

WITec Confocal Raman Microscope System alpha300+ Micro-Raman Mapping
Functionality Highest sensitivity for 532 and 785 nm Excitation Wavelengths High
Throughput Configuration

- Acquisition of Raman spectra at selected areas
- Large Area Raman mapping up to 25 x 25 mm
- Confocal Microscopy in Reflection
- Confocal Fluorescence
- Laser Focus Size: Diffraction limited lateral typ. 250 nm @ 532 nm excitation wavelength (with objective NA 1.4)
- Sample Size: max. 120 mm in x- and y-direction, 25 mm in height
- Automated Sample Positioning in x-, y- and z-Direction
- Wavelength Range VIS, typ. Detection from < 95 - ca. 4000 Wavenumbers @ 532 nm Excitation Wavelength Pos.2-14

2 XCK3001-0401 1 piece WITec Confocal Raman Microscope alpha300 M Base • Optical Microscope with 6x Turret • Video Sytem: Eyepiece Color Video Camera • Motorized z -Stage System for automated approach • LED White-Light Source for Köhler Illumination of Tip and Sample • Manual Sample Positioning in x- and y-Direction. Motorized x-y- Sample Stage UHL KT5 NOOA 25 x 25 mm travel Range, 100 nm Step Size Software controlled Reproducibility < 1 µm.

alphaControl Digital Controller for WITec Microscope Systems System on a programmable chip controller with the following features:

- 80MHz FPGA
- 64MB SDRAM
- 4 MB SRAM
- High speed USB 3.0 connection (480 MBit/s)
- Three 32bit counters with integrated APD/PMT overload protection
- Three digital outputs for user applications
- Digital input for user applications
- Three RS232 serial ports for extensions and user applications
- Two free FPGA slots for future extensions
- XYZ scan stage with closed loop controlled piezos and capacitive sensors (optional)
- Motorized Microscope z-axis control
- White light LED Köhler illumination
- Three free slots for further extensions
- TrueScan dynamic position error correction.

Raman Laser Coupler for up to 3 Laser Wavelengths (785nm,532nm) FC -APC single-mode Fiber Connector Optical Input Filter Slider Assembly : Dichroic Beam Splitter, Raman Edge Filter, Band Pass Filter 4-Position Turret with 1 open Position for White-light Extendable for Polarization Measurements.

Raman Filter Set 532nm • Long Pass Raman Filter, 532nm E-Grade • Razor Edge Dichroic Beamsplitter, high transmission starting at 95 cm-1 • Laser Line Filter 532nm.
Raman Filter Set 785nm • Long Pass Raman Filter E-Grade • Razor Edge Dichroic Beamsplitter, high transmission starting at 65 cm-1 • Laser Line Filter 785nm.
Optical Fiber with FC/APC Connectors, length 3m.

UHTS 300 Spectrometer VIS, f/4 300mm focal length Imaging Spectrometer with FC/APC Optical Fiber Entrance Triple Grating Turret incl. 3 Gratings with 1800 and 600 lines/mm @500nm.

Thermoelectrically cooled CCD Camera ANDOR iDUS DV401A-BV-352 Peltier Cooling down to -65°C at 20 °C Roomtemperature VIS optimized, backilluminated, VIS AR Coating Marconi 40-11CCD Chip with 1024 x 127 Pixel Format Camera Controller withlow Noise 16bit A/D Converter 100kHz, USB 2.0 Interface Power Supply PS 24.

UHTS 300 Spectrometer NIR, f/4 300mm focal length Optimized for 785 nm Excitation Imaging Spectrometer with FC/APC Optical Fiber Entrance Triple Grating Turret incl. 2 Gratings with 1200 and 600 lines/mm @750nm.

Thermoelectrically cooled CCD Camera ANDOR iDUS DU401A-BR-DD-352 Peltier Cooling down to approx. -65°C at 20 °C Roomtemperature Marconi 40-11CCD Chip 1024 x 127 Pixel Format S/N Camera Controller with 16bit A/D Converter 100kHz, USB 2.0 Interface Chip back-illuminated deep Depletion NIR optimized, NIR AR Coating, QE >95% @ 800nm.

WITec Control FOUR Licence includes free Upgrades for 2 years Functionality (configuration depended):

- All measurement modes use one intuitive software package
- Measurements with various techniques (e.g. AFM, Raman) can be applied and controlled simultaneously
- All essential parameters are automatically set when changing between measurement modes
- TrueScan™ for exact position control even at the fastest scan rates
- Capability of measuring very large data sets, for e.g. image stacks
- Automated multi-area measurements and time series in combination with the WITec +-series and alpha500 microscopes
- Multi-user management including user-customizable software configurations for individual measurement preconfigurations
- Standard SPM Features for AFM and SNOM × High speed, automatic tip approach in all AFM modes
- × Software-guided step-by-step cantilever installation and adjustment
- × Oscilloscope mode for the observation of signals as a function of time.

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Frequency doubled Nd:YAG Laser Coherent Compass Sapphire Wavelength 532 nm, 75 mW Power at Laser Output (typically 50mW at Fiber End) Laser Class 3B Single Longitudinal Mode Intra cavity Frequency Doubling, Opt. Isolator S/N 100-1750- Fiber Coupling Unit HPUC-2,A3A-488-P-3,9AS-17 Non contact style Laser to PM Fiber Coupler 3 m PM Fiber with FC Connector QPMJ-A3A-3A-488-3,5/125-3A-3-1-SP.

TOPTICA Diode Laser Module SYS XTRA 785 Wavelength 785 nm, 300 mW Power Power at Fiber Output < 150mW Single Longitudinal Mode, Laser Class 3B Head:S/N XTRAIL_ Vers.3V0 Power Supply XTRA -PS 65: S/N xtra-PS_ Fiber Coupling Unit HPUC-2,A3A-785-P-11AS-17 3 m Single-mode Fiber with FC/APC Connector PMJ-A3A-3A-850-5/125-3A-3-1-SP.

Objective 10x ZEISS, Typ EC "Epiplan" DIC Numerical Aperture NA 0,2 Working Distance WD 16,1mm Adapting for WITec Microscope Systems.

Objective Zeiss LD "Epiplan-Neofluar" 50x DIC Applications from 360nm to NIR
Excellent Flatness of field Numerical Aperture NA 0,55 Working Distance WD 9,1
mm Adapting for WITec Microscope Systems.

Objektive Zeiss EC "Epiplan-Neofluar" 100x for applications from 360nm to NIR
Excellent flatness of field Numerical Aperture NA 0,90 Working Distance WD 0,31
mm Adapting for WITec Microscope Systems.