What Does It Measure?
For many years, the measurement of elasticity parameters with the Cutometer® MPA 580 has been worldwide acknowledged as standard method. The Multiprobe Adaptor layout allows to connect up to four probes additionally to two Cutometer® probes. A Sebumeter® is also built in.

The Measuring Principle
The measurement is based on suction. Negative pressure created by a vacuum pump within the device draws the skin into the aperture of the probe. Inside the probe, the penetration depth is determined by a non-contact optical measuring system consisting of a light source and a light receptor, as well as two prisms facing each other, which project the light from transmitter to receptor. The light intensity varies due to the penetration depth of the skin.

Technical Data
Dimensions: Device: 39.0 x 22.5 x 7.6 cm, Probe: 10.7 cm x Ø 2.4 cm, Aperture: Ø 2 mm standard, (4, 6 or 8 mm on request); Weight: Device: 3.9 kg, Probe:165 g incl. air tube; Power supply: ext.100-240 VAC, 47-63 Hz, DC 12V/4A; Measurement principle: suction
Units: μm penetration depth into the probe opening, expressed as curves

Units of measurement: 
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The resistance of the skin to be sucked up by negative pressure (firmness) and its ability to return into its original position (elasticity) are displayed as curves in real time.

Advantages
• Several probe aperture sizes for various skin sites and study requirements (e.g. different skin thickness, scars) are available. Two probes with different aperture sizes can be connected at the same time.
• A spring in the measuring head provides constant pressure on the skin.
• The convenient handling of the probe permits measurements at all skin sites.
• A multitude of elasticity related parameters can be calculated from the curves.
• The settings in the programme are very flexible and can be adjusted by the user according to different applications.
• All data of the curves can be transferred to Excel® spreadsheets for further individual evaluation (up to four curves per sheet).
• Available solely as C+K MPA system.

Fields of Application
The measurement with the Cutometer® is used as standard in anti-ageing research and cosmeticology.
- It is indispensable for formulation, efficacy testing and claim support for all kinds of cosmetic products (esp. anti-ageing products, firmness enhancing & anti-cellulite products).
- Basic research of mechanical properties of the skin and skin ageing.
- Other materials like food or textiles can also be assessed.

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Technical changes may be made without prior notice.
Software & Parameters
The software of the Cutometer® dual MPA 580 allows to calculate a lot of interesting parameters. Here a short overview:

R-Parameters
- R 0: Maximum suction depth/firmness (strength to resist the suction).
- R 1: Ability of the skin to return to its original state (minimal amplitude).
- R 2: Gross elasticity, ratio between recovery and suction.
- R 3/R 4: Maximum/minimum amplitude of the last suction curve after repeated suction. „Tiring effects“ of the skin are visible, as the amplitude increases/decreases with each new suction.
- R 5: Net elasticity, elastic proportion of the suction curve versus elastic proportion of the release curve.

F-Parameters
- F 0/F 1 = Area within the rectangle (Uf x suction time) above the curve/ within the rectangle (Uf x relaxation time) underneath the curve.
- F 2 = Area above the upper envelope-curve of 10-times repetition of the measuring cycle.
- The smaller F 0, F 1 and F 2, the more elastic the skin. A completely elastic material will show no area at all. The closer the value to 0, the more elastic.
- F 3: Area within the enveloped curve, represents the skin fatigue.
- F 4: Area beneath the enveloped curve, represents the firmness of the skin (resistance to the suction).

Q-Parameters
A set of parameters developed by the scientist Dr. Di Qu* has been added, showing interesting correlations between skin age and the elastic and viscous recovery of the curves.

- Q 0: Maximum recovery area, will decrease with increased firmness of the skin.
- Q 1: Total recovery area, increases with higher elastic recovery.
- Q 2: Elastic recovery, will increase with higher elasticity.
- Q 3: Viscoelastic recovery, will increase with more elasticity of the skin.

Technical Data
Computer: Windows® 7, 8 or 10, performance must meet system requirements, USB 2.0

Technical changes may be made without prior notice.

*Di Qu, Senior Research Scientist, R&D Skin Care, Amway Corporation, Ada, Michigan, USA