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# AUTOMATED DTEX MEASUREMENT ACW 600

Fineness (dtex, den) and evenness are two main key figures for the quality of filament yarns. But the time gap between the moment they leave the spinning position and their determination in the laboratory can cause the production of large lots of low quality yarn.

Such losses can be avoided. The special design of ACW 600 in combination with the DVA module realizes the measurement of fineness and evenness of filament yarns only moments after they have left the spinning position – enabling fastest possible reaction to production irregularities.

The instrument shows an exceptionally high level of automation and flexibility since all essential parts of the measurement device are totally computer controlled – that includes fast change of testing prarameters, automatic data transfer, optimized handling and a sophisticated evaluation software including an expert system.

This expert system automatically monitors the quality of the yarn. That liberates experts in the laboratory from evaluating the graphs of most individual samples, which is enormously time consuming and prevents them from taking care of further quality issues.

ACW 600/DVAstands for faster testing, higher accuracy, automatic string up and sample removal, integrated automatic calibration, totally computer controlled and exceptionally easy handling. That means efficient process control in terms of high speed testing of differing yarn types with automatic data transfer in an instream process. ACW 600/DVA conforms to ASTM D6612 and D6587.

## Scope

Automated evaluation of fineness and evenness of filament yarns by an expert system immediately after their production, with the aim of:

- Fast reaction to irregularities
- Independence from subjective influence in the judgement of measurementt results
- High percentage of production tested
- Minimal man power for operation
- No impact from moisture on yarn (spin finish)
- Evenness and fineness of the same sample within one test run

## Method

Denier is obtained by automatically cutting a certainlength of yarn and weighing it onto an integrated balance – ACW 600 – in accordance with ASTM D6587.
Evenness is determined by capacitive sensors. These sensors are automatically chosen by the system according to the actual fineness – DVA – in accordance with ASTM D6612

# Tecnical specifications

## ACW 600: Automatic Cut & Weigh

- Denier range
  up to 8500 den (9444 dtex)

- Testing speed
  up to 1200m/min

- Testing time
  20-35s/test (depending on test modus, cut length and yarn speed

- Accuracy:
  ± 0,1%

- Sample feeding:
  Automatic string up and sample removal

- Pretension:
  Self adjusting for textile yarns
  Servo controlled yarn break for BCF-yarns

- Calibration:
  Fully automatically in-between test runs

- Power supply:
  220 V / 50 Hz or 110 V / 60 Hz, 1000 W

- Computer system:
  Evaluation and control system consisting of:
  PC with Windows operating system, keyboard, mouse and instruments cable

- IInstruments software:
  Data storage for long time analysis
  Product table
  Network capabilities
  Bar code sample identification

- Air supply:
  90 psi instrument air, 40 scfm
  (6 bar, 1.2 Nm³/min)

- Options:
  DVA module
  Network communication
  SESS automatic bobbin changer

- Dimensions:
  H x W x D: 134 x 95 x 57 cm

## DVA Denier Variation Accessory (Optional module)

- Reproducibility
  +/- 0,1%

- Denier range:
  7 - 600 den (higher ranges onrequest)

- Results
  Within one test run fineness, evenness and CV% are obtained. Additional special process key figures (BGT, DFV) for the continuously monitoring expert system are given.

- Testing speed:
  Up to 900 m/min

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