CITREX™ H4

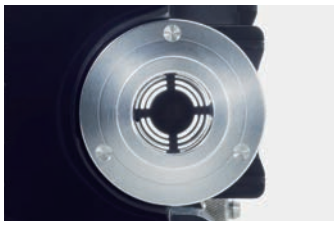
« The compact and mobile
testing device for ventilators. »

imtmedical

Ventilator tester for mobile use

simple. compact. reliable.

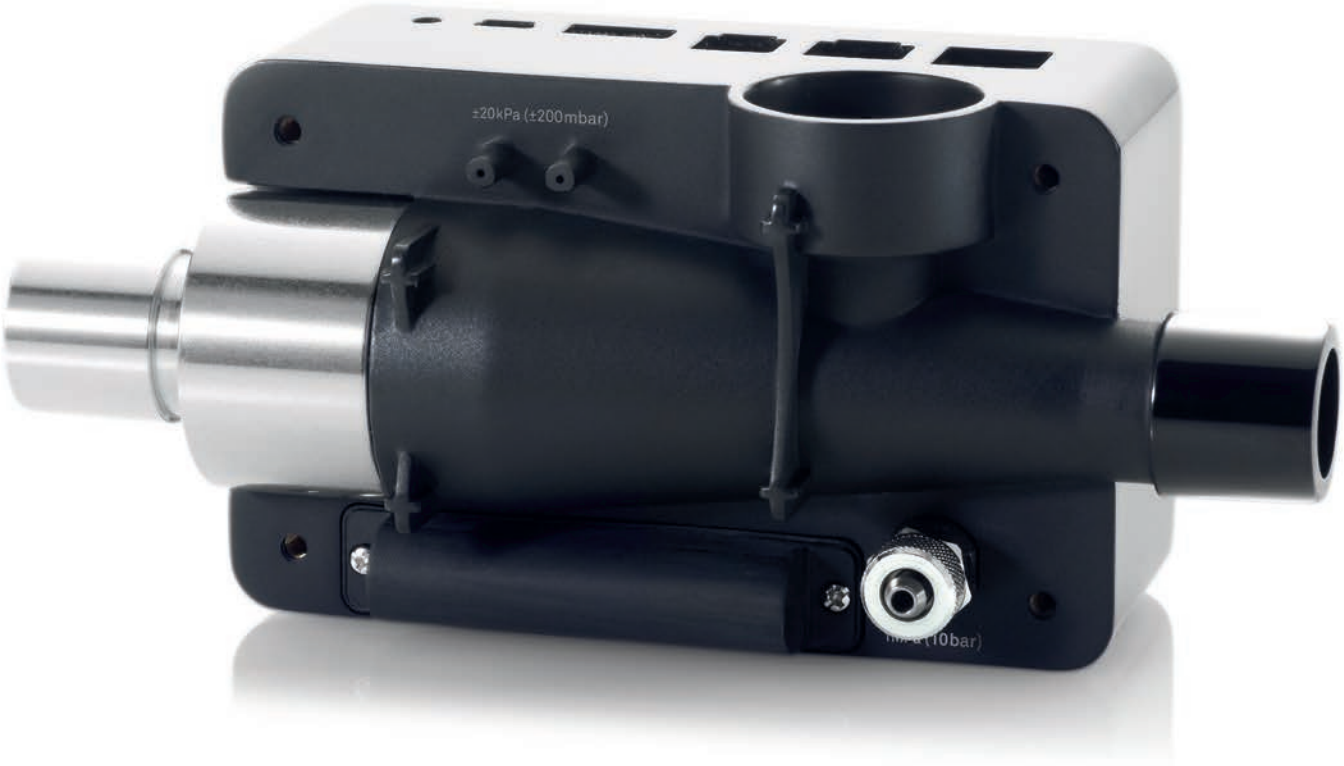
Simple operation
CITREX is simple and intuitive to operate. The color screen offers excellent readability and can be adapted to any situation due to its flip-screen function.



Bidirectional flow measurement
The newly developed measuring method allows extremely precise, bidirectional flow measurement with low measuring resistance.

Respiratory parameters
All the relevant respiratory parameters are measured and calculated. The device measures flow, volume, four pressures, temperature and oxygen concentration.

Gas standards and gas types
13 gas standards and 6 gas types can be measured so as to meet a range of measuring requirements.



Memory function
It is simple to save measurements on the device and export them via SD card for subsequent analysis.

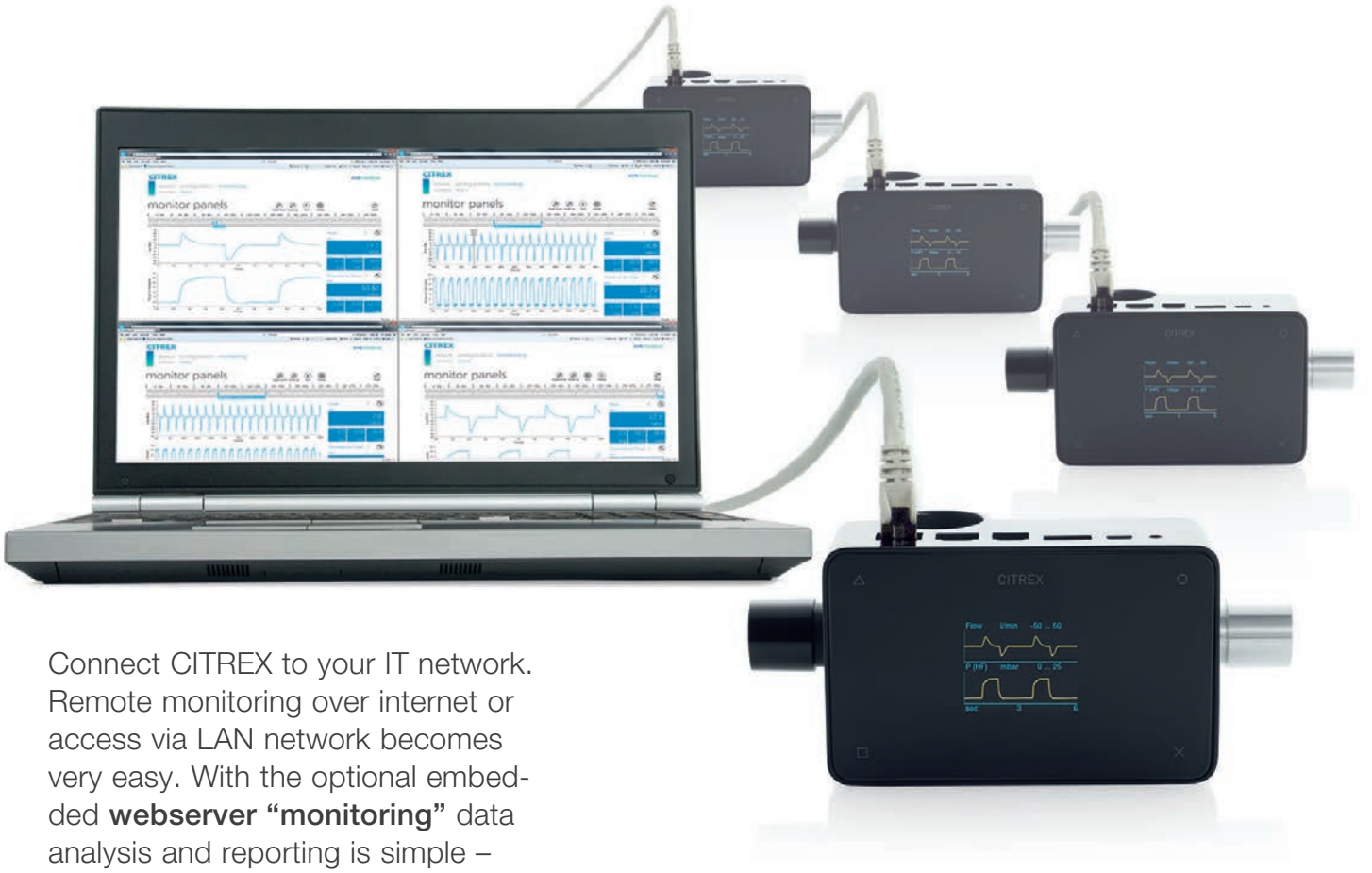
Interfaces
Due to the numerous interfaces the device is ideal for networking, remote control and configuration.

A compact device with everything you need
CITREX is especially impressive due to its size, low weight and robustness. All required components are integrated and the battery enables prolonged independent use.

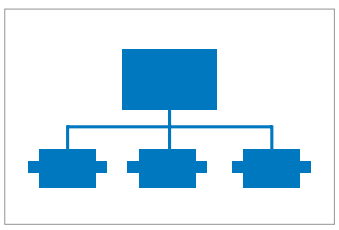
Device configuration
With the integrated webserver configure your device just via a browser. Define device name, trigger modes and screen layouts for real time curves and numerical values.

Webserver Monitoring

Remote and network application

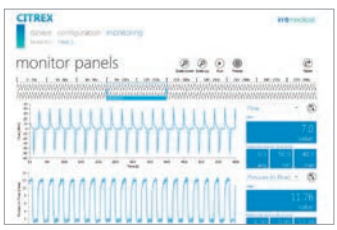


Connect CITREX to your IT network. Remote monitoring over internet or access via LAN network becomes very easy. With the optional embedded **webserver "monitoring"** data analysis and reporting is simple – just in a browser.

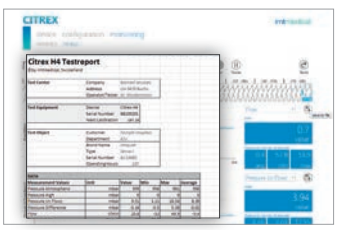


Network applications
Access all your CITREX data via LAN network without installing additional software. Connect CITREX with network settings DHCP, default or configured.

Remote monitoring
Supervise measurements via internet. Get access from anywhere to your CITREX device. Remote monitoring becomes very easy.



Real time curves
Investigate real time charts with zooming and cursors. All breath based respiratory parameters can also be displayed as charts.

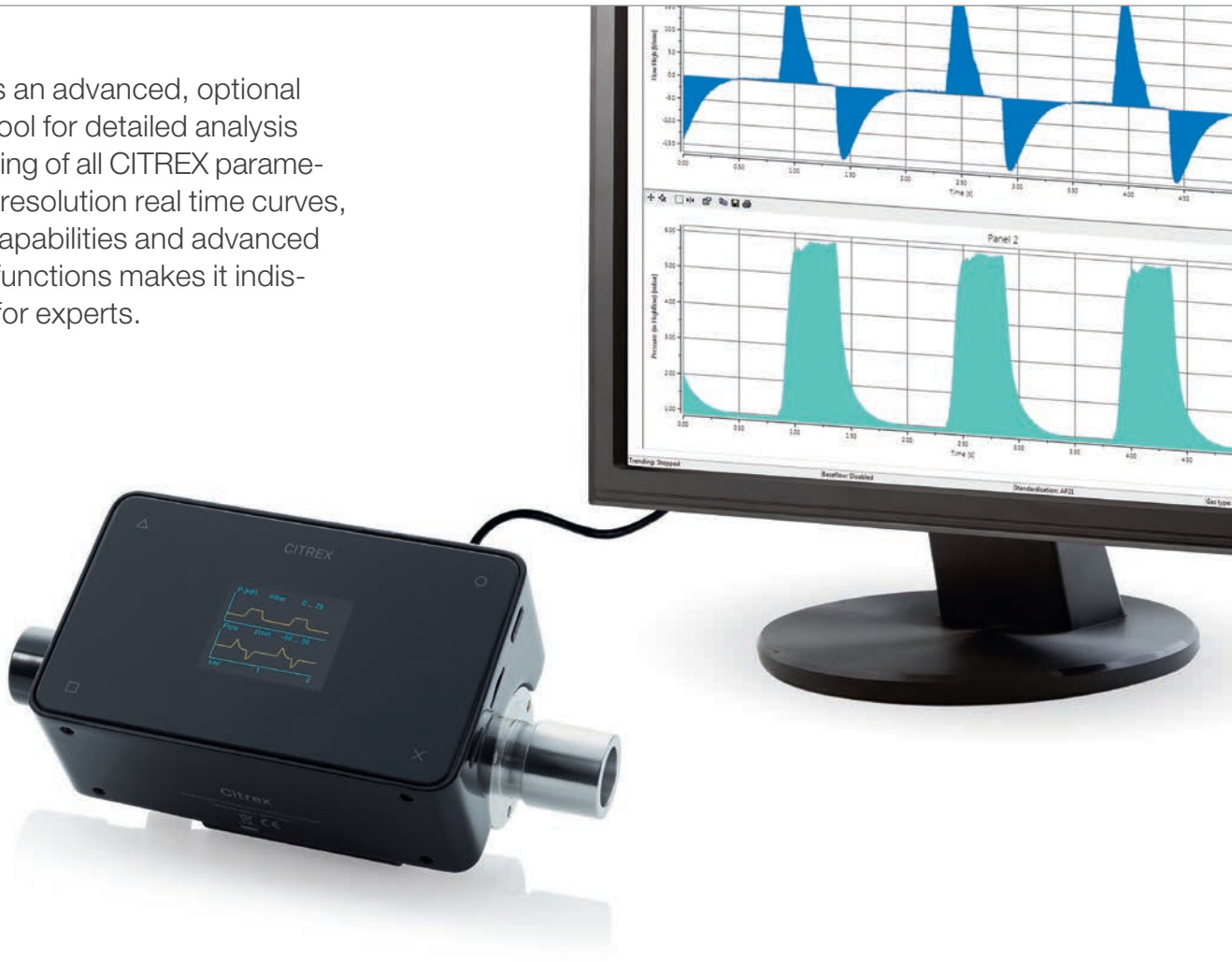


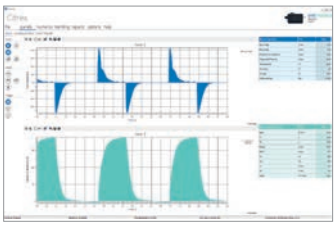
Test reports
Create your individual test reports by exporting data in Microsoft Excel format.

FlowLab™

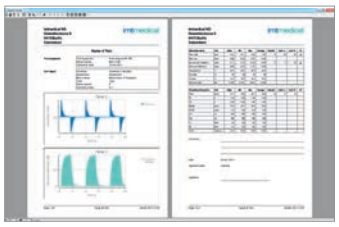
Reporting and documentation software

FlowLab is an advanced, optional software tool for detailed analysis and reporting of all CITREX parameters. High resolution real time curves, trending capabilities and advanced reporting functions makes it indispensable for experts.

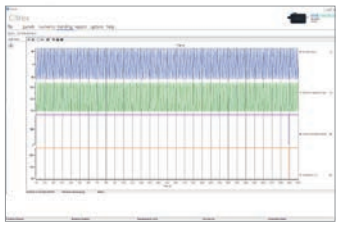




Panels
Display up to 6 curves simultaneously. FlowLab offers high resolution real time curves and X-Y graphs of all parameters.



Performance records
To facilitate your device management, performance records can be created and saved electronically or printed. Define the configuration and insert your logo.



Trending
Record data up to 100 hours to verify longterm ventilator functionality. User defined trending interval and measuring up to 10 values simultaneously are available.

Languages
FlowLab software is available in 15 languages.

Accessories
Meeting the requirements in the field

Oxygen Measurement
Fast and precise measurement of oxygen concentration is an important function when verifying and calibrating ventilators. This option is available for new devices or can be acquired subsequently as a retrofit set.

Carrying Bag CITREX
The carrying bag is made of high-quality materials and is big enough to securely hold and transport the device along with all accessories.

Inlet Pipe
Test setup tool

USB Car Adapter
This adapter allows charging your CITREX device in every car.

Protection Filter RT019
To protect your device from dust and dirt.

SmartLung & EasyLung
The most intelligent and cost-effective test lungs that safely test ventilators and anaesthesia machines for function and precision. SmartLung and EasyLung are extremely handy and user-friendly.

Adapter Set
The adapters contained in the set allow connection of virtually any test object to the device.

CITREX Set
Equipped for any situation

The biomedical test set “CITREX mobile” is a certified, high precise measuring system delivered with all needed component parts.

Differential pressure
Besides various functions CITREX can measure differential pressure starting with -200 mbar up to 200 mbar.

Biomedical Test Set “CITREX mobile” to test and verify:
- Ventilators CPAP / Bilevel
- Ventilators ICU
- Ventilators High Frequency
- Blood pressure analysers

...and many more

Carrying Bag CITREX
For optimal protection of your equipment the bag is padded with soft foam.

Inlet Pipe and USB Car Adapter
The inlet pipe can be supportive during complex test setups. Charge your CITREX device in the car with the USB car adapter.

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Technical Specifications

Flow and Pressure Measurements		Range	Accuracy
Flow		± 300 sL/min***	Air: ± 1.9 %* or ± 0.1 sL/min**
Temperature compensated		yes	
Pressure compensated		yes	
Pressure			
High		0 ... 10 bar	± 1 %* or ± 10 mbar**
Differential		± 200 mbar	± 0.75 %* or ± 0.1 mbar**
Flow channel		- 50 ... 150 mbar	± 0.75 %* or ± 0.1 mbar**
Barometer		500 ... 1150 mbar	± 1 %* or ± 5 mbar**
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, pressure compensated	0 ... 100 %	± 1 % O_2**
Gas temperature	0 ... 50 °C	± 1.75 %* or ± 0.5 °C**
Gas types	Air, Air/O_2, N_2O/O_2, Heliox (21 % 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		1 ... 1000 bpm	±1 bpm or ± 2.5 %**
Time	Ti, Te	0.05 ... 60 s	± 0.02 s
Ratio	I:E	1:300 ... 300:1	± 2.5 %*
	Ti/Ttotal	0 ... 100 %	± 5 %*
Volume	VTi, Vte	± 10 L	± 2 %* or ± 0.20 mL (> 6 sL/min)**
Minute volume	Vi, Ve	0 ... 300 sL/min	± 2.5 %*
Peak flow	Insp./Exp.	± 300 sL/min	Air: ± 1.9 %* or ± 0.1 sL/min**
Pressure	Ppeak, Pmean, PEEP, Pplateau	0 ... 150 mbar	± 0.75 %* or ± 0.1 mbar**
Compliance	Cstat	0 ... 1000 mL/mbar	± 3 %* or ± 1 mL/mbar**
Volume trigger	Adult, Pediatric, HFO	flow or pressure at preset and at adjustable levels	

General Information	
Color display	yes
Realtime curves	flow, pressure, volume, temperature, oxygen, ventilation parameters
Interface	RS-232, USB, Ethernet, CAN, Analog Out (TTL), TSI4000 Protocol
Power	100 ... 240 VAC, 50 ... 60 Hz
Battery	4 hours
Dimension (w x d x h)	11.4 x 6 x 7 cm
Weight	0.4 kg
Calibration	annually
Memory card	yes
Approvals	CE, CAN/CSA-C22.2 No. 61010-1-12, EN 61326-1:2006/ICE 61326-2:2005 (EMC)

Legend 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 mbar (DIN 1343).

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