SCIENTICO INDIA
Manufacturer & Exporter · Ambala, Haryana, India

PRODUCT DATA SHEET
Catalogue reference for product evaluation

Phone: +91 7015865225 **Email:** info@scienticoindia.com **Web:** scienticoindia.com **Address:** #71, Industrial Area, Ambala Cantt, Haryana, India

Deflection of Beam Apparatus | FortiTestX 06

Category: Strength of Materials · **Order Code:** FORTITESTX 06 · **Country of Origin:** India

Product Overview

A CE-certified apparatus for experimental study of deflection of simply supported and cantilever beams under various loading conditions, manufactured by Scientico India to ISO 9001:2015 standards. Supplied with calibration certificate, operation manual, and complete export documentation. Designed for Strength of Materials laboratories in engineering colleges and technical institutions.

View this product online: https://scienticoindia.com/product/deflection-of-beam-apparatus-fortitestx-06/



Request a model-specific quotation
Include quantity and delivery country.

Technical Specifications

Parameter	Details
Model	FortiTestX 06
Unit Type	Benchtop, anodized aluminum section frame
Beam Materials	Stainless steel, brass, aluminum, mild steel, copper
Beam Cross-Sections (all materials)	19 x 3 mm, 19 x 5 mm, 19 x 6 mm
Total Beam Sections Supplied	15 (3 cross-sections × 5 materials)
Articulated Supports with Force Gauge	3; height-adjustable; range 0–100 N; least count 0.5 N
Supports with Clamp Fixing	2
Dial Gauges	3
Weight Sets	4 sets with adjustable riders
Weights Supplied	4 × 0.5 N hangers, 8 × 0.5 N, 8 × 1 N, 8 × 2 N, 8 × 5 N
Measuring Scale	1 m length
Optional Software	FT-06, LabVIEW-based data logging; Windows compatible

Parameter	Details
Scope of Delivery	1 experimental unit, 1 storage unit, 3 dial gauges, 4 weight sets, 3 articulated supports with force gauges, 2 supports for clamping, 5 beam sets, 1 manual, 1 measuring scale (1 m)

Key Features

Key Features

- Anodized aluminum section frame houses the complete experimental setup with integrated storage system
- Supports statically determinate and indeterminate beam configurations including cantilever, single-span, dual-span, and triple-span arrangements
- Three height-adjustable articulated supports with built-in force gauges provide direct support reaction readings
- Force gauges feature zeroing, peak hold, and tracking functions
- Support height adjustment compensates for beam dead weight prior to loading
- Fifteen interchangeable beam sections across five materials and three cross-sectional thicknesses
- Three dial gauges measure deflection and slope at selectable positions along the beam span
- Load application points are adjustable; up to four weight sets can be applied simultaneously
- Optional LabVIEW-based software available for automated data logging and results processing

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Applications

- Investigation of deflection and slope for statically determinate and indeterminate beams
- Cantilever beam deflection measurement at the point of load application
- Dual-span and triple-span beam experiments with simultaneous support reaction and deformation measurement
- Determination of elastic lines under various clamping and support conditions
- Study of the influence of elastic modulus and cross-sectional geometry on beam deflection
- Verification of Maxwell-Betti reciprocal theorem coefficients
- Application of the principle of virtual work to statically determinate and indeterminate beams
- Arithmetic and qualitative determination of influence lines using the Muller-Breslau method
- Formulation and verification of differential equations for the elastic line

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Construction and System Design

The apparatus is built within a rigid anodized aluminum section frame that provides a stable and consistent reference plane for all beam and support configurations. The three articulated supports are height-adjustable via fine adjustment mechanisms and incorporate integrated force gauges with zeroing, peak, and tracking functions, allowing support reactions to be read directly without external instrumentation. The clamp-fixing supports establish fixed-end boundary conditions for cantilever and other statically indeterminate configurations. Beam sections are interchangeable and standardized to a width of 19 mm across all five materials, with thickness varying across the three supplied cross-sections. The adjustable riders on the weight sets allow uniform load distribution to be simulated along defined spans. All experimental components are stored in a dedicated storage system within the frame, keeping the apparatus organised and ready for repeated laboratory use.

Export and Supply Capability

SCIENTICO manufactures and supplies the FortiTestX 06 Deflection of Beam Apparatus to engineering institutions and laboratory equipment distributors internationally. The unit is packaged for safe transit and is suitable for supply to universities, civil and mechanical engineering departments, and technical training institutes across export markets. Customization of beam materials, cross-sections, or software integration is available upon inquiry.

Ordering & Delivery

- Send the product name, quantity, delivery country and destination with your enquiry.
- Production schedule, freight, payment terms and export documents are confirmed in the written quotation.

Frequently Asked Questions

1. What beam configurations can be tested using the FortiTestX 06?
The apparatus supports cantilever beams, single-span beams, dual-span beams, and triple-span beams under both statically

determinate and statically indeterminate conditions. End conditions can be varied using the interchangeable articulated supports and clamp-fixing supports.

2. How many beam sections are supplied and what materials are available?
Fifteen beam sections are supplied across five materials, stainless steel, brass, aluminum, mild steel, and copper, each available in three cross-sections: 19 x 3 mm, 19 x 5 mm, and 19 x 6 mm. This range enables direct comparison of the effect of elastic modulus and cross-sectional geometry on beam deflection.

3. How are support reactions measured on the FortiTestX 06?
Three articulated supports are fitted with built-in force gauges with a measurement range of 0 to 100 N and a least count of 0.5 N. The gauges feature zeroing, peak hold, and tracking functions and provide direct support reaction readings without the need for external instrumentation.

4. Is software available for the FortiTestX 06?
Yes. Optional LabVIEW-based software is available for automated data logging and results processing. It is compatible with any Windows operating system and is designed specifically for use with the FortiTestX 06 experimental setup.

5. What analytical methods can be verified using the FortiTestX 06?
The apparatus supports experimental verification of results obtained from differential equation analysis, the Area Moment Method, the principle of virtual work, Maxwell-Betti reciprocal theorem coefficients, and influence line determination using both arithmetic methods and the qualitative Muller-Breslau force method.

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