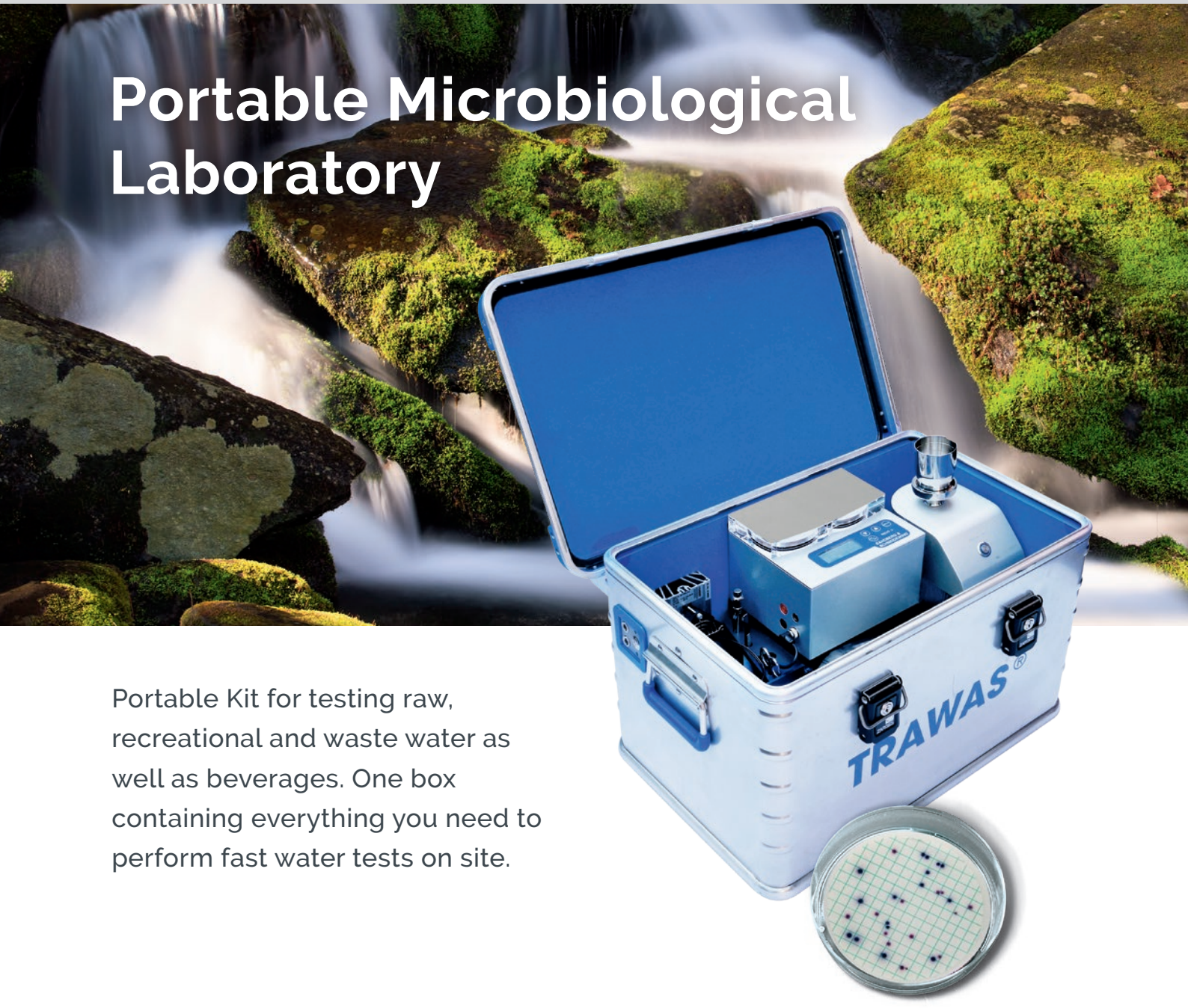
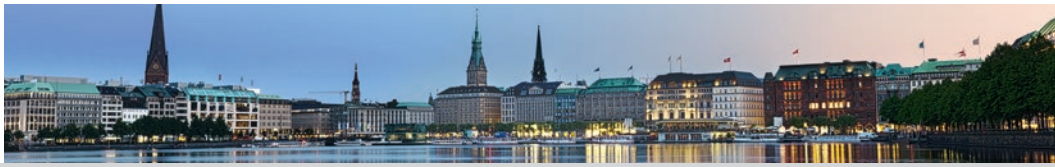
TRAWAS® pro



Portable Microbiological Laboratory

Portable Kit for testing raw, recreational and waste water as well as beverages. One box containing everything you need to perform fast water tests on site.

Developed and made in Hamburg, Germany



SANDBERG & SCHNEIDEWIND
Established 1875

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TRAWAS® pro

The Portable Microbiological Laboratory Kit consists of:

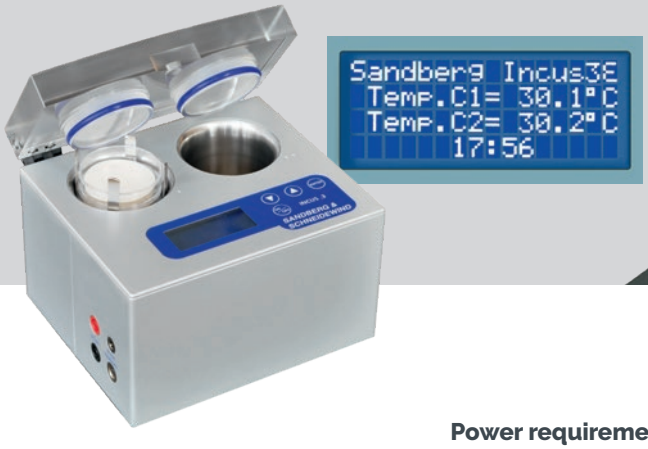
- Hi-End Version, with quality components made in Germany, dual incubator included
- Independent from mains with in-built battery
- Temperature stabilized by electronically controlled cooling
- Complies to latest standards CE, ISO, EUDWD
- 100% safe results using sterile dehydrated media
- Detection of various different types of bacteria
- No sample preparation required
- Can be transported during incubation
- Strong aluminum box with LED and audible alarm
- Sustainable instruments guarantees for very long time
- Modular with wide range of accessories and options
- WLAN/App with GPS data available**

Dimensions:58 x 38 x 33 cm
Weight: 18 kg
** from 2020

	Rack with control unit and serial interface to incubator	NEW 	Vacuum Filtration System, stainless steel, electrical vacuum pump with 100 ml funnel and silicone hose		Electrical Peltier cooling system
	Power adapter 230 V AC / 12 V DC		Battery 12V DC / 15 Ah		Automatic syringe
	Thermometer		Bags, for collecting samples		Nutrient pad set, i.e. Colichrom (acc. to choice)*
	Gas burner (option: alcohol burner)		pH test strips		Membrane filter, sterile
	Scissors, forceps, stainless steel		Checkit® Chlorine		Minisart® 0.2 µm, syringe filter unit
	Permanent Marker		Magnifier, 7x (optionally)		Bottles, for alcohol and water & Turbidity disc (optionally)

* Chromogenic Coliform Agar, as per recommendation of the EUROPEAN UNION DRINKING WATER DIRECTIVE 98-83 EC and EN ISO 9308-1:2014
Other media, i.e. Azide, for detection of Enterococci recommended

Incubator INCUS.3
No.140.054



Can be operated stand-alone or with the coolbox in automatic mode

Incubator Specifications:

> Temp. range: +30°C....+50°C ± 0.2

> Count-down timer max. 36 hours

> Microprocessor controlled, alpha-numeric 4-line display, 4 languages

> New incubator lid with high tech aerogel insulation

> With red LED indicating heating cycle

> Each chamber independently controlled by temp. sensor

> Third temp. sensor for outside temperature control

> Warm-up time: approx. 15 min

> Capacity: 2 x 250 ml (10 Petri dishes or 40 aluminium Petri dishes of competitors)

> Dimensions: 200x180x150 mm

> Optional USB data output and software

> Weight: 1.8 kg

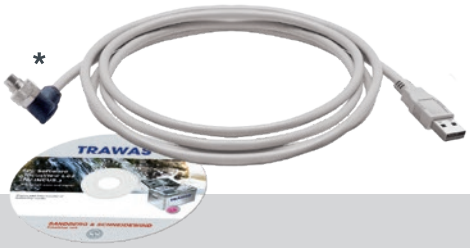
Power requirements:

> Vehicle battery 12 VDC

> 110/230 V AC mains power adapter

> Rechargeable 12 V battery, with charger

> Solar power station on request



Advantages of TRAWAS

> Integrated work area

> No need for any preparation before going into the field

> Easy to use; no special technical knowledge required

> One laboratory assistant onsite is sufficient

> Allows different microorganisms to be analyzed, depending on the nutrient pads

> Vacuum filter holder made of stainless steel, thus sterilizable by flaming

> No autoclave is necessary

> Just moisten nutrient pads with sterile water

> No freezer required for storage. Nutrient pads can be stored at room temperature

> Incubator with 2 chambers for different temperatures, easy to operate, 4 languages

> Automatic cooling if ambient temperature is too high (optional)

> Various power modes with adapter available

> Optionally with memory to save data from up to 10 test cycles. Print-out to PC

Advantages of Filtration Method

> Eliminates time-consuming and labour-intensive preparation of culture media

> This eliminates handling errors when preparing media culture

> Nutrient pads are sterile, dehydrated culture media. Once they are moistened with sterile and demineralized (or distilled) water, they are ready for use immediately

> Conforms to ISO 9308-1

> The visible colonies can be related directly to the sample volume. They give quantitative results. Compared with the direct method, considerably larger sample volumes can be tested. This concentration effect increases the accuracy of micro-biological detection

> Adequate for the determination of E. coli and coliforms, Enterobacteria, Salmonellae, wild yeasts, yeast and mold, etc. utilizing the different nutrient pad types

> Typical application examples are not only the detection of microorganisms in water, but also in beer, foods, milk, pharmaceuticals, soft drinks and wine

> The incubated membrane filters are easy to file as a permanent record for convenient traceability

> Sartorius* Membrane Filters are manufactured under GMP conditions, ensuring consistent quality and high reproducibility from batch to batch and within each batch
*www.Sartorius.com

Bacteriological quality of drinking water according to World Health Organisation (WHO)*

Organisms	Guideline Value
All water directly intended for drinking E. coli or thermotolerant coliform bacteria [b,c]	Must not be detectable in any 100 ml sample
Treated water entering the distribution system E. coli or thermotolerant coliform bacteria[b]	Must not be detectable in any 100 ml sample
Treated water in the distribution system E. coli or thermotolerant coliform bacteria[b]	Must not be detectable in any 100 ml sample

[a] Immediate investigative action must be taken if E. coli are detected.

[b] Although E. coli is the more precise indicator of faecal pollution, the count of thermotolerant coliform bacteria is an acceptable alternative. If necessary, proper confirmatory tests must be carried out. Total coliform bacteria are not acceptable indicators of the sanitary quality of water supplies, particularly in tropical areas, where many bacteria of no sanitary significance occur in almost all untreated supplies.

[c] It is recognized that the great majority of rural water supplies, especially in developing countries, faecal contamination is widespread. Especially under these conditions, medium-term targets for the progressive improvement of water supplies should be set.

* "Guidelines for drinking water quality", Vol 1, Recommendations, 3rd Edition, WHO, Geneva, 2004

Recommended Accessories:

AL 15 pH/Con Set

- high quality portable pH/Conductivity meter
- large LCD display, protective casing with a measuring range 0 - 14.00 pH, ORP : ± 1999 mV, Conduct. 200 µS – 200 mS, TDS, Temp. 0 – 100°C, ATC, 3 point calibration, real time, data logger, USB/RS232, software
- complete set with pH electrode, temp. probe, conductivity probe, pH buffer set 4.00/7.00, instruction manual, in rugged case

Turbidity Meter AL 250T-IR

- infrared light source 90°, backlit LCD
- measuring range : 0.01 – 1100 NTU (auto range) accuracy: 0,01 NTU
- for use with various media, from drinking water to waste water
- complete with 4 turbidity standards, battery and test vial in case

N.I.S.T. traceability

Photometer AL 400 & 410

- Highest/reproducible precision with interference filter
- Display with background lighting
- More than 120 pre-programmed methods
- Automatic selection of wavelength
- User guidance in German, English, French, Spanish, Italian, Portuguese (BR), Polish, and Indonesian.
- Buffer for up to 1000 data records
- Bluetooth® interface for connection to smart phones and tablets (only with AL410)
- iOS® and Android™ app for data management and email delivery (only with AL410)
- Infrared interface (only with AL400)
- Waterproof housing*
- Handheld format, portable

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