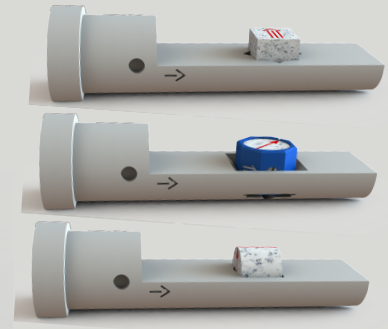
PUMA

IMPULSE MAGNETIZER

AGICO
ADVANCED GEOSCIENCE INSTRUMENTS COMPANY

PUMA is a precise impulse magnetizer that allows standard-sized paleomagnetic specimens to be magnetized in any orientation. Its sophisticated design made possible to set the intensity of magnetizing field precisely in the range from 1 mT up to 5 T.



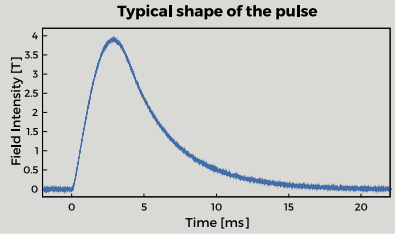
Features

- Wide range of magnetizing field intensities achieved in a single coil
- Precise setting of pulse intensity with respect to the current temperature of the coil
- Once triggered, the actual pulse intensity measured and displayed
- High field homogeneity over entire specimen volume
- Supplied with various holders allowing positioning of standard-sized paleomagnetic specimens in 18 orientations
- Stand-alone or computer-controlled instrument that can optionally work in conjunction with AGICO JR6 Spinner Magnetometer
- Built to last from high-end components

Applications

- Characterization of magnetic remanence carriers in rock and environmental specimens
- Acquisition of isothermal remanent magnetization (IRM) curves and their decomposition into various IRM components
- Evaluation of magnetic field leading to magnetic saturation and coercivity of remanence through back-field demagnetization
- Anisotropy of isothermal remanent magnetization (AIRM) for evaluating magnetic fabric carried by ferromagnetic (s.l.) minerals

Typical shape of the pulse



Specifications

Field intensity
1 mT - 5000 mT (5 Tesla)

Magnetizing coil diameter
41 mm

Pulse duration
~ 8ms

Field homogeneity
< 4% over size of specimen

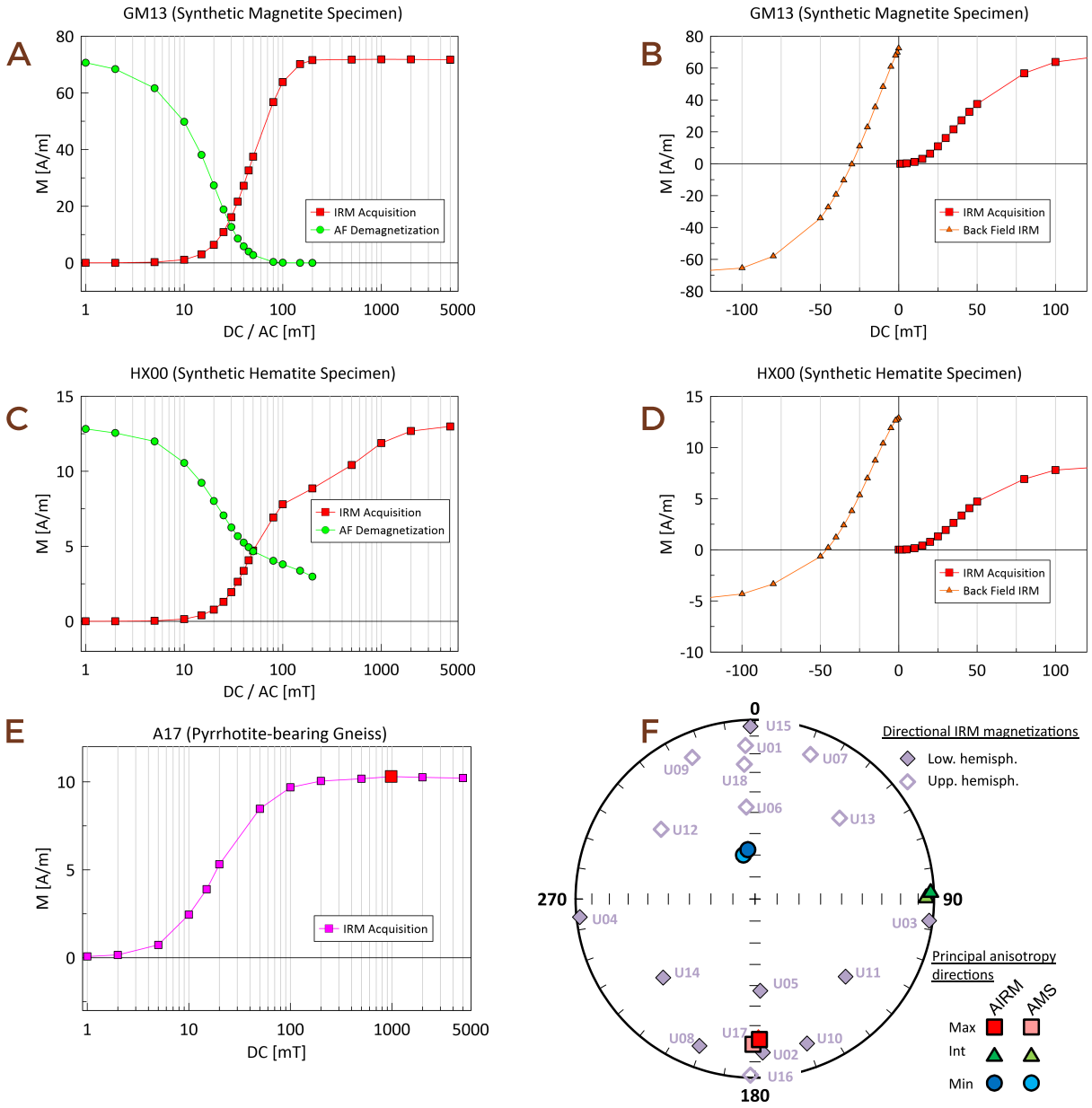
Field intensity precision
<5% of set value

Specimen Size
Cylinder Diameter 25.4±1 mm
Length up to 23.0 m
Cube Up to 23.0 mm

Dimensions, mass
700x450x420mm, ~77 kg

Power
230, 120, 100 V, 50/60 Hz, 1000 VA

LABORATORY INSTRUMENTS FOR MEASUREMENT OF MAGNETIC PROPERTIES OF ROCKS



Synthetic magnetite in plaster of Paris: (A) The curves of acquisition of isothermal remanent magnetization (IRM) performed using PUMA and the corresponding alternating-field demagnetization (AGICO LDA5 AF Demagnetizer), (B) Back field demagnetization curve performed by magnetizing the specimen in the opposite direction.

Synthetic hematite in plaster of Paris: (C) IRM acquisition and AF demagnetization curves, (D) Back field demagnetization curve performed by magnetizing the specimen in the opposite direction.

Pyrrhotite-bearing gneiss: (E) IRM acquisition curve showing the saturation at ca. 1 T, (F) The spherical projection of 18 directional magnetizations at 1 T highly deviating from the symmetric pattern of the magnetization directions design due to very high specimen anisotropy. The principal directions of the fitted anisotropy of IRM (AIRM) tensor compared the principal directions of the low-field anisotropy of magnetic susceptibility (AMS, measured using AGICO MFK2 Kappabridge).

All artificially imparted magnetizations were measured using AGICO JR6-A Spinner Magnetometer.

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