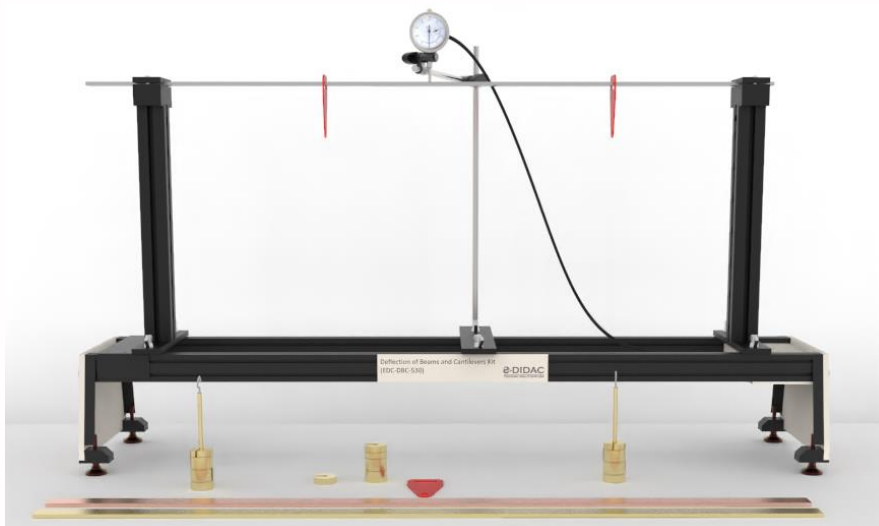
- Bench-top deflection apparatus designed for studying beam deflections under various conditions.
- Bench-mounted structure made from aluminum extrusions for durability and stability.
- Supports experiments on beam deflection, Young's modulus, moment of inertia (I-value) and different beam support types.
- Twin beam structure with a minimum length of 1140mm and section dimensions of  $40 \times 16$  mm.
- Beam supports include cantilever, propped cantilever, fixed beam and simply supported configurations.
- Adjustable screw feet for leveling, along with a 1-meter scale for precise measurements.
- Two knife-edge supports for accurate load application.



### DESCRIPTION:

The Deflection of Beams Apparatus is a bench-mounted testing unit designed for studying the deflection behavior of beams under various loading and support conditions. The apparatus enables students and researchers to investigate the effects of beam length, material properties (Young's modulus), moment of inertia (I-value), and different support types (cantilever, fixed, simply supported, and propped cantilever) on deflection. The main structure is made from aluminum extrusions, ensuring durability and precision. A twin-beam setup, with beams measuring at least 1140mm long and  $40 \times 16$  mm in section, is mounted on legs 250mm wide  $\times$  250mm high. The apparatus includes adjustable screw feet for proper leveling and a 1-meter scale for accurate measurements.

The system comes with two knife-edge supports, one built-in support, and three stirrups with 1N load hangers, providing flexibility in experimental setups. Deflections are measured using two high-precision dial gauges (0-12 mm, 0.01 mm resolution) mounted on a support unit. A slope indicator with a clamp allows for additional angular measurements. Load application is facilitated with a load position indicator to ensure precise placement of weights. The unit includes a set of beams in various materials, such as steel, brass, and aluminum, allowing users to study the influence of material properties on beam behavior. The entire system is conveniently stored in a dedicated storage tray to keep all components organized and protected.



## TECHNICAL DATA:

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- **Beam Structure:**

- Twin beam setup: 1140mm long, 40 × 16 mm section.
- Leg dimensions: 250mm wide × 250mm high.
- Adjustable screw feet for leveling.
- 1m scale with 1mm divisions.

- **Supports & Load Application:**

- Two knife-edge supports.
- One built-in support.
- Three stirrups with 1N load hangers.

- **Measurement Instruments:**

- Two dial gauges: 0-12 mm range, 0.01 mm resolution.
- Slope indicator with clamp.
- Load position indicator.

- **Beam Materials & Sizes:**

- Set of beams: 25 × 6 mm × 1045 mm long.
- Steel beams: 19 × 5 mm and 19 × 3 mm × 1045 mm long (5 pieces total).
- Materials: Steel, brass, aluminum.

- **Weight Set:**

- 1 × 20N.
- 2 × 10N, 2 × 5N, 2 × 2N, 1 × 1N, 1 × 0.5N.

- **Storage System:**

- Dedicated storage tray for organization and protection.