

DATASHEET



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

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.

ACCURATE MEASUREMENT OF MAGNETIC MATERIAL

INSTANT ANALYSIS

RELIABLE

COST EFFECTIVE

ACCURATE MEASURING

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.

TIME EFFICIENCY

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.

FUNCTIONALITY

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.

EASY CALIBRATION & INSTALLATION

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.

YOUR AUTHORISED DISTRIBUTOR

X SELMATEC

NORWAY

+47 63 92 84 00
sales@selmatec.no
www.selmatec.no

DENMARK

+45 48 18 90 33
sales@selmatec.dk
www.selmatec.no

SWEDEN

+46 19-670 81 00
sales@selmatec.se
www.selmatec.se

FINLAND

+358 50 4093175
sales@selmatec.fi
www.selmatec.fi



PHYSICAL SPECIFICATION

DIMENSIONS	L	640 mm (26 in)
	W	340 mm (13.5 in)
	H	370 mm (15 in)
NET WEIGHT		63 kg (145 lbs)
EXPORT PACKAGE	L	950 mm (38 in)
	W	570 mm (22 in)
	H	570 mm (22 in)
	WGT	95 kg (210 lbs)

ENVIRONMENT & POWER

LINE VOLTAGE	210...240V or 110...130V (to be specified when ordering; can be changed on field)
LINE FREQUENCY	50 to 60 Hz
POWER CONSUMPTION	10 W
CONTROLS	- Power switch - Range switches - Sample weight balancing and magnetic control knob - Crank for turning magnet

OPERATING ENVIRONMENT

OPERATING TEMPERATURE	+10°C to +40°C
AMBIENT HUMIDITY	Up to 95% relative

TECHNICAL SPECIFICATION

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. Coarse Range: 0 to 200% by magnetite weight for stronger magnetic materials (e.g. metallic iron).
--------------------------	--

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.
-------------------	--

FEATURES

Maximum Error 0.4% of the measurement range (the result can be as good as 0.1%)

Analysis time is 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:

The 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

Rapiscan®
systems
An OSI Systems Company

1. Approximate Values 2. Stated performance as measured by Rapiscan® Imaging Validation Test Kit

Rapiscan® Systems is ISO 9001:2015 Certified

Rapiscan® Systems' cabinet X-ray products comply with all applicable U.S. FDA and equivalent international regulatory agency requirements, contained in the cabinet X-ray radiation safety performance standard [21 CFR 1020.40] and the general performance standard [21 CFR Part 1010] as well as IEC standard 61010-2-091. Rapiscan® baggage and parcel inspection systems radiation emission leakages are well below the required regulatory limits with less than 1µSv/hr at 10 cm from all surfaces of cabinet X-ray.

With continual development of our products Rapiscan® Systems reserves the right to amend specifications without notice. Product pictures are for general reference. Please note that due to US laws and regulations, not all Rapiscan® products are available for sale in all countries without restriction. Please contact your Rapiscan® Systems sales representative for more information.

DS-SATMAGAN135-001