



The quality of interlaced (entangled) yarns is determined by the number of nodes over a certain length, by their regularity and their tenacity, which is an essential criterion for the behaviour of the filament during downstream process steps such as weaving and knitting.

RAPID 600 V tests interlaced yarn by means of a vertically moving pin. The pin is inserted into the running yarn, thereby detecting the entangled nodes. This physical testing method enables simultaneous determination of the number of nodes per length unit, the absolute node distance as well as checking their tenacity in accordance with ASTM D4724.

By using the mechanical pin system also the quality of the interlaces is controlled, since only nodes which hold a tension defined by the operator are accepted as valid interlaces.

The instrument itself is designed in a robust way. Therewith, it does not need to stay exclusively in a laboratory - it can even be operated close to the production in order to test as early as possible after the filament yarn has left the production. That way, the results of the interlace testing are evaluated faster and reactions to irregularities in the interlacing process can be taken much sooner, i.e. within minutes.

RAPID 600 V features total computer control with automatic servo controlled pretensioning, string-up and sample removal. It allows faster, more accurate and efficient testing of entangled filament yarns, with major labor savings and exceptionally easy handling.

Scope:

Determination of the number of interlaces per meter filament yarn according to ASTM D4724.

Method:

The yarn is automatically strung up and guided through the instrument. Permanent pretensioning is accomplished by means of a servo electro-mechanical pretension device. Thereafter, the yarn passes a detection unit with vertical pin movement. The pin is inserted into the yarn for detection and counting of interlace nodes, the absolute distance between them as well as for quality validation in terms of tension buildup.

Results:

A graphic chart with node force trend is visible throughout the measurement, with indication of nodes of requested tenacity as well as of weak nodes. After the measurement, results are presented with full statistics, including nodes per length unit, absolute distance between nodes and much more.

Measured filament yarn types:
POY, FDY, DTY, BCF,...

Denier range:
15 - 4000 den
(other ranges on request)

Nodes per meter:
0.5 - 180 n/m

Testing speed:
0 - 50 m/min

Testing time:
Approx. 30 sec./test

Tensiometer
(for tenacity of nodes):
0 - 150 g
(higher ranges on request)
accuracy ± 0.1 g

Control system:
Totally computer controlled with an external evaluation unit

Sample feeding:
Automatic string-up and sample removal

Dimensions:
Length: 565 mm
Width: 1040 mm
Height: 545 mm
Weight: 65 kg

Power supply:
230/115 VAC $\pm 10\%$
50/60 Hz, 1000 W

Air supply:
90 psi instrument air
20 scfm (6 bar, 0.6 Nm³/min)

Optionally available:

- Serial port communication with external source
- Interface for Lenzing Instruments' SESS or other automatic bobbin changers
- Bar code sample identification
- OPC UA interface

Technical data and pictures are subject to change.