



# 01

# PHYSICS

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## 1.1 3D PHYSICS

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## ABOUT US

At EDIBON, we have been a **worldwide benchmark** in **technical education and research equipment** since **1978**. We design and manufacture **state-of-the-art teaching equipment and pilot plants**, integrating **cutting-edge technology** to enhance training and scientific development.

With a catalog of around **4,500 different products**, we provide institutions and industries with solutions for **learning, experimentation, and process optimization**.

## Our mission

Our commitment is to deliver **high-quality solutions** to **educational institutions, research centers, and industrial sectors**, ensuring **precision, efficiency, and excellence** in every project.

## Our vision

Backed by a **highly skilled team**, EDIBON is a global leader in **technical education and research equipment**, providing a **comprehensive service** that includes **design, manufacturing, installation, maintenance, and advisory support**. Our priority is to ensure success and complete customer satisfaction, delivering high-quality and innovative solutions.



# 3D PHYSICS



# EFAC COMPUTER CONTROLLED THREE DIMENSIONS (3D) PHYSICS




The Computer Controlled Three-Dimensional (3D) Physics Unit, "EFAC", from EDIBON, allows to carry out practices within the different fields of physics (electricity, magnetic fields, mechanics, acoustics, optics and thermodynamics).



### DIMENSIONS AND WEIGHTS

Dimensions: 1020 x 1250 x 890 mm approx.  
(40.15 x 49.21 x 35.03 inches approx.)  
Weight: 80 kg approx. (110.2 pounds approx.)

### EXPANSIONS

-  **ICAI**  
Interactive Computer Aided Instruction Software
-  **ESN**  
EDIBON SCADA-Net
-  **ECL**  
EDIBON Cloud Learning



Some software results screens



We transform theory into *practice*

**FCE > Electric Fields Study Set**

The Electric Fields Study Set, "FCE", allows the spatial study of the electric field in all its dimensions: calculation of the intensity, force lines, equipotential surfaces in both static and dynamic fields, giving the student a more extensive spatial vision not given by other methods.

**GUIDED PRACTICAL EXERCISES INCLUDED IN THE MANUAL**

Level 1:

1. Electric field created by two parallel flat sheets.
2. Visualisation of the field lines created by a point charge.
3. Spatial representation of the equipotential lines and the intensity of the electric field created by a point charge.
4. Visualisation of the field lines generated by two point charges.
5. Spatial representation of the equipotential curves created by two spherical charges.

Level 2:

6. All the exercises included in level 1.
7. Calculation of the charge enclosed by a plane-parallel capacitor. Gauss's theorem (I).

... and more



**ICAI**  
Interactive Computer Aided  
Instruction Software

**FSS**  
Fault Simulation System

**ELK**  
EDIBON Software Development  
KIT, Powered by NI LabVIEW™

**DIMENSIONS AND WEIGHTS**

Dimensions: 500 x 300 x 300 mm approx.  
(19.68 x 11.81 x 11.81 inches approx.)

Weight: 8 kg approx. (17 pounds approx.)

**FCM > Magnetic Field Study Set**

The Magnetic Field Study Set, "FCM", allows the spatial study of the magnetic field in all its dimensions: calculation of magnetic field strength, lines of force, vector potential and equipotential lines, both in static and dynamic fields.

**GUIDED PRACTICAL EXERCISES INCLUDED IN THE MANUAL**

Level 1:

1. Visualisation of the magnetic field lines generated by a magnet.
2. Decay of the magnetic field.
3. Three-dimensional representation of the magnetic field generated by a magnet.
4. Magnetic field generated by two magnets. Spatial representation of the field lines and intensity.
5. Magnetic field generated by parallel rectilinear conductors. Visualisation of field lines and calculation of magnetic intensity. Principle of superposition (I).
6. Magnetic field generated by a loop. Three-dimensional representation of the intensity and visualisation of the field lines.
7. Magnetic field generated by rectangular coils. Visualisation of field lines and calculation of the magnetic intensity. Superposition principle (I).

... and more



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**FM > Mechanics Study Set**

The Mechanics Study Set, "FM", allows us to study movements that normally, would take hours and hours of calculations in a fast and simple way in the mechanical area, besides corroborating the theoretical results of other simpler ones.

**GUIDED PRACTICAL EXERCISES INCLUDED IN THE MANUAL**

Level 1:

1. Calibration of the cameras.
2. Guided horizontal movement analysis.
3. Inclined plane movement analysis.
4. Simple damped pendulum analysis.
5. Circular damped pendulum movement analysis.

Level 2:

6. All those of level 1.
7. Calibration of the chambers.
8. IMPORTANT: The teacher can use his own elements, so these practical possibilities are NEARLY UNLIMITED.

... and more



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**FAC > Acoustics Study Set**

The Set for the Study of Acoustics, "FAC" designed by EDIBON allows to perform all kinds of experiments related to acoustic waves (propagation, interferences, wave fronts, etc.).

**GUIDED PRACTICAL EXERCISES INCLUDED IN THE MANUAL**

Level 1:

1. Temporal visualisation of an acoustic wave.
2. Three-dimensional study of an acoustic wave.
3. Signal generated by two identical sources (Interference I).
4. Acoustic attenuation produced by an obstacle.
5. Wave fronts generator (Diffraction I).
6. Spatial representation of an acoustic attenuation.

Level 2:

7. All those of level 1.
8. Experimental determination of the power of an acoustic emitter.

... and more



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**FOP > Optics Study Set**

The Optics Study Set, "FOP", designed by EDIBON, has as its objective the study and understanding of simpler optical phenomena on which other much more complex phenomena are based. In this case, focusing on reflection, refraction, transmission, absorption and measurement of light intensity (irradiance).

**GUIDED PRACTICAL EXERCISES INCLUDED IN THE MANUAL**

Level 1:

1. Determination of beam divergence.
2. Focusing point of the torch beam.
3. Analysis of intensity loss with distance.
4. Phenomenon of reflection.
5. Transmission.
6. Variation of the luminosity with methacrylate without inclination.
7. Variation of the luminosity on having fallen with an angle on the methacrylate.
8. Refraction.
9. Influence of the medium in the refraction.

... and more



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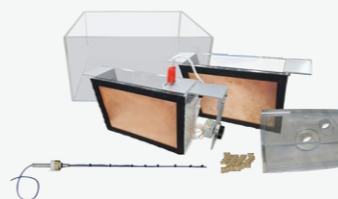
**FTT > Thermodynamics Study Set**

The Set for the Study of Thermodynamics, "FTT", allows the study of thermodynamics by means of the temperature difference between two sources.

**GUIDED PRACTICAL EXERCISES INCLUDED IN THE MANUAL**

Level 2:

1. Determination of temperature distribution in a water tank.
2. Temperature distribution in the presence of hot and cold focus. Dependence on the temperature difference.
3. Temperature distribution in the presence of a hot and a cold source. Dependence with the distance between them.
4. Temperature distribution in the presence of hot and cold sources. Dependence on their position and geometry.
5. IMPORTANT: The teacher can use his own elements, so these practical possibilities are NEARLY UNLIMITED.



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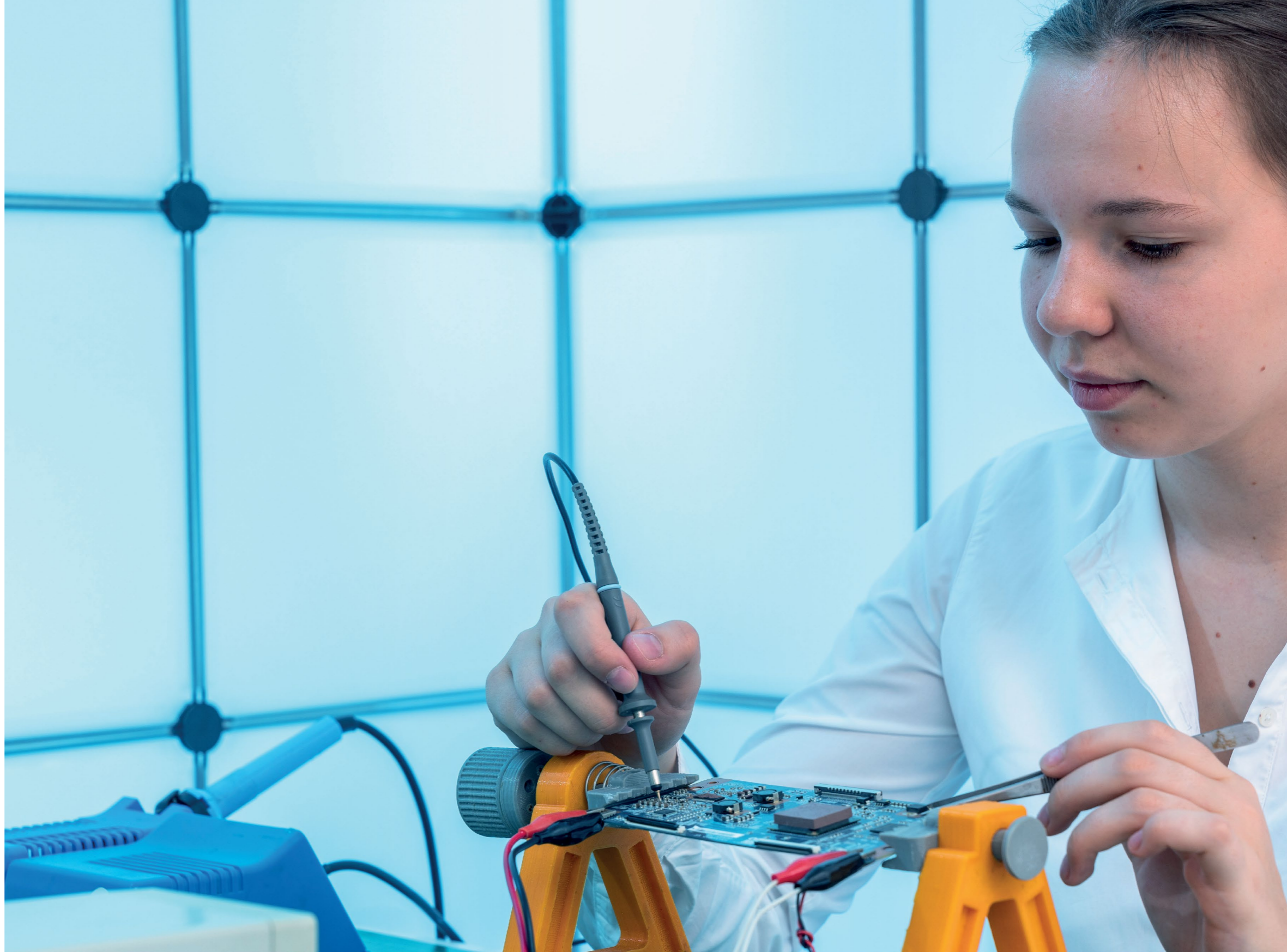
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Curious about how we work? ▶▶▶▶

We'd be **HAPPY TO WELCOME YOU** and explore together how we can **BRING YOUR PROJECT TO LIFE**



edibon

C O N T A C T U S

**+34 91.619.93.63**

**edibon@edibon.com**

C/ Julio Cervera, 10. Móstoles Tecnológico. 28935 - Madrid, Spain

more information

[www.edibon.com](http://www.edibon.com)

