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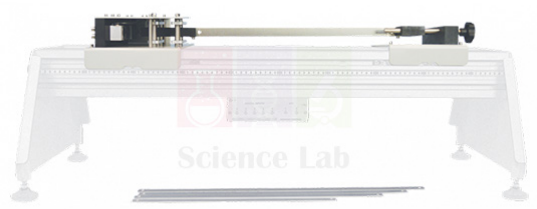
Product Name :

Euler Buckling of Struts

Product Code :

SLE/EG/12



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Description :

Euler Buckling of Struts (Product Code: SLE/EG/12) is a structures experiment in which students load a slender strut in compression, record the force through a load cell and note the point at which the strut collapses sideways, or buckles. They then predict the same bucklingloads from textbook equations, including Euler's theory, and compare prediction withmeasurement. Manufactured by **Jain Scientific Equipments Pvt Ltd (ScienceLab)**, Ambala, itis engineering lab equipment for civil and mechanical engineering departments, polytechnics andtechnical institutes teaching strength of materials.

Key Details

Parameter	Detail
Type	Strut buckling experiment for compression members
Load measurement	Load cell measures the applied buckling force
Specimens	Specimen struts of different lengths, for comparing buckling loads
End conditions	Different strut end fixings, to compare their effect on the buckling load and on the shape of the strut as it buckles
Included tool	Vernier caliper for measuring the cross-section of the struts
Data connection	Load cell connects to the USB interface hub of the Structures Platform for computer display and data acquisition
Theory covered	Euler's theory and related textbook buckling equations, compared with measured results

Typical Use

A typical practical begins with students measuring each strut's cross-section with the supplied Vernier caliper, so they can work out the second moment of area that Euler's formula needs. With a chosen pair of end fixings in place, the compressive load is raised steadily while the load cell reading is watched; the peak value just before the strut bows out is taken as its buckling load. Repeating the test on the struts of different lengths lets the class plot buckling load against length and see how sharply slenderness reduces the load a strut can carry.

Swapping the end fixings then shows how the way a strut is held changes both the load it supports and the curve it takes as it fails — the idea behind effective length, which students usually meet only as a factor in a table. Comparing each result with the Euler prediction confirms how well the textbook equations hold and prompts discussion of why small differences appear, such as slight initial crookedness. Logging through the Structures Platform's USB hub puts the load on screen, which suits mechanics lab equipment sessions where one group's test is reviewed by the whole class.

Manufacturer

This buckling module is manufactured by Jain Scientific Equipments Private Limited, the Ambala, Harya ing colleg