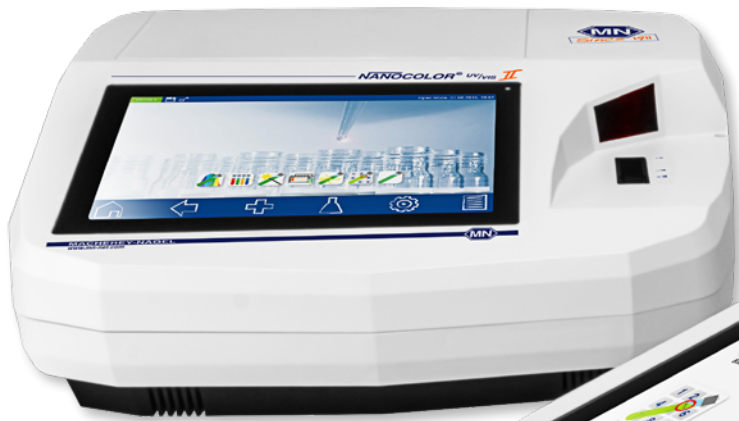MACHEREY-NAGEL

NANOCOLOR®
Spectrophotometers

Smart photometry

Water Analysis

Easy and reliable

- 10.1 inch HD touch screen display

- Integrated turbidity control (NTU-Check)

- Intuitive and entirely icon-based menu guidance

- Revolutionary user experience

- Integrated inspection equipment monitoring tools

NANOCOLOR® spectrophotometers

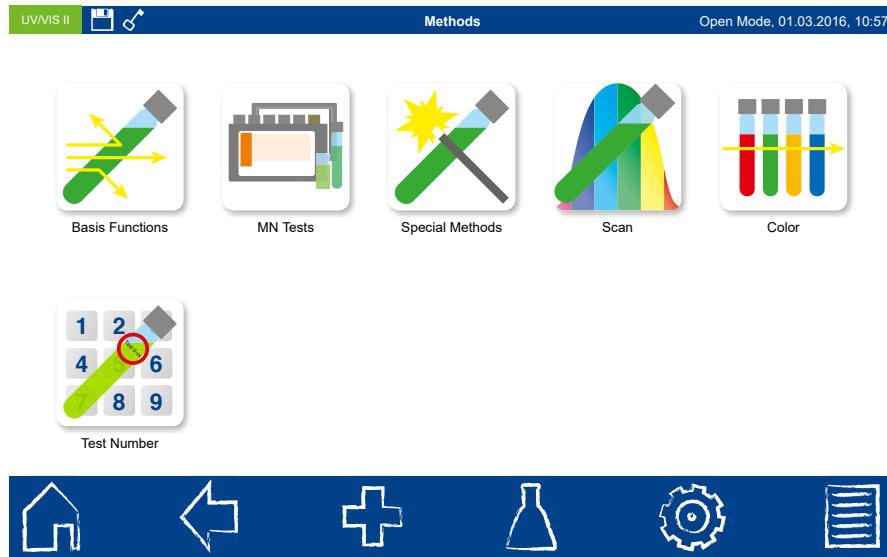## Reach your goals smartly

Clearly arranged icons instead of complicated lists

With the brand-new spectrophotometers *NANOCOLOR® VIS* II and *NANOCOLOR® UV/VIS* II, MACHEREY-NAGEL revolutionizes your daily laboratory work, combining premium high-tech instruments with outstanding usability. Work with these innovative photometers as with your smartphone or tablet and enjoy the intuitive, icon-based menu. The clearly arranged and high-resolution touch screen display makes your daily measurement routine a real pleasure.
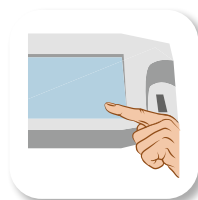
UV/VIS II			Methods		Open Mode, 01.03.2016, 10:57

Basis Functions · MN Tests · Special Methods · Scan · Color

Test Number

The ⚗-icon allows a quick access to all programmed methods.

User guidance

- Smart, icon-based menu guidance
- Easy to use without time-consuming training
- Intuitive operation for fast results
- → Revolutionary user experience

Touch screen

- Projective-capacitive touch screen
- 10.1 inch HD touch screen display for comfortable lab work
- Reliable operation even with gloves
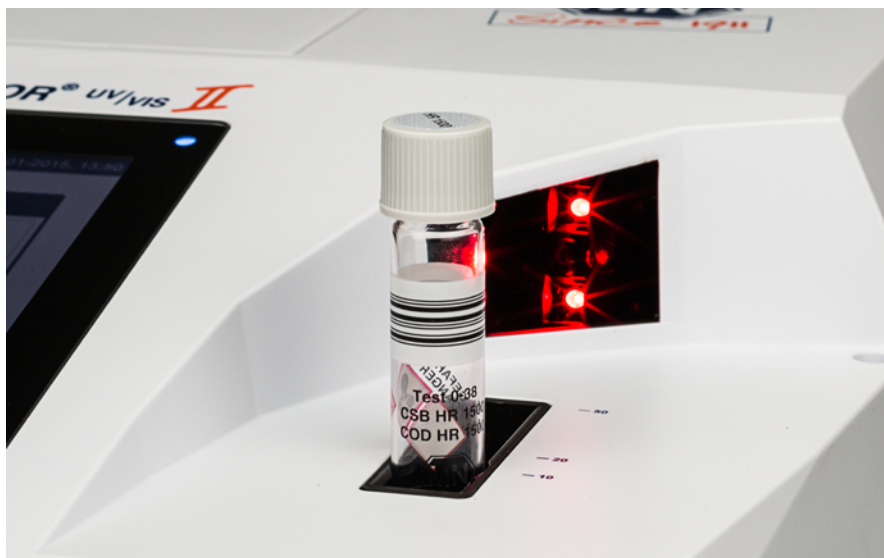- → Innovative usage concept

Smart photometry

NANOCOLOR® spectrophotometers

Makes your colleagues envious
Powerful technology behind the scenes

The brand-new *NANOCOLOR®* spectrophotometers impress with high-class technology and optics. The spectral bandwidth of the *NANOCOLOR®* UV/VIS II has been reduced to less than 2 nm and allows high-precision measurements. The wavelength resolution of 0.1 nm enables a new level of precision, for example for the monitoring of high-resolution scans. Internal stray light is reduced to < 0.05 %, resulting in extremely accurate measuring signals. The optical setup and the clever technology of both instruments enable measurements without protective cover, a big advantage for seamless lab processes.

Universal cuvette holder without cuvette slot cover

- Cuvette slot for 10 mm, 16 mm, 20 mm, 40 mm, 50 mm cuvettes
- Measurements without cuvette adapter and slot cover
- Insensitive to external light
- Automatic detection of cuvette size
- → Seamless laboratory processes

The optics are insensitive to external light allowing measurements of MACHEREY-NAGEL cuvette tests without covering the cuvette slot. However, the cover is important for the performance of color measurements and measurements in the UV range.

Sample detection and sample information

- Time saving sample allocation with a handheld scanner
- Quick and easy administration of all important sample information
- → Future-proof data manangement

Optical setup

- Precise optics with reference detector technology
- High-resolution scans
- Minimized aberrations due to holographic gratings
- → Strong technology for more precise measurements

2D barcode scanner

- Automatic test recognition via 2D barcode scanner
- Clear measurement process from cuvette insertion to storage
- → Easy operation

NANOCOLOR® spectrophotometers

Photometry becomes a pleasure
The all-rounders for all requirements

As complete spectrophotometers, the *NANOCOLOR® VIS* II and *NANOCOLOR® UV/VIS* II meet all requirements of your daily laboratory work. They come with the well-known barcode technology for *NANOCOLOR®* tube tests for fast measurements. Besides, they offer the possibility of extensive CIE-conform color measurements and scan-performance in real time. In addition to turbidity measurements, the devices offer comprehensive and free of charge brewery analysis according to MEBAK.
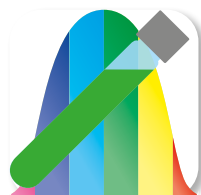
Icons from different menus can be linked to the favorite bar on the start screen by simply holding and moving them.

Measurement of MN tube tests
- Convenient handling
- High measurement accuracy
- Reliable results
- → The right test kit for each application

Scans
- High-precision live scans
- Analysis and comparison of spectra
- Exporting spectra and data
- → Complex analytics made simple

Color measurement
- CIE-conform color measurements
- Conversions of color index and display in color space
- Measuring of color difference against quality control standards
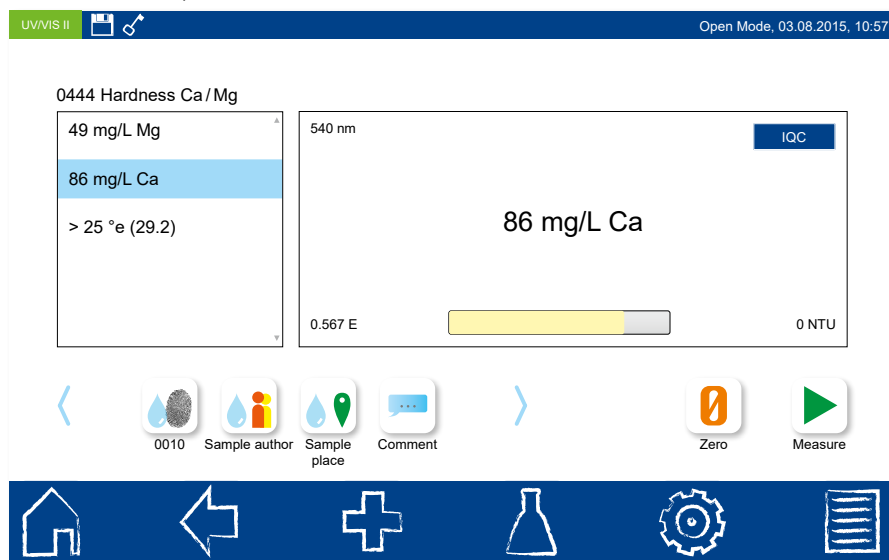- → Monitoring of special production processes

Turbidity measurement
- Turbidity measurement according to EN ISO 7027
- Absorbance measurement (transmitted light measurement) at a 180 ° angle from 2–400 NTU
- Nephelometric stray light measurement from 0.1–1000 NTU
- → Fulfill requirements and assure measurement results

NANOCOLOR® spectrophotometers

Photometry becomes a pleasure

The all-rounders for all requirements

NANOCOLOR® VIS II and *NANOCOLOR® UV/VIS* II reduce the complexity of your daily laboratory work with easy menu guidance and icon-based procedures of the cuvette tests stored in the instrument. The clear result window enables an easy assignment of sample information to the measurement result. The step-by-step menu guidance for the calibration of special methods creates a simple entry level into user specific analytics even for inexperienced users.
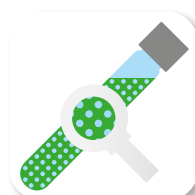
UV/VIS II		Open Mode, 03.08.2015, 10:57

0444 Hardness Ca / Mg

49 mg/L Mg
86 mg/L Ca
> 25 °e (29.2)

540 nm — IQC

86 mg/L Ca

0.567 E   0 NTU

0010   Sample author   Sample place   Comment   Zero   Measure

> For each measurement up to eight sample information can be added and saved.

Result view

- Clear connection of results and sample information
- Comprehensive presentation of all measurement results
- Direct linkage to IQC-options
- → All information at a glance

NTU-Check

- Safely spot interfering turbidities
- Unique for maximum measurement result safety
- Runs automatically with each measurement of MN tube tests
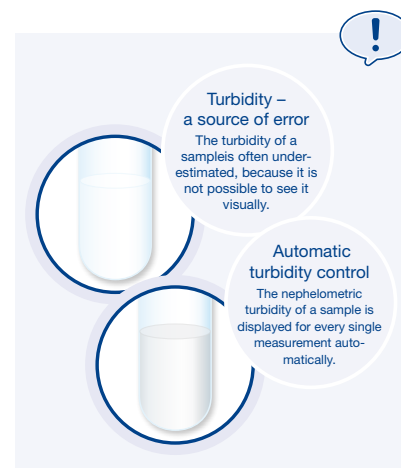- → Your insurance for secure measurement results

Pictograms in the instrument

- Easy to understand pictograms
- Step-by-step procedures directly in the instrument
- Conduct measurements without extensive training
- → Reduce errors, enhance security

Method development

- Creation of user specific special methods
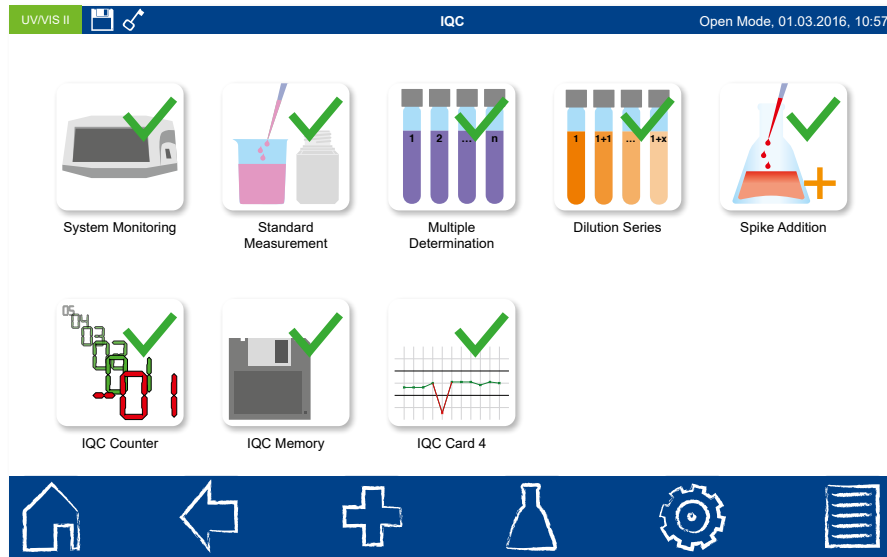- Comfortable calibration of customized methods
- Database for your applications
- → Versatility for highest demands

> **Turbidity – a source of error**
> The turbidity of a sampleis often under-estimated, because it is not possible to see it visually.
>
> **Automatic turbidity control**
> The nephelometric turbidity of a sample is displayed for every single measurement auto-matically.

NANOCOLOR® spectrophotometers

Be convincing

Your next audit will be a breeze

Quality is of high importance for MACHEREY-NAGEL. Thus, the brand-new spectrophotometers are equipped with extensive quality control features. Besides the integrated, f.o.c. inspection equipment monitoring, the devices offer a variety of quality control functions like standard measurements, multiple determinations and dilution series. In this way the *NANOCOLOR® VIS* II and *NANOCOLOR® UV/VIS* II provide easy to use control options which enable an efficient and exact internal quality control.

UV/VIS II		IQC	Open Mode, 01.03.2016, 10:57

System Monitoring Standard Measurement Multiple Determination Dilution Series Spike Addition

IQC Counter IQC Memory IQC Card 4

Besides the monitoring of the complete analysis system the inspection equipment monitoring offers extensive possibilities for the inspection of instruments functionality. Perform the inspection equipment monitoring yourself and save money; additional external equipment checks are not necessary.

IQC

- IQC chart directly in the device
- Standard measurements, multiple determinations, dilution series and spike additions
- IQC memory for a clear documentation
→ Quality control at its best

User administration

- GLP-conform data storage
- Comprehensive user administration with password protection
- Individual adaptation to the respective user
→ Fulfill requirements

Inspection equipment monitoring

- Inspection equipment monitoring directly in the device
- Wavelength check with integrated holmium oxide filter
- Photometric accuracy check (*NANOCONTROL NANOCHECK*)
→ Ease controls and reduce costs
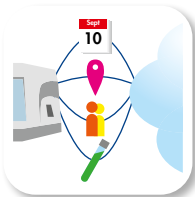
NANOCOLOR® spectrophotometers

Stay connected

Striking interface options for smart connectivity

The connection of measuring devices to laboratory information systems (LIMS) plays a more and more important role in many industries. Therefore, the *NANOCOLOR® VIS* II and *NANOCOLOR® UV/VIS* II are equipped with all important interfaces (LAN, RS 232, USB) for the connection to modern laboratory information systems. Furthermore, the integrated LIMS configurator allows a customized adaptation for many kinds of data transfer.

Easily accessible USB interface at the side of the instrument for the connection of a USB stick, printer or barcode reader.

LIMS configurator

- Easy implementation of measurement data to LIMS
- Customized composition of datasets
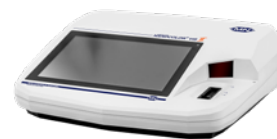→ Tailor-made data for individual needs

Interfaces (USB, LAN, RS 232)

- Future-proof interface options
- Straightforward data transfer to storage media
- Easy accessible USB-connections
→ Future-proof connectivity options

NANOCOLOR® spectrophotometers

Technical data

	NANOCOLOR® UV/VIS II	NANOCOLOR® VIS II
Type	Spectrophotometer with reference detector technology (RDT)	
Light sources	Halogen lamp (visible range) deuterium lamp (UV range)	Halogen lamp
Optical system	Monochromator	
Wavelength range	190 nm–1100 nm	320 nm–1100 nm
Wavelength accuracy	± 1 nm	
Wavelength resolution	0.1 nm	
Wavelength reproducibility	< 0.5 nm	
Wavelength calibration	Automatic	
Wavelength selection	Automatic, barcode, manual	
Scan speed	1 complete scan in less than 1 min	
Spectral bandwidth	< 2 nm	< 4 nm
Photometric range	± 3.0 E in wavelength range 200–900 nm	± 3.0 E in wavelength range 340–900 nm
Photometric accuracy	0.005 E at 0.0–0.5 E; 1 % at 0.5–2.0 E	
Photometric linearity	< 0.5 % at 2 E; ≤ 1 % at > 2 E	
Stray light	< 0.05 %	< 0.1 %
Measuring modes	More than 200 preprogrammed tests, 100 optionally programmable methods, absorbance, transmission, factor, kinetics, 2-point calibration, scan, nephelometric turbidity measurement	
Turbidity measurement	Nephelometric turbidity measurement at 860 nm, 0.1–1000 NTU	
Cuvette slot	Test tubes 16 mm AD, rectangular cuvettes 2 mm, 10 mm, 20 mm, 40 mm, 50 mm	
Data memory	16 GB Micro SDHC card, 5000 measured data sets / spectra, GLP conform	
Display	10.1" HD display, anti-reflective cover glass with projective-capacitive touch screen (PCAP) and background LED lighting	
Operation	Barcode technology, icon-based menu guidance, touch screen	
Languages	DE / EN / FR / ES / PT / PL / HU / NL / CZ / RO / IT	
External light	Insensitive, open cuvette slot	
Interfaces	LAN, 2 x USB (Host), 1 x USB (Function) and RS 232	
Update	Via Internet and USB-Stick	
Operating range	10–40 °C, max. 80 % relative humidity (without condensation)	
Power supply	110 V–240 V, ~50/60 Hz	Input: 110 V–240 V, Output: 12 V ⎓ 3A
Dimensions L / W / H	400 mm x 440 mm x 170 mm	360 mm x 400 mm x 110 mm
Weight	6.5 kg	4.0 kg
Warranty	2 years	
Ordering information	Spectrophotometer NANOCOLOR® UV/VIS II **REF 919 600** incl. manual (Quickstart guide), protective covering, power cable, USB cable, USB stick, calibration cuvette, touchpen, cleaning cloth and certificate	Spectrophotometer NANOCOLOR® VIS II **REF 919 650** incl. manual (Quickstart guide), protective covering, power supply, USB cable, USB stick, calibration cuvette, touchpen, cleaning cloth and certificate

www.mn-net.com

MACHEREY-NAGEL

MACHEREY-NAGEL GmbH & Co. KG · Valencienner Str. 11 · 52355 Düren · Germany

DE +49 24 21 969-0   info@mn-net.com
CH +41 62 388 55 00   sales-ch@mn-net.com

FR +33 388 68 22 68   sales-fr@mn-net.com
US +1 888 321 62 24   sales-us@mn-net.com