# Bending Moments in a Beam (EDC-BMB-302)

SPECIFICATIONS:

- **Compatibility:** Fits onto the Structures platform for ergonomic use.

- **Measurement System:** Unique beam "cut" and load cell system for accurate bending moment measurement.

- **Software & Connectivity:**

  - Works with user-friendly EDAQ software.
  - Load cell connects to the USB interface hub of the Structures platform for data acquisition and computer display.

DESCRIPTION:

This experimental module is designed to fit onto the Structures platform, providing an ergonomic and efficient setup for studying bending moments. It features a unique beam "cut" and load cell system that allows direct and precise measurement of bending moments. Users can apply various loading conditions, including single-point loads and uniformly distributed loads (UDLs), to analyze structural behavior. The setup includes a pinned support (allowing rotational movement only) and a roller support (allowing translational movement), closely replicating real-world structural conditions. The load cell positioned at the mid-span accurately records the bending moment due to applied loads, and results can be compared between different load configurations.

The system is integrated with the EDAQ software, enabling real-time data acquisition, visualization, and analysis through a USB interface. The package includes essential accessories such as two beam supports, a bending moment load cell, a 0.8m beam (0.5m span), four mass hangers, 50 x 20g masses, two UDL bars, and a comprehensive user guide. A dedicated storage tray is also provided to keep smaller components organized and safe. This setup is ideal for educational and research purposes, helping users understand the effects of varying loads and bending moments on structural elements.
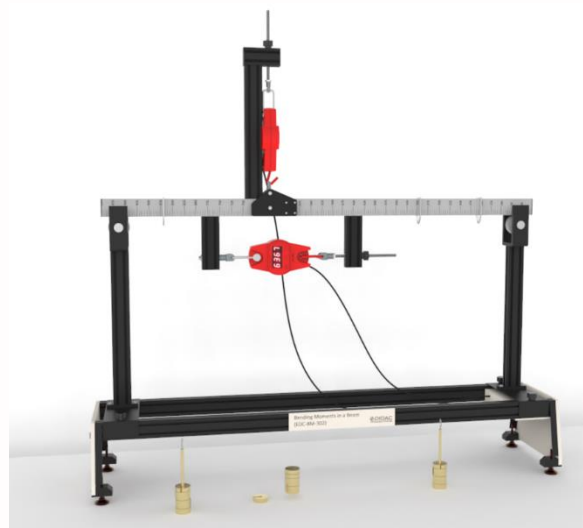
TECHNICAL DATA:

- **Beam & Support System:**
  - Beam length: 0.8 m
  - Beam span: 0.5 m
  - Two supports:
    - **Pinned support:** Allows rotational movement only
    - **Roller support:** Allows translational movement
- **Load Measurement & Application:**
  - Bending moment load cell built into the center span of the beam
  - Load application through mass hangers suspended along the beam
  - Includes multiple loads for various combinations
  - Uniformly Distributed Load (UDL) bars for comparative analysis
- **Software & Connectivity:**
  - Compatible with EDAQ for real-time display and data acquisition
  - Connects to the USB interface hub of the Structures platform
- **Learning Outcomes:**
  - Bending moment due to varying single point loads
  - Bending moment due to moving single point loads
  - Bending moment due to uniformly distributed loads
  - Influence lines and superposition
- **Accessories Included:**
  - Two beam supports
  - Bending moment load cell
  - 0.8 m beam with 0.5 m span
  - Four mass hangers
  - 50 x 20 g masses
  - Two UDL bars
  - Storage tray
  - Comprehensive user guid