

# METAMax<sup>®</sup> 3B

## MOBILE SPIROERGOMETRY SYSTEM



*Product Brochure*



## EXTENDING LIMITS



## METAMAX<sup>®</sup> 3B

*Whatever pushes you forward:  
The META<sup>®</sup>MAX 3B is a spiroergometry  
system for professional outdoor use  
designed to meet your individual needs –  
no matter how exceptional they might be.*

Thanks to sophisticated technical features and constant further development the META<sup>®</sup>MAX 3B can be used in all disciplines. Regardless of its location in the field, in the air, on the water or near fire, the META<sup>®</sup>MAX 3B offers endless options.

Because of its very low weight, the high wearing comfort and the secure data transmission it ensures the META<sup>®</sup>MAX 3B is the first choice for mobile high performance testing.



TELEMETRY: > 1.000 M

APPLICABLE AT EVERY HEIGHT

HUMIDITY: 0 TO 100 %

TEMPERATURE: -10 ° TO +40 ° C

For more information: <http://cortex-medical.com>





### **Spiroergometry – On your Conditions**

With a weight of less than 600 g the METAMAX® 3B is the most light mobile spiroergometric device on the market. For many disciplines this is a decisive advantage because in field tests the total weight of the test person increases only minimally and has effectively no influence on your test results. Its award-winning ergonomic design in combination with the chest and back carrying system and adjustable Velcro fasteners allows maximal mobility and impress in numerous types of sport.

The METAMAX® 3B can be operated in various ways, either with a laptop, the Smart Control or completely autonomously. Just synchronize the recorded test data with the application software METASOFT® Studio.

Benefit from the full potential of the METAMAX® 3B and add – for example – an optional stationary kit, a back carrying system or an ECG. All options and accessories are listed in the product overview on pages 6 and 7.

## **METAMAX® 3B – DESIGNED FOR OUTDOORS**

### **Highlights**

- **ultralight, mobile Breath-by-Breath system (580 g)**
- **telemetric range of over 1,000 m (bi-directional telemetry with Bluetooth® technology)**
- **chest and back carrying system**
- **convenient control via Smart Control, laptop or as stand-alone**
- **6-hour battery life**
- **400 hours data storage**
- **constant dynamic flow control**
- **free definable audio signals**

### **Using GPS**

To determine the velocity and location of a test person in a field test the METAMAX® 3B uses a powerful GPS module. The module allows you to calculate velocity and altitude changes and gives an objective picture of the person's stress factors during a field test.

### **Secure Data Communication**

The Long Range Bluetooth® module, developed and enhanced by CORTEX, has a range of over 1,000 m. Only very slight disturbances are caused by interference. In case connection is interrupted, the measured results are securely stored in the METAMAX® 3B. In addition, the system is equipped with Bluetooth® Low Energy. This standard guarantees a maximum compatibility with external sensors, for example heart frequency, SpO2 or a power meter.



The Entire Spectrum of the METAMAX® 3B

Configure your METAMAX® 3B according to your Individual needs. A wide range of hard-/software options and benefit packages are available. You can enhance your selected system by adding perfectly matching peripherals and accessories.

Volume Transducer	Hardware Options	Packages	Trolley & PC	Ergometer	HF/ECG	PhysioFlow/BD/SpO2	Software Options	Accessories & Spare Parts
<ul style="list-style-type: none"> <li><b>CORTEX volume transducer disposable</b> <ul style="list-style-type: none"> <li>disposable turbines</li> <li>disposable flow electronics</li> </ul> </li> <li><b>CORTEX volume transducer reusable</b> <ul style="list-style-type: none"> <li>turbine</li> <li>flow volume electronic</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>stationary kit</b> <ul style="list-style-type: none"> <li>power supply</li> <li>extension for volume sensor</li> <li>sample line 2 m</li> </ul> </li> <li><b>GPS</b></li> <li><b>backpack system</b></li> <li><b>sample flow dryer</b></li> <li><b>calibration kit</b> <ul style="list-style-type: none"> <li>gas-on-demand valve</li> <li>gas bottle</li> <li>3 liter syringe</li> <li>box</li> </ul> </li> <li><b>Canopy</b> <ul style="list-style-type: none"> <li>Canopy</li> <li>blanket</li> <li>hose</li> <li>adapter</li> </ul> </li> <li><b>spirometry kit</b> <ul style="list-style-type: none"> <li>spirometry (SW)</li> <li>hand holder for CORTEX reusable flow sensor</li> <li>100 disposable filters &amp; nose clips</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>performance package</b></li> <li><b>service package</b></li> <li><b>TestControlCenter</b> <ul style="list-style-type: none"> <li>for 2 CPET devices</li> <li>for 3 CPET devices</li> <li>for 4 CPET devices</li> </ul> </li> <li><b>warranty extension</b></li> </ul>	<ul style="list-style-type: none"> <li><b>CORTEX mobile Plus dual monitor</b> <ul style="list-style-type: none"> <li>printer shelf</li> <li>support arm</li> </ul> </li> <li><b>CORTEX mobile Plus single monitor</b> <ul style="list-style-type: none"> <li>printer shelf</li> <li>support arm</li> </ul> </li> <li><b>PC</b></li> <li><b>monitor</b></li> <li><b>laptop</b></li> <li><b>printer</b></li> </ul>	<ul style="list-style-type: none"> <li><b>CORTEX bike M</b> <ul style="list-style-type: none"> <li>seat height adjustment (motor)</li> <li>integrated BP</li> <li>integrated SpO2</li> <li>adjustable pedal cranks</li> <li>triathlon handle bar</li> <li>adaptation for pediatric ergometry</li> </ul> </li> <li><b>CORTEX TM Sport</b> <ul style="list-style-type: none"> <li>fall stop</li> <li>handrail</li> </ul> </li> <li><b>CORTEX TM High Performance</b> <ul style="list-style-type: none"> <li>fall stop</li> <li>handrail</li> </ul> </li> <li><b>more</b> <ul style="list-style-type: none"> <li>Lode</li> <li>Cyclus II</li> <li>SRM</li> <li>Woodway</li> <li>HP Cosmos</li> <li>Monark</li> <li>Ergoline</li> </ul> </li> <li><b>interfaces</b> <ul style="list-style-type: none"> <li>TrackMaster</li> <li>Micromed</li> <li>Marquette</li> <li>Quinton</li> <li>Motek Force</li> <li>TechnoGym</li> <li>...</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>Polar H10</b></li> <li><b>BT smart HF sensor</b></li> <li><b>MSS 1-lead belt</b></li> <li><b>MSS 3-lead guard</b></li> <li><b>custo cardio 100</b> <ul style="list-style-type: none"> <li>MC3000 interface</li> </ul> </li> <li><b>custo cardio 200</b> <ul style="list-style-type: none"> <li>MC3000 interface</li> </ul> </li> <li><b>custo cardio 300</b> <ul style="list-style-type: none"> <li>MC3000 interface</li> </ul> </li> <li><b>ECG - electrodes custo med</b></li> <li><b>ECG - electrodes blue sensor</b></li> <li><b>12-lead ECG interface</b> <ul style="list-style-type: none"> <li>Schiller</li> <li>GE</li> <li>Micromed</li> <li>AmedTec</li> <li>Dr. Schmitt</li> <li>Ergocid</li> <li>Spacelabs</li> <li>Norav</li> <li>Medset</li> <li>Labtech</li> <li>Welch Allyn</li> <li>...</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>PhysioFlow</b> <ul style="list-style-type: none"> <li>PhysioFlow license</li> <li>PhysioFlow electrodes</li> <li>PhysioFlow cable</li> <li>bag</li> <li>batteries</li> <li>charger</li> </ul> </li> <li><b>PhysioFlow electrodes</b> <ul style="list-style-type: none"> <li>for 50 tests</li> <li>for 200 tests</li> </ul> </li> <li><b>Tango M2 for use with custo med</b> <ul style="list-style-type: none"> <li>custo trigger cable</li> <li>QRS trigger software license</li> </ul> </li> <li><b>Tango M2 with ECG module</b></li> <li><b>Nonin wrist Ox2 3150</b></li> </ul>	<ul style="list-style-type: none"> <li><b>MSS Energy Metabolism for CPET</b> <ul style="list-style-type: none"> <li>MSS Performance Assessment</li> <li>MSS Exercise Scheduler</li> </ul> </li> <li><b>MSS Pre-Operative Risk Assessment</b></li> <li><b>MSS Interpretation Assistant by Wasserman</b></li> <li><b>EOV Detection</b></li> <li><b>PhysioFlow License</b></li> <li><b>MSS Spirometry</b> <ul style="list-style-type: none"> <li>hand holder</li> </ul> </li> <li><b>MC3000 Interface (custo med)</b></li> <li><b>12-lead ECG Interface</b></li> <li><b>MSS Basal- &amp; Resting Metabolic Rate</b></li> <li><b>MSS HL7 Interface Activation License</b></li> <li><b>MSS Network License Basic</b> <ul style="list-style-type: none"> <li>MSS Network License Extension</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li><b>face masks</b> <ul style="list-style-type: none"> <li>pediatric 1</li> <li>pediatric 2</li> <li>petite</li> <li>XS</li> <li>S</li> <li>M</li> <li>L</li> </ul> </li> <li><b>head cap</b></li> <li><b>adapter for face mask</b></li> <li><b>sample line</b> <ul style="list-style-type: none"> <li>0.6 m</li> <li>2 m</li> </ul> </li> <li><b>turbine with sieve - reusable</b></li> <li><b>turbine - disposable</b> <ul style="list-style-type: none"> <li>100 pieces</li> <li>500 pieces</li> </ul> </li> <li><b>O2 sensor MMX3B</b></li> <li><b>bacterial filter spirometry</b></li> <li><b>PhysioFlow electrodes</b> <ul style="list-style-type: none"> <li>for 50 tests</li> <li>for 200 tests</li> </ul> </li> <li><b>ECG electrodes custo med</b></li> <li><b>ECG electrodes blue sensor</b></li> </ul>

ⓘ Please select  
 ⊙ Standard  
 ⊙ Option  
 Ⓜ Offer on request  
 ↔ Connection possible  
 Ⓜ Accessories & spare parts

## BENEFIT FROM OUR PACKAGES

### ***The Service Package for Major Security of Investment***

The service package includes all consumables (calibration gas, O2 sensors etc.) for the first three years. It gives you high planning reliability for your projects and test studies thanks to an extended warranty period of three years. In addition, your operating costs are much lower by purchasing the service package.

### ***Performance Package METAMAX® 3B***

The METAMAX® 3B already comes with the most widely used hardware and software options in the area of sports and preventive medicine. It also includes the CORTEX GPS module and a stationary kit for optimal use of the METAMAX® 3B in a laboratory with an external electricity supply. Furthermore, the package includes a calibration kit and a larger supply of consumables.

### ***CORTEX Warranty Extension***

The warranty extension from CORTEX allows you to extend the warranty for your spiroergometry system at any time and as often as you wish. CORTEX offers you attractive warranty packages for the systems depending on scope and duration. The warranty includes free of charge repair of the device, trouble shooting of hard- and software as well as regular software updates.

For more information on the terms of the warranty extension please go to:



For more information: <http://cortex-medical.com>

## CONNECTIVITY

### ***CORTEX treadmill TM***

The CORTEX treadmill TM combines functionality and design at an outstanding price-performance ratio. Two basic versions are available: with running surfaces of 53 cm x 161 cm or 73 cm x 172 cm plus various add-ons.

### ***CORTEX bike M***

Due to its ergonomic design with an open frame, low entry and the stable aluminum platform, the CORTEX bike M is a perfect all-rounder.

### ***Additional Ergometers and Treadmills***

Connect our systems to more than 40 different ergometers and treadmills. Based on special software interfaces you can easily connect our spiroergometry solutions to a continuously increasing number of bike / arm ergometers and treadmills (such as: Ergoline, Cyclus 2, h/p/cosmos, Woodway or Lode). Upon special request we also offer connections to additional devices. Just give us a call.

### ***Electrocardiograms (ECGs)***

The perfect symbiosis between spiroergometry and ECG: benefit from the specific advantages of a bidirectional interface and combine our spiroergometry solutions with the ECGs made by custo med.

Numerous advantages such as simplified operational steps, a synchronized cursor or an easier exchange of variables enable an especially intuitive reporting, thereby enhancing your test and diagnostic options.

Besides custo med's ECGs you can select alternative ECG connections. For more information please refer to pages 6 and 7.

### ***Wireless 3-lead ECG from custo med***

The custo guard allows a user-friendly 3-lead ECG measurement when performing laboratory and field tests.

# METASOFT® STUDIO MAKES COMPLEXITY EASY

The METASOFT® Studio combines the complexity of spiroergometric examinations with the most intuitive usability in a unique way.

It is impossible to give a feeling of the easy and intuitive data collection and test evaluation METASOFT® Studio offers.

To put it briefly:

**You have to see and test METASOFT® Studio by yourself.**

Please contact us to arrange an appointment for a product presentation to see what the software is all about. To get a first impression, watch our short video tutorial:



## CORTEX Quality Guarantee

The top quality of CORTEX products and services is the key factor of our success and represents a central brand promise. Since founding our company almost 30 years ago, we stay for:

**„Fast realization of innovative ideas, supported by excellent services, now and in the future“.**

We and all our CORTEX partners work according to the world wide quality and security standards of medical products.

## The Entire Spiroergometry Variety

Visit our website [www.cortex-medical.com](http://www.cortex-medical.com) and get to know the wide range of products offered. Or ask for additional brochures. Besides our powerful mobile and portable spiroergometry systems we also offer customized solutions. Share your ideas and tell us what you want!

**You would like to know more about CORTEX and our products?**

**Then contact us!**

**Please call: +49 341 487 49-0 or send an e-mail to: [sales@cortex-medical.com](mailto:sales@cortex-medical.com)**





# METAMAX<sup>®</sup> 3B – TECHNICAL DATA



IGZ Instruments AG  
Furtbachstrasse 17  
8107 Buchs ZH

Tel. +41 44 456 33 33  
igz.ch igz@igz.ch

## O2 Sensor

- type: chemical fuel cell
- range: 0-100 %
- accuracy: < 0.1 Vol %
- T90: < 100 ms
- calibration: every 14 days

## CO2 Sensor

- type: NDIR
- range: 0-13 %
- accuracy: < 0.1 Vol %
- T90: < 100 ms
- calibration: 1x per month

## Pressure Sensor

- range: 300-1,100 mbar

## Volume Turbine, Reusable

- flow: ≤ 20,1 l/s
- accuracy: 50 ml or +/- 2 %
- resistance: ≤ 0,1 kPa/l/s @ 20 l/s
- calibration: 1x daily

## Volume Turbine, Disposable

- flow: ≤ 14 l/s
- accuracy: +/- 3 %
- resistance: ≤ 0.06 kPa/l/s @ 14 l/s
- calibration: not necessary

## Heart Rate

- smart BT | 3-lead ECG (optional)  
12-lead ECG (optional)

## Telemetry

- range: > 1,000 m
- PC interface: USB 2.0 with  
Long Range Bluetooth<sup>®</sup> receiver  
or Bluetooth<sup>®</sup> USB adapter

## Operating Conditions

- temperature: -10 ° to +40 °C
- ambient pressure: 500 to 1,050 mbar
- at atmospheres: ≤ 25 % O2
- relative humidity: 0 to 100 %  
(non condensing)

## Physical Specifications

- dimension (LxWxH): 2x (120 x 110 x 45 mm)
- weight: 580 g (without battery)

## Electrical Specifications

- PC interface: Bluetooth<sup>®</sup> 2.1
- power supply:  
battery with 6 hours operating time

## Quality Management

- EN ISO 9001, EN ISO 13485

## Conformity

- guideline 93/42/EWG + 2007/47/EG
- EN ISO 60601-1; 60601-1-2;  
10993-1; 15223-1; 1041; 62304; 62366;  
23747; 26782

## System Requirements Operating System

- Windows 7, 8, 10 (32 or 64 Bit)  
Windows Server 2008, 2012 (64 Bit),  
2016 (64 Bit)

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