

MACHEREY-NAGEL NANOCOLOR® robot tests



Increase your efficiency

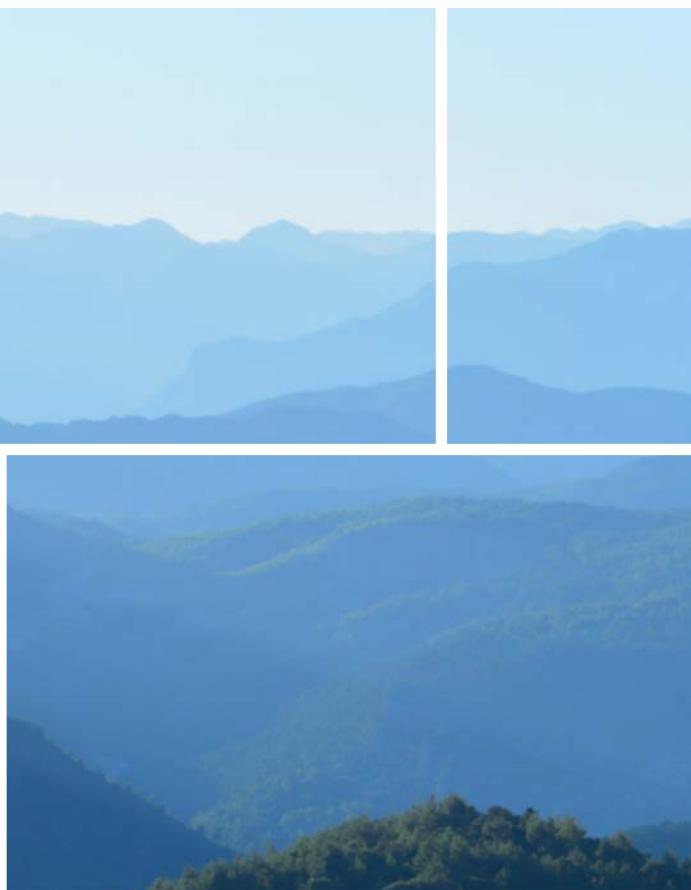
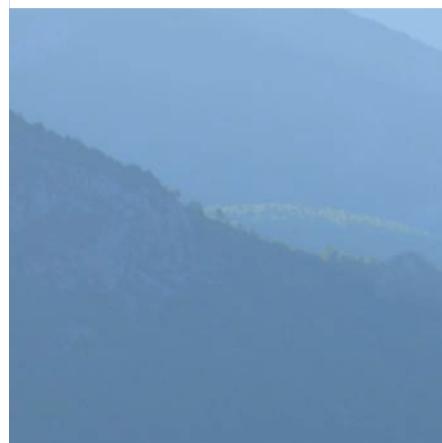
- Automated sample preparation, digestion and measurement
- Save time by automating all analysis steps
- Customer-specific configuration for high flexibility
- Analysis of all important wastewater parameters

MACHEREY-NAGEL and Skalar



MACHEREY-NAGEL

- Global company for chemical and biomolecular analysis from Düren (Germany), founded in 1911
- Family-run in the 4th generation
- Worldwide sales of over 25,000 products
- More than 700 employees in branches in Germany, Switzerland, France and USA
- Continuous development and innovation of our products
- Reliable partner with delivery stability and security of supply

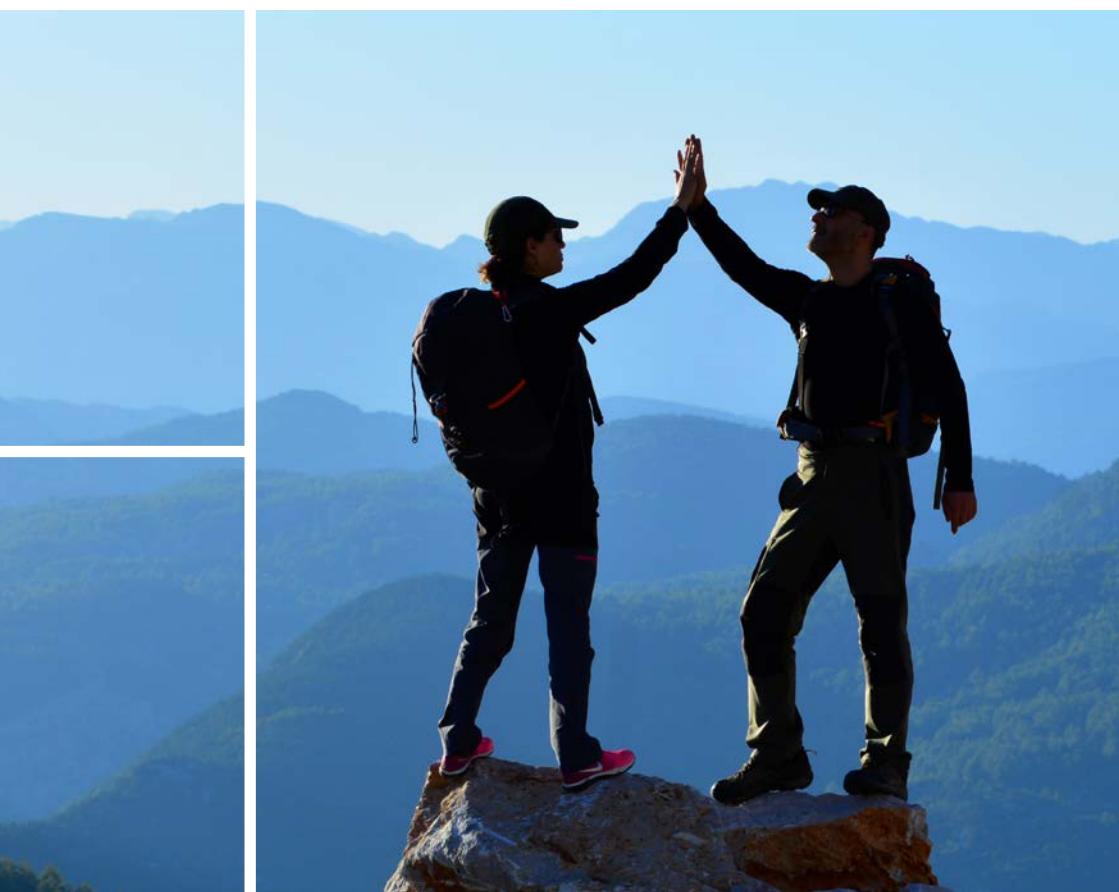
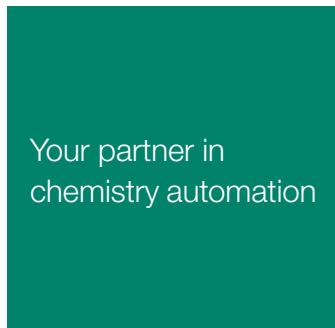


A partnership with tradition and future



Skalar

- Global manufacturer of chemical analyzers for laboratory automation and process industry from Breda (Netherlands), founded in 1965
- 8 branches worldwide and over 80 international representations
- In-house research and development department with over 40 years of experience in the field of laboratory automation
- Reliable specialist for automation with the highest quality standards



MACHEREY-NAGEL and Skalar

Benefit from our
expertise in photometric
water analysis

Production according to
ISO 9001 and ISO 13485
quality standards

Extensive technical knowledge in the field of
wastewater and environmental analysis
Extensive selection of measuring ranges and
applications for photometric analysis
Precise measuring devices for reliable measurement
results and support with complete documentation
for quality assurance

A competent team will
guide you to achieve
your goals



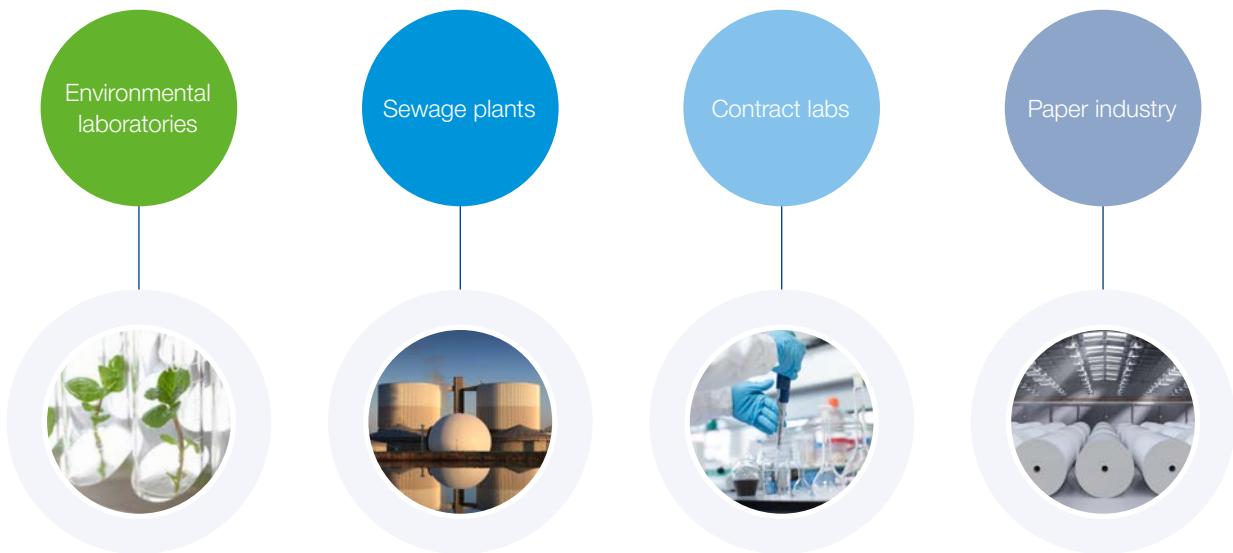
MACHEREY-NAGEL

Trust our joint expertise



Skalar 

MACHEREY-NAGEL and Skalar



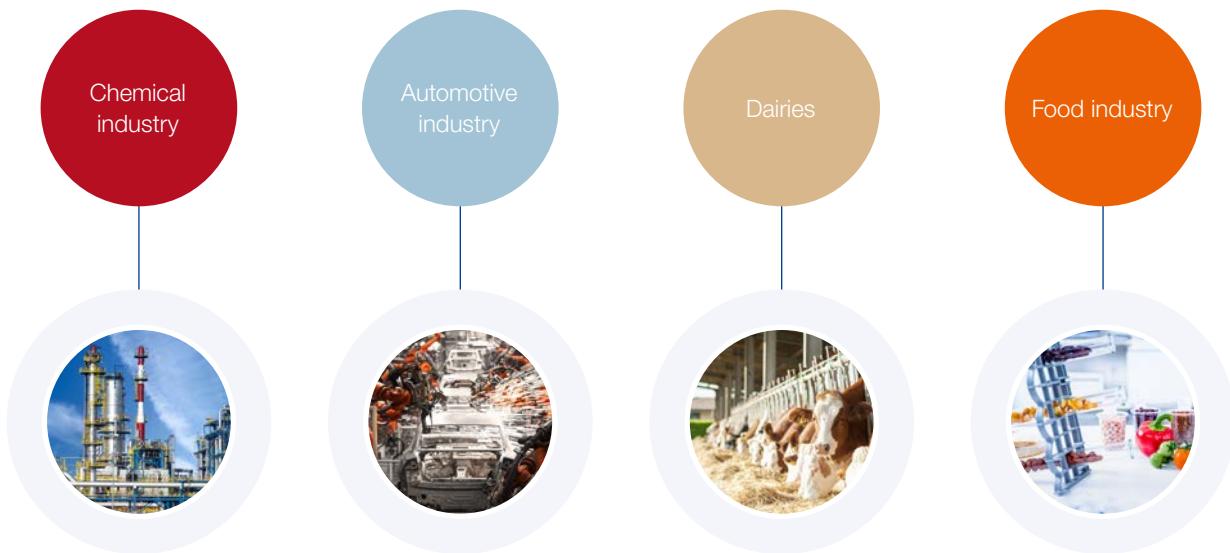
Your benefits

- Time and cost savings
- Increased productivity and flexibility
- Increased precision and accuracy
- Less user errors
- Parallelization of processes
- Complete documentation

NANOCOLOR® robot tests

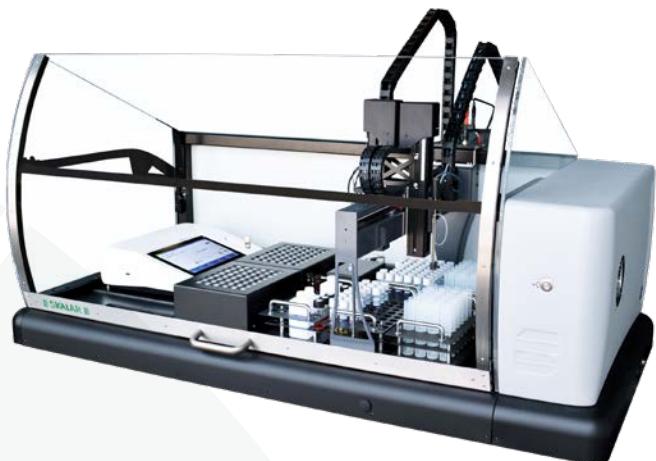
- Precisely pre-dosed reagents for reliable results
- Method validation data and lot specific certificates
- Consistently high quality from batch to batch
- Reaction bases conform to internationally recognized standards
- No direct contact with hazardous chemicals
- No reagent blanks required *

A solution for every application



Skalar SP2000

- Complete automation
- Simultaneous processing of different samples and methods
- ST-COD analysis analogous to ISO 15705 and EPA 410.4
- Enormous sample capacity from 48 – 192 cuvettes
- Removal of the sample and reagent racks for easy loading
- Automatic sample dilution
- Extensive software package including quality control functions and data export options
- Optional combination with pH and conductivity measurement



Service

- Specialist advice from initial contact to installation
- Analysis protocols tailored to your application
- Technical support for questions of any kind
- Operating procedures for manual execution for quality assurance and matrix comparison
- 2 year guarantee

MACHEREY-NAGEL and Skalar

1

Preparation

- Test tube transfer for decapping
- Opening of tube
- Flushing of stirrer and needle



2

Dosage

- Take a sample
- Dispense sample in test tube
- Dispense reagents
- Close the test tube



3

Mixing process

- Insertion in mixing unit
- Horizontal mixing



The complete walk-away solution for your laboratory

4

Reaction process

- Digestion in the heating block
- Removal from heating block
- Precise adherence to cooling and reaction times



5

Measuring process

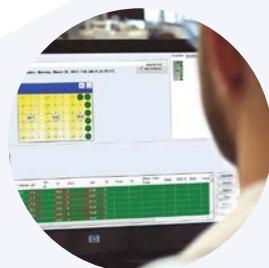
- Measuring of test tubes in the photometer
- Barcode scanner recognizes the test used
- Transfer of data to the PC software



6

Evaluation

- GLP-compliant calculation of measurement data
- Warning of interfering turbidities
- Marking of "out-of-range" results



NANOCOLOR® robot tests

Order information NANOCOLOR® robot tests

Test	REF	Measuring range NANOCOLOR® VIS II		Shelf life	Method
Ammonium 3*	ISO 23695 985603.1	0.04–2.30 mg/L NH ₄ ⁺ -N	0.05–3.00 mg/L NH ₄ ⁺	1 year	Indophenol
Ammonium 50*	ISO 23695 985605.1	1–40 mg/L NH ₄ ⁺ -N	1–50 mg/L NH ₄ ⁺	1 year	Indophenol
Chloride 50*	985621	0.5–50.0 mg/L Cl ⁻		1 year	Mercury(II)-thiocyanate / Iron(III)-nitrate
Chloride 200*	985619	5–200 mg/L Cl ⁻		1 year	Mercury(II)-thiocyanate / Iron(III)-nitrate
COD 60*	ISO 15705 985622	5–60 mg/L O ₂		1 year (2–8 °C)	Potassium dichromate
COD 160*	ISO 15705 985626	10–160 mg/L O ₂		1 year	Potassium dichromate
COD 600*	ISO 15705 985630	50–600 mg/L O ₂		1 year	Potassium dichromate
COD 1500*	ISO 15705 985629	100–1500 mg/L O ₂		1 year	Potassium dichromate
COD LR 150*	ISO 15705 985636	3–150 mg/L O ₂		1 year	Potassium dichromate
COD HR 1500*	ISO 15705 985638	20–1500 mg/L O ₂		1 year	Potassium dichromate
COD 15000*	985628	1.0–15.0 g/L O ₂		1 year	Potassium dichromate
Nitrate 8*	ISO 23696-1 985665	0.30–8.00 mg/L NO ₃ -N	1.3–35.0 mg/L NO ₃ ⁻	2 years	2,6-Dimethylphenol
Nitrate 50*	ISO 23696-1 985664	0.3–22.0 mg/L NO ₃ -N	2–100 mg/L NO ₃ ⁻	2 years	2,6-Dimethylphenol
Nitrite 2*	985668	0.003–0.460 mg/L NO ₂ -N	0.02–1.50 mg/L NO ₂ ⁻	1 year	Sulfanilic acid / 1-Naphthylamine
Nitrite 4	985669	0.1–4.0 mg/L NO ₂ -N	0.3–13.0 mg/L NO ₂ ⁻	1.5 years	Sulfanilic acid / 1-Naphthylamine
total Nitrogen TN _b 22*	ISO 23697-1 985683	0.5–22.0 mg/L N		1 year	2,6-Dimethylphenol
total Nitrogen TN _b 220*	ISO 23697-1 985688	5–220 mg/L N		1 year	2,6-Dimethylphenol
Phenolic index5*	985674	0.2–5.0 mg/L Phenol		1.5 years	4-Aminoantipyrine
total Phosphate 1*	985676	0.05–1.50 mg/L P	0.2–5.0 mg/L PO ₄ ³⁻	1 year	Phosphomolybdenum blue
total Phosphate 5*	985681	0.20–5.00 mg/L P	0.5–15.0 mg/L PO ₄ ³⁻	1 year	Phosphomolybdenum blue
total Phosphate 15*	985680	0.30–15.00 mg/L P	1.0–45.0 mg/L PO ₄ ³⁻	1 year	Phosphomolybdenum blue
ortho-Phosphate 1*	985607	0.05–1.50 mg/L P	0.2–5.0 mg/L PO ₄ ³⁻	1 year	Phosphomolybdenum blue
ortho-Phosphate 15*	985657	0.30–15.00 mg/L P	1.0–45.0 mg/L PO ₄ ³⁻	1 year	Phosphomolybdenum blue
Organic acids 3000*	985650	30–3000 mg/L CH ₃ COOH	0.5–50.0 mmol/L CH ₃ COOH	1.5 years	Ethylenglycole / Iron(III)-lons
Sulfide 3*	985673	0.05–3.00 mg/L S ²⁻		3 years	Methylene blue

* This product contains hazardous substances that must be labeled. For detailed information please refer to the safety data sheet.



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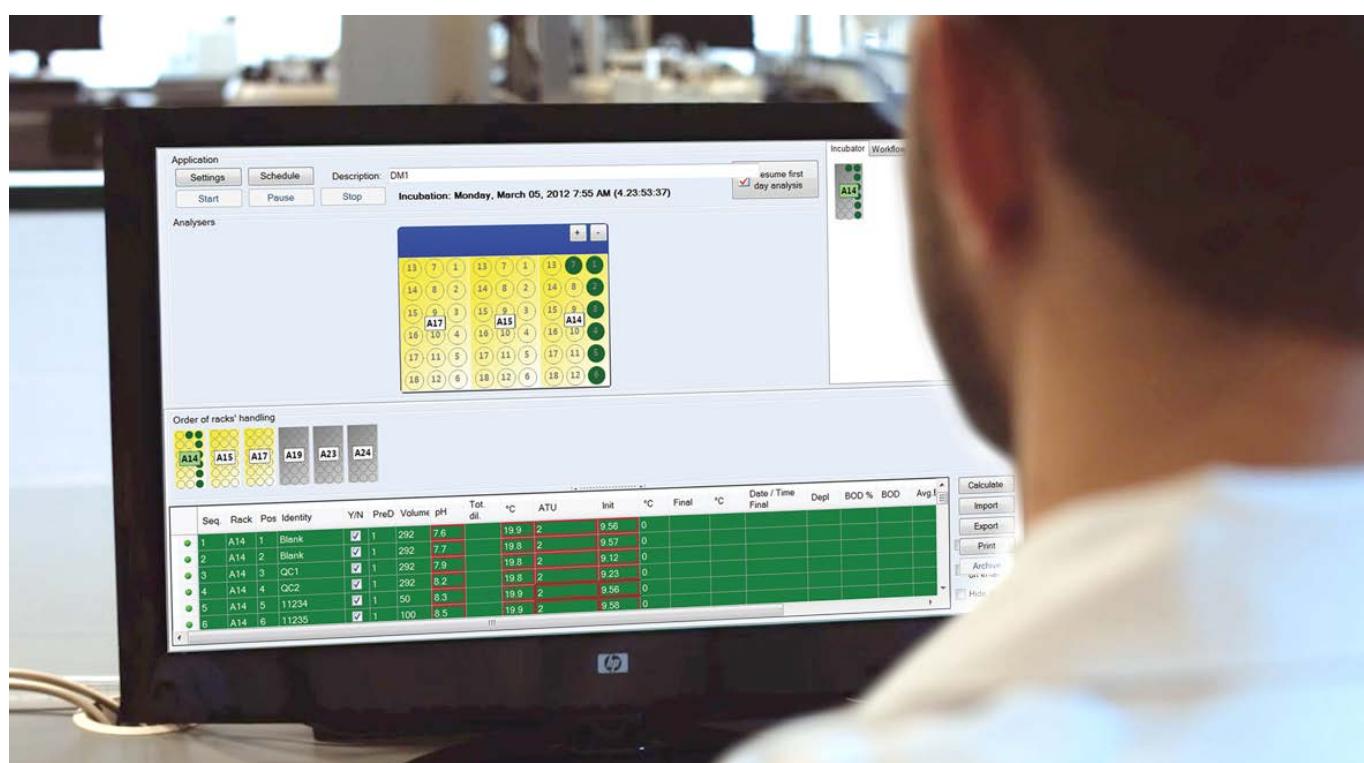
Technical data SP2000

Hardware

Sample capacity	Up to 192 test tubes
Sample throughput	96 samples in 7 hours 96 samples in 4 hours (with second robotic arm)
Movement mechanism	XYZ axis with safety protection
Configuration	Up to 2 robotic arms, each with 4 independently moving manipulators
Modular parts	<ul style="list-style-type: none">■ Removable sample rack■ Removable reagent rack■ Customized racks possible
Temperature adjustable heating reactor	Adjustable to 20–160 °C
Mixing mechanism	Horizontal shaking
Safety	Interlocked front and side protection covers complying with CE regulations
Dimensions	(H x T x B): 75 x 70 x 146 cm
Power supply	220–240 V, 50 Hz or 110–120 V, 60 Hz.

Software

Safety	Definable access levels and password protection
Operation	Drag and drop setup of the sample list, editing during the analysis possible
Data export	Transfer to LIMS and spreadsheet programs even during analysis
Automatic functions	<ul style="list-style-type: none">■ GLP-compliant backup of raw data and calculation of measurement data■ “Out-of-range” results flagging■ Dilution if the measuring range is exceeded■ Averaging of the measurement results■ Start and stop using the analysis planner



NANOCOLOR® robot tests

Curious about MACHEREY-NAGEL?

If you are interested in testing a manual MACHEREY-NAGEL measuring system including reagents, please do not hesitate to contact us or your local distributor.

Contact us via:

Phone: +49 24 21 969-333

E-Mail: support@mn-net.com

Or contact your local distributor.



www.mn-net.com

MACHEREY-NAGEL



Management
System
EN ISO 13485:2016
ISO 9001:2015

www.tuv.com
ID 0000056401



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