CITREX H4 test set

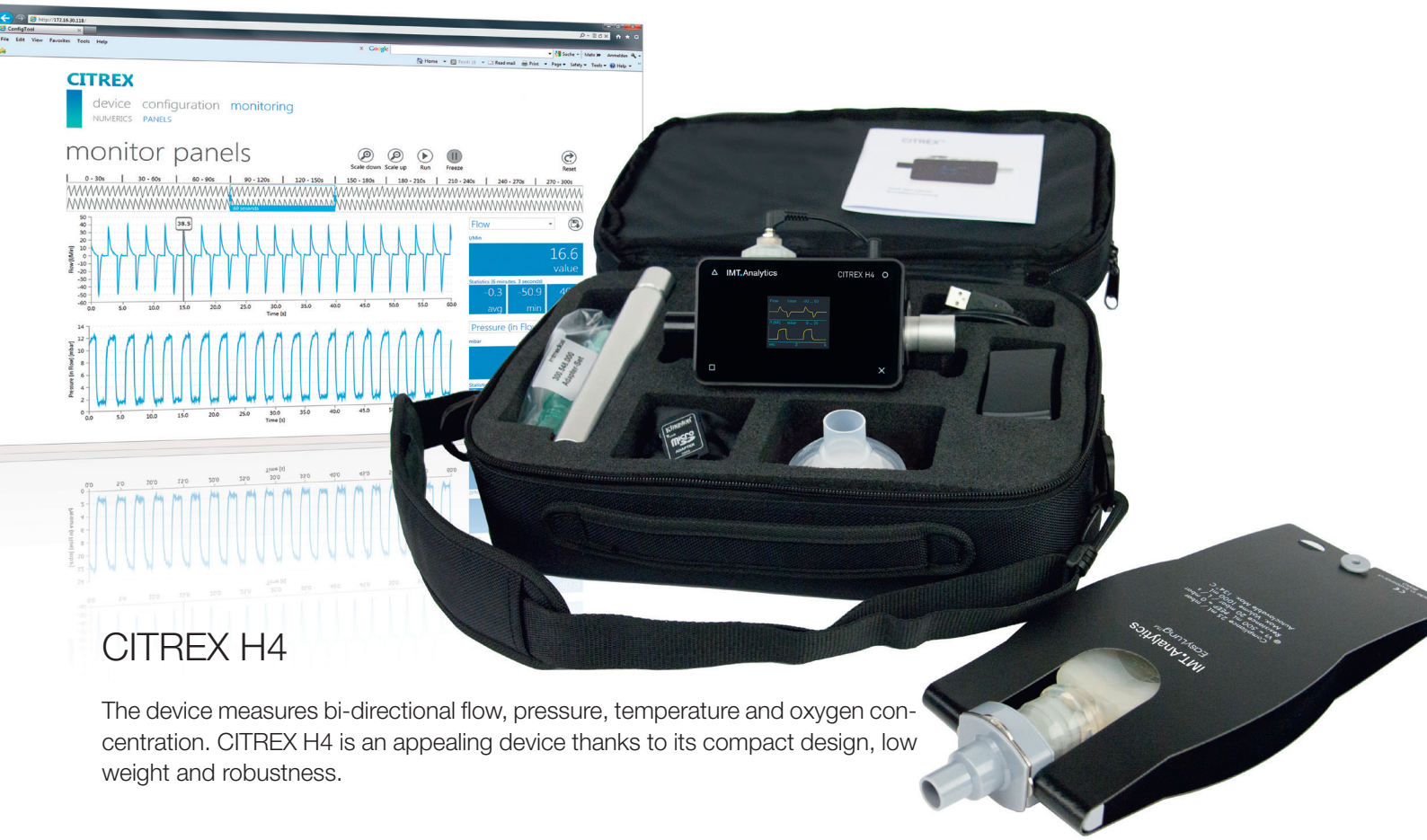
The compact device for mobile use

analyser
the art of measuring

Complete measuring system for mobile use.

The CITREX H4 test set is a certified, high precision measuring system with an extensive set of accessories.

The CITREX H4 can be used to validate and calibrate a wide range of ventilators and gas delivery systems. It's intuitive user interface and high resolution display makes set up and measurement a simple process.



CITREX H4

The device measures bi-directional flow, pressure, temperature and oxygen concentration. CITREX H4 is an appealing device thanks to its compact design, low weight and robustness.

CITREX Webserver Monitoring

Connect CITREX H4 to your IT network. Remote monitoring via your LAN network or the internet is child's play. The "Webserver Monitoring" software tool included in the scope of delivery can be used in any browser to evaluate and record your measured data in detail.

FlowLab

The test set also includes the advanced FlowLab software for detailed analysis and recording of all CITREX parameters. High resolution real-time curves, trending capabilities and advanced Excel reporting functions make it indispensable to experts.

CITREX H4 test set contains:

- CITREX H4
- EasyLung
- CITREX Webserver configurator and monitoring
- FlowLab activation code
- Oxygen sensor incl. activation code
- Adapter set
- Laminar flow tube
- Car adapter
- Micro SD memory card
- Protection filter RT019
- USB cable
- Ethernet cable
- Power supply
- Carrying bag
- Battery pack
- Quick start manual

Differential pressure

In addition to 17 gas standards and 8 gas types, the CITREX H4 has also a differential pressure sensor with a range of ±200 mbar. The measured values of this sensor can be used for internal calculation of ventilation parameter and stored on an external memory media.

CITREX H4 test set for inspecting and certifying:

- CPAP/bi-level ventilators
- ICU ventilators
- High-frequency ventilators
- Blood pressure monitors
- Oxygen concentrators
- Spirometers
- CO_2 insufflators
- Medical gas supplies

Order number: 302.161.000

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CITREX H4

Technical Specifications

Flow and pressure measurements		Range	Accuracy
Flow	Measuring direction	Bidirectional	
	Temperature compensated	Automatic	
	Pressure compensated	Automatic	
	Humidity compensated	Manually	
	O_2 compensated	–	
	High Flow	± 300 sL/min***	± 1.9 %* or ± 0.1 sL/min (for 10..40°C)**
	Low Flow	–	
Pressure	High Pressure (P_{High})	0–10 bar	± 1 %* or ± 10 mbar**
	Differential Pressure (P_{Diff})	± 200 mbar	± 0.75 %* or ± 0.1 mbar**
	Relative Pressure	–	
	Low Pressure	–	
	Pressure in High Flow Channel ($P_{Channel}$)	-50–150 mbar	± 0.75 %* or ± 0.1 mbar**
	Atmospheric Pressure (P_{Atmo})	500 – 1150 mbar	± 1 %* or ± 5 mbar**
	Vacuum Pressure	–	
Units	Flow	L/min, L/s, cfm, mL/min, mL/s	
	Pressure	bar, mbar, cmH_2O, inH_2O, Torr, inHg, hPa, kPa, mmHg, PSI	

Other measurements		Range	Accuracy
Oxygen	Concentration	0–100 %	± 1 % O_2**
	Pressure compensated	≤ 150 mbar	
Temperature	In High Flow Channel	0–50 °C	± 1.75 %* or ± 0.5 °C**
Dew point	–		
Humidity	–		
CO_2	–		
N_2O	–		
HAL, ISO, ENF	–		
SEV	–		
DES	–		
Gas types		Air, O_2, Air/O_2, N_2O, N_2O/O_2, He/O_2, N_2, CO_2	
Gas standards		ATP, ATPD, ATPS, AP21, STP, STPH, BTPS, BTPS-A, BTPD, BTPD-A, 0/1013, 20/981, 15/1013, 25/991, 20/1013, NTPD, NTPS	

Ventilation parameters		Range	Accuracy
Breath rate	Rate	1–1000 bpm	±1 bpm or ± 2.5 %**
Time	T_i, T_e	0.05–60 s	± 0.02 s
Ratio	I:E	1:300–300:1	± 2.5 %*
	T_i/T_{cyc}	0–100 %	± 5 %*
Breath volumes	V		±2 %* or ±0.20 mL (>6 sL/min)**
	Vti, Vte	± 10 L	± 2 %* or ± 0.20 mL (> 6 sL/min)**
Minute volume	Vi, Ve	0–300 sL/min	±2.5 %*
Pressure	P_{Peak}, P_{Mean}, PEEP, $P_{Plateau}$, IPAP	0–150 mbar	±0.75 %* or ±0.1 mbar**
Peakflow	PF_{Insp}, PF_{Exp}	± 300 sL/min	± 1.9 %* or ± 0.1 sL/min**
Compliance	C_{Stat}	0–1000 mL/mbar	±3 %* or ± 1 mL/mbar**
Trigger	Adult, Pediatric, HFO, ext. Trigger	Adult, Pediatric, HFO	

General information	
Power	100–240 VAC, 50/60 Hz
Battery	4 hours
Power consumption	2.5–6 W
Weight	0.40 kg
Dimensions (w × d × h)	11.4 × 7 × 6 cm
Data storage	microSD Card
Display	1.7" with touch control elements (color), Realtime curves
Interfaces	RS-232, USB, Ethernet, CAN, Analog Out, TTL (external Trigger Input), TSI4000 Protocol
Calibration	Annually
Conditions Ambient temperature	15–40 °C (59 –104°F)
Conditions Humidity	10–90 % R.H.***
Approvals	CE, BC (Energy Efficiency for Battery Charging Systems), CSA (North America), IEC 61010-1:2010, IEC 61326-2:2012

The greater tolerance is valid: *Tolerance related to the measured value, ** Absolute tolerance, *** The unit sL/min is based on ambient conditions of 0 °C and 1013.25 mbar (DIN 1343).