GEL INSTRUMENTE AG

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Gelnorm® MED010, Article No. 100.160 Software V20

(On request, the Gelnorm® MED010 Software can be pre-installed on an HP Netbook instead)

For establishing the critical Temperature of fibre glass reinforcement Tg

Establishment of the critical temperature (softening temperature) of fibre glass reinforcement for laminates at the point of loss of stiffness (loss of strength) in bend test specimen as a function of the temperature.

GELNORM®- MED 010 is new measuring instrument for establishment of the critical temperature (softening temperature) of fibre glass reinforcement for laminates at the point of loss of stiffness (loss of strength) in bend test specimen as a function of the temperature.
Model Med010 is the outcome of further development, to provide an extremely economical means for the thermo mechanical analysis similar to the “conventional” examination of the TMA of laminate material. The critical temperature measured is an important parameter which shows good correlation with the TMA established by method B in accordance with DIN EN 61006 – IEC 1006.

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System layout

- **MED010**

Precision measuring and regulating unit
Heat regulator with adjustable gradient
1 °C … 10 °C per minute
Display of force setting
0,00 N … 50,00 N
Measurement input for the measured temperature (in oil)
0,00 °C … 250,00 °C
USB interface
Power input; 100 … 240 VAC

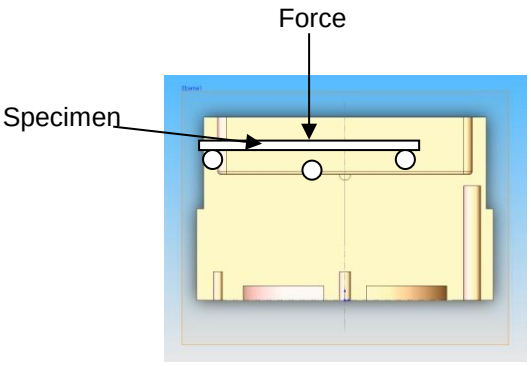
- **Stand with linear drive**

Very sensitive force setting using hand wheel
Height setting, 20 mm… 350 mm
Bending beam force sensor,
0,00 N … 50,00 N
Accuracy, 0,25%
With Calibration Certificate
Housing in anodised aluminium

Connection
4 Pole plug of the force transducer

- **Electric heating**

Power, 230 VAC, 400 W
Safety cut out at 270 °C



Oil bath for specimen

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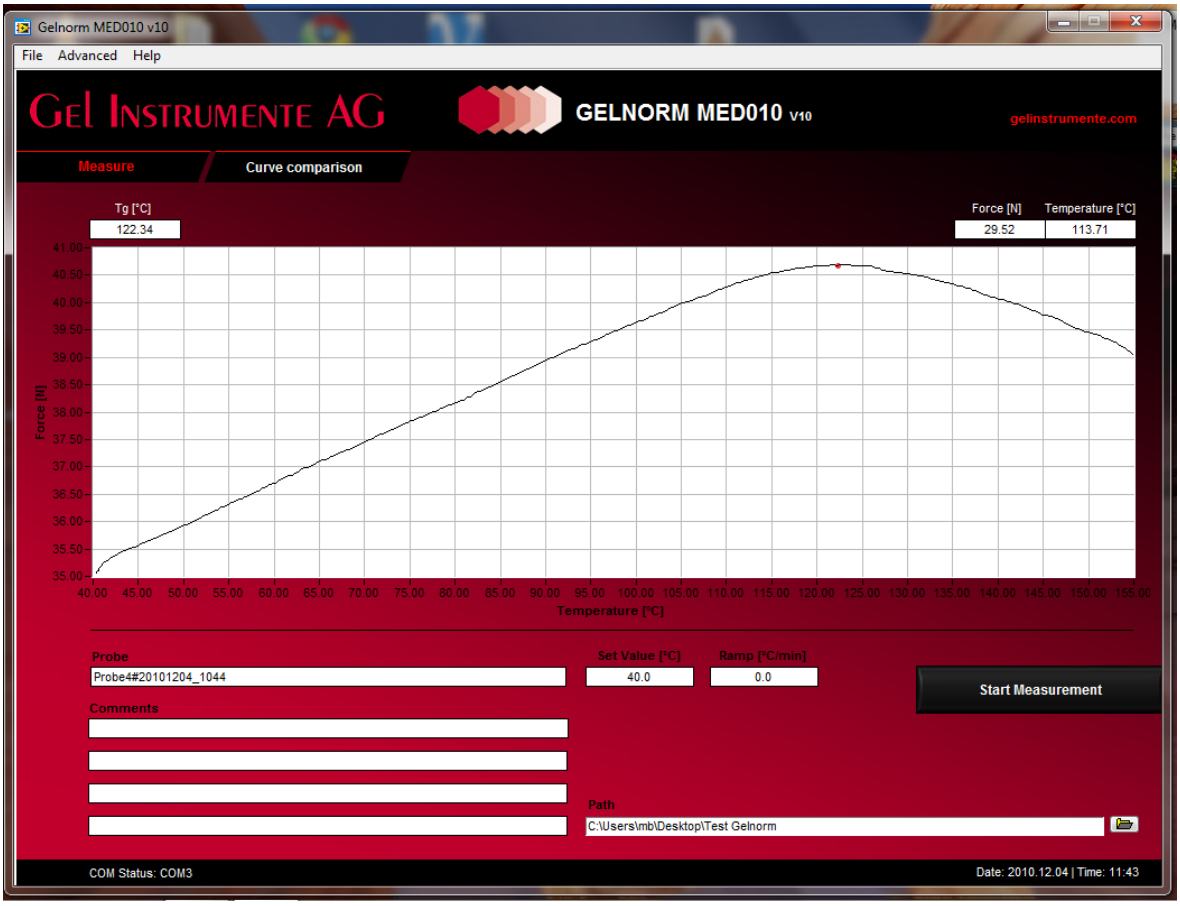
A special heater has been developed to match the requirements of this measuring equipment. The standardised specimen (5-10 x 1-4 x approx. 72 mm, W x T x L) is placed inside the heater on a support bracket. The relevant part of the heater is filled with silicon oil to achieve optimum temperature transfer to the specimen. A force transducer applying a specific force in the range between approx. 35 and 45 N is placed on the middle of the specimen. At the start of the measurement a temperature regulator controls the temperature change in such a way that the specimen is heated at an adjustable rate between 1 °C … 10 °C° per minute, until the desired temperature (e.g. 200°C) is reached. During the entire measuring process a diagram of force against temperature is shown on the computer. The pre-setting of the parameters required for the measurement (temperature range, maximum temperature, rate of heating, data acceptance, etc.) is carried out before the measuring process starts, direct on the computer. During the procedure, from the first input the temperature at which the strength of the specimen starts to fall is established. The measuring data is stored and can be evaluated later using MS-Excel. The individual data values can be compared with one another.

On request, the Gelnorm® MED010 Software can be pre-installed on an HP Netbook instead.
The software shows, on the X/Y axes, the temperature / force values and calculates the Tg value where the zero point is passed for the first time. The Tg value is displayed digitally and optically by a red dot on the curve. The resolution of the temperature and force measurements is 0.001. the mean value is calculated from 25 measurements taken at 200 ms intervals.
The specimen name, together with 4 lines of commentary and the measured values is stored in a csv-file. The user, therefore, is able to process the data also in Excel. Customer-specific evaluation processes can be applied at any time.



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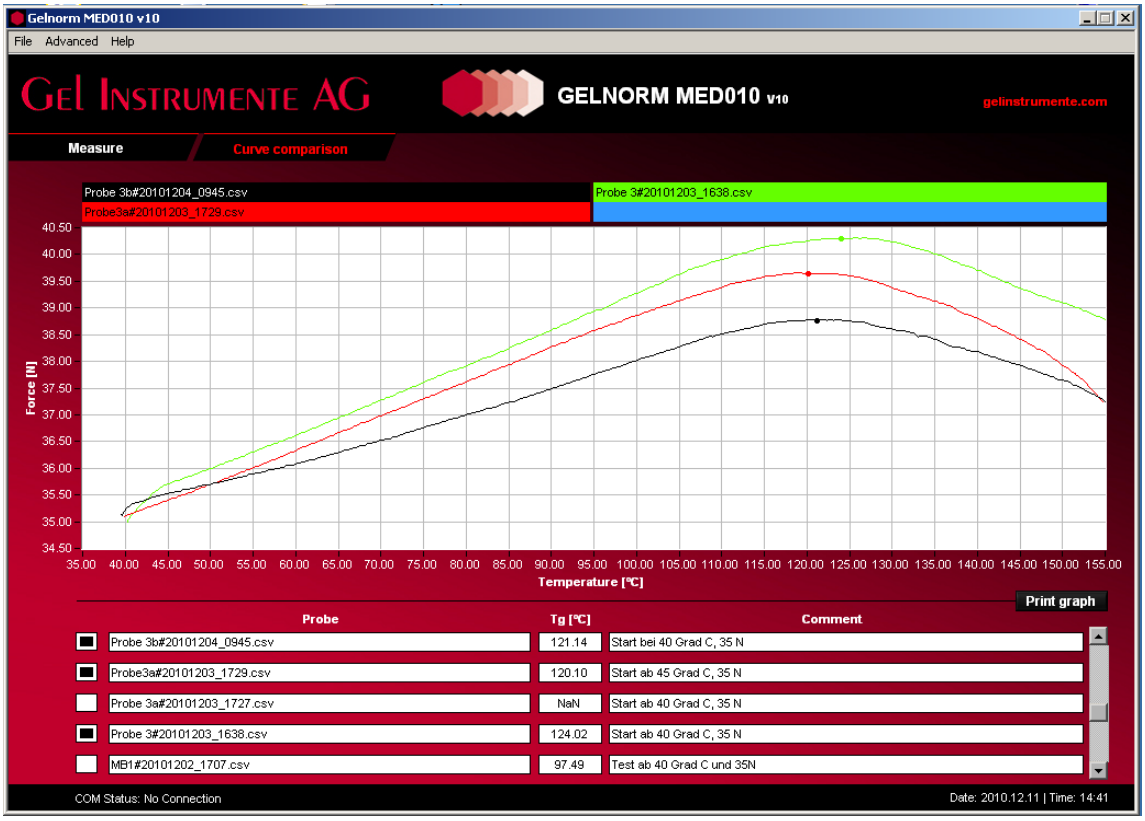
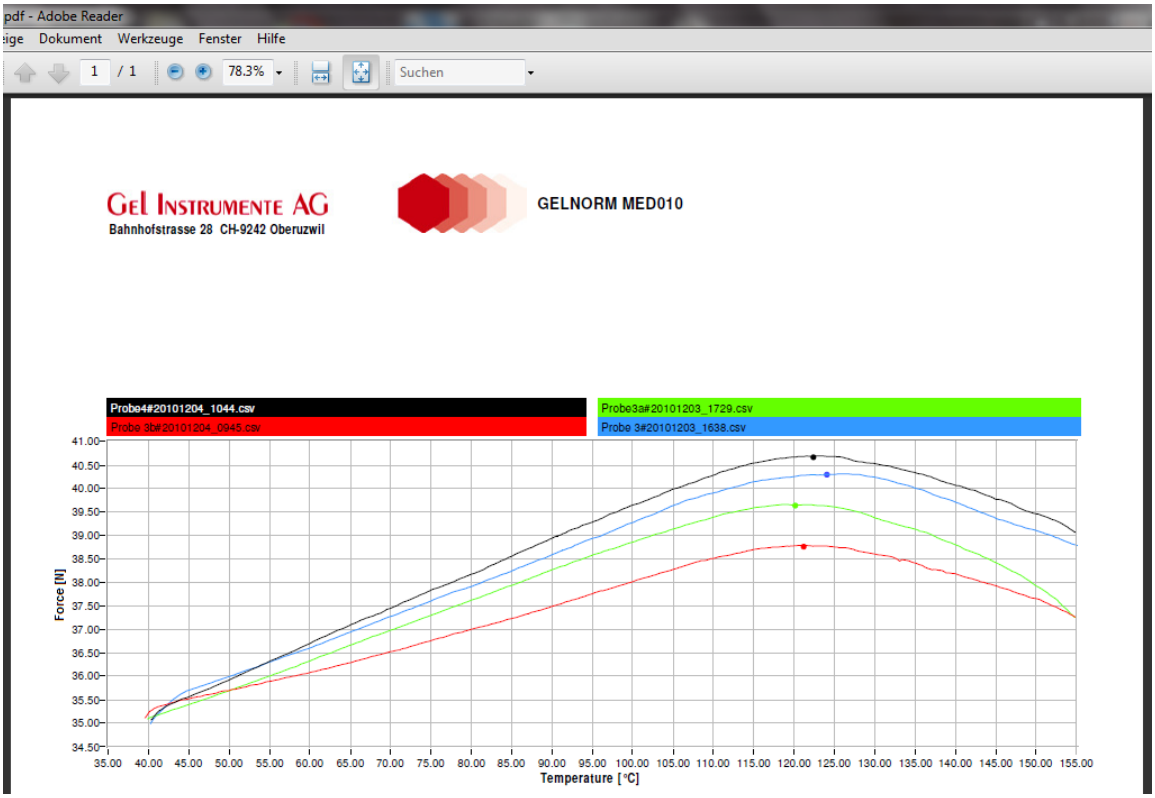
The results of a series of tests can be compared directly using the Software. The display shows the specimen name, commentary 1 and the calculated Tg value.



The data can also be converted and printed in PDF format.



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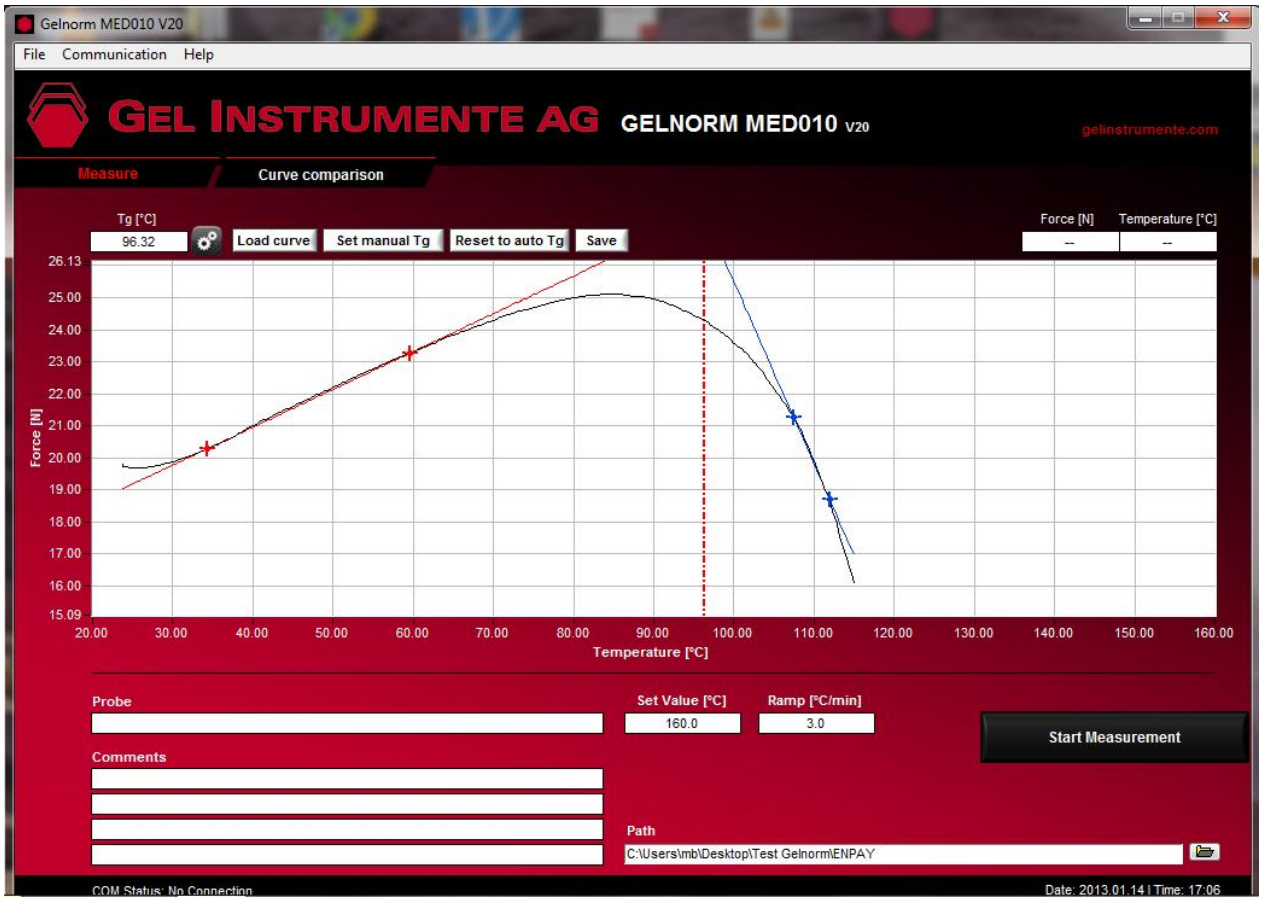
New function in the software V20

With the function "load curve" you can upload and modify the Tg from measured data.

You can move the tangents at the + Points with the mouse. The resulting Tg point can now be saved with the measured data. The Reset to auto Tg at any time is possible.



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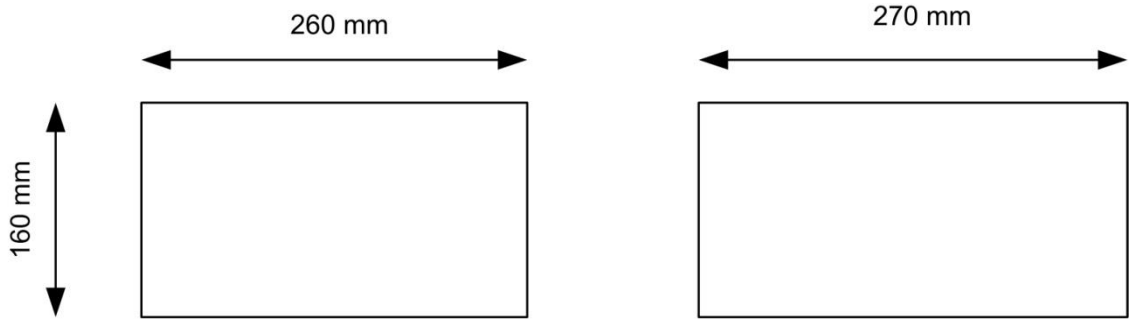
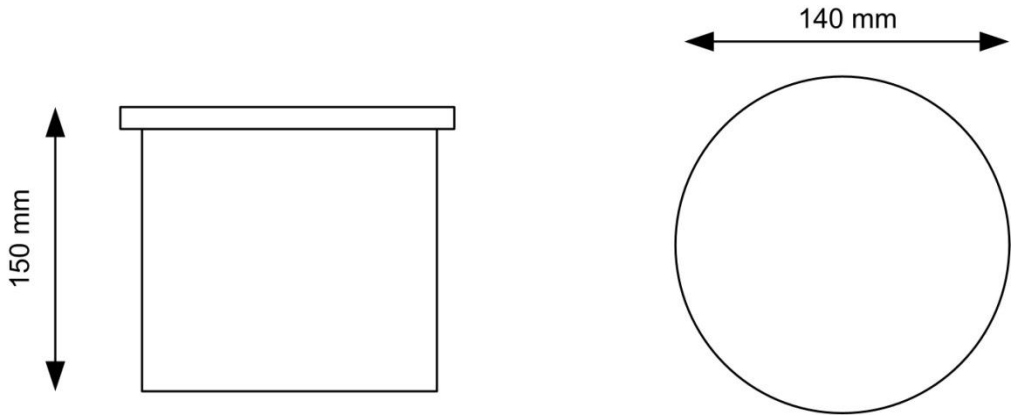
Dimensions and weights of the MED 010 instrument.

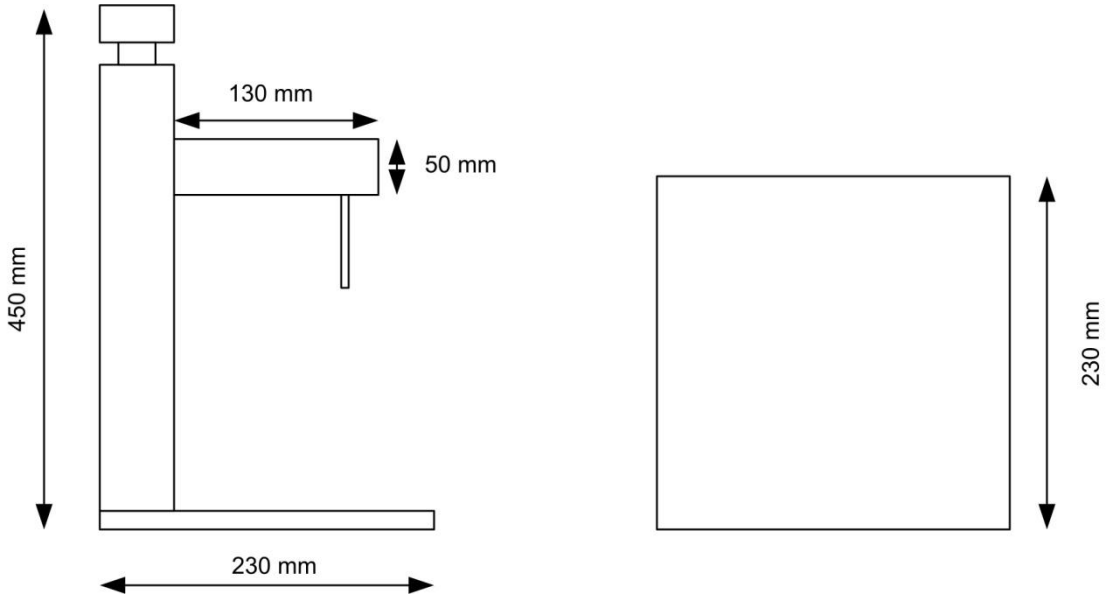
- **Measuring and control unit 100.160. - Weight 5,3 kg**



- **Heating, Article number 100.160H, Weight 5,4 kg**



- **Stand with linear drive, Article number 100.160ST. - Weight 5,3 kg**



Ordering No. 100.160, on request with current HP Netbook and installed Software