



# SATMAGAN 135

A fast, accurate and reliable instrument for measuring the magnetite content in samples.

Accurate Measurement of Magnetic Material

Instant Analysis

Reliable

Cost Effective



Accurate measurement of ferrous material content in iron ore is extremely difficult and time-consuming by conventional chemical methods in the laboratory. This is overcome by measuring the total magnetic moment of the sample in a high magnetic field thereby measuring the magnetite content in the sample accurately, reliably and faster than measurement based on susceptibility of the material.

For over 40 years Satmagan has been in use in the mining industry around the world and has been proven to be a fast, accurate and reliable instrument for measuring the magnetite content in samples. With a measuring time of roughly one minute and an accuracy of 0.4 % or less Satmagan is considered to be an ideal instrument for securing an optimal return on investment.

The principle behind the Satmagan 135 is to measure the force acting on the sample in a magnetic field with a spatial gradient. The magnetic field is strong enough to saturate the magnetic component in a sample. A Satmagan can be used to measure any sample with only one magnetic component. Alternatively, it can measure a component with a dominant concentration and/or dominant specific magnetic moment.

Once Satmagan is calibrated it is easy and fast to use. Therefore it is an ideal instrument for analyzing mixtures of magnetic and non-magnetic components.

## Features

**Maximum Error**  
0.4% Of The Measurement Range (The Result Can Be As Good As 0.1%)

**Analysis Time**  
Roughly One Minute

**Powder, Granular Or Solid Samples Used For The Measurement**

**Stabilized For Voltage And Temperature**

## Applications

The Satmagan was designed especially to measure magnetite in iron ore concentrations. It can be used in various applications:

Analysis of magnetite in iron ores, concentrates and tailings

Control of copper and nickel smelting by analyzing magnetite and other ferromagnetic oxides in slag

Determination of martensite or ferrite in austenitic steels

Determination retained austenite in steels

Control of magnetizing roasting

Control of oxidizing roasting of carbonate ores

Controlling the heat hardening of pellets

Control of iron ore sintering



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## Technical Data

Materials for Analyses	Magnetite and magnetic iron can be analyzed. The sample can contain only one magnetic component, or have one component with a dominant concentration and/or specific magnetic moment.
Type of Sample	powder, granular or solid samples maximum volume of sample 1.2 cu cm (0.073 cu inch) recommended sample size: sample container filled up grain size: An average grain size greater than 150um (100 mesh) does not disturb the measurements. For finer materials, the Satmagan gives slightly lower readings, so a different calibration curve is required.
The Range of Measurement	Fine Range: 0 to 100 % by magnetite weight Course Range: 0 to 200 % by magnetite weight for stronger magnetic materials
Reproducibility	0.2% by weight
Sample Containers	An acrylic container has a sample volume of 1.2 cu cm (0.073 cu inch). Its plug is made of polyethylene. Average weight: container 1010mg, plug 543mg. The weight distribution of sample containers is approx. +/- 5mg, corresponding to an error +/- 0.12% in a 4g sample. The weight distribution of plugs is approx. +/- 1mg, corresponding to an error of +/- 0.08% in a 4g sample.
Operating Temperature Range	+10°C to +40°C (+50°F to +100°F)
Ambient Humidity	Up to 95% relative
Controls	power switch range switches sample weight balancing knob crank for turning magnet sample magnetic control knob
Line Voltage	210...240V or 110...130V (to be specified when ordering)
Line Frequency	50 to 60Hz
Power Consumption	10W

## Physical Specifications

Overall Dimensions	length 64 cm (26 in.), width 34 cm (13.5 in.), height 37 cm (15 in.), weight 63 kg(145 lbs.) net.
Export Package	length 95 cm (38 in.), width 57 cm (22 in.), height 57 cm (22in.), weight 95 kg (210 lbs.) gross
CE Compliance	Yes



Satmagan 135 front view



Satmagan 135 rear view