Gerhardt
Analytical Systems

automatic
serial determination of up
to 100 samples
rapid-clean-precise

N-REALYZER

Elemental analysis for the determination of nitrogen

Technical data N-Realyzer

Data	N-Realyzer
Sample size	up to 1000 mg
Sample capacity	1 - 100 samples
Analysis time	3 - 5 min, depending on the sample type and sample size
Recovery rate	> 99,5 %
Detection limits with Helium	0,003 - 50 mg N absolut
Standard deviation	< 0,5 % (with standard sample preparation)
Operation	via computer with REAL-OS
Temperature range Combustion furnace	400 - 1.100 °C
Temperature range Reduction furnace	400 - 1.100 °C
Temperature range Desorption furnace	50 - 400 °C
Required gases and quality	Helium, quality grade 5.0 (99,999 %)
	Oxygen, quality grade 5,0 (99.999 %)
	Compressed air (100 % oil- and water free)
Gas installation	ressure regulators for high purity gas; 1/4˝ cylindric thread (female)
Inlet pressure helium	3 - 6 bar
Inlet pressure oxygen	3 - 6 bar
Inlet pressure compr. air / nitrogen	7 - 8 bar
Ambient temperature	15 °C < t < 35 °C
Nominal voltage	100 - 240 VAC
Frequency	50/60 Hz
Dimensions Device closed W / D / H	600 x 550 x 722 mm
Dimensions Device opened* W / D / H	600 x 550 x 1200 mm
Weight	ca. 130 kg
Nominal wattage	1400 W
Current	max. 14 A (6 A bei 230 V, 14 A bei 100 V)
Wanted digital balance	Precision min. 0,1 mg

* Upper protective cover open

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ORDER INFORMATION

When ordering the apparatus, please note that you must order the correspondin REAL-OS control unit for the intended destination country in addition to the 14-4000 base unit. The base unit can be operated for all voltages from 100 - 240 volts. The respective control units are configured for the corresponding target markets with suitable connection cables.

N-Realyzer Base unit

Order No.	Type	Description
14-4000	REAL-N	N-Realyzer basic unit, complete with: - Autosampler for the automatic supply of up to 100 samples - Starter kit incl. all consumables for 1,000 samples (absorber, CO_2 adsorber, copper, ash insert, etc.) - Accessories and tools for sample handling - Connection lines for gas and compressed air installation

### REAL-OS Control Unit 230 V (EUR/INT)
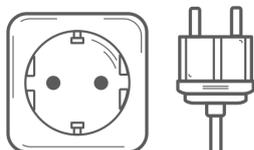
Plug type F
230 V

| Order No.	Type	Description
14-4002	CUN-02	REAL-OS Control Unit for N-Realyzer, for target markets **Europe and International** with plug connection type Typ F, 230 V - complete with: - 14-4545 Mini PC with REAL-OS control software and power supply unit - 14-4549 Ethernet cable, 2 m (2 pieces) - 10-0057 Mains cable AKE 3x1,0 mm², 1,5 m Note: Monitor, PC keyboard and mouse are not included in the scope of delivery and must be provided on site*

REAL-OS Control Unit 220 V (US/CAN/CSA)
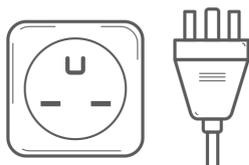
Plug type B, NEMA 6-15
220 V

Order No.	Type	Description
14-4003	CUN-03	REAL-OS Control Unit for N-Realyzer, for target markets USA, Canada, South America with plug connection type NEMA 6-15, 230 V - complete with: - 14-4545 Mini PC with REAL-OS control software and power supply unit - 14-4549 Ethernet cable, 2 m (2 pieces) - 1004799 US device connection cable NEMA 6-15 with plug, 2.5 m - 14-4559 Travel plug N-Realyzer Control Unit Note: Monitor, PC keyboard and mouse are not included in the scope of delivery and must be provided on site*

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REAL-OS Control Unit 115 V (US/JPN/CSA)
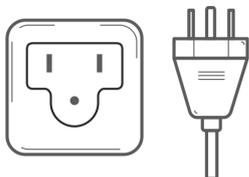
Plug type B, NEMA 5-15
115 V
Attention, only permitted with
protective conductor!

Order No.	Type	Description
14-4004	CUN-04	REAL-OS Control Unit for N-Realyzer, for target markets USA, Japan, South America with plug connection type B, NEMA 5-15, 115 V - complete with: - 14-4545 Mini PC with REAL-OS control software and power supply unit - 14-4549 Ethernet cable, 2 m (2 pieces) - 1007344 15A mains cable, with NEMA 5-15, 115V (with IEC plug) - 14-4559 Travel plug N-Realyzer Control Unit Note: Monitor, PC keyboard and mouse are not included in the scope of delivery and must be provided on site*

REAL-OS Control Unit 240 V (GB)
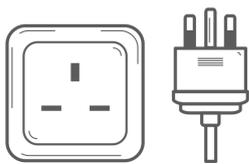
Plug type G
240 V

Order No.	Type	Description
14-4005	CUN-05	REAL-OS Control Unit for N-Realyzer, for target markets Great Britain with plug connection Type G 1-13 A, 240 V - complete with: - 14-4545 Mini PC with REAL-OS control software and power supply unit - 14-4549 Ethernet cable, 2 m (2 pieces) - 10-0050 Mains cable, 1.5 m with English plug plug Note: Monitor, PC keyboard and mouse are not included in the scope of delivery and must be provided on site*

*Minimum monitor requirements: Full HD resolution 1080 p (1920 x 1080),
24" screen diagonal, recommended: HDMI interface, Vesa mount compatible, 75 Hz

*Minimum keyboard and mouse requirements: 100% keyboard with Numpad, wireless

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ACCESSORIES AND CONSUMABLES

The best analytical results can only be achieved with original accessories from C. Gerhardt. These have been specially developed and tested for use with the N-Realyzer in our in-house application laboratory.

Set of Consumables - DumaSet (with high-performance reactor)

Copper must be ordered separately

Order No.	Type	Description
14-0194	DumaSet	N-Realyzer - Compilation of important consumables, consisting of: 1 x 14-0244 DumaReact, combustion reactor, filled with HT and LT 2 x DumaTube, quartz tube for reactor 1 x DumaCollect, ash insert (unit with 10 pcs.) 10 x DumaFoil, Tin foil, conditioned, (10 boxes á 100 pcs.)

Reactor - DumaReact

Order No.	Type	Description
14-0244	DumaReact	Prepacked combustion reactor, filled with HT- and LT-catalyst, 1 pc.

Quartz tube - DumaTube

Copper must be ordered separately

Order No.	Type	Description
14-0203	DumaTube	Quartz tube for reactor, OD 26mm, L 450mm, 2mm wall thickness, 1 pc

Copper - DumaCop

Order No.	Type	Description
14-0007	DumaCop	Copper for reduction, **10 bottles á 225 g** (two bottles are enough for one filling for quartz tube no. 14-0203)
14-0002	DumaCop	Copper for reduction, **20 bottles á 225 g** (two botles are enough for one filling for quartz tube no. 14-0203)

HT wool - DumaPad (for quartz tube and combustion reactor)

Order No.	Type	Description
14-0225	DumaPad	HT Wool pads combibox, content: 30 pcs. small + 30 pcs. large
14-0274	DumaPad	HT Wool pads **small**, content: 60 pcs.
14-0275	DumaPad	HT Wool pads **large**, content: 60 pcs.

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![Gerhardt Analytical Systems logo]

Special tool for N-Realyzer

Order No.	Type	Description
14-0064		Tool for taking out reactor tubes,1 pc.

Removing tool

Order No.	Type	Description
14-4511		Removing tool for ash insert

Extractor

Order No.	Type	Description
14-0068		Extractor for ash insert, 1 pc. For removing and inserting hot ash inserts

Tin foil - DumaFoil

Order No.	Type	Description
14-0017	DumaFoil	DumaFoil, tin foil 3.5 x 3.5cm, 100 pcs.
14-0417	DumaFoil	DumaFoil XL, tin foil 4.3 x 4.3 cm, specially designed for weighing in larger samples, 100 pcs.

Ash insert - DumaCollect

Order No.	Type	Description
14-0015	DumaCollect	Ash insert, ceramics, with bottom, **for single use** L 100 mm, package with 10 pcs.

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Condensate collection glass

Order No.	Type	Description
14-4331		Condensate collection glass, square 50 ml

Standard - DumaEDTA

Order No.	Type	Description
14-0032	DumaEDTA	EDTA Calibration Standard, 10g

Absorbent - DumaSorb
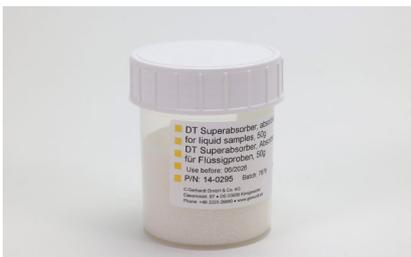
Order No.	Type	Description
14-0022	DumaSorb	Absorbent for liquid samples, content 25 g
14-0295	Super-absorber	Absorbent, special, for low salt- and low fat liquid samples of up to max. 400 mg, content 50 g

Adsorber - DumaCO$_2$

Order No.	Type	Description
14-4085	DumaCO$_2$	REAL-N Spiral adsorber for CO$_2$, completely filled with adsorbent, gas-tight seal incl. GL 14 screw caps, package with 7 pieces
1003687		REAL-N Screw cap GL 14, closed

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Order No.	Type	Description
14-4529		REAL-N Sample transfer unit for collecting and safely transferring up to 100 samples into N-Realyzer analysis system.

Encapsulating device

Order No.	Type	Description
14-0025		Encapsulating device for samples, 3-part, for sample magazine 64-place

Accessories for water adsorption trap

Order No.	Type	Description
14-0219		Adsorbent for water adsorption trap 14-0061, Content 100 g, 1 bottle
14-0217		Glass part L = 150 mm for water absorption trap 14-0061
14-0243		Covering wool for water absorption trap, 5g
14-0081		Silicone sealing for water absorption trap, 2 pcs

14-0219

14-0217

14-0243

14-0081

Rack versions

Order No.	Type	Description
14-0672		Reactor rack - for the safe storage of up to 4 reactors (DumaReact)
14-0076		Metal stand for supporting reactor tubes

14-0672

14-0076

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Filling funnel

Order No.	Type	Description
14-0218		Funnel for the filling of the reactors and traps, 1 pc.

Sampling devices for solid & liquid samples

Order No.	Type	Description
14-0073		Spatula for solid samples, 1 pc.
14-0095		Syringe, 1 ml for liquid samples, 1 pc.

14-0073

14-0095

Rod for filling

Order No.	Type	Description
14-0065		Rod for reactor tube filling, 1 pc.

Tweezer

Order No.	Type	Description
14-0072		Tweezer with curved tip, 1 pc.

End caps for reactor

Order No.	Type	Description
14-0273		End caps for reactor small/large, content: - 10 x end caps small - 10 x end caps big

Reactor connection, complete

Order No.	Type	Description
14-4518		Reactor connection, completely assembled with: Teflon tube 14-4436, glass connector 14-4435 and o-ring seal 14-4437

Spare parts for reactor connection

Order No.	Type	Description
14-4436		Teflon tube for reactor connection, inner Ø 4 mm, complete with nuts and ferrules
14-4435		Glass connector for reactor connection
14-4437		O-ring seal green FFPM, green 18 x 4 mm, pack of 4 pcs.

14-4436

14-4435

14-4437

Leakage detector

Order No.	Type	Description
14-0008	LD239	Leak detector for detecting leaks in the apparatus, complete with: - USB charging cable

Sealings for quartz tubes

Order No.	Type	Description
14-0020		Sealings for quartz tube top, black, Ø 26 mm, 4 pcs.
14-4437		Sealings for quartz tube bottom, green, Ø 18 mm, 4 pcs.

14-0020

14-4437

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Adapter for gas pipes

Order No.	Type	Description
14-0126		Adapter 1/4˝, for PU gas pipe 4 mm
14-0125		Adapter 1/4˝, for gas pipe 2 mm
14-0128		Adapter 3/8˝, for PU gas pipe 4 mm
14-0127		Adapter 3/8˝, for gas pipe 2 mm

14-0126 (14-0128)

14-0125 (14-0127)

Spare parts for gas pipes

Order No.	Type	Description
14-0069		Sealing cone for 4 x 0.75 mm for PU tube, 6 pcs.
14-0070		Nut M6 x 0.75 mm, for 2 mm stainless steel pipe, 10 pcs.
14-0071		Sealing cone for 2 mm stainless steel pipe, 10 pcs.

14-0069

14-0070

14-0071

SUPPORT AND SERVICE

In addition to its high quality instruments, C. Gerhardt offers comprehensive services to maintain the functionality and effeciency of your equipment.

INSTALLATION / EQUIPMENT QUALIFICATION

Selection	Type	Description
99-0204	ABI-DT	Installation and Instruction N-Realyzer - Installation and connection of the unit - functional check - operating instructions
99-0212	GQF-DT	Equipment Qualification (IQ/OQ) N-Realyzer - Installation of the unit and instruction - **I**nstallation **Q**ualification **IQ** and **O**perational **Q**ualification **OQ**, Guidance for **P**erformance **Q**ualification **PQ** - Training of laboratory personnel with certificate - Individual training certificates, if reqested

SERVICING AND MAINTENANCE CONCEPTS

For detailed information on servicing and maintenance concepts, please contact your local authorised C. Gerhardt representative.

WORKSHOPS / SEMINARS / APPLICATIONS TRAINING

For detailed information on trainings and workshops, please contact your local authorised C. Gerhardt representative.

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TABLE OF CONFIGURATION
Please arrange the required system

N-REALYZER

Quantity	Order No.	Type	Description

CONSUMABLES / ACCESSORIES

Quantity	Order No.	Type	Description

SUPPORT AND SERVICE

Quantity	Order No.	Type	Description

Send offer to:

Customer No.	
Company	
Name	
Address	
Tel.	
E-mail	
Web	

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