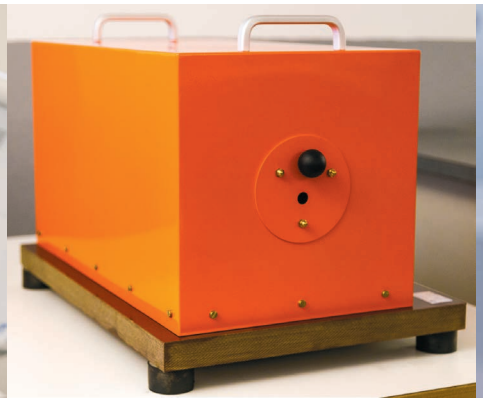
LABORATORIO ELETTROFISICO

CR/03 - COERCIMETER


The automatic DC measuring system made for irregularly shaped samples

The CR-03 Coercimeter measures the coercivity for soft magnetic materials. The CR-03 Coercimeter is a DC automatic measuring system to characterize samples having irregular shapes — in a fast and easy way. The CR-03 Coercimeter detects the stray field emitted from a magnetized sample with a Hall probe in close proximity. By applying an increasing demagnetizing field with the solenoid coil, the stray field is reduced to zero. The result, the demagnetizing field coincides with the coercivity of the material. The coercimeter measurement is automatic and easy to use with the custom LE software that comes standard. Soft materials measured include: iron and carbon steels, soft ferrites, amorphous alloys, nano-crystalline alloys.

KEY BENEFITS

- Manual or automatic settings of parameters
- Magnetizing field up to 140 kA/m
- Coercivity H_c and H_{sat}
- Double-polarity measurements

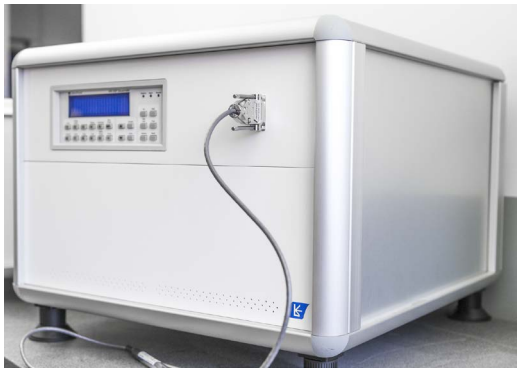
STANDARD CONFIGURATION

- Cabinet with DC power supply and gaussmeter
- Hall probe
- Solenoid with positioning tool for samples
- Mu-metal shield (optional)
- Dedicated software COER2015
- PC and printer

Accessories

- Sample holder
- Probe holder

HOW IT WORKS

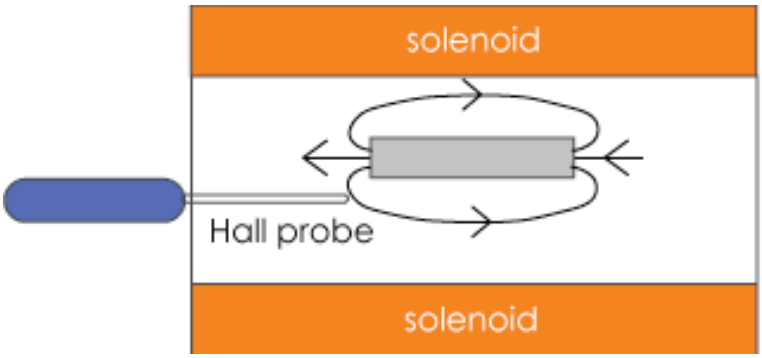


The working principle is based on the detection of the stray field coming from the sample under test. A Hall probe, positioned near the sample, measures the transverse component of this field. The stray field reduces as the axial field of the solenoids demagnetizes the sample. When the transverse field is zero, the axial field coincides with the coercivity of the material.

The CR/03 measurement is automatic and very easy to use with supplied custom software.
The measurement meets International Standard IEC 60404-7.

When Hc is lower than 40 A/m, it's required to shield the sample, to avoid influences from external magnetic fields (also the Earth magnetic field can affect the results). For this reason, a Mu-metal shield is provided to guarantee the reduction of external influences to negligible levels, that permits accurate measurement of Hc lower than few A/m.

Examples of irregular shapes measurable



Coercimeter's measuring principle

TECHNICAL SPECS

GENERAL	
Measurable materials	Soft Magnetic Materials
Measurable shapes	Regular or irregular
Measurable quantities	H_{CJ}, H_{sat}
H_{CJ} range	from 0.5 A/m to 144 kA/m
H_{CJ} resolution (max)	6 mOe to 1800 Oe
ACCURACY	
H_{CJ}	± 1 %
H_{sat}	± 1 %
Transversal field	± 0.5 %
Sample size	20 mm with positioning tool Lenght 110 mm
Test Time	30 seconds (typical)
Operating temperature range	15 ÷ 40 °C
Frequency	DC
MAIN ELECTRICAL CABINET	
Power Supply	2200 Vac, 50-60 Hz, 16 A max absortion
Dimensions	535 x 655 x 550 mm (21 x 26 x 22”)
Weight	55 kg (121 lb)
GAUSSMETER	
Ranges	35 G, 350 G, 5 kG, 35 kG
Resolution	from 100µG to 1 G
Accuracy	± 0.075% of reading, ± 0.005% of range
Communication port	RS232, IEEE 488
HALL PROBE	
Type	Transverse
Stem material	Aluminium
Dimensions	200 x 4.6 x 1.5 mm (8 x 0.8 x 0.06”)
Linearity	0.20% to 30 kG
Cable lenght	2 m (6,5 ft)
SOLENOID	
Max Field	1800 O_e (144 kA/m)
Max Current	25 A
Diameter	53 mm - 2.09”
1% uniformity lenght	110 mm - 4.33”
Dimensions	L280 x W225 x H410 mm - L11.02 x W8.86 x H16.14”
SHIELD	
Material	Mu metal
Thickness	1.5 mm (0.06”)
Dimensions	L300 x W300 x H545 mm - L11.81 x W11.81 x H21.46”
PC AND SOFTWARE	
PC	PC, monitor, printer and all connection cables
Operating System	Windows
Software	COER2015 (English or Italian)
Connection	ethernet/USB
MANUALS AND DOCUMENTATION	Instruction manual (English or Italian)
	Calibration certificate

COER2015 SOFTWARE

LE's proprietary coercivity software COER2015 automatically controls the measurement process. It takes less than 30 seconds to get accurate measurements, display the coercivity, perform a quality control routine, and store data for statistical elaboration. Other available options include: integrated database, customizable print options, and data management.

FEATURES

Type of measurement

- Coercivity H_c and H_{sat}
- Double-polarity measurements

Printing a report

- Customized print options for information and language
- Direct print of a graphical report on printer or file
- The report can be opened and saved with other word processor programs

Protection

Password protection for restricting access according to selected parameters

Setting of measuring parameters

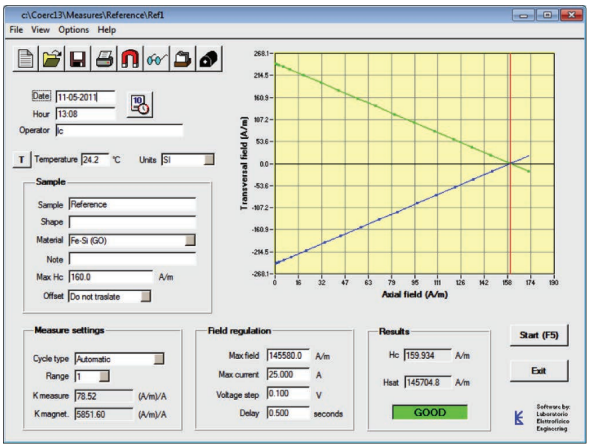
- Manual or automatic settings of parameters
- Magnetic units in SI and CGS

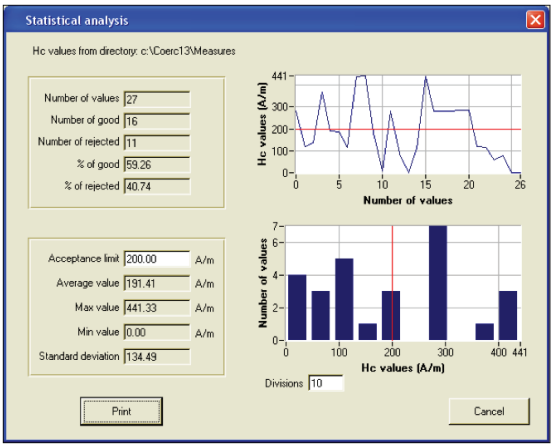
Data elaboration

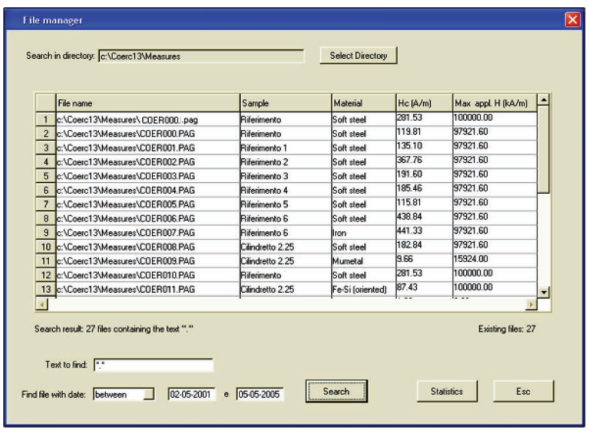
- Limit setting for good/rejected results
- Statistical evaluation of the results

Data base and file searching

- Data base of measuring file with fast search capability, ordering and selection
- Full compatibility with other spread sheet programs, such as Microsoft Excel™

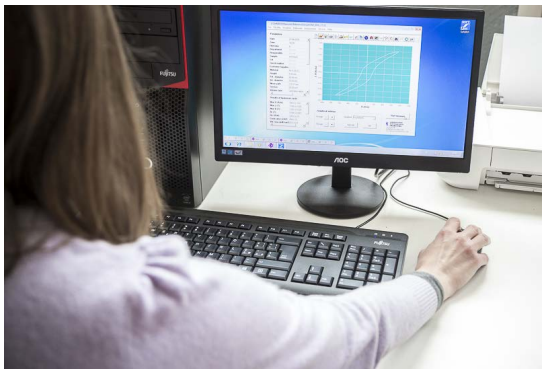






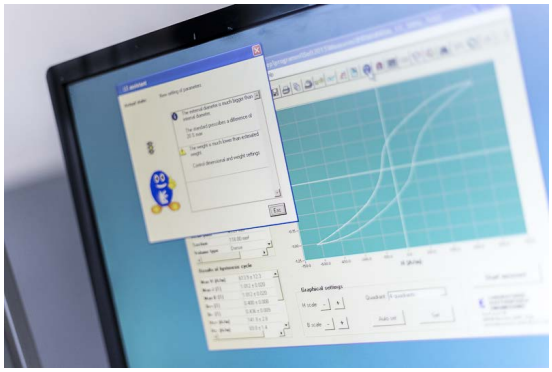
Personalized training

Count on our team of experts for personal training during the acceptance period at Laboratorio Elettrofisico. After delivery, additional training maybe arranged at your facility. We'll be happy to create a custom training plan to fit your needs.



Real-time help

The LE Assistant monitors your system in real time and provides suggestions and error messages to improve performance. The LE Assistant is automatically activated if messages or warnings exceed a certain level.



Seamless support

With LE, you're only one button away from expert help. Access support online through TeamViewer screen sharing, Skype us - or send a request for technical assistance directly through your equipment's software. Seamless support for LE equipment is built in.

LABORATORIO ELETTROFISICO

BEST-SELLING MAGNETIZERS AND PRECISION MEASURING EQUIPMENT FOR ALL MAGNETIC MATERIALS

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EUROPE
Via G. Ferrari 14, Nerviano
Milan, Italy +39 0331 589785

CHINA
217 Lvke rd, Pudong New District
Shanghai +86 215 401 9806

USA
4280 Giddings rd, Auburn Hills
Michigan +1 248 340 7040

USA
370 Kishimura Drive, Gilroy
California +1 408 842 2336

sales@elettrofisico.com

Founded in 1959, Laboratorio Elettrofisico is a global company specializing in engineering, designing, and manufacturing the world's most precise magnetizing and magnetic measuring equipment. Headquartered in Milan, LE has laboratories, testing facilities, support staff, and services centers in the United States, India, and China.

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