µ - METER

LENZING INSTRUMENTS

FRICTION MEASUREMENT

In addition to the measurement and analysis of filament tension forces, the calculation of coefficients of friction becomes more and more important in textile practice.

The strive for higher manufacturing speeds, the constantly growing demands on the quality of the products and new production processes all require exact knowledge of the fibre characteristics.

The friction behaviour of fibers and yarns is to be considered as a key parameter in many processes.

Exact knowledge and control of the behaviour of fibers and yarns is of major importance for filament manufacturers and textile machine producers.

The **µ-Meter** testing instrument for the examination of coefficients of friction is the result of continuous and consistent product improvement through intense feedback from the market.

It represents a flexible system which permits effective use with respect to the particular measurement tasks and offers the basis for easily adaptable extensions.

The apparatus for the measurement of coefficients of friction consists of three functional modules:

- **µ-Meter**
- **Filament take-off device**
- **Data collection and analysis system**

Developed and manufactured by Honigmann, Wuppertal / Germany

FILAMENT TESTING

The Testing Company

qualityaustria
SYSTEM CERTIFIED
ISO 9001:2008 No.00894/0

µ - METER

FRICTION MEASUREMENT

Description

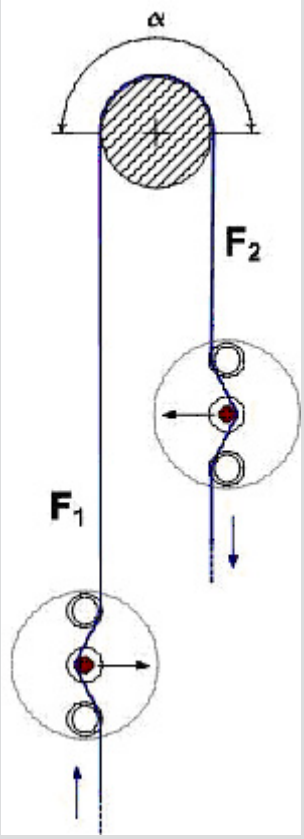
The **µ-Meter** testing instrument for the examination of coefficients of friction is the result of continuous and consistent product improvement through intense feedback from the market.
It represents a flexible system which permits effective use with respect to the particular measurement tasks and offers the basis for easily adaptable extensions.
The apparatus for the examination of coefficients of friction provides rapid, exact and reproducible measuring results.

The opposite drawing shows a schematic presentation of a measuring arrangement typical for determination of friction coefficients.
The test yarn is pulled over a friction body at a certain speed and a certain angle.The tensile force is measured before and behind this friction body. The friction coefficient is calculated from the Eytelwein formula.

Eytelwein formula:

$$\mu = \frac{1}{\alpha} \ln \frac{F_2}{F_1}$$

µ ..... friction coefficient
F1 ....input tensile force
F2 ....output tensile force
á .... angle of contact



Application examples:

- friction values of thread guide devices
- stick-slip measurements
- friction coefficients of filaments
- analyzing the uniformity of surface preparations
- continuous measurement of friction coefficients over yarn length
- measurement series to determine the concentration of the finish or sizing
- thread/thread measurements
- examinations of dust and friction generated dust

Optional:

- electronically controlled friction body heating
- take-off device for stick-slip measurement
- extended filament / filament measurement
- angle adjusted adapter for filament / filament measurement
- preparation nozzle
- version for sewing yarns

Technical data:

- speed range: 0 - 300 m/min
- tensile force: max. 200 cN (higher on request)
- power supply: 230 / 115 V AC, approx. 100 W
- dimensions W x H x D (mm): 534 x 297 x 400
- weight: approx. 20 kg

Measuring methods:

- yarn / ceramic friction
- yarn / steel friction
- yarn / glass friction

with different surface conditions

Software:

- based on Windows operating software
- numerical and graphical information
- friction value, F_1, F_2 tensile forces, take-off speed
- standard statisics (mean, max, min, std, CV)
- FFT-analysis
- reporting
- generates files for editing and further processing of data with other programs, e.g. MS Excel

Technical data and pictures are subject to change!

Lenzing Instruments GmbH & Co. KG
A-4851 Gampern, Austria
E-mail: team@lenzing-instruments.com
www.lenzing-instruments.com

Textechno Herbert Stein GmbH & Co. KG
D-41066 Mönchengladbach, Germany
E-mail: info@textechno.com
www.textechno.com