Technospex

Optical micro-spectroscopy solutions with research grade performance and reliability

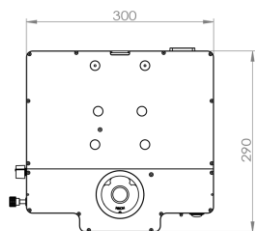uSight™-2100 mounted on Nikon Ci-L Microscope

uSight™-2100

uSight™-2100 micro-spectroscopy system measures transmittance, absorption, reflectance, fluorescence, and phosphorescence of samples at sub-micron sampling area and with sub-micron spatial precision. The uSight™-2100 system consists of a spectroscopy module integrated into a Nikon upright microscope. This provides spectroscopy functionalities while retaining the microscope original functionalities. Users can therefore perform standard microscopy techniques such bright-field, dark-field, phase contrast, etc.

uSight™-2100 equips with a 2048 pixels linear array CMOS sensor for fast acquisition time to as low as 100µs. The same sensor also offers high sensitivity in the UV region, which when coupled with correct optics covers the spectral range down to 250 nm.
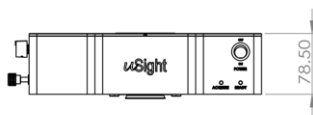
The uniqueness of uSight™-2100 lies in the functionality, with 150X microscope objective, to probe a single spot of sub-micron diameter. To help user to know where to probe, an imaging marker indicator is shown on the camera screen to pinpoint the exact probing location.

The uSight™-2100 system can be further enhanced with Raman spectroscopy by adding an addition uRaman™ module. With this, the ultimate system now offers user multi-dimension spectral information of the same sample within same location. Hyperspectral mapping is also possible if the microscope is equipped with motorized stage. uSight™-2100 is ideal for research laboratories, education, and commercial use.
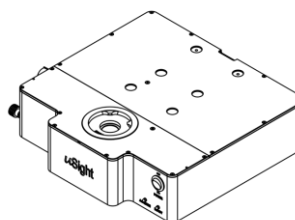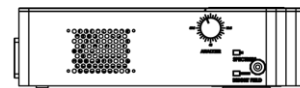
Top View

Front View
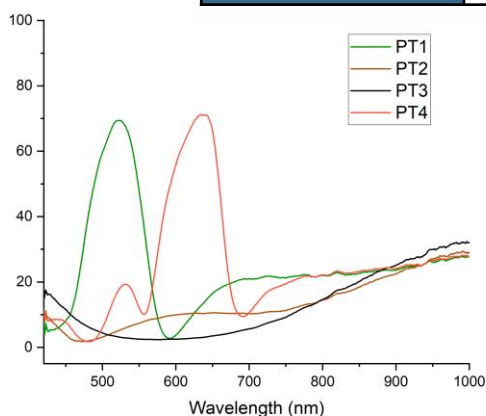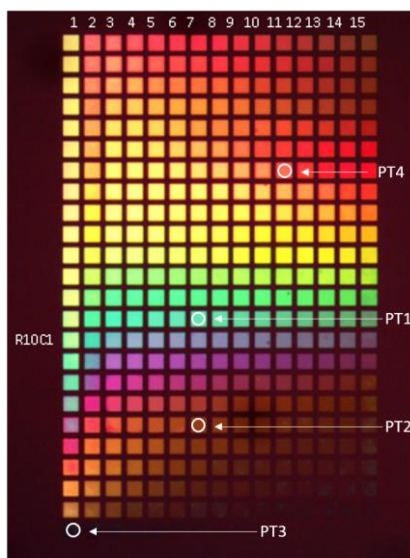

Side View

Back View

APPLICATIONS

➢ 2D materials
➢ Forensic Science
➢ Gemology and minerals
➢ Biology
➢ Agriculture
➢ Education
➢ Pharmaceutical

TECHNICAL SPECIFICATIONS

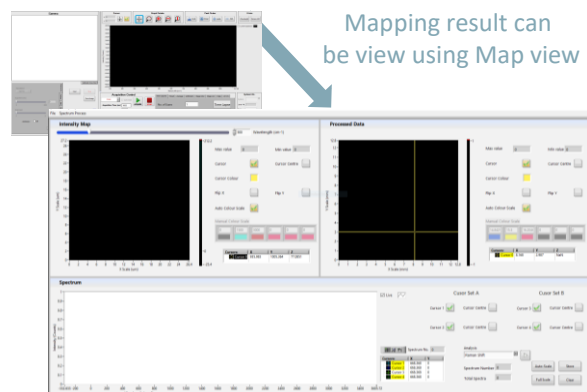| Wavelength Range	200-1100 nm
Resolution	0.06-20 nm, depending on configuration
Sensitivity	375,000 counts/µW per ms integration time
Detector	2048 pixels linear array detector
AD converter	16-bit, 6 MHz
Detector	CMOS linear Image Sensor
Integration time	9 µs – 59s
Interface	USB 3.0 high-speed, 5 Gbps Gigabit Ethernet 1 Gbps
Physical dimension of uSight-2100	**L x B x H** 30.0 x 29.0 x 7.85 (cm)

RESULTS

Reflectance spectra from various points on the plasmonic structured sample

SOFTWARE

uSoft is an integrated control software which control Technospex range of spectroscopy solutions, including uRaman™ (for Raman spectroscopy) and uSight™-2100. uSoft is designed to be user-friendly. Further to standard control features, uSoft offers addition acquisition functions such as time-lapsed, accumulation and mapping. With mapping, user can select an area of interest within the camera screen, the software and motorized stage will do the rest. There are multiple mapping approaches, such as area, line and multipoint which user will find them useful. The system also offers Mapview software for viewing the chemical map.

GUI of Map view

Mapping result can be view using Map view

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