Properties of the SVT 15N Package
The SVT 15N Package comprises the SVT 15N base instrument, the innovative liquid/gas-temperature controlled measuring cell MC-TFC 130, a fast-exchangeable glass capillary FEC 622/400-HT, and the software SVTS 20.

The spinning drop video tensiometer SVT 15N is a special-purpose optical instrument for measuring conventional to extremely low interfacial tensions. A high-precise optics, a fast image processing system, and an electronically commuted direct drive combined with the very compact instrument design allows fast and precise results.

Standard components
- high-performance 6-fold power zoom lens with an integrated continuous fine focus and adjustable observation angle
- video measuring system with USB-camera (max. 123 images/s sample rate)
- software-controlled electronic tilting base for the measuring cell
- LED lighting with software controlled adjustable intensity
- automatic calibration function
- innovative liquid/gas-temperature controlled measuring cell MC-TFC 130, temperature range -10 ... 130 °C
- fast-exchangeable glass capillary FEC 622/400-HT

Optional accessories
- Fast-exchangeable glass capillaries FEC 622/400-HT (outer diameter 6.22 mm, inner diameter 4.0 mm, working length (optically) 50 mm)
- Holder FEC-D with cost-effective, fast-exchangeable glass capillary DGC-T or DGC-M
- Injection cap for fast exchange capillaries IC-FEC
- Set of silicone septum IC-SE for the injection cap IC-FEC
- dosing syringes DS xx
- dosing needles SNS xx
- calibration standards DCS-SVT made of polypropylene
- calculation of interfacial tension based on spinning drop contours according to various methods including the Young-Laplace method
- automatic calibration of the magnification of the drop
- automatic “drop hold” function
- automatic temperature recording
- automatic compensation of density and refractive index as well as of temperature dependent changes
- statistical evaluations and error analysis
- liquids database

Software for control, measurement, analysis and presentation
The SVTS 20 software, developed for Microsoft Windows®, designed for intuitive control of the SVT 15N and the measurement of the interfacial tension.
- video based measurement and presentation of the time and temperature-dependent interfacial tension
- presentation and export of measurement values as well as the storage of video sequences for the calculation of fast processes
- control of the rotational speed, the inclination of the tilting base with the measuring cell and the camera position
Technical data

Interfacial tension measuring range: \(1 \times 10^{-6} \text{ to } 2 \times 10^3 \text{ mN/m}\)

Rotational-speed range: \(0 \text{ to } 17000 \text{ rpm}\)

Rotational-speed resolution: \(\pm 0.01 \text{ rpm}\)

Speed long term stability: \(\pm 0.5 \text{ rpm}\)

Tilt angle of capillary block: \(\pm 10^\circ\), resolution \(\pm 0.0023^\circ\)

Optics:
- 6-fold zoom lens (0.7 \(\text{ to } 4.5 \text{ magnification}\)) with integrated continuous fine focus \(\pm 6 \text{ mm}\) and high light transmitting capacity
- LED lighting with software controlled adjustable intensity

Image processing system:
- USB-CCIR camera, max. pixel 768 x 576 resolution, max. sample rate 123 images/s

Measuring methods:
- Spinning Drop Method

Diameter of fast exchange capillary:
- outer 6.22 mm, inner 4.0 mm (FEC 622/400-HT)
- outer 7.80 mm, inner 4.0 mm (FEC 780/400-PMMA)

Measuring cell:
- liquid/gas-temperature controlled measuring cell MC-TFC 130 for \(-10 \text{ to } 130^\circ \text{ C}\)
  - heat up and cool down rate dependent on liquid circulator bath

Dimensions (L x W x H):
- SVT 15N base unit: 420 x 290 x 370 mm
- Power supply unit: 300 x 120 x 210 mm

Weight:
- SVT 15N base unit: 25 kg
- Power supply unit: 10 kg

Power supply:
- 100 \text{ to } 240 \text{ VAC, } 50 \text{ to } 60 \text{ Hz, } 180 \text{ W}

Accessories

- liquid/gas-temperature controlled capillary chamber MC-TFC 130
- fast-exchangeable high-temperature glass capillaries (up to 180 \text{ C}) FEC 644/400-HT
- Holder FEC-D with cost-effective, fast-exchangeable glass capillary DGC-T or DGC-M
- optical calibration standard DCS-SVT
- dosing syringes DS xx
- dosing needles SNS xx
- refrigerated/heating circulators

For more information about a tailor made solution to your surface chemistry requirements, please contact us. We will be pleased to provide a quotation, obligation free, for your instrument system.