MJC 210 - Single Sheet Tester

MJC 210 – Small tabletop Single Sheet Tester for the AC hysteresis measurements

• Operating Principle

A soft magnetic single sheet sample, such as electrical steel, is placed in the tester. The tester consists of a coil system to magnetize the sample with an alternating field strength H and a pick-up coil to sense the sample´s polarization. Two laminated C-yokes close the magnetic circuit. The yoke is a high-quality lamination with low losses which has no significant effect on the measurement.
The tester MJC 210 is used with the powerful Remacomp models which tests the BH-loop and evaluate magnetic quantities, such as core losses, peak polarization, amplitude permeability, remanence, coercive field strength etc.

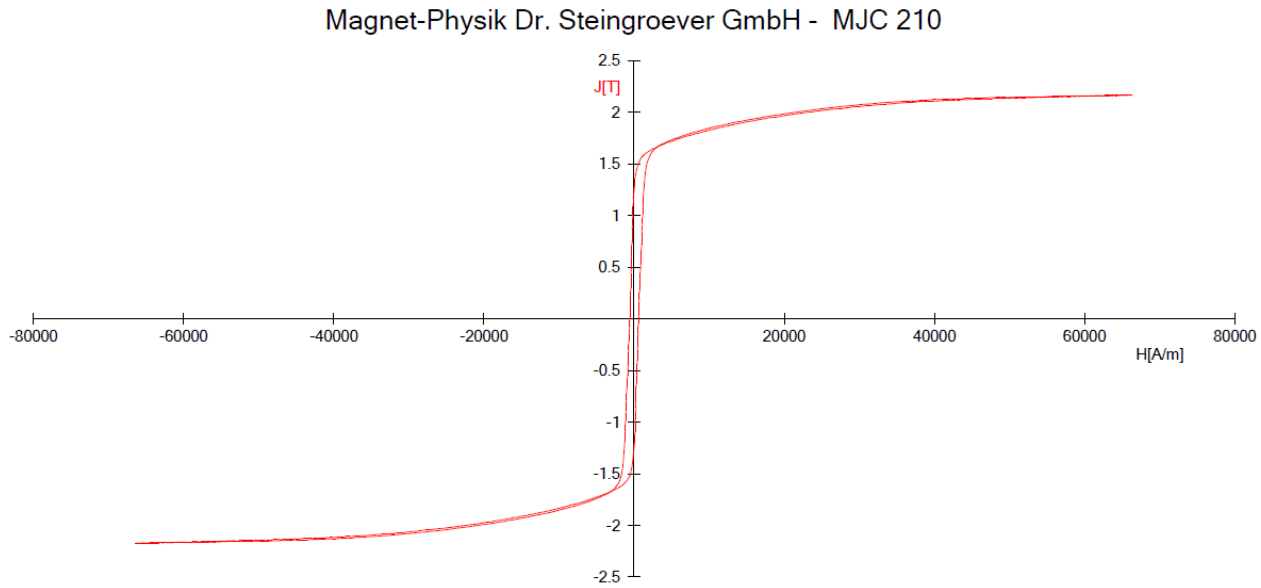
A smart opening mechanism allows fast sample mounting, and a spring mechanism reduces the mechanical stress on the sample.

The operation principle is related to the large 500 mm x 500 mm tester of IEC 60404-3 but applied to smaller size of 210 mm x 210 mm. The conformity to IEC 60404-3 is demonstrated by a comparative test below. The small size makes it more handy, less expensive and increases the measuring range in frequency and amplitude compared to the 500 mm x 500 mm one. Also, less sample material is needed, which makes it perfect for research and quality control applications.

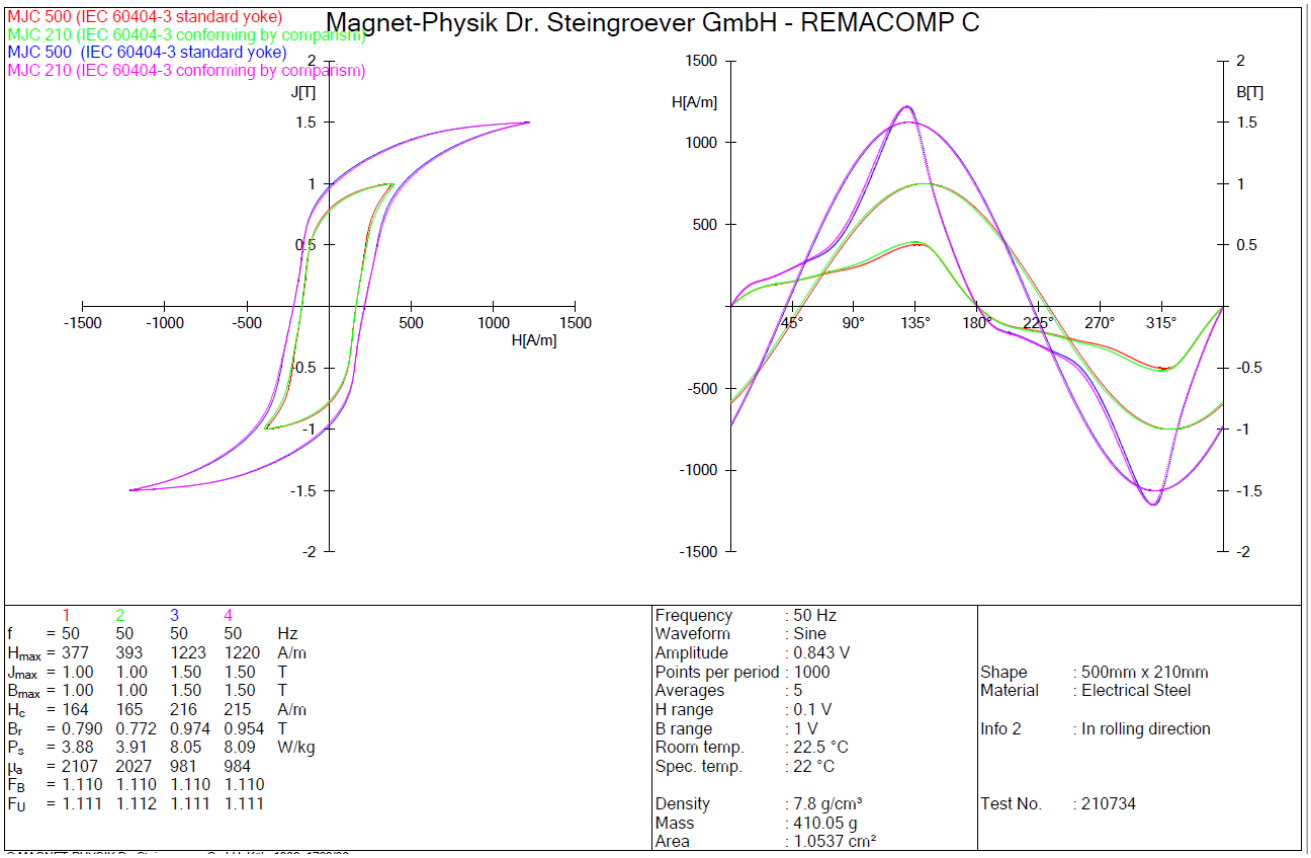
• Features

Correlated to IEC 60404-3
Compatible with Remacomp C - 1200, C - 1207, C - 2200 and C – 2207

Frequency Range:	DC to 1000 Hz (depending on sample and excitation)
DC H_max:	22 kA/m (10 A fused)
AC H_max:	30 kA/m continuous, 66 kA/m single shots
Sample length:	min. 210mm
Sample width:	min. 100mm, max. 210mm
Sample thickness:	max. 1.5mm



High excitation example of an electrical steel strip tested at 50 Hz in single shot mode with Remacomp C-1200. The current driven was 30 A.



	1	2	3	4	
f	= 50	50	50	50	Hz
H_{max}	= 377	393	1223	1220	A/m
J_{max}	= 1.00	1.00	1.50	1.50	T
B_{max}	= 1.00	1.00	1.50	1.50	T
H_c	= 164	165	216	215	A/m
B_r	= 0.790	0.772	0.974	0.954	T
P_s	= 3.88	3.91	8.05	8.09	W/kg
μ_s	= 2107	2027	981	984	
F_B	= 1.110	1.110	1.110	1.110	
F_U	= 1.111	1.112	1.111	1.111	

Frequency	: 50 Hz
Waveform	: Sine
Amplitude	: 0.843 V
Points per period	: 1000
Averages	: 5
H range	: 0.1 V
B range	: 1 V
Room temp.	: 22.5 °C
Spec. temp.	: 22 °C
Density	: 7.8 g/cm³
Mass	: 410.05 g
Area	: 1.0537 cm²

Shape	: 500mm x 210mm
Material	: Electrical Steel
Info 2	: In rolling direction
Test No.	: 210734

Comparison between MJC 210 and MJC 500. The same sample was tested in both yokes. The results achieved in both yokes correlate to each other. This demonstrates conformity of MJC 210 to IEC 60404-3.

Due to continuous product improvement, specifications are subject to change without notice.

MAGNET-PHYSIK Dr. Steingroever GmbH
Emil-Hoffmann-Straße 3, 50996 Köln, Germany
Telefon: +49 2236 3919-0 ▪ Fax: +49 2236 3919-19
info@magnet-physik.de
www.magnet-physik.de

MAGNET-PHYSICS Inc.
6330 East 75th Street, Suite 224, Indianapolis, IN 46250, USA
Telefon: +1 317 577 8700 ▪ Fax: +1 317 578 2510
info@magnet-physics.com
www.magnet-physics.com

