



**LABORATORIO ELETTROFISICO  
WALKER LDJ SCIENTIFIC**

YOUR MAGNETIC BUSINESS RESOURCE



# AMH-5800

## HARD METAL MAGNETOMETER

*The measurement of Cemented Carbides*

LABORATORIO ELETTROFISICO ENGINEERING Srl  
via G.FERRARI, 14, 20014 NERVIANO (MI) ITALIA  
Tel +39 0331 589785  
SEDE LEGALE: 20122 MILANO ITALIA  
Via DELLA SIGNORA,2/A  
e-mail: [info@laboratorio.elettrofisico.com](mailto:info@laboratorio.elettrofisico.com)  
[www.laboratorio.elettrofisico.com](http://www.laboratorio.elettrofisico.com)

LE USA WALKER SCIENTIFIC Inc.  
40 ENGELWOOD DRIVE SUITE C  
LAKE ORION, MI 48359 USA  
248-340-7040 Fax 248-340-7045  
[sales@leusawsci.com](mailto:sales@leusawsci.com)  
[www.laboratorio.elettrofisico.com](http://www.laboratorio.elettrofisico.com)

# AMH-5800

## HARD METAL MAGNETOMETER

---

### *Magnetic characterization of Cemented Carbides*

The new AMH-5800 is the latest in Magnetic Measurement Technology for the measurement of magnetic properties of Cemented Carbides (WC in Co or Ni matrix) and Semi-Hard magnetic materials. This revolutionary instrument utilizes a technique that provides the fastest, repeatable and accurate measurements in the market today. The AMH-5800 measures the following parameters:

- Coercivity  $H_cJ$ ,
- Magnetic moment  $M_{sat}$ ,
- Weight-specific saturation magnetization  $\sigma_{sat}$ ,
- Magnetic polarization  $J_{sat}$ ,
- %Co or any other magnetic material in the alloy.

The AMH- 5800 provides accurate measured data to evaluate other correlated properties; for examples: hardness or the presence of undesired phases.



### *A revolutionary instrument to determine the magnetic properties of Cemented Carbides*

Our exclusive open circuit measurement technique allows measure on samples with irregular shapes and sizes. A complete line of optional inductive sensors provides a wide range samples size to facilitate almost all measurement applications.

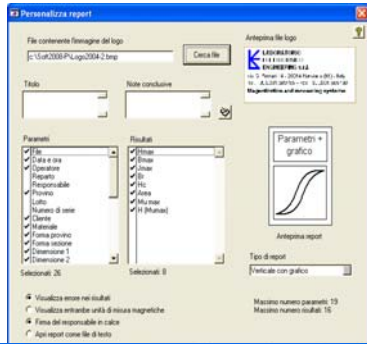
The AMH 5800 is completely automatic: All you need to do is insert the weight and/or the volume of the sample under test and start the measurement cycle.

The AMH 5800 is supplied with the latest state of the art hardware, Windows operating system and exclusive LEE software that makes the most tedious measurements simple and easy to understand. Included in the software is a data collection applications, print options, and a troubleshooting guide.

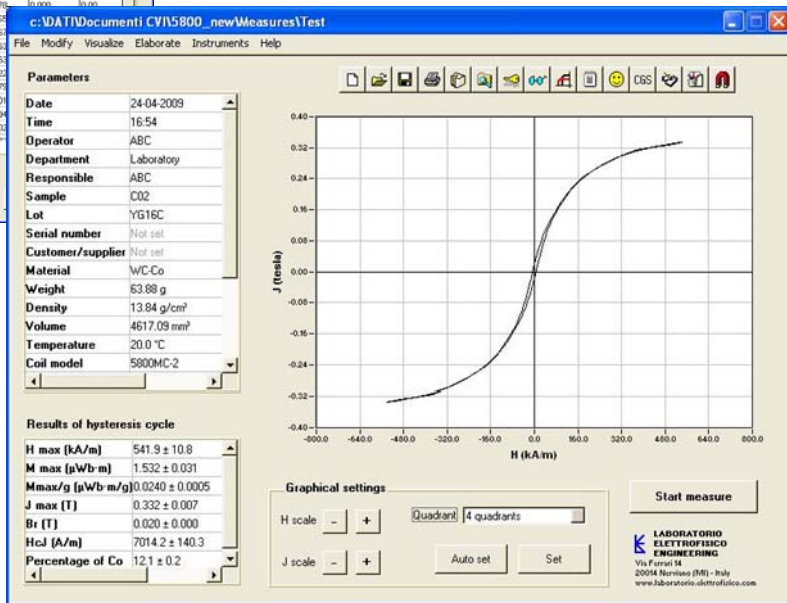
AMH-5800 meets the IEC standards for measurement and is supplied with certification certificate.

# 5800SW: the software to manage the measurement process and the data collection

The program manages the AMH-5800 and the measurement process in a completely automatic way. Data collected are elaborated to give advanced results, with the possibility to compare different curves and obtain statistical elaborations. A virtual Assistant guides the operator during all the phases of the measure and manages the whole process.



Sel	File	Campione	Materiale	Forma provino	Hv (A/m)	Bv (T)	Jv (T)	Br (T)	Ho (A/m)
1	c:\SAI2008-PMu\0004	Ferro	Areello	1475.0	1.408	1.406	0.747	173.12	
2	c:\SAI2008-PMu\0006	Genesco/Scoscoz	Biana	55618.5	1.573	1.503	0.793	184.95	
3	c:\SAI2008-PMu\0003	Ferro	Biana	59952.0	1.567	1.497	0.470	142.79	
4	c:\SAI2008-PMu\0003	Ferro	Biana	53300.2	1.574	1.507	0.405	131.93	
5	c:\SAI2008-PMu\0003 mm1	Ferro	Biana	227.5	0.370	0.370	0.000	0.000	
6	c:\SAI2008-PMu\0003 mm1	Ferro	Biana	404.1	0.526	0.526	0.000	0.000	
7	c:\SAI2008-PMu\0004	Ferro	Areello	4731.0	1.673	1.661			
8	c:\SAI2008-PMu\0004	Genesco/Scoscoz	Areello	4595.1	1.669	1.661			
9	c:\SAI2008-PMu\0004	Ferro	Areello	4595.1	1.669	1.661			
10	c:\SAI2008-PMu\0003	Ferro	Biana	1361.2	0.924	0.922			
11	c:\SAI2008-PMu\0003	Ferro	Biana	301.6	0.479	0.479			
12	c:\SAI2008-PMu\0003	Ferro	Biana	53745.9	1.566	1.501			
13	c:\SAI2008-PMu\0003	Acciaio dolce	Biana	54279.2	1.562	1.434			
14	c:\SAI2008-PMu\0003	Acciaio dolce	Biana	54088.2	1.570	1.503			



## Type of measure

Measure of hysteresis cycle  
Jsat, saturation magnetic moment, weight specific saturation moment  $\sigma_{sat}$ , percentage of magnetic material in the alloy.  
Magnetic units in SI and CGS.

## Setting of measuring parameters

Manual or automatic settings parameters.  
Possibility to insert weight automatically thanks to an electronic scale connected to the system.  
The final list of parameters is shown in the main page

## Set of measures

Curve comparison and possibility of grouping more curves in sets for

## LEE Assistant

Real-time assistant for suggestions or warnings constantly updated about what happens in the machine and in the measure. With a click, the Assistant shows the actual state, with a list of suggestions and/or warnings. When the gravity of errors, anomalies or hardware problems exceeds a certain level, the Assistant comes out automatically. Help file

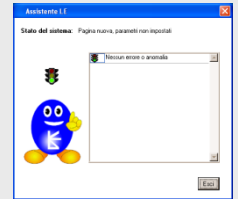


## Printing a report

Possibility to customize the report changing the information and the language: 2 languages are available for the printing  
Possibility to print directly a graphical report on printer or file.  
The report can be opened and saved with other editors, like Microsoft Word™

## Data base and file searching

Data base of measuring files with fast search capability, ordering, selection,...  
Full compatibility with all main elaboration program, such as Microsoft Excel™.



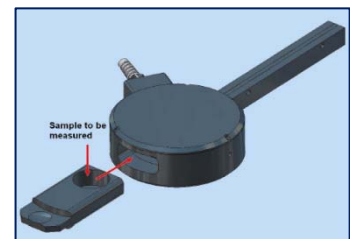
## SPECIFICATIONS

<b>Measurable materials</b>	Semihard and Cemented Carbides
<b>Measurable quantities</b>	Msat, Hc, Jsat, weight specific saturation moment asat, %Co
<b>H measurement</b>	
Accuracy	Gaussmeter: 0.25% reading + 0.1% range Probe: 0.5% linearity
Resolution	0.1 Oe (300 Oe range), 1 Oe (3000 Oe range)
<b>Hc measurement</b>	
Accuracy	±1% for Hc>500 A/m
<b>Ms measurement</b>	
Accuracy	±1% on reading
Resolution	10 <sup>-4</sup> μWbm (10 <sup>-10</sup> Tm <sup>3</sup> , 10 <sup>-1</sup> emu)
<b>Sample Size</b>	
With Coil 5800 MC-1	Ø 37 mm x h 19 mm (1.45" dia x 0.75" H)
With Coil 5800 MC-2	Ø 27 mm x h 13.6 mm (1" dia. x 0.6" H)
<b>Poles diameter</b>	100 or 120 mm (4" or 4.7")
<b>Max H field</b>	
With LP-100 mm pole	9700 Oe (776 kA/m)
With LP-120 mm pole	7750 Oe (620 kA/m)
<b>Test time</b>	≤1 minute
<b>Operating temperature range</b>	10°C to 35°C
<b>Communication port</b>	RS-232 / USB2
<b>Main electrical cabinet</b>	
Power supply	220 V, 50 / 60 Hz
Dimensions	535x655x550 mm (21"x 26"x 2 2")
Weight	58.5 Kg (129.3 lb)
<b>Fluxmeter</b>	<b>Digital Flux</b>
Ranges	(1, 2, 5, 10, 20, 50, 100) x 2000 μWb
Resolution	From 1 μWb (range 1) to 100 μWb (range 100)
Accuracy	± 0.5%
Drift	Less than 1digit/minute
Input impedance	10kΩ x range
Communication	RS232/USB
<b>Magnetic Yoke (Electro Magnet)</b>	<b>LEP/100-4S</b>
Max Pole diameter	120 mm (4.7")
Movement operating	Manual
Poles setting	Micrometric
Dimensions	330 x 410 X 491 mm (12.9" x 16.1" x 19.3")
Weight	350 kg (approx.) (780lbs)
<b>PC and Software</b>	
PC	Latest PC processor class with LCD Flat Screen Monitor
Operative system	Windows XP Professional O.S.
Software	5800SW
<b>Manuals and Documentation</b>	Instruction manual

## STANDARD CONFIGURATION

- Main cabinet equipped with Fluxmeter, Gaussmeter, DC power supply and polarity control
- Electromagnet
- Hall Probe
- Inductive Sensor Assembly with sample holder
- Digital scale
- Latest PC processor class with Windows XP OS and LCD Flat Screen Monitor

## ACCESSORIES



*Measuring Coils*



*Poles*



*Standard sample*