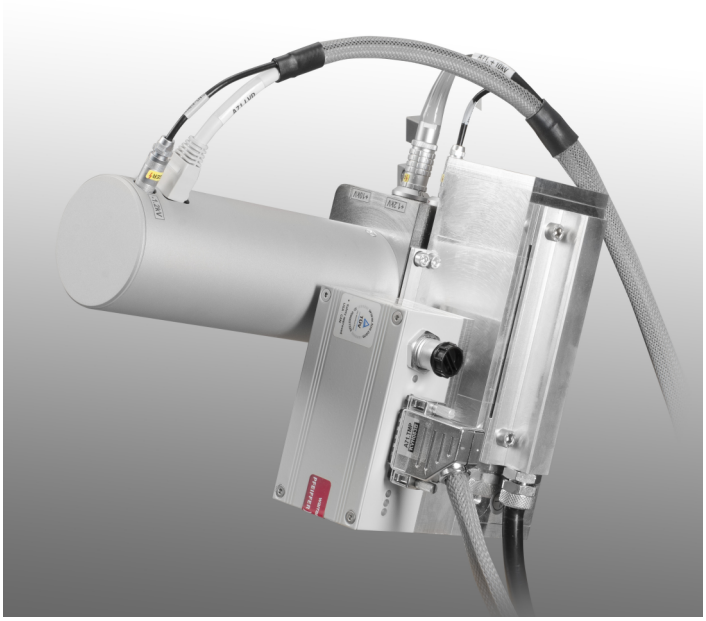
LVSTD
Low Vacuum Secondary Electrons TESCAN Detector

The Low Vacuum Secondary Electron TESCAN Detector is a unique solution developed and patented by TESCAN. Modified Everhart-Thornley design equipped with a YAG scintillator provides a lot of merits:

- True secondary electron imaging under low vacuum conditions
- Perfect displaying of the fine surface topography
- Good-quality investigation of non-conductive materials without special preparation
- Fine imaging of the surface structure of materials with low atomic number
- Compact design of the LVSTD allowing fast and easy interfacing to any chamber manufactured by TESCAN*

*Possible configuration must be discussed with TESCAN Brno



Versions of LVSTD detectors offered by TESCAN:

LVSTD version	LVSTD up to 500 Pa	LVSTD up to 1000 Pa (N_2)	LVSTD up to 1000 Pa (Water Vapor)
Condition	N_2	N_2	water vapor or N_2
Vacuum	up to 500 Pa	up to 1000 Pa	up to 1000 Pa
Microscope	SEMs with low vacuum mode up to 500Pa	SEMs with extended low vacuum mode up to 2000Pa	SEMs with extended low vacuum mode up to 2000Pa and with Water Vapor option

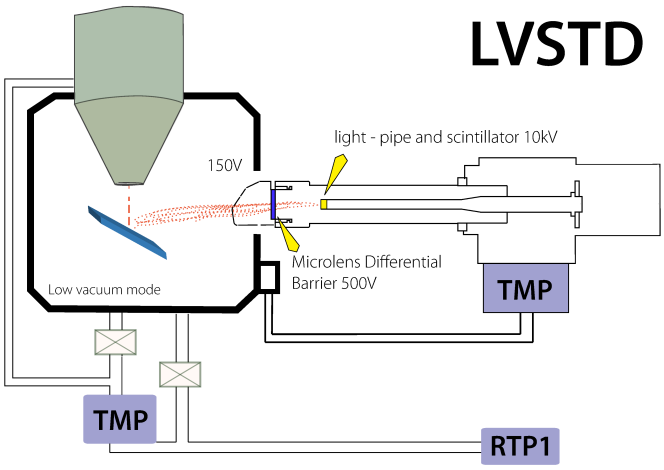
The new versions of the LVSTD detector

TESCAN has developed two new versions of LVSTD detector working up to 1000Pa, available as an option for W microscopes with extended low vacuum mode up to 2000Pa.

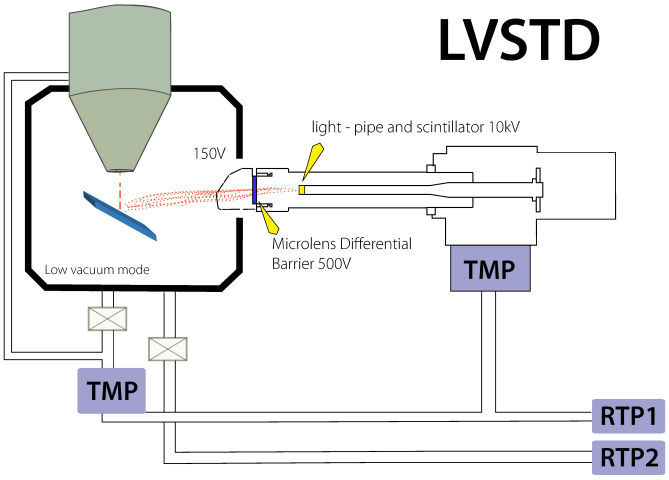
Benefits and Features

- Improved pumping system allows using of the LVSTD up to 1000 Pa in Low Vacuum Mode. Separate detection chamber of the LVSTD is pumped down by a turbomolecular pump. The pumping efficiency of the gas from the detector chamber is increased by a rotary pump which pre-pumps the turbomolecular pump.
- Increased detected signal in all three versions of the LVSTD detector.
- Combination of LVSTD up to 1000 Pa and Water Vapor Inlet System allows observation of hydrated samples at temperatures above zero in their natural state.

Schematics of the construction:



LVSTD up to 500 Pa



LVSTD up to 1000 Pa

Note:

The version LVSTD up to 1000Pa (N2) can be modified to version LVSTD up to 1000 Pa (Water Vapor), and vice versa. Modification can be performed solely by the manufacturer's service technician

Application:

Investigation of non-conductive samples under low vacuum condition – Life science, Polymers, Textile Industry, Paper Industry, Pharmacology etc.

Investigation of hydrated samples - combination of low vacuum condition with Water Vapor Inlet System– Life science, Food Industry, Construction Industry etc.

Fig. Larval stadium of a fly
LVSTD (up to 1000 Pa), 600Pa, -10 °C
water vapor condition

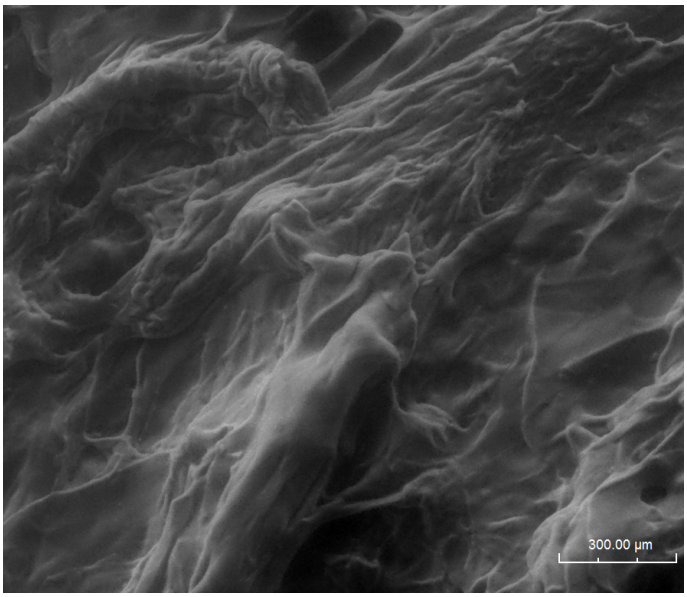


Fig. Gel in water solution
LVSTD (up to 1000 Pa), 600Pa, 1 °C
water vapor condition