

**T&T medilogic**

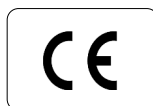
MEDIZINTECHNIK GmbH

# Instruction for Use

**IBG**

**medilogic IBG  
IkonoBaroGraph**

2026-01





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## 1 Important information and hotline

The buyer is allowed to make a backup copy of the software. Except for the Buyer's personal use, any electronic or mechanical duplication or transmission, including photocopy and recording, or any part thereof, shall be prohibited without the prior written consent of T & T medilogic Medizintechnik GmbH.

We reserve the right to make changes and improvements to our products without being required to make these changes and improvements to previously delivered systems.

We assume no liability or consequential liability for loss of data or consequences of loss or destruction of data in connection with the use of the system.

For any queries you can contact us during normal business hours Monday to Friday between 8:00 am and 5:00 pm (UTC+1) at the hotline - phone numbers 030-63306340 and 030-63306341.

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E-Mail: [medilogic@medilogic.com](mailto:medilogic@medilogic.com)

manufacturer registration: SRN: DE-MF-000011836

## 2 Introduction

Dear medilogic user!

After careful consideration, you chose our medilogic system and we thank you for that.













We are confident that your expectations for purchasing this system will be fulfilled after a short training period. In order to keep this training period as short as possible, we have endeavoured to make the instructions as informative and easy to understand as possible without burdening you with unnecessary ballast.


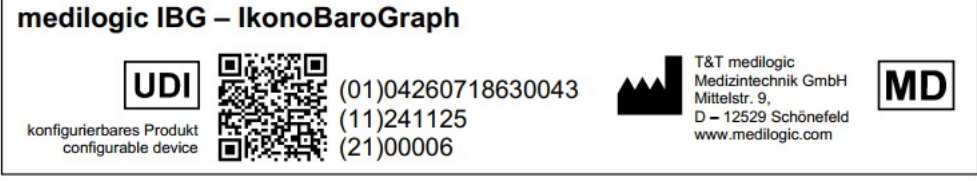
We refer you to this user manual as a user of the medilogic system in order to provide you with all necessary information and instructions. For the naming of the person to be examined, instead of the term 'customer' which is customary in the medical field, the term 'customer' is used uniformly in this user manual as well as in the software. Hereby we take into account the fact that in the practice of medical / orthopaedic care the customer today often takes the position of a customer.

Every effort has been made to ensure that the information contained is complete and accurate. However, a guarantee can not be given. If you notice something in this regard, or should individual passages give rise to misunderstandings from your point of view, we kindly ask you to send us a message, so that the following issue of the instructions for use can be corrected accordingly.

## 2.1 Markings

Important information and safety-relevant markings can be found on the nameplate on the housing parts of the medilogic pressure measuring system. All characters and symbols are explained in the following table.

  <p>konfigurierbares Produkt configurable device</p> <p>(01)04260718630043 (11)241125 (21)00006</p>	<p>UDI identifier, QR-Code contains UDI-DI and UDI-PI: (01) UDI-DI [type of medilogic product] (11) date of production [yymmdd] (21) serial no. of the configurable product</p>
	<p>Medical Device</p>
	<p>CE- Marking</p>
	<p>Serial Number Marking of the device at type label (y – individual no.; JJ = year of manufacturing) SN: 5090JJyyyy</p>
	<p>Safety sign: FOLLOW THE INSTRUCTIONS !</p>
	<p>APPLICATION PART Type B acc. EN 60601-1</p>
	<p>Disposal NOT in the household waste, but to the collection point for electronic devices or to the manufacturer</p>
	<p>Indication of the manufacturer on the type label</p>
	<p>Device with attached USB cable</p>
	<p>MAXIMUM LOAD on the IBG with a body weight of 180 kg</p>
	<p>Component contains ESD-sensitive components. Do not touch electrically conductive parts. Only touch on the housing !</p>

<p>Type Label</p>	 <p>medilogic IBG IkonoBaroGraph</p> <p>MD</p> <p>T&amp;T medilogic Medizintechnik GmbH Mittelstr. 9, D – 12529 Schönefeld www.medilogic.com</p> <p>SN 5090240002</p> <p>CE</p> <p>180kg max.</p>
<p>UDI carrier</p>	 <p>medilogic IBG – IkonoBaroGraph</p> <p>UDI</p> <p>konfigurierbares Produkt configurable device</p> <p>(01)04260718630043 (11)241125 (21)00006</p> <p>T&amp;T medilogic Medizintechnik GmbH Mittelstr. 9, D – 12529 Schönefeld www.medilogic.com</p> <p>MD</p>

### 3 medilogic IBG – transparent load analysis

#### 3.1 intended purpose

The medilogic IBG - IkonoBaroGraph consists of a transparent sensor system that is mounted on a conventional 2D scanner and supplements it with additional diagnostic information. This is mainly used to evaluate the patient's stance behavior in relation to the foot's contact surface. For this purpose, the load under the sole of the foot is indicated by color gradations and set in relation to the foot geometry without local offset.

#### a) Benefits and indications (medical purpose)

The medilogic IBG uses color-coded visualization to provide a comparative assessment of the support and movement system when standing, as a supplement to other diagnostic and manual procedures. The combination of geometric foot shape capture using a 2D scan and color-coded visualization of load distribution achieves local coincidence. The medilogic IBG can therefore also be used to accompany and support the manufacture of medical aids. This visualization can increase patient compliance, which in turn supports motivation and acceptance of the therapeutic concept.

#### b) contraindications

The medilogic IBG must not be used if the patient is unable to stand safely for the duration of the examination. It must not be used in direct contact with damaged skin.

#### c) intended use

The medilogic IBG is used to support diagnostics in the fields of rehabilitation, orthopedics, and sports medicine. In addition, it can be used to support therapy planning for healthcare professionals. Basic data on load distribution is obtained and displayed using color visualization. This data is automatically combined with an image of the foot geometry captured by a 2D scanner. This data is used to prevent injuries, such as skin lesions, by helping the user to identify and monitor incorrect loading.

It is the responsibility of the medical user to compare the conclusions of the combined recording of load distribution and 2D scan with other examination and diagnostic methods, such as medical history, X-rays, etc.

When using the medilogic IBG, a distinction is made between users and technically trained personnel. The user performs the analysis in everyday practice by operating the IBG and the application software on the PC. Technically trained personnel are responsible for setting up and ensuring operational readiness, which includes carefully installing and laying the necessary cables.

#### d) product description

The medilogic IBG consists of a transparent sensor system that is permanently attached to a 2D scanner. It supplements a 2D scan image with a color representation of the load distribution under the foot, which is recorded simultaneously. The simultaneous recording of both data sets enables local coincidence, allowing the result to be reproduced without offset. The adjustable duration of the load distribution measurement also allows the center of gravity curve to be recorded while standing, which is useful for posturographic examinations, for example. The data is transferred to the PC via a USB interface.

### 3.2 System Description

The medilogic IBG transmits its data via a USB interface. The visualization of the load curve is based on pressure sensors with a high local resolution of 2.7 sensors/cm<sup>2</sup> and a maximum sampling rate of 20 Hz.

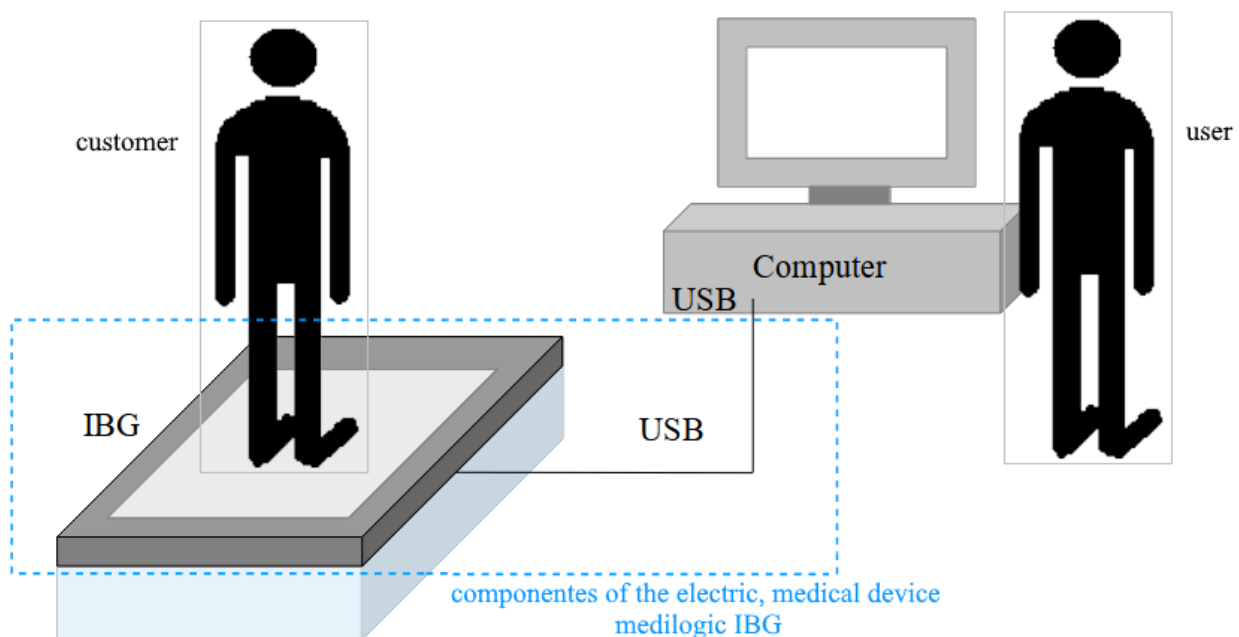
The medilogic software running WINDOWS<sup>®</sup> allows an immediate display of the examination results on the computer monitor. Immediately after connecting the USB cable to the PC, the system boots up and is ready for use. The pressure distribution can be displayed either as an isobaric colour graphic or as a three-dimensional colour print mountain.

The operation of the medilogic software is comparable to that of a recording device. By "pressing a key" (mouse click), the measurement (data recording) is started. After completion of the recording, each data point can be selected and viewed either in fast-forward, at the original speed or in slow motion.

Single images can be printed if necessary. A comparison of two measurements is possible. To archive the data, each measurement can be assigned to a customer and stored on the hard disk. Later evaluation of the data is possible at any time. The data can be saved, exported and re-imported if required via a comprehensive data maintenance function.

In the following illustration, the system configurations of the medilogic IBG system are explained in detail in the schematic diagram and the delivery contents.

#### 3.2.1 Schematic medilogic IBG



The Scope of delivery of the *medilogic IBG* includes the following components:

<i>component</i>	<i>classification</i>
medilogic IBG (IkonobaroGraph)	application Part Typ B according to EN 60601-1
USB cable 3m (permanently installed) <i>requirement: IEC62386-1/ IEC 60601-1 – compliant computer</i>	power supply / data interface
frame part (depending on model)	accessory parts
Instruction for use	accessory parts
medilogic Software (USB flash drive)	application software
Cardboard packaging	packaging

### 3.2.2 Combinability with accessories and other products

The medilogic IBG can be combined with the A320 and A360 flatbed scanners from the medilogic product family.

For the combinability of the medilogic IBG with the computer system please review the notes according to Chapter 4. The minimum requirements for the computer system apply. Technical data: Chapter 7.

The medilogic IBG is NOT combinable with third-party products.

### 3.3 Contraindications to the use of the medilogic pressure measuring system

The medilogic IBG must only be used in compliance with the instructions for use and safety described in chapter 3.4.

Use is NOT allowed if:

- the customer is unable to stand or walk safely for the duration of the measurement process
- the customer has open, weeping oder bleeding skin on the foot.

### 3.4 special instructions for use

When using the *medilogic IBG system* as a medical measuring device, the following instructions must be observed to ensure proper and safe use.

In general, the system should only be operated by trained medical personnel who have been instructed in its use. Particular care must be taken to ensure that the sensor surfaces used are not damaged by sharp-edged or pointed objects.

**WARNING: Changing the device is not allowed!**

Failure to comply with warnings described in the Instructions for Use may damage the system.

**If cables are damaged or no longer functional, the manufacturer must be contacted.**

The medilogic IBG system is intended for use in combination with a 2D scanner. Information and notes regarding the scanner can be found in the corresponding medilogic scanner manual.

#### *Safety Instructions*

To ensure customer safety the following precautions need to be adhered to. The medilogic IBG system may only be used on the scanner provided for this purpose. The sensor module is connected to the scanner via a permanently mounted frame to ensure safe operation. Before using the system, check that safe operation is possible at the location. When using the IBG on customers with balance disorders, the examiner is particularly required to monitor the customer during the measurement and prevent them from falling.

As the system is used barefoot, for safety and hygiene reasons it is prohibited to use the system on open, weeping, or bleeding skin. The medilogic system is intended for temporary use for measurement purposes and is therefore only intended for limited use on customers.

In addition, the sensor surface must be disinfected between customers to prevent infection. The cleaning instructions described in the following section must be followed using a damp cloth. When using the medilogic system, the use of liquids is not permitted in order to avoid hazards to the customer, user, or system components.

The joint use of the medilogic system with a computer requires the proper functioning and electrical safety of the computer components. Therefore, only a PC that complies with IEC62386-1 or IEC 60601-1 should be used. Furthermore, the safety-related information in chapter 5.3 for the installation and testing of the PC under the responsibility of the operator must be observed.

The medilogic IBG system is designed for use in an electromagnetic environment in which RF interference is controlled. The user should avoid electromagnetic interference by complying with the environmental conditions specified in the guidelines in chapter 8.2 and maintaining the recommended minimum distances from RF telecommunications equipment.

**Warning!** Do not use the medilogic IBG immediately adjacent to other devices in a manner that deviates from the guidelines in Chapter 8.2 or in a stacked configuration not intended for this purpose, as the unrestricted functionality of the devices can no longer be guaranteed in such cases. If use in the manner described above is nevertheless necessary, this device and the other devices involved should be monitored to ensure that they are functioning properly.

**Note!** The medilogic IBG is equipped with an energy-saving function that causes the measuring module to log out of the system after approx. 4 hours and restart. To do this, disconnect the USB plug from

the computer and then reconnect it. The acoustic signal indicates that the device is ready for operation again.

### ***Cybersecurity***

In addition to the general security instructions, measures to secure the IT environment must also be observed. These serve to protect data, devices, and patient information from unauthorized access and manipulation. Therefore, please observe the following instructions:

The operator must ensure that the database server is operated in a protected network environment. To this end, separation into a separate network segment (e.g., VLAN) is recommended, whereby only authorized application servers are permitted to access the database service. Open connections to unsecure or external networks must be avoided.

The devices may only be operated with PCs that are intended for this purpose and configured accordingly. These must be secured with **up-to-date** security measures such as a firewall, anti-malware software, and regular security/operating system updates. In addition, access controls (e.g., operating system access control) must be set up to prevent use by unauthorized persons. It is recommended that regular backups of the data collected in medilogic be performed using a backup process.

The configuration of the devices is reserved exclusively for authorized specialist personnel. Access should be via individual login to prevent manipulation or uncontrolled changes.

Where possible, operation should take place in separate rooms that are isolated from other wireless networks. This makes it more difficult to interfere with the system unintentionally or gain unauthorized access.

Since, according to its intended purpose, the loss of function or data of the medilogic software does not pose a risk to patients or users, and a compromise of the IT environment is unlikely if the above measures are observed, the medilogic software does not include any access control measures or protective measures against cyber attacks.

### ***Cleaning and Disinfection***

Clean the sensor surface and the cases using a soft moist cloth without detergents, take special care that no moisture enters the devices; don't use abrasive detergents or sharp edged objects.

To avoid the transfer of infections via the sensor surface of the pressure measuring system disinfect the surface before and/or after each customer

In order to disinfect the sensor surface (pressure measuring insoles, pressure measuring platforms, flexible mats) wipe them off with disinfectants that can be found in the VAH list (Verband für Angewandte Hygiene e.V.) according to criteria set out by the DGHM (Deutsche Gesellschaft für Hygiene und Mikrobiologie). Please pay attention to the product description of the disinfectant. Use cloth soaked in disinfectant, do not apply the fluid to the sensors directly. To ensure customer safety and flawless sensor operation make sure that during the cleaning process fluids or impurities can not enter the sensors through faults in the surface.

The user must take care that no damage to the device are present, that could lead to injuries (e.G. sharp edges). Damaged components need to be send to the manufacturer for repair.

To ensure safety, please note that the system must never be used in an enclosed or covered environment.

parameter	How to comply?
temperature	See chapter 7.3 Environmental conditions
humidity	no standing liquid (use of soaked cloths - 3-4ml of liquid per cloth)
duration	until all areas have been safely reached (at least 30s)
number of cycles	once after each use

## Maintenance

**Warning!** Any service, inspection, or calibration should only be performed when the device is not currently in use and, if possible, disconnected from the power supply.

### • Calibration

The sensor calibration tables stored in the amplifier electronics must be checked by the manufacturer at regular intervals (at least once a year) and corrected if necessary. To do this, the system must be sent to the manufacturer in the system packaging supplied, protected against impact, using an additional cardboard box as outer packaging.

### • Replaceable parts / accessories

Only the accessories listed are approved for safe operation of the medilogic IBG. If a defective USB cable is detected, always contact the manufacturer, as the USB cable provides an essential protective function for the user and operator.

### • preventive inspection:

Additionally to the cleaning and disinfection mentioned above the user has to make a preventive inspection at least once a year to check that:

- sensor surface is clean, free of crinkles and damages
- Housing free from mechanical damage
- Secure fit of the IBG on the scanner
- USB cable without damage (housing/strain relief without damage)

## Disposal



The components of the *medilogic IBG* contain electronic parts and must therefore be disposed of as electronic waste or returned to the manufacturer if defective. The components must not be disposed of in household waste.

## Storage and transport

To protect against dust, moisture, and other contaminants or damage, the system components must be stored in the system packaging or, alternatively, in a dust-free and secure location suitable for electronic measuring equipment.

The medilogic IBG should always be stored lying flat. The system should always be transported in the packaging provided for this purpose. This will prevent damage to the system or accessories. Make sure that there are no loose parts on the sensor surface, as this could damage the sensors.

The system packaging protects the components from shocks and other mechanical damage during transport. Only the packaging must be used when shipping the system.

Any modifications made by the user to system components (in particular, improper repairs) and improper use can lead to failure and void the manufacturer's warranty!

The shipping box used for delivery must be used for transport. The following note must be affixed to the outer packaging:



*Do not drop. Beware, fragile!*

### Summary

Finally, a brief overview of the identified risks should be given in order to provide a concise, short formulated compilation. This is used in case of need for a quick reference.

Category	Safety Instruction
preparation	<ul style="list-style-type: none"> <li>➤ Check the assembly – secure fit on scanner</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Do not use the system on broken skin!</li> <li>➤ Do not drop system: Fragile!</li> </ul>
operation / Maintenance	<ul style="list-style-type: none"> <li>➤ Monitoring of the measurement by qualified personnel</li> </ul>
	<ul style="list-style-type: none"> <li>➤ System is for temporary use</li> <li>➤ Handling of liquids not allowed</li> <li>➤ given electrical safety of the associated PC system</li> <li>➤ The control unit must not be operated in an enclosed or covered environment.</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Protective measures taken by the operator against unauthorized access to computer systems and software through access control; against cyber attacks through anti-malware software and security patches; against data loss through backup processes.</li> </ul>
hygiene	<ul style="list-style-type: none"> <li>➤ After each measurement the surface has to be disinfected</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Check for obvious contamination (both sensor surface and operation part)</li> <li>➤ Under no circumstances should the components be submerged during cleaning</li> </ul>
inspection	<ul style="list-style-type: none"> <li>➤ Check for damage</li> </ul>
	<ul style="list-style-type: none"> <li>➤ Plate transitions inconspicuous</li> <li>➤ USB cable and housing feed-through free from damage</li> </ul>
storage / transport	<ul style="list-style-type: none"> <li>➤ System components are to be stored in the associated system packaging (or at a location suitable for el. measuring technology)</li> <li>➤ system should be stored lying flat</li> </ul>
	<ul style="list-style-type: none"> <li>➤ The system is to be transported in the packaging provided for this purpose</li> </ul>
disposal	<ul style="list-style-type: none"> <li>➤ Proper disposal (electronic waste) or return to the manufacturer</li> </ul>
other	<ul style="list-style-type: none"> <li>➤ Device components must not be opened</li> </ul>

	➤ Avoidance of electromagnetic influences (see guidelines in chapter 8.2)
	➤ No stacked application of devices (if it is still necessary, constantly monitor the devices) → Only use the module on the scanner intended for this purpose.
	➤ If a shipment is necessary, the system must be shipped shockproof in the associated packaging

***Note!:***

**All serious incidents occurring in connection with the medilogic system that directly or indirectly lead to death or serious deterioration of health or where there is a possibility of death or serious deterioration of health must be reported to the manufacturer and the competent local authority.**

## 4 Installation and Commissioning

### 4.1 Hardware Installation

#### 4.1.1 Structure and Preparation of the System

Upon delivery of the medilogic IBG system, the medical device consultant will install it directly. The IBG module is connected securely and professionally to the corresponding scanner before commissioning. The operational medilogic IBG then basically consists of the sensor module and a 2D scanner. Power supply and data exchange take place via the USB interface. This is routed separately from the module housing, independently of the scanner's operating connections. The intended operating location should not be illuminated by a direct light source. The suitability of the room lighting must always be checked in advance by means of a regular test measurement. To enable optimal recording, the following distances from light sources at the operating location must be maintained:

position of light source*	minimum distance	optimal distance
sideways (long edge of the housing)	100 cm	>120 cm
front / rear (short housing edge)	85 cm	>100 cm

\*The distances apply to a room height of approximately 2.50 m and must be adjusted for different dimensions.

The device should be set up in a straight and stable position. Suitable surfaces include carpet or parquet flooring. The system is not screwed to the surface.

Taking into account the operating instructions for the assigned scanner, the hardware installation is completed by unlocking the scanner's transport lock and the system can be put into operation (see 4.1.2).

Before actual commissioning, all points relating to "preventive inspection" in section 3.4 must be checked.

#### 4.1.2 Establishing the USB connection with the medilogic IBG

The measurement data is transferred via the USB cable that comes out of the housing. Since the cable also serves as the power supply, make sure that the USB port isn't in power-saving mode and is supplying 500mA.

When the cable is connected to the USB port on the PC, the module starts up and a short acoustic signal is heard four times. Make sure that the connected scanner is also ready for operation and has been connected to the PC via USB.

As soon as the medilogic software starts, the system is recognized and the live display of the pressure values appears on the screen. The prerequisite for this is that USB mode has been selected as the data interface under *Options* → *Extra* → *USB mode*.

### 4.1.3 Installation of a Chip-Card Reader (eGK)

*This reader only applies to the German medical insurance system.*

An optional chip card reader can be connected for quick entry of customer data when saving a measurement. The medilogic software includes an interface to the following Cherry card readers for the electronic health card (eGK):

- MTK+ Terminal ST-2052
- eHealth-BCS Tastatur G87-1504
- eHealth-BCS Terminal ST 1503

When installing a chip card reader, the associated **software must first be started** via the driver (located on the medilogic installation drive; can be installed via the installation selection: Additional hardware drivers) **before inserting** the card reader.

As each card reader has its own special driver, you should only use the card reader supplied by T&T medilogic GmbH with the device driver contained on the medilogic installation drive.

The card reader is then connected to your computer and can be activated in the medilogic program under the menu item "Options" on the "Extra" tab with the "Card reader" button.

Please note that the card reader should be plugged in before starting the medilogic program, otherwise you will need to activate it again in the program. You can then read in the customer data when saving a measurement or under 'Edit customer details' by pressing the F12 key on your computer keyboard

## 4.2 Installing the Software

Before You can start using the medilogic system the software has to be installed to the hard disk of your computer. When purchasing the medilogic system together with computer hardware, the software is pre-installed. In all other cases the following point need to be checked:

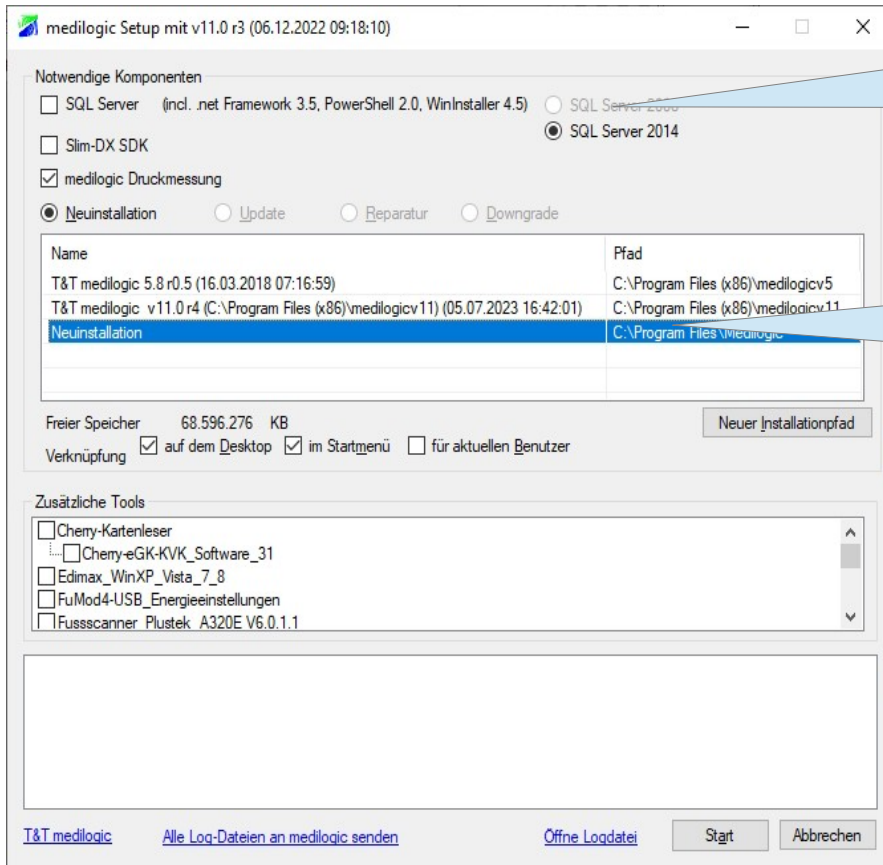
- The computer is able to run Windows<sup>®</sup> operating systems and fulfils the hardware requirements: *see 7.3 Technical Data of the IBG*
- The operationg system Windows<sup>®</sup> 10 oder 11 is already installed. If not, install the operating system first following the instructions that come with it.
- Necessary hard disk capacity.  
The programme for the medilogic pressure measurement system requires 200MB space on the hard disc. At least 10 GB free space are recommended for measurements and the SQL-server.  
If You use video capture with medilogic we recommend an additional 20 GB of hard disk space.
- The computer system has to be certified according to *IEC62386-1* or *IEC 60601-1* and checked regularly according to BGV A3. The responsibility lies with the operator of the system.
- Furthermore operating a medical device (medilogic) with a non-medical device (standard Computer) *DIN EN 60601-1* need to be adhered to, which also is the responsibility of the operator.
- The appropriate permissions are essential for performing the installation on your computer system. Therefore, please log in to your system as a user with **full administrative** rights.
- The operator is responsible for protecting your computer system and thus the medilogic software and the data stored therein from unauthorized access, as well as for protecting the computer system from cyber attacks. The operator is also responsible for securing the data collected by the medilogic system by means of a suitable backup. Backup functions in the medilogic software can be used for this purpose.

To install the software in the graphical user interface WINDOWS<sup>®</sup> it is only necessary to run the medilogicsetup.exe of the respective installation medium.

For a first-time installation, please click on 'Installation medilogic pressure measurement full version'. If you are already using an older medilogic version, click on 'Installation medilogic pressure measurement update'.

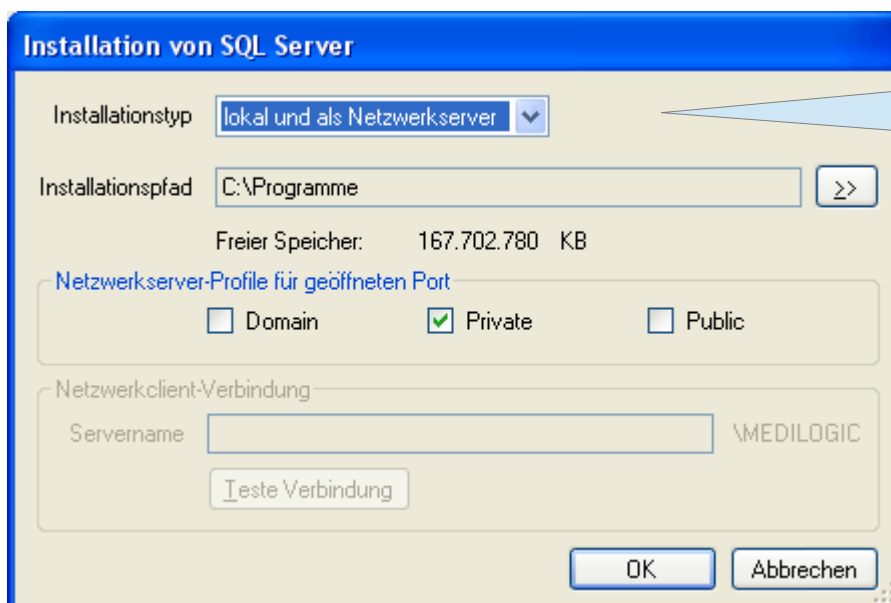
### Installing Version 11.x

Using medilogic version 11.x for medilogic IBG requires the installation of an SQL server and the necessary auxiliary programs. All necessary components are listed in the installation selection menu and must be installed as shown in the following figure.



Installation  
 - SQL-server  
 - Slim-DX-Tool  
 - medilogic Software

Select New Installation  
 Select installation path if necessary



SQL-Server local and network  
 To prepare for network operation

## 5 Recording a Measurement

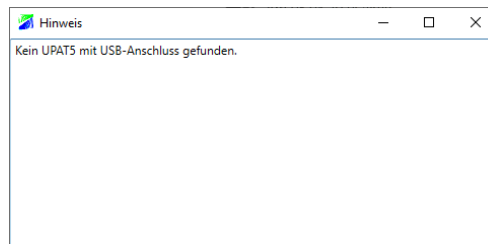
### 5.1 Quick Start – Preparation and Measurement

If You are an experienced WINDOWS® user, handling of the programme will come easy to You. The software is designed to be easily understood focusing intentionally on function relevant to everyday use. This eliminates long training. This section will show You the most important steps for preparation and measurement. The details can be found in the corresponding chapters.

*Please follow these steps to use the medilogic IBG-system:*

- *setup the hardware* see 4.1
- *install the software* see 4.2
- *start the medilogic IBG:*

Double-click on the medilogic symbol under WINDOWS®. The *medilogic* program will now start. Make sure that the corresponding scanner is ready for operation. To do this, the power supply must be plugged in and the scanner must be switched on. Connect the scanner's USB cable to a free USB port on the PC. The USB cable of the IBG module is also connected. A short acoustic signal confirms the connection. If USB mode is correctly selected as the connection option (*Options* → *Extra* → “*USB Mode*”), the live display of the IBG module's sensor data appears on the screen. If the IBG is not connected correctly or is not yet ready for operation, the following message appears:



**Please Note!** The IBG must not be accessed during initialization, as the current sensor settings are always made when the control unit is started up for the first time.

- **Preparation** of the recording:  
After commissioning, the customer can stand on the sensor surface of the IBG. They should stand as centrally as possible with their feet evenly spaced from the edges of the housing. The feet must not be placed too close to each other in order to ensure clear foot recognition by the software. In preparation for the measurement, it may be useful to instruct the customer to rock slightly and carefully toward the forefoot and heel during the measurement. This ensures even and full sensor loading.

**Note!** To minimize interference with the image capture, it is advisable to turn up the hem of long pants. Colored socks or bandages, pants that are too long, or large bandages may interfere with image processing or the cropping of the feet.

- **starting** a measurement (see chapter 6.2 )

Start recording data by pressing the red record button. A measurement cycle consists of two consecutive recordings.

The measurement begins with the *recording of pressure readings*, which are recorded in an adjustable time window. During this time period, the customer must shift their weight as described above by rocking or shifting their weight to the left/right to fully characterize the load distribution. This measurement section ends when the yellow cursor arrow reaches the end of the measurement period and is indicated by an acoustic signal on the computer. This is followed by the optical scan, during which the customer should remain standing still on the device.

Only after the scan is complete, when the scan carriage has returned to its starting position, the measurement is finished, and the customer may step off the sensor surface

- **Save** the data under a customer record (see 6.2)  
Enter first name, name, date of birth and other personal data as needed
- **Evaluation** of recording (see 6.2.3 ff.)  
Bewertung Fußbelastung anhand der plantaren Druckverteilung, des plantaren Fußscans sowie der Schwerpunktsbewegung; Vergleich von Messungen
- **Printing** the recording (see 6.4)  
Select the desired printout from the 'Print' menu
- **End use** by closing the software and, if necessary, disconnecting the USB cable.

Everything else is easily explored. Enjoy!

## 6 Description of the *medilologic* - Software

### 6.1 *medilologic systems* - Overview

The description of the programmes is structured in these main parts:

- First are buttons described displayed on the user interface. Buttons give easy access to the most important functions like recording and evaluation see 6.2 *Buttons of the user interface*
- Next the graphics of the programmes are explained. see 6.3 *Display*
- Finally follows a detailed description of menu entries. see 6.4 *Data*

### 6.2 Buttons of the user interface

The software for medilologic systems from version 10.x onwards offers the option of switching to the new program display in the Options menu. Here, all program functions can be accessed via easily accessible buttons (icons) on the newly structured interface.

However, the important operating functions continue to use the previous symbols, making the changeover very easy for users.

Below you will find an overview of the new basic program display with labels for the control elements. The key functions explained in the following chapter apply to both the classic and the new basic program display. Where applicable, the icons from both programs are shown:

The screenshot shows the software interface with several key components labeled:

- Left Panel (Control Elements):**
  - data connection / Stop measuring:** Buttons for connecting and stopping the measurement.
  - Start measurement:** A large red button to begin the measurement.
  - Replay bar:** Playback controls including stop, play, and pause.
  - load measurement:** Folder icons for loading saved measurement data.
  - load comparative measurement:** Folder icons for loading comparative measurement data.
  - Data administration patient data, Printout:** Icons for patient management and printing.
  - remarks on measurement:** A text area for entering notes.
- Top Center:**
  - Time Graphic shows measured running:** A line graph showing pressure over time.
  - Display Maximum pressure / Average / momentum:** A panel with 'MAX', 'Ø', and 'IM' buttons.
- Center:**
  - Centre of Pressure in Gaitline and Cyclogram:** Two foot images showing pressure distribution with gait lines and cyclograms.
  - Display Switch to Sensor-/Isobar- 2D/ 3D/:** Buttons for switching between 2D and 3D views.
  - Display in Scanimage: filter / contrast marker position Zoom:** Controls for adjusting the scan image display.
  - Cross-fading of pressure And scan image:** A slider for adjusting the transparency between pressure and scan images.
- Bottom:**
  - Setting the highest value of the colour scale:** A color scale bar with a red box highlighting the value '23'.
  - Options for software configuration:** A gear icon for settings.
- Additional Labels:**
  - Before measurement: Display live pressure data:** A label pointing to the left panel.
  - Display of crossfading of pressure and image data:** A label pointing to the cross-fading slider.

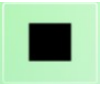
### 6.2.1 Start a recording



The button with the red circle („Start“) represents the recording button. A recording is started clicking this button. Always the current measurement is recorded not the comparative measurement.

Note: This function is only possible if the IBG and Scanner have been successfully connected to the PC.

### 6.2.2 Stopping a Recording



The button with the black square („Stop / Online“) is used to stop a recording and switch the software from replay mode to online display of current values.

Note: This function is only recommended if a measurement is to be restarted afterwards. An evaluable measurement always consists of the recording of pressure and scan data and is completed with the execution of a scan.

### 6.2.3 Replaying



The three-part play bar is used to play a recorded or a loaded measurement. The operation corresponds to that of a common playback device. The measurement can be reproduced in "normal" speed or slowed down. Furthermore, a pause of the replay is possible at any time.



Slow motion (speed can be set in the dialogue Options/Display-General)



Replay in normal speed (depending on computer speed frames can be skipped)



Pause (stops the replay at any chosen point in time)

All replay buttons lock after a short press and can be changed by clicking on another button. With the option "Continuous Playback" an immediate new beginning of the playback can take place after expiration of the respectively represented time range.

### 6.2.4 Loading Measurement / Comparative Measurement

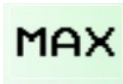
Clicking the grey folder allows You to load a measurement from the database, with the magenta folder You can load a comparative measurement for comparison.



In the classic basic programme interface You can find this function in the menu 'data' 'load data' and 'load comparative data'.

The corresponding chapters 6.5.2 and 6.5.3 in this manual give a detailed explanation.

### 6.2.5 Evaluation Maximum Pressure



The button with "MAX" on it switches to the display of maximum pressure graphics. Now the highest values for every sensor from the whole recording or the currently zoomed period are displayed.

### 6.2.6 Evaluation Average Pressure



The button with the average icon switches the display to averages graphics. Now the average values for every sensor for the whole recording or the zoomed part are displayed.

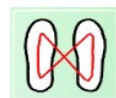
The method for the average calculation can be tailored to incorporate all values or only the values above a certain threshold. This can be set using the menu 'Options' 'Display/General' 'Method for Calculation of Averages'. We suggest the setting '20% of the maximum', if You want to evaluate the pressure values from the load phase of a step. see 6.6.1 Options „Display / General“

### 6.2.7 Evaluation Gait line



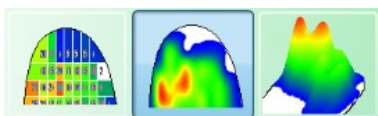
This button will display the gait lines which represent the progression of the centre of pressure for every step as a black line. They are calculated for every foot separately. The gait line is a biomechanical evaluation used as a graphical representation of the roll of during walking. It can be displayed optionally, although its informative value is rather low in the case of a static measurement.

### 6.2.8 Evaluation cyclogram



This will button will display the cyclogram graphics. It is a representation of the progression of the centre of pressure for the body as whole. Activating the option „display Cyclogram for MAX,... “ displays the progression of the centre of pressure.

### 6.2.9 Switching between graphics displays



These Buttons switch between different types of graphic display.(isobaric display, sensor display, 3D-display)

see 6.3.1 Isobaric Display

see 6.3.2 Sensor-Display

see 6.3.3 3D-Display

### 6.2.10 Comparing two measurements

The buttons below appear only when a comparative measurement has been loaded. Here You can choose which parts of the two measurements are displayed:



- current measurement (also used for recording a measurement )



- comparative measurement (additionally loaded measurement)



- comparison between the two left feet from both measurements



- comparison between the two right feet from both measurements

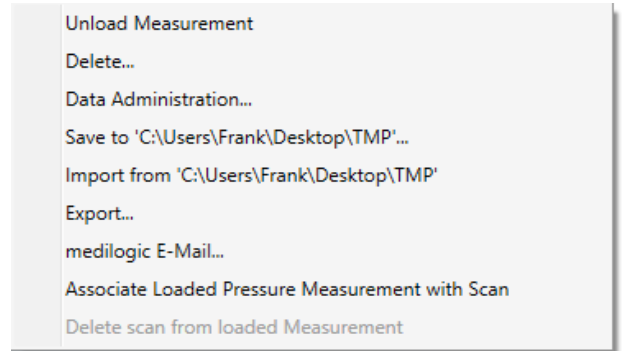
If You are looking at a comparison between both left or both right feet, the information about the measurement will be displayed in the title bar and note if the mouse cursor hovers over one of the displayed feet or platform halves. (This display is only available in sensor or isobaric display)  
*see 6.4.3 Loading comparative measurement*

### 6.2.11 Data menu

This button is only available in the new program main display and is used to access the data management functions and the various export interfaces for measurement data.

In the classic program main display, these functions can be found in the 'Data' menu.

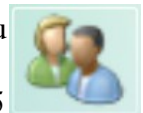
Detailed explanations of the functionality can be found in the corresponding section 6.4 of this user manual.



### 6.2.12 Customer details

This button opens the a dialogue to edit customer details(e.g. name, address) and allows You to generate a new customer record prior to starting a measurement.

In the classic basic programme interface this can be found in the menu 'Data'. Chapter 6.4.5 of this manual gives detailed information.



### 6.2.13 Print Out

This button will open a list of available print outs.

In the classic basic programme interface this can be found in the 'print out' menu. In Chapter 6.5 in this manual You can find detailed information about print outs.



### 6.2.14 Options

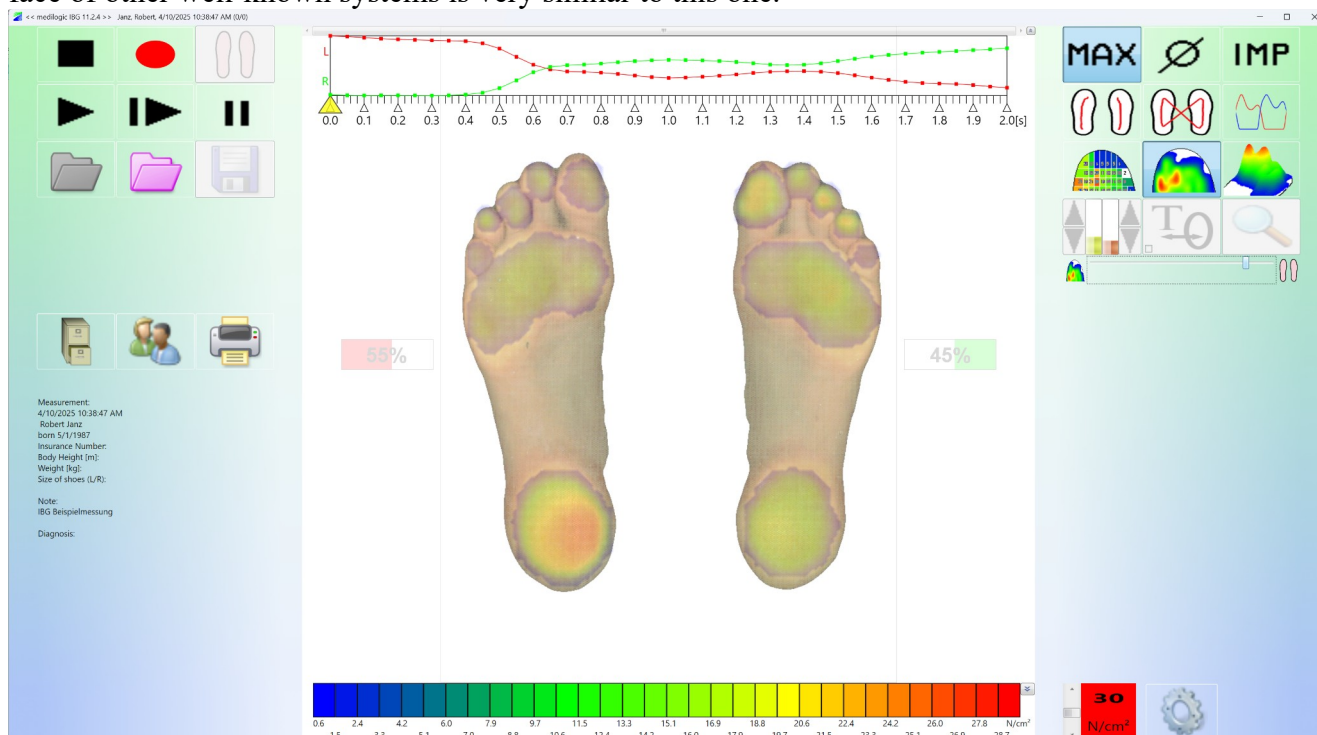
This button gives you access to the program options.

In the classic program display, these functions can be found in the 'Options' menu. Detailed explanations of the functionality can be found in the corresponding chapter 6.6 of this user manual.



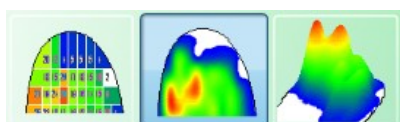
### 6.3 Display

The following image shows the most important controls of the *medilogic* IBG system. The user interface of other well-known systems is very similar to this one.



The title bar of *medilogic* contains some more information. There, the name of the customer currently being processed, the date and time of the measurement can be read off.

All keys are arranged in individual key groups. They perform all the essential operating steps during recording and playback. The following section describes the functions that are important for the display.

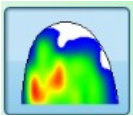


These buttons switch between the different display modes. (colour display, 3D-display with different views and isobaric display).

The graphics card of the computer should be set to a graphics resolution of at least 800 x 600 at 16-bit color depth ("High-Color").

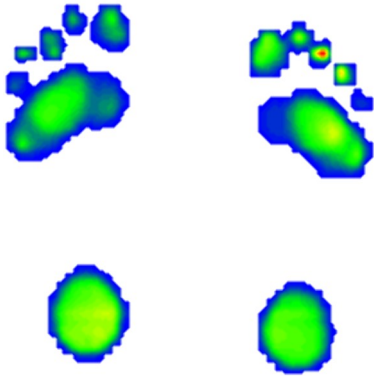
Changing the settings is done under Control Panel / Display / Settings.

### 6.3.1 Isobaric Display



The isobaric display colour codes the pressure values from the platform systems so that areas with the same colour share the same pressure value. To achieve a higher spatial resolution mathematical algorithms are used to calculate pressure values between the sensors.

By pressing and moving the right mouse pointer, the view can be zoomed.



The correlation between pressure and color can be seen in the color scale at the bottom of the screen. This correlation is influenced by both the selected zero threshold and the “*max. pressure*” control bar. The “*maximum pressure*” setting allows measurements of people of different weights to be evaluated using the entire color range. This setting can also be easily adjusted after the measurement.

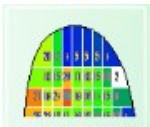
see 6.6.2 „Colour Table“

see 6.3.5 Adjusting the colour scale using ‘maximum pressure’

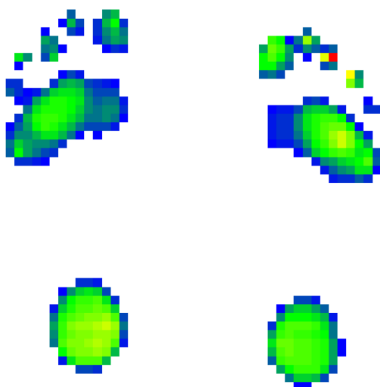
Hovering the mouse cursor over the isobaric display will show the pressure value at this position on to the right side of the graphic area as ‘current pressure’

Note: The pressure values can only be read back if the crossfade slider has been moved all the way to the left so that the crossfade of the scan is no longer visible.

### 6.3.2 Sensor-Display



When the sensor display is selected, the pressure of the individual sensors is shown in different colors within the outline display.



The pressure corresponding to a colour can be read from the colour scale at the bottom of the screen.

The relation between colour and pressure is influenced by the zero threshold and maximum pressure set in the programme. Setting the maximum pressure with the slide bar allows You to compare measurements of customers with different weights and still using the full colour range.

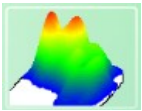
see 6.6.2 „Colour Table“

see 6.3.5 Adjusting the colour scale using ‘maximum pressure’

By means of this representation, it is somewhat easier to differentiate between individual sensors. If you now move the mouse pointer over individual sensors, their value is displayed as "act. Pressure "in N / cm<sup>2</sup>, these values are independent of the selected zero threshold and" max. Print ".

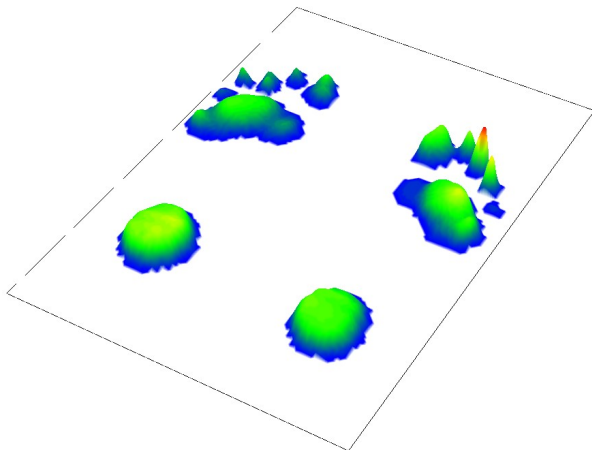
Note: The pressure values can only be read back if the crossfade slider has been moved all the way to the left so that the scan crossfade is no longer visible.

### 6.3.3 3D-Display



The 3D representation is used to visualize the pressure load—without superimposed foot scan—in a perspective view. The perspective can be rotated and panned by clicking and dragging the *left mouse button*. The 3D representation can be enlarged or reduced by clicking and dragging the *right mouse button* up or down.

When the 3D display is selected, the pressure distribution display shows the pressure of the individual sensors as height (y-direction). At the same time, the respective color shading corresponds to the color table from the color scale.



This color assignment is influenced by both the selected zero threshold and the “max. pressure” control bar. The “maximum pressure” setting allows measurements of people of different weights to be evaluated using the entire color range. This setting can also be easily adjusted after the measurement.

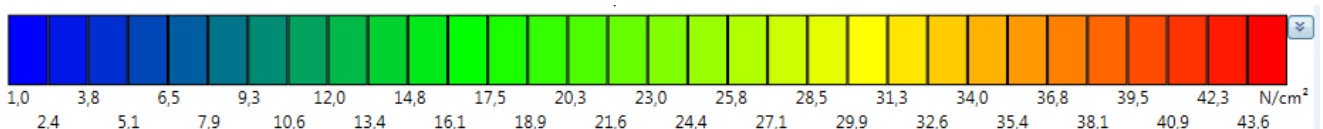
*see 6.6.2 „Colour Table“*

*see 6.3.5 Adjusting the colour scale using ‘ maximum pressure’*

Hovering the mouse cursor over the isobaric display will show the pressure value at this position on to the right side of the graphic area as ‘current pressure’

Note: The pressure values can only be read back if the crossfade slider has been moved all the way to the left so that the crossfade of the scan is no longer visible.

### 6.3.4 Colour Scale



The colour scale shows the relation between colours and pressure values for the isobaric, sensor and 3D display. The lower end is defined by the zero threshold (set in the ‘Options’) the upper end by the maximum pressure (set with the slider for maximum Pressure).

The numbers underneath the colours represent the dividers between the colours and represent the lowest value for the colour going to the right. The values are rounded to a decimal everywhere they are shown (beneath the colour scale, in a sensor field or under ‘current pressure’).

The number of colour steps can be set in the ‘Options’.

In the new basic programme interface the colour scale can be collapsed using the arrow key on the right hand side. This key can be used to show the colour scale again.

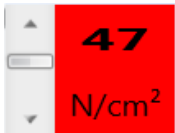


*see 6.6.2 „Colour Table“*

*see 6.3.5 Adjusting the colour scale using ‘ maximum pressure’*

### 6.3.5 Adjusting the colour scale using ‘ maximum pressure’

The relation between colour steps and pressure values can be set using the slider ‘maximum pressure’ . The setting defines the pressure value (N/cm<sup>2</sup>)to be represented by the last colour step (dark red). The colour table is scaled accordingly. This allows You to set the optimal colour range for every measurement. This is especially useful if individuals with widely different weights have to be evaluated.



Setting the maximum pressure to the highest value of a measurement ensures the best possible contrast displaying the pressure values. It does not change the numbers.

For most cases it is advisable to set the maximum pressure to the highest pressure occurring in the current measurement, ensuring the best possible pressure representation. This setting can be made by the software automatically, if ‘Options’ /‘Colour Table’ /‘automatically adjust max. pressure’ is set. The alternative would be to use ‘manual adjustment’ and set the value by hand.

In the new basic programme interface You can also click and drag the mouse over the colour scale to change the value. Moving the mouse to the right will move the colour spectrum towards red (max. pressure is decreased); reversely moving the mouse to the left shifts the colour spectrum towards blue (max. pressure is increased). see 6.6.2 „Colour Table“ Option: „max. pressure: Setting the colours for display“

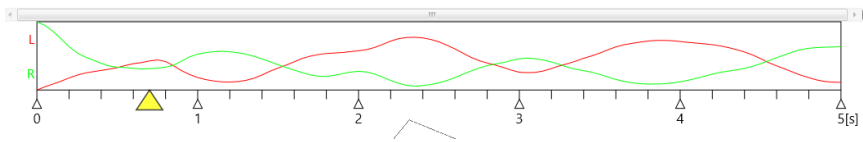
Two markers are available in the classic basic programme interface above the slider. These give quick access to two setting (e.g. for walking and standing) by clicking on them. To change the marker position hold the ‘Ctrl’ -Key down click on one marker and drag it to the desired position.

This is also available for the colour scale used with the momentum graphic (max. momentum (Ns/cm<sup>2</sup>)).

### 6.3.6 Time Graphic

The time graph can only be used to a limited extent for the *IBG system*, as only static analyses are performed. Nevertheless, it can be useful to examine certain time periods in detail, as fluctuations in the patient's condition over the selected time period are also recorded.

During recording and replay of a measurement the time graphic is drawn or shown. During replay You can set the point in time for values from the measurement.



This graphic displays the average pressure values for each side (red: IBG halve; green right IBG halve).

The unit for the x – axis is seconds.

The yellow triangle below the time graphic indicates the current position of the recording, whose measured values are currently displayed in the colour or 3D display. A movement of this pointer is possible by touching and pulling the triangle with the left mouse button.

In addition, the time graph also has a zoom function. With this function, a certain area of the time graphic can be marked and enlarged.

To do this, first move the mouse pointer within the time graphic to the desired start position of the magnification. Now click with the left mouse button there and keep it pressed. Now move the mouse pointer to the right or left. If you are at the desired end position of the interesting area, release the mouse button. The area you just marked will now be automatically enlarged and stretched to the entire length of the timeline. Of course, this enlargement process can be performed several times. The period of time selected by means of the zoom function is displayed above the diagram as a bar. This provides the additional option of moving the period forward or backward by moving the bar.

To maximize the footprint display area, the time graph can be minimized using the right-edge arrow key. Likewise, the graph can also be maximized using the arrow key.

All functions (play, slow motion, maximum, average, gait analysis etc.) now refer to this area. When saving, only the selected section is considered.

To be able to review the entire measurement again, a single mouse click at any point of the enlarged range is sufficient.

This is a qualitative representation of the pressure curve during the measuring time. A detailed diagram of the measured values over time is available in the menu gait analysis / time graphic.

see 6.3.1 *Isobaric Display*

see 6.3.2 *Sensor-Display*

see 6.3.3 *3D-Display*

### 6.3.7 Note

Measurement:  
8/19/2004 1:44:24 PM  
Mrs Jane Jones  
born 7/24/1981  
Insurance Number:  
Body Height [m]: 1.78  
Weight [kg]: 80  
Size of shoes (L/R):  
  
Note:  
Video Seitenansicht; Scan: Sportschuhe  
  
Diagnosis:

For every measurement a note can be displayed, which can be entered while saving the measurement.

To hide or show the note set the 'Option'/'Display/General'/'Display Note' (see 6.6.1 Options „Display / General“) The size and position of the note can be adjusted using the left mouse button by clicking and dragging. With a saved and loaded measurement You can change or enter new information by double clicking on the note. Now You are in edit mode (cursor is blinking) and can write or change the text.

With a right click in the note a context menu will appear with these options:

- *Undo* all changes since entering edit mode
- *Select all* , to select all of the text in the note
- a selection of predefined text blocks to speed up entry of standard texts (diagnoses etc.)
- *Add new text module*, to create a new text block
- *delete text module*, to delete a text block from the list

Clicking anywhere outside the note will end the edit mode.

## 6.4 Data



Measurement data can be saved and loaded for later viewing and evaluation. The medilogic software store the data in the SQL server installed with the system (if not present) either locally or on a network location of Your choice.

Identifying information is first name and name (additionally date of birth) of the customer as well as time and date of recording. Additional information can be saved with the measurement (e.g. note, body weight, email address etc).

### 6.4.1 Saving Data



After recording has stopped the measurement can be saved. The period of the measurement shown in the time graphics is saved. This offers You the chance to exclude parts at the beginning or end with unwanted data (e.g. customer just starting to walk from standing, or tripping) see 6.3.6 *Time Graphic*

The ‘Save’ button (floppy disk symbol) can be used to call up the save dialogue. To simply this the dialogue can be called up automatically when the recording stops. This can be set in ‘Options’ ‘Usability’ ‘Show Save Dialogue after recording’.

Save Measurement
×

---

Select Customer

Group Show all  use measurement date as sorting criterium New Group

Name Jones, Jane (7/24/1981) 12345 Sampleton, Sampleroad 123 New Customer

Quick Search  Name, First Name, ... Import Customer Data

	Mr./Ms.	Acad. Degree	First Name	Name	Date of Birth
Customer	Mrs		Jane	Jones	7/24/1981

Note

Advanced <<
OK
Cancel
Help

---

Details

Distance [m] Alternative: Speed [km/h]

Customer Number

ZIP City Street

Telephone 1 Telephone 2 E-Mail

Body Height [m] Weight [kg] Size of shoes (L/R)

Insurance PNumber Insurance Number

GKV  
 Private  
 Unknown

Diagnosis

In the middle part of the memory the information about first name and name are mandatory in order to save a measurement. Entering the date of birth will further increase the programmes ability to differentiate Your customers.

The notes are saved for every measurement separately, entry is not mandatory. To speed up the entry of notes and diagnoses text blocks can be inserted using the right mouse button. *see 6.3.7 Note*

The 'Advanced' button unfolds (and folds) an area with additional information about the measurement and the customer (e.g. address). This can also be accessed using the 'Edit Customer Data' dialogue *see 6.4.5 Edit Customer Data*

If You want to use gait analytical evaluations You need to enter information about the length of the walkway or the treadmill speed as well as body height and weight of the customer. Should You not wish to use these evaluations or evaluation is not possible (e.g. walking very erratic) You can leave these fields empty. To make entry of this information mandatory You can set the check in 'Options' 'Usability' 'make entering body height and weight mandatory'.

The upper part of the dialogue gives access to customers already stored in the system in order to save a new measurement with that customer. Your customers can be grouped to make it easier to locate them, if You want to access all customers select 'show all'. The drop down selection 'Name' list all customers of the selected group in alphabetical order. You can also sort the customers by the date of their last measurement setting the check next to the 'Group' drop down list.

The field 'Quick Search' lets You find a customer by entering first name or name. The search start as soon as You start entering letters and will show information for the first hit immediately. The drop down list lets You choose insurance number or customer number as alternate criteria.

To enter a new Customer click the 'New Customer' button (all fields will be emptied). If You need a new group You can create one by clicking 'New Group', otherwise select the group from the drop down list You wish to associate with the customer.

When the dialogue opens the most recent customers information will be shown. If the information about the customer is correct You can confirm by clicking the 'OK' button. Otherwise use the 'New Customer' button to create a new customer entry and fill in the information necessary.

To jump from field to field use the TAB-key or click into the field of interest.

Note: For quick handling the dialogue will position the cursor in the field 'First Name' hitting the 'ENTER' key will set it to the 'Name' field , then the 'Date of Birth' field the next hit on the 'ENTER' key will operate the 'OK' button and save the measurement.

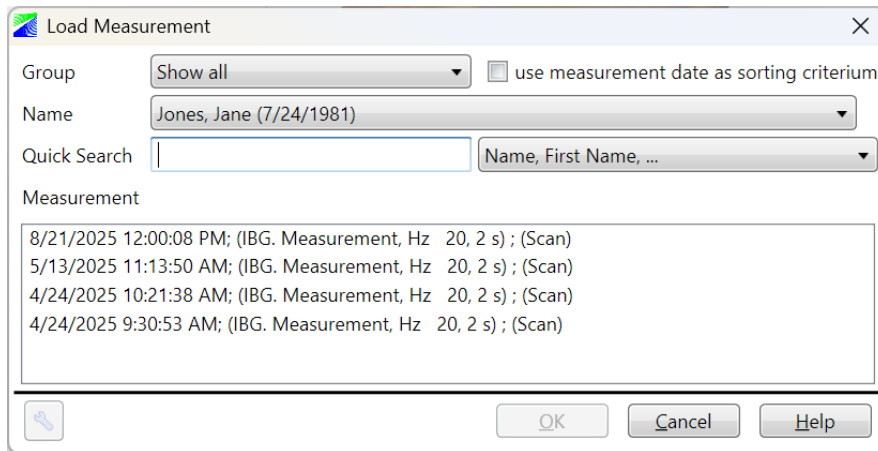
Saving a measurement is only possible if a new recording has been made, otherwise the access is denied (greyed out). This is meant to prevent saving a measurement twice.

If You configured the medilogic system to access external data bases for customer data ('Options' 'Extra' 'External Databases') data entry can be speeded up

## 6.4.2 Loading Data



Saved data can be loaded into the software. Thus the data is again available for viewing and evaluation. Please use the 'Data' 'Load' menu item to do this.



Choose the customer group (or 'Show all') and the customer You are looking for from the drop down list 'Name'. Default sorting criterium is the name, if the check 'use measurement date as sorting criterium' is set the customers most recently measured will be listed first. For every day use this eases locating Your customers.

In the list below You can select the desired measurement by clicking on it. The entries show time and date of the measurement, the sensors used, length of the measurement, sampling rate and the note if entered. Using the 'OK' button will cause the measurement to be loaded into the software and the dialogue to close.

Note: You can also double click on the measurement for more speedy loading.

The 'Quick Search' field lets You locate customers quickly using first name, name, insurance number or customer number.

If You select a measurement made with a different programme mode (e.g. insole, platform, IBG) the current one, the software will automatically switch to the needed programme.

### 6.4.3 Loading comparative measurement



For the IBG-system it often is useful to compare two measurement side by side. To do that Use 'Data'load comparative measurement'.

The dialogue mirrors the one used for loading a current measurement. (*see 6.4.2 Loading Data* ).

After successfully loading a comparative measurement an additional button block is displayed. The black feet represent the measurement first loaded (current measurement), the magenta coloured feet represent the second measurement loaded (comparative measurement)

All evaluations are also available for the comparative measurement. The measurements are compared for the side of the feet or platform halve (left-left or right -right). Use the corresponding buttons to select.

### 6.4.4 Deleting measurements / Customers / Groups



The menu item 'Data>Delete...' allows You to delete measurements, customer entries and groups no longer needed. Selecting the element to be deleted is analogue to 6.4.2 Loading Data .

Pressing the button 'Delete Group' or 'Delete Customer' will delete the customer shown in the drop down list or the group from the drop down list with all its customers. Clicking 'Delete measurement(s)' will delete all measurements selected in the list 'measurement'. *Please check carefully whether to confirm the confirmation dialogue whether these object should really be deleted.*

### 6.4.5 Edit Customer Data



The menu item 'Data>Edit Customer Data' is used to call up the dialogue used to access and edit customer data (e.g. name, address etc.). You can also use it to create new groups or customer entries with the buttons 'New Group' 'New Customer' before recording a measurement and saving it to the database. Handling is similar to 6.4.1 Saving Data . Entry can

also be done using external databases *see 6.6.3 Options „Extra“* The drop down list 'New Group assignment' lets you shift customer entries between the groups.

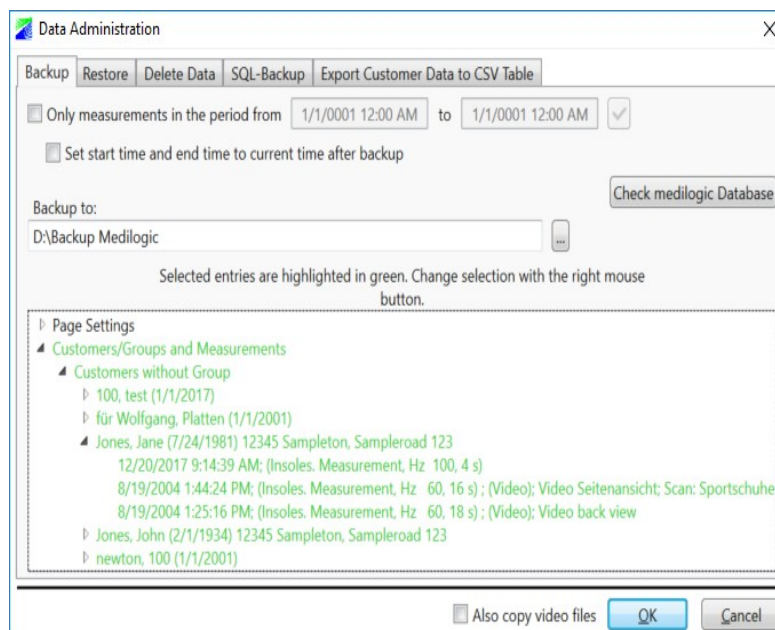
When the dialogue is opened it always presents the customer called up most recently. But You can access any customer from this dialogue.

If any information for a customer has been changed, selecting other customers is denied until the 'Apply' button is clicked.

## 6.4.6 Data Administration (Backup / Restore / SQL-Backup / Export Customer Data to CSV Table)



Making a backup to an external storage device, other computer or server is a good idea for all systems. The menu item 'Data' 'Data Administration' opens a dialogue to do that.



### **Backup**

The data backup allows the existing data to be saved to a destination selected by the user. The customer information, the associated measurements and the individually adjusted print page settings are saved in a file "backup.mdb" (if necessary "logo.bmp") and the directory "Data". If the check mark "Also copy video files" is set, please check whether the backup medium provides sufficient storage space.

Before starting a backup, it is recommended to check if all file associations etc. are correct by using 'Test medilogic database' to create an error-free backup.

Note: Please always use this procedure to back up or transfer your measurement data, as manually copying individual measurement files will result in loss of customer data.

### **Restore**

Data restoration works the other way round, in which data is restored from an existing backup medium into the medilogic software. The file "backup.mdb" (possibly "logo.bmp") and the directory "Data" created during the backup must be searched for.

### **SQL Backup**

The SQL server performs an internal backup to protect the stored data from possible damage, whereby the target directory and the number of months stored retroactively can be set.

### **Export customer data to CSV table**

This function converts the customer-specific information stored in the database into a csv file readable by office programs. This allows you to make the stored customer data accessible for further applications, such as mail merge. A complete export or a selection of individual customers is possible. see 6.4.5 Edit Customer Data

## 6.4.7 Save to...; Import from...

For the transfer of individual measurement files, the menu item Data / Save to... menu item, there is the possibility to save the current measurement to any other storage medium (e.g. USB stick, network drive). The prerequisite for this is that the target directory specified under 'Options / Extra' is not write-

protected and has sufficient free memory space. see 6.6.3 Options „Extra“

The measurement file(s) saved on the storage medium can then be read in on another medilogic system using the menu item 'Import from...'.  
If set in the options, the information of the storage medium will be deleted after the import and the measurement will be displayed immediately.

### 6.4.8 E-Mail



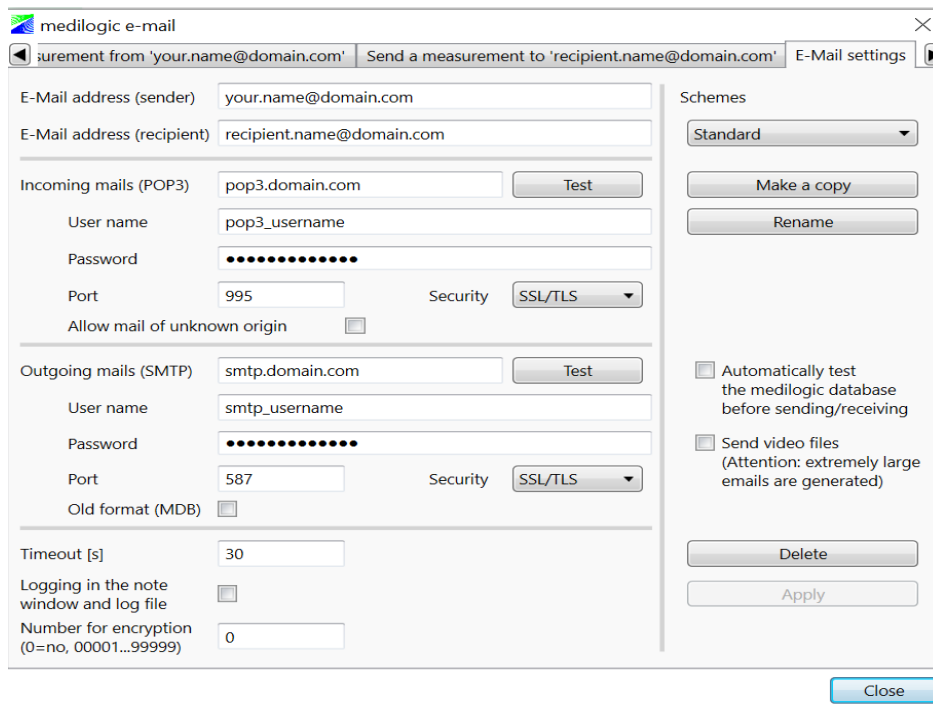
This menu item allows you to send the data of the current measurement by e-mail, or to receive the data of a measurement and integrate it into your own system so that it can be evaluated in your own system.

#### *E-mail settings*

For using the e-mail communication a number of settings are required. These settings are entered in the medilogic software in the menu item "Data/E-Mail/E-Mail Settings".

If you do not know some of these data, please contact your e-mail provider.

For reasons of data protection it is recommended to use encryption. A 5-digit key number is used for this purpose. In this case, the recipient can only read in the customer data and measurements with the correct key number. The input window should be designed to be self-explanatory, if not, please contact the hotline.

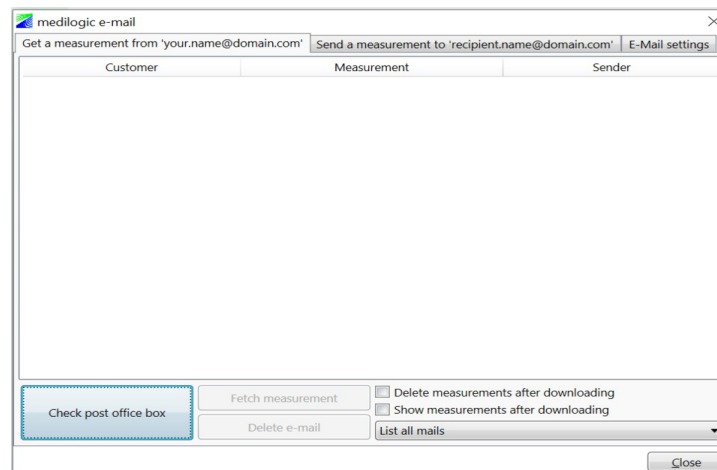


#### *Pick up measurement from your.name@domain.de*

After you have made the POP3 settings in the e-mail settings, first check whether e-mails are available for you. If so, the two buttons "Get measurement" and "Delete e-mail" will also be active.

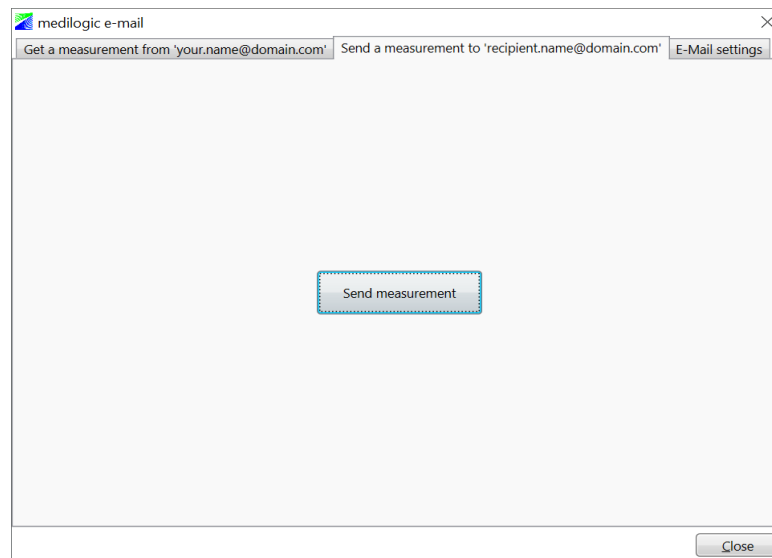
When fetching emails, you can use the checkboxes in the lower area to choose whether the data should be deleted from the server immediately (or not), and whether the measurement should be displayed in the medilogic system immediately after fetching.

In order to optimise the processing time in case of a high number of e-mails, you can reduce the number of e-mails to be listed.



### ***Send measurement to recipient.name@domain.de***

After you have entered the SMTP settings as well as recipient and sender in the e-mail settings, you can send the current measurement by e-mail by clicking on "Send measurement".



### **6.4.9 Exporting Data to external programs**

With this menu item it is possible to write the data of the current measurement into a file which can be read by external programs. In this way, the measurement data is written into a csv table, which can be read by spreadsheet programs such as MS Excel for statistical evaluations. Likewise, the data of the pressure distribution measurement can be transferred to the computer-aided insole milling machine of the systems ID:CAM, pedcad, IETEC, ComfortSpline or Ortho-Fit. For the pedcad and ComfortSpline export, the evaluation of the average pressure distribution under consideration of the 80% threshold is used. In case of the IETEC export, the average of the pressure maxima of the single steps is used. Optimization of the display in the ID:CAM System Expert Analytics system is achieved by activating the checkbox 'increased sensor resolution'. For the routine use of this export, this can be done automatically when saving the measurement.

### ***Export measurement Data to CSV table***

In the menu under Data/Export you will find the option to export the currently loaded measurement to a CSV table. Use the export path to specify the desired storage location.

5 files are saved:

Name \_first name \_date of birth \_time of measurement \_  
\_CYCL.CSV → Coordinates of the cyclogram  
\_GL\_L.CSV → Coordinates of graph left  
\_GL\_R.CSV → Coordinates of the chart right side  
\_L.CSV → Sensor measured values left  
\_R.CSV → Sensor measured values right

For correct formatting in the spreadsheet program, it is recommended that you first open it and then access the csv file via File/Open. The semicolon (;) must be specified as a separator.

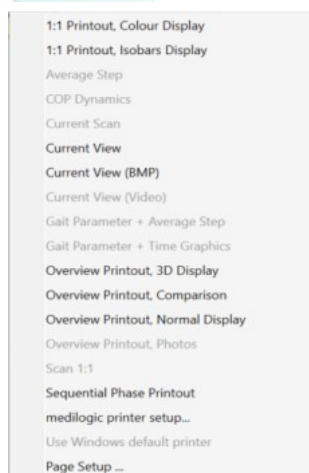
The sensor measured values to be found in the .csv file are the raw values of the system, given in digits. The following applies to the conversion of the specified digit values into the pressure unit N/cm<sup>2</sup>:

1. determine the maximum pressure range that applies to the respective type of medilogic sensors. This is the highest value that can be set with the 'max.pressure' control above the time graph. For sole and plate measurements of foot pressure distribution this is typically 64 N/cm<sup>2</sup>.

2. calculation rule for determining the measured value in the unit N/cm<sup>2</sup>:

$$\text{Pressure [N/cm}^2\text{]} = \frac{\text{csv - Value [Digit]} * \text{max . Pressure [N/cm}^2\text{]}}{1023[\text{Digit}]}$$

## 6.5 Printing



In principle, all images visible on the monitor can also be printed out. In addition, important information about the measured person is also printed out.

There are several possibilities to output the information displayed on the screen to a printer installed under WINDOWS®.

Note: As with all menus, the items are shown in grey and cannot be operated, which are currently not reasonably executable. For the printout of the gait analysis evaluations these must also be activated, otherwise the menu item is shown in grey.

The printer is selected via Print / Set up printer. The following section provides an overview of the different printout variants.

### 6.5.1 Print - current view

This function prints the currently visible image and additional personal information such as last name, first name and the comments entered. This allows the printout to be assigned to the measured person later. If the data of the measurement have not yet been saved, the printout is made without any personal information. It is therefore advantageous to save the measurement of the customer before printing. In addition, the company logo is printed.

When using the video option in medilogic, the video image associated with the current time is also printed (print scheme 'Current View (Video)')

### 6.5.2 Print - 1:1 printout, Sensor, / Isobaric Display

The image of the pressure distribution currently displayed on the screen is printed in its original size. This is possible for all evaluations with the exception of 3-D representations. For printing in original size, the paper format previously set on the printer is analysed by the medilogic program. The 1:1 printout is then adapted to the paper format found. This means that when printing the measurement results of the pressure measurement plate system 1:1 on A4 paper, the printout is often made on 2 sheets. It is possible to distinguish between a 1:1 printout in sensor representation and in isobar representation. Unfortunately, the company logo cannot be shown on this printout due to lack of space.

### 6.5.3 print to bmp file

Instead of printing on paper, the currently displayed print image can also be saved as an image in a \*.bmp file, which can then be used in other applications. After calling the menu item "Current view (BMP)" in the Print menu, a subdirectory "pictures" is created in the program directory (default: C:\programs\medilogic). There you will find the bmp file, whose file name is composed as follows: Name\_first name\_date of birth\_no.bmp

### 6.5.4 Setup printer

In the menu Print / medilogic printer setup the dialog window known under WINDOWS® for selecting and setting up the printer is called up. The WINDOWS® standard printer is used by default. In this dialog window, the paper format (portrait format must be selected) and the print quality can be set. The latter is also responsible for the printing speed and ink consumption.

The parameters that can be set in the setup are printer-specific. In case of doubt, please refer to your printer manual or consult your printer dealer.

When printing to a black/white printer, the software automatically switches briefly from the colour table to the grey value table in order to be able to display the printing differences in a meaningful way. In order to simplify the daily work, the function "Do not show printer dialog before printing" can be selected under Options / Comfort settings after printer setup. The printout will then be activated immediately after selecting the printing scheme in the Print / Print menu.

### **6.5.5 Including a company logo**

When printing from the medilogic program your company logo can be included. It will be displayed in the upper right corner. The company logo should be available as a Windows bitmap and be named LOGO.BMP. It must then be copied to the computer on which the program is installed in the path C:\PROGRAM FILES (x86)\MEDILOGIC. The existing LOGO.BMP file is replaced.

The settings on the print page and the file "logo.bmp" are also saved in the backup directory during the data backup (see 6.4.6 Data Administration (Backup / Restore / SQL-Backup / Export Customer Data to CSV Table)) and are thus available again in the event of a data restoration.

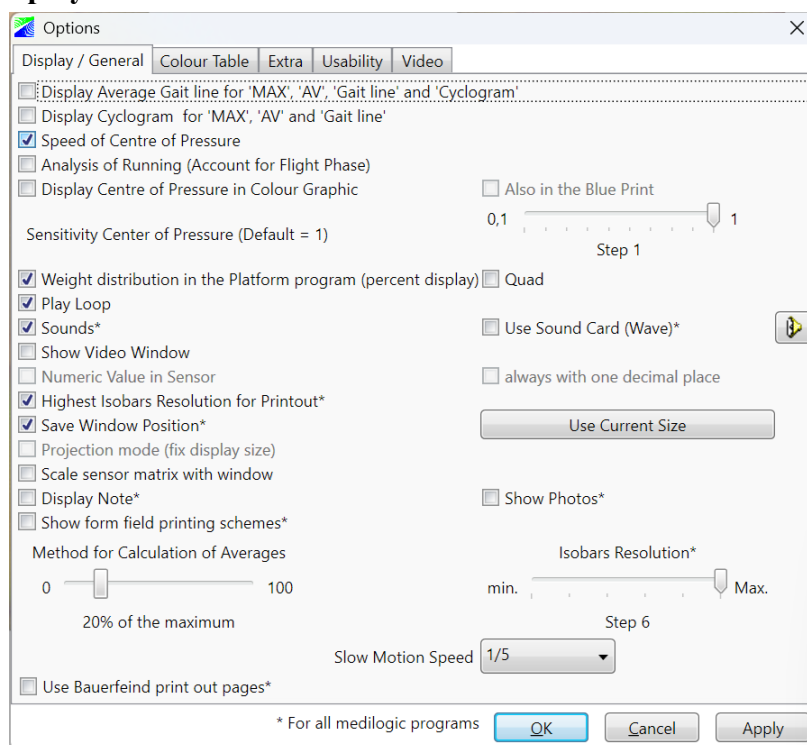
## 6.6 Options



Under the menu item "Options..." various settings can be made in the medilogic software to adapt the program to specific requirements.

The activated status of an option is indicated by a tick at the menu item. Selecting this menu item again switches this state off. The settings are saved and are therefore also effective when medilogic is started again. Settings that apply to both the sole and the plate program are marked with a \* and therefore only need to be adjusted in one of the two programs. A number of functions from the options menu are only relevant for pressure measurement.

### 6.6.1 Options „Display / General“



**Option: "Display Average Gait Line for 'MAX', 'AV', 'Gait Line' and 'Cyclogram'".**

By selecting this option the mean graph can be displayed in maximum display, average display, graph or in the cyclogram. see 6.2.8 Evaluation Gait line

**Option: "Display Cyclogram for 'MAX', 'AV' and 'Gait Line'"**

In addition, the cyclogram, which shows the centre of gravity of the body during the entire measurement or the selected area, can also be displayed. It normally represents a typical "butterfly shape". see 6.2.8 Evaluation cyclogram

**Option: "Speed of Centre of Pressure"**

This will colour the line of the centre of pressure according to the speed at each point.

**Option: "Analysis of Running (Account for Flight Phase)"**

By selecting this option, the cyclogram is displayed as a continuous line although it is not possible to calculate a centre of gravity for every moment (e.g. in the flight phase when running). In addition, an axis division left/right and forefoot/backfoot is displayed to support the evaluation of the cyclogram. This option must be switched off for walking.

Note: Not relevant for measurements with the IBG.

**Option: "Display Centre of Pressure in Colour Graphic".**

This menu item shows the respective (current) centre of gravity in the form of a cross in the colour display.

**Option: "Weight Distribution in the Plattform Program (Percent Display)"**

The weight distribution is displayed either for the left and right halves of the plate or for left-right-front-back if the 'Quad' option is ticked. This is useful for posture analysis.

**Option: "Play Loop"**

Endless playback allows you to play back a measurement so that when the end of the measurement (or the selected time range) is reached, playback immediately starts again from the beginning. This eliminates the need to "rewind" the playback for repeated viewing.

**Option: "Sounds"**

This option enables signals when the program is started and when the soles or plates are detected. These signals are emitted from the PC speaker or via the sound card of the computer and give an orientation about possible error messages or the loading status of the program.

**Option: "Show video window"**

If a video source (e.g. a digital camera) is connected to your computer, you can use this option to switch a video window on accompanying the medilogic program. You can order this additional option as a software update. The control of recording and playback is done by the usual control elements synchronously to the pressure measurement. At the end of the recording, the video file is saved by the system, which can lead to a short delay of the further process in case of longer recording times due to the file size depending on the computer performance.

**Option: "Highest Isobar Resolution during Printout"**

In order to ensure a fast display during the course and evaluation of measurements, it can be useful to reduce the isobaric resolution depending on the computer performance. However, for an optimal print image, it is useful to maximize the resolution of the isobar display. Before printing, the isobar resolution can be automatically set to the maximum value for a short time by activating this option. If this process leads to an excessive delay of the printing process on slower computers, this option should be deactivated.

**Option: "Save Window Position"**

After a new start of the program, the program window and all dialogue boxes appear at the position on the desktop where they were closed before. So you can determine in which area the windows should always open. After the first installation, this Option is initially deactivated and should therefore be activated the first time the program is started.

**Option: "Projection mode (fix display size)"**

With this option the window size for the original medilogic projection is saved by the program, so that the correct size is displayed at every restart.

**Option: "Scale sensor matrix with window"**

With this option, the display of the sensor matrix depends on the size and format of your program window. Especially with 16:9 screen resolutions this scaling should NOT be used to get an undistorted display of the soles/plates.

**Option: "Display Note"**

You can use this option to decide whether or not the corresponding comment is displayed permanently. If this option is selected, the remark is displayed in a separate window. When loading and saving measurements, the corresponding comments are always displayed in the respective selection lists of the measurements.

see 6.3.7 Note

**Option: "Show photos".**

This Option allows you to assign up to 9 digital images to each stored measurement. For documentation purposes, the images or photos can be, for example, still images from a digital video camera or, if the video window is used, single images from the stored video sequence. The photos are permanently

assigned to the corresponding measurement and are displayed again in the photo window when the measurement is loaded later. A special printing scheme enables the overview printout of the photos.

**Option: "Show form field printing schemes"**

Displays a dialogue which allows the user to create individual forms.

**Option: "Method for Calculation of Averages"**

This option refers to the display of the average pressure. (see 6.2.6 Evaluation Average Pressure) The set percentage figure forms a threshold for the calculation of the averaged pressure values of each sensor. Values below this threshold are not included in the calculation. In this way, a distinction can be made between times of lower and higher load when walking. With the recommended threshold of 20%, this means that the pressure values occurring during the swing phase (foot in the air and therefore only very low pressure values in the shoe) are not included in the averaging.

It can therefore be said that with the setting "20% of maximum" a mean pressure during the stance phases of the measured steps is displayed.

If the controller is moved all the way to the right edge, the averaging display uses a special mode which is required for export to the IETEC milling machine. The pressure distribution is calculated for the average of the pressure maxima of the individual steps, i.e. for each individual sensor the pressure maximum of the individual steps is determined and the average value is calculated from this.

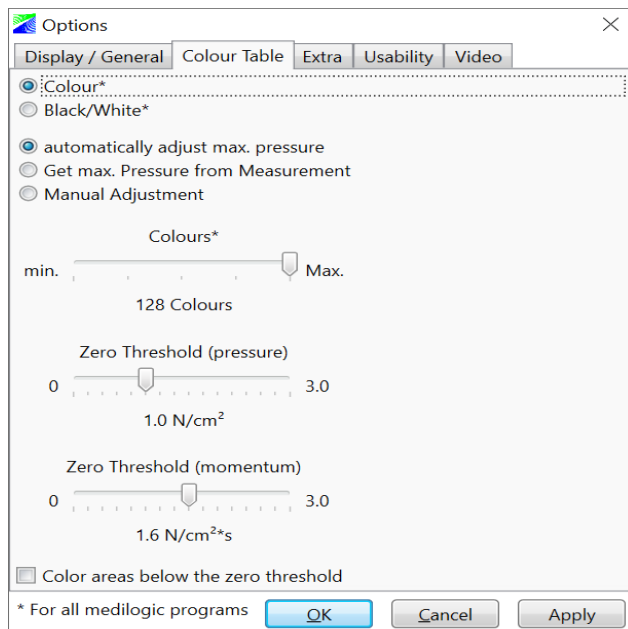
**Option: "Isobars Resolution"**

During program operation it is possible to change the resolution of the display. In case the computing power of the PC is not fast enough for your needs, you can choose a lower resolution, which increases the speed of display and evaluation.

**Option: "Slow motion"**

This setting determines the speed at which the slowed playback of a measurement is performed. When playing back the single images, all measured values are displayed in the sequence. The other settings define a fixed playback speed as fractions of the real speed. Depending on the computing power of the computer, images may be omitted to achieve the speed specification.

**6.6.2 Options „Colour Table“**



**Option: "Colour - Black/White"**

If You use a black and white display it is important to set this option. The pressure will then be coded according to a grey scale. If You print to a black and white printer the software will automatically switch to this mode for a short period to generate the correct grey scale.

**Option: "Method to Adjust max. Pressure".**

These three options influence how the max. pressure slider works. The option we suggest is to let the programme automatically adjust the colour distribution. That way the programme will parse the measurement when it is loaded and set the colour red to that value. This displays the measurement the highest number of colours available.

Getting the max. pressure value from the measurement will read the value set by the user when saving the measurement. The measurement will then be displayed with the value set by the user.

The third option is to set the max. pressure value manually. The programme will not touch that value except to call up the value set by the user in the previous session. This is useful if You want to have a fixed relation between colour and pressure. With this setting You can compare two measurements by just looking at the colours.

**Option: "Colours"**

This set the number of colours used to display pressure distributions between 8 and 128. The more colours are used the more computing power is needed. For the average computer 32 colours is a good setting . If You set the number of colours higher than 32 that number is used, but the colour scale at the bottom of the screen stays at 32 intervals, because of readability. *see 6.3.4 Colour Scale*

**Option: "Zero threshold (pressure / momentum)"**

Only the values above the set zero threshold are displayed as colours. The colour scale starts with the value set here. It can be set separately for pressure ( $\text{N}/\text{cm}^2$ ) and momentum ( $\text{N}/\text{cm}^2 \cdot \text{s}$ ) graphics. *see 6.3 Display*

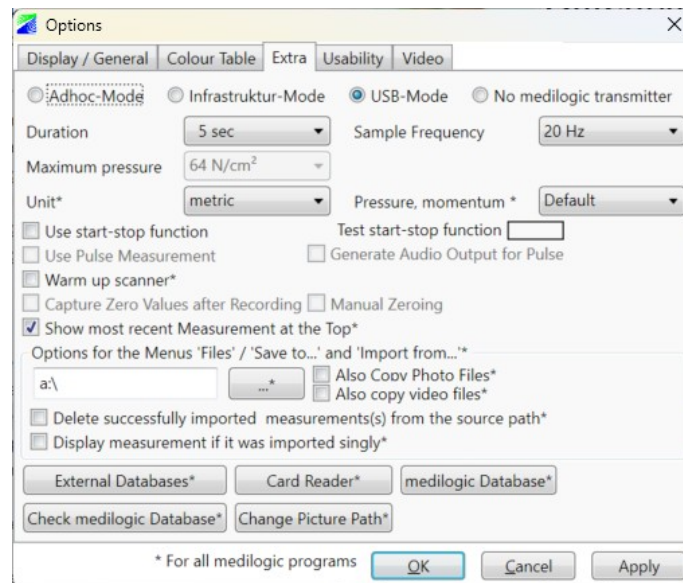
Note: Momentum evaluation can only be used to a limited extent for static measurements with the IBG.

**Option: "Colour Areas below the Zero Threshold"**

Areas below the zero threshold are normally coloured white, if this option is ticked they will be coloured in dark blue.

### 6.6.3 Options „Extra“

The setup of the software is usually done by a technician of the manufacturer, who makes the necessary adjustments of the program to your computer. For this reason, we would like to point out once again that if you are unsure about the settings, you should first contact the manufacturer via the hot line.



#### Option: „Duration“

The maximum recording duration of a measurement is determined. This refers to the recording of the pressure measurements; the subsequent scan **is not** included in this duration. When setting this parameter, it should always be borne in mind that a very long measurement also requires correspondingly more memory. Therefore, recordings should only be made for as long as is reasonable for the evaluation, and the measurement duration should be adapted to the current conditions. A recording time of 5-10 seconds is recommended for a static IBG measurement.

#### Option: "Sample Frequency"

The number of samples per sensor during measurement is determined. As already mentioned in relation to the measurement duration, the measurement frequency also influences the size of the resulting files. An increased measurement frequency offers the possibility of recording shorter events in the pressure curve, i.e., examining faster movements in detail. A selection of 10Hz or a maximum of 20Hz is offered.

#### Option: "Unit"

For users in the anglophonic world this option can be set to English in order to display pressure units and speed in English units.

#### Option: "Show latest measurement at the top".

The dialogue for loading current and comparative measurements will sort the measurements according to their recording date and time, if this option is set.

#### Option: "Options for the Menu 'Data' / 'Save to...' and 'Import from...'"

Fast data exchange via a mobile storage medium can be conveniently carried out in the Data menu by means of 'Save to...' or 'Import from ...'. In the options you can configure which drive is to be used, whether photos/videos are to be transferred and whether the data is to be deleted from the source data medium and displayed immediately.

#### Option: "Delete successfully imported measurements(s) from the source path"

The measurement is deleted from the storage device after it has successfully been imported.

**Option: "Display measurement if it was imported singly"**

If only one measurement was in the location specified above, display it immediately after importing.

**Option: „medilogic Database“**

This button will call up a dialogue that lets You choose the location of the medilogic database, to which measurements and customer information are stored. You can point the software to server on Your network. From now on data will be saved and retrieved from this location. Multiple instances of the medilogic software on computers in different locations can access the same database and thus share the information without the need for a backup and restore process for synchronisation. This allows You to work on measurements and customer information simultaneously from different locations. The information currently changed on one computer is protected from change made at a different location, to prevent conflicts. Changes that do not pertain to customer information or measurements (e.g. Options or printouts) get stored in a local database.

**Option: "medilogic Database"**

Within this menu item the path where the database with the measurements of the customers is located can be defined. The setting of the location where the database of customer measurements is located refers to applications within a network. With this setting, it is possible to access the same database and therefore the same data from different computers on which the medilogic software has been installed, without the need for time-consuming matching of data sets.

Thus it is possible to take measurements at one measuring station and at the same time evaluate pressure measurements on other computers. The modification of data sets which are currently occupied by one user is prevented by a checking mechanism, so that in these cases the access of another user is prevented until the release by the first user has been effected.

Operator changes that do not affect customer groups, customers or measurements (e.g. options, printing schemes) are stored in a local database for each installed medilogic separately and are not affected by this setting.

**Option: "Check medilogic database"**

To check the database for inconsistencies concerning measurements and customer information click this button. This check should be done regularly and always before making a complete backup.

**Option: "External databases"**

This option lets You set up import of customer data from external databases. This is mainly meant to speedily enter customer data already existing in other programmes.

You can choose from a number of databases and programmes for which we have programmed an interface. Select a database name from the drop down list and activate the check 'use'. You can choose more than one database to import customers from.

The field 'database path' lets You set the path to the external database, if the database is installed at the default location You can leave the entry as it is. If not You can use the button 'Search for Database' to locate it. The same is true for the field 'Database file'.

Should the database You use not be in the drop down list please contact the manufacturer of the medilogic system. *See 6.4.1*

**Option: "Card reader"**

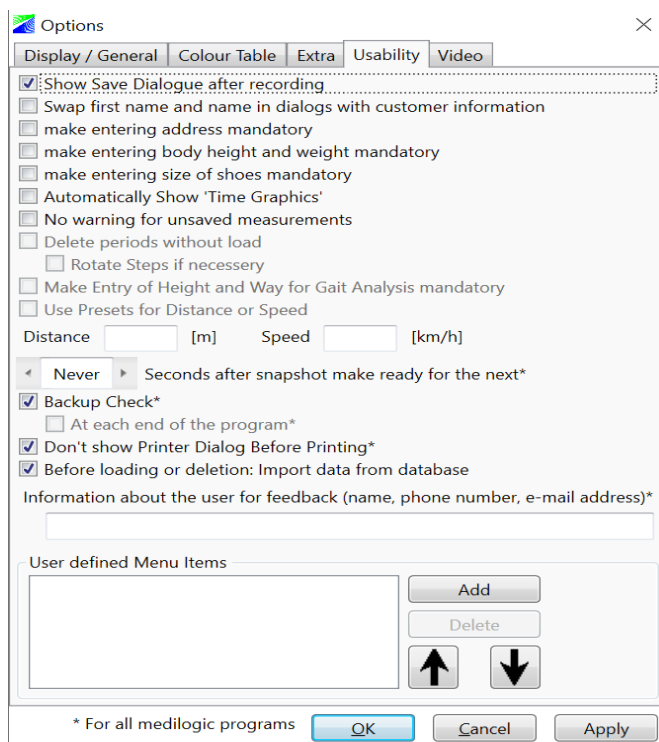
This Option enables the configuration of a chip card reader to read the customer data from the health insurance card or the new electronic health card. For this purpose, the medilogic program addresses an external card reader (depending on the setting of the 'Chip-Drive SCR335' from SCM Microsystems GmbH or the 'Cherry-eGK-KVK') when saving a measurement and there is no need to enter the customer data manually. The matching card reader is offered as an optional accessory to the medilogic IBG system by the manufacturer.

**Option: "Change Picture Path"**

Here you can specify whether the image files created with the print scheme 'Current View (BMP)' are stored in a directory other than the default directory: 'Pictures' in the medilogic program directory.

## 6.6.4 Options "Usability"

These options category contain programme settings which can streamline Your everyday work. Depending on Your work mode and habits You can choose how the programme 'reacts'.



### Option: "Show Save Dialogue after Recoding"

The save dialogue opens automatically as soon as a recording is stopped, either by clicking the stop button or when the maximum recording duration is reached. If You choose not to save the measurement just recorded (e.g. You want to do it again) , click on 'Cancel' to return to the main window and the online mode.

### Option: "Swap First Name and Name in Dialogues with Customer Information"

Depending on your usage habits, you can swap the order in which you enter the customer data for surname and first name.

### Option: "Make Entering Address Mandatory"

If You want to save an address with every customer set this option to make entering the information mandatory.

### Option: "Make Entering Body Height and Weight Mandatory"

Information necessary for gait analytical evaluations will be checked for completeness. This is to prevent the user accidentally forgetting to enter the information and thus preventing gait analytical evaluation.

### Option: "Force input of shoe size in 'Save measurement'".

If you need the information about the shoe size, setting this option will prevent the save dialogue from being closed without this information. The field is marked red.

**Option: "Automatically show 'time graph'".**

The evaluation 'Gait Analysis/Time Graphics' opens automatically after a recording is finished. The save dialogue might appear before that if the option (see above) is set. This might be useful for a dynamic platform measurement so that the time-load graphic is opened for immediate inspection.

**Option: "No Warning for unsaved Measurements"**

If you use the WLAN start-/stop switch provided additionally by medilogic to start and stop recordings, this option will overwrite existing unsaved measurements. This prevents the save dialogue from delaying the start of the recording, If You use this option make sure to save recordings right after stopping them.

Note: Not relevant for measurements with the IBG.

**Option: „Don't show Printer Dialogue before Printing“**

If You use the same printer with the same settings for all medilogic printout, this option will skip the printer setup dialogue for faster printing.

**Option: “Before loading or deletion: Import data from database”**

If you are using a shared SQL database in the network, it makes sense to synchronize the currently open program with the central database before loading or deleting it. You can deactivate this function if the duration of these network accesses has an unfavourable effect on your working speed; synchronization is then only carried out when the program is closed.

**Option: „User defined Menu Items“**

To quickly access sub menu items (e.g. like a printing scheme) You can define the menu items needed most often and put them in the menu bar on the right hand side. This makes Your every day handling of the medilogic system much faster.

## 7 Hardware components

The following section provides a brief overview of the medilogic IBG components.

### 7.1 IkonoBaroGraph

#### 7.1.1 Description

The *medilogic IBG – IkonoBaroGraph* usefully supplements a 2D scan image with a simultaneously recorded color representation of the load distribution under the foot. The simultaneous recording of both data sets enables local coincidence, allowing the result to be reproduced without offset. The adjustable duration of the load distribution measurement also allows the center of gravity curve to be recorded while standing, which is useful for posturographic examinations, for example. The medilogic IBG thus provides simple and straightforward assistance in assessing the standing behavior of patients.

Note: It is not permitted to use the system if you have open, weeping oder bleeding skin on the foot.

#### 7.1.2 Application

The USB cable of the medilogic IBG is connected to the USB port of the computer. A short acoustic signal indicates that the device is ready for operation.

The medilogic program can then be started. If the USB interface has already been selected as the data transfer option, the software automatically searches for the connected components and, once connected, displays live pressure measurement data on the screen.

**Note!** During the switch-on process, it is important that no customer or user stands on the device, as the IBG performs a self-test during initialization. If a customer or user stands on the measuring surface during this phase, this may lead to incorrect values during recording.

Once initialization is complete, the customer can stand on the measuring surface. Pressing the record button starts a recording process consisting of two parts. First, the pressure values are recorded within a preset time window. It is helpful if the customer gently rocks their weight from the ball of their foot to their heel during the recording time. This ensures that the sensor is loaded evenly and fully. Immediately after the pressure values have been recorded, the image is captured with the 2D scanner. During image capture, the customer should stand still and only step off the sensor surface once the examination is complete. Once the measurement is complete, it is assigned to the respective customer in a window and can then be evaluated. Pressure and image data are already aligned and can be brought to the foreground using a slider on the right-hand side. Depending on the question and objective of the examination, different information about the foot geometry can be obtained in this way. The other evaluation functions are part of these instructions for use.

see 5 *Recording a Measurement*  
see 6.2 *Buttons of the user interface*  
see 6.3 *Display*

### 7.1.3 Sensor principle

The sensors used in the *medilogic IBG - IkonoBaroGraph* are state-of-the-art measurement technology. Capacitive sensors are used, in which two conductive surfaces are arranged opposite each other, separated by a flexible, insulating layer, thereby forming a capacitance. If the distance between these surfaces changes as a result of external stress, the capacitance formed also changes. The transparency of the sensors is particularly innovative, as it enables the simultaneous recording of image and pressure data.

With appropriate adjustment, a precise stress value can be assigned to each capacitance value. The characteristic curves established in this way are stored in the electronics. The calibration characteristic curves must be checked at regular intervals. To this end, it is recommended that the sensor technology be sent to the manufacturer for calibration by means of computer-assisted polybaric characteristic curve recording at least once a year or after 5,000 loads (whichever occurs first).

### 7.2 USB data transfer

Data transfer with *medilogic IBG* takes place via a USB interface. The scanner and the attached module each communicate via their own USB port, which requires the presence of two Type A ports. Particularly with mobile laptops, it is important to ensure that the power-saving modes of the USB interfaces are deactivated, as the maximum possible power consumption of the USB interfaces is required for unrestricted operation. The system is switched off by disconnecting the USB cable from the connected computer and reactivated by reconnecting it.

**Note!** No adapters from permanently connected USB Type-A to other USB connection types are permitted.

see 7.3 Technical Data of the IBG

### 7.3 Technical Data of the IBG<sup>1</sup>

Capacitive transparent pressure sensors

Sensor density: 2.8 sensors/cm<sup>2</sup>

Measuring surface: 400 mm x 290 mm

Dimensions (LxWxH): 627 mm x 425 mm x 30 mm

Weight: approx. 5 kg

Measuring range: 0.6 to 64 N/cm<sup>2</sup> (max. permissible load: 200 N/cm<sup>2</sup>)

Maximum measurement error +/-5% FSO

Sampling frequency: maximum 20Hz

Measurement resolution 12 bits

Connections: 5V DC (USB power supply)

Data transfer: USB interface (permanently attached USB cable)

#### **Calibration:**

Computer-assisted polybare characteristic curve recording by the manufacturer

Calibration interval: Once a year or after 5,000 loads, if these occur before the end of a year of use

#### **ambient conditions:**

Storage/transport:

Do not drop, caution fragile!



Move only in the intended way of transport

-20 to +40°C; 20-80% relative humidity, non-condensing; 700-1060hPa atm. pressure

Operation:

+5 to +30°C; 20-80% relative humidity, non-condensing, 800-1060hPa atm. pressure

#### **Test certificates**

EMV test report according to DIN EN 60601-1-2

electrical safety according to DIN EN 60601-1:2005/AMD2:2020

#### **Computer system (minimum recommended equipment):**

- 16 GB RAM
- x64 based processor
- 1 USB Typ-A port (min. USB 2.0 500mA / 2,5W) for IBG
- 1 USB Typ-A port for 2D foot Scanner
- Additional 1 free USB interface if chip card reader is connected
- Operating System: Windows<sup>®</sup> 10 oder 11
- IEC 62386-1/ IEC 60601-1 – compliant computer system

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<sup>1</sup> Technical data for the foot scanner can be found in the corresponding instructions for use.

## 8 Annex:

### 8.1 Possible system messages and their meaning<sup>2</sup>

Das Programm *medilogic* fängt eventuell auftretende Fehler selbständig ab und zeigt diese auf dem Bildschirm an. Die wichtigsten davon und die notwendige Reaktion darauf, sollen hier kurz erklärt werden.

#### 8.1.1 Message: “No UPAT5 with USB connection found”

This message in the *medilogic* IBG program indicates that no IBG module was found on the USB interface. Ensure that Windows is **not operating** the USB interfaces in power-saving mode. To reactivate, disconnect the USB cable from the socket and reconnect it. An acoustic signal will indicate when the IBG has started up. Always connect the IBG module directly to the PC/laptop and not via a USB hub. If it is necessary to use a USB hub, we recommend using a hub with its own power supply via a power adapter.

#### 8.1.2 Message: “UPAT5-USB: The connection is closed”

In this case, please check the USB connection between the module and the PC or USB hub. All connections must be connected and active. An energy-saving function in Windows may be causing the connection to be disconnected. The *medilogic* IBG system is ready for use as soon as live print data is visible in the main window.

#### 8.1.3 Message: “The feet could not be detected in the scan image.”

This message appears if the program has not been able to detect the feet with certainty. This can be caused by unfavorable foot positioning on the sensor surface. The feet should be placed in the center, at least 1 cm away from all side edges. A minimum distance of 2 cm from the lower edge of the housing is recommended. Check the distance between your feet and the edge of the measurement field in the live pressure display preview. Furthermore, your feet should not be too close together. Another reason for failed foot detection is the lighting situation. In this case, please check the specifications described in chapter 4.1.1 Structure and Preparation of the System . In most cases, the measurement can still be used, but manual adjustments are necessary. In the scan view (the slider for the overlay must be moved all the way to the right), the red frame for the left foot and the blue frame for the right foot are then manually aligned over the images. The feet are isolated using the “Increase filter value” slider. In the overlaid view, the image of the pressure values now only needs to be placed manually over the foot scan.

#### 8.1.4 Message: „Scan Marker: NoRedRect“ „Scan Marker: NoBlueRect“ „Scan Marker: NoYellowRect“ „Scan Marker: NoGreenRect“

The positioning and assignment of image and print data is achieved using marker points that have a specific color. If a marker is not recognized correctly, the above message appears. This can occur due to unfavorable lighting conditions in the room. The image can still be used.

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<sup>2</sup> For scanner-specific messages, please refer to the corresponding user manual.

## 8.2 Interference radiation and safety distances - Manufacturer's declaration on EMC

The following tables must be observed with regard to EMC (electromagnetic compatibility) for safety reasons. They are part of the certification according to the standard EN 60601-1-2 and are taken from this standard accordingly.

Portable and mobile RF communication devices (radios) should be used at no closer distance from any part of the *medilogic IBG* system including the connecting cables than the recommended safety distance given in the tables below.

In the following tables the term ME device is used for 'Medical Electrical Equipment' and specifically describes the *medilogic IBG system* described in this manual

### 8.2.1 Cable lengths of accessories

<i>Connection cable</i>	<i>Cable length</i>
USB connection	250 cm

### 8.2.2 Electromagnetic emissions: Manufacturer's Declaration and Guidelines

(Table 1 according to EN60601-1-2)


<i>Guidelines and manufacturer's declaration - electromagnetic emissions</i>		
The ME unit is intended for operation in an electromagnetic environment as specified below. The user of the ME unit should ensure that it is operated in such an environment.		
<b>Interference emission measurements</b>	<b>Compliance</b>	<b>Electromagnetic environment - Guidelines</b>
HF-emissions according to CISPR 11 Group 1	Group 1	The ME unit uses RF energy exclusively for its internal function. Therefore, its RF emission is very low and is unlikely to interfere with neighboring electronic equipment.
HF-emissions according to CISPR 11	Class B	The ME unit is suitable for use in facilities other than residential and those directly connected to the public power supply network, which also supplies buildings used for residential purposes
Emission of harmonics according to IEC 61000-3-2	Not applicable	
Emission of voltage fluctuations/ flicker according to IEC 61000-3-2	Not applicable	

### 8.2.3 Electromagnetic immunity: Manufacturers' declaration and guidelines

(Table 2 according to EN 60601-1-2)

<b>Guidelines and manufacturer's declaration - electromagnetic immunity</b>			
The ME unit is intended for operation in an electromagnetic environment as specified below. The user of the ME unit should ensure that it is operated in such an environment.			
<b>Immunity tests</b>	<b>IEC 60601 test level</b>	<b>Compliance level</b>	<b>Electromagnetic environment - Guidelines</b>
Static electricity discharge (ESD) according to IEC 6100-4-2	± 8 kV Contact discharge ± 15 kV Air discharge	± 8 kV Contact discharge ± 15 kV Air discharge	Floors should be made of wood or concrete or be covered with ceramic tiles. If the floor is covered with synthetic material, the relative humidity must be at least 30%.
Fast transient electrical disturbances / bursts according to IEC 61000-4-4	± 2 kV for power lines (100kHz repetition frequency)	Not applicable	No special requirements for the operating environment. Supply lines should correspond to typical values found in business and hospital environments.
Surges acc. IEC 6100-4-5	± 1 kV symmetrical ± 2 kV unbalanced	Not applicable	No special requirements for the operating environment. Supply lines should correspond to typical values found in business and hospital environments.
Voltage dips, short interruptions and fluctuations of the supply voltage according to IEC 61004-11	UT = 230V (100% UT incursion) for 10ms UT = 230V (100% UT incursion) for 20ms 70% 230V (30% UT incursion) for 500ms periods UT = 230V (100% UT incursion) for 5s	Not applicable	No special requirements for the operating environment. Supply lines should correspond to typical values found in business and hospital environments.
Magnetic field at the supply frequency (50/60Hz) according to IEC 60114-8	3 A/m	Not applicable	Magnetic fields at the mains frequency should correspond to the typical values found in the business and hospital environment.
Note: UT is the mains AC voltage before applying the test levels			

**8.2.4 Electromagnetic Immunity: Manufacturer's Declaration and Guidelines for ME equipment that is not life-sustaining**  
**(Table 4 according to EN 60601-1-2)**

<b>Guidelines and manufacturer's declaration - electromagnetic immunity</b>			
The ME unit is intended for operation in an electromagnetic environment as specified below. The user of the ME unit should ensure that it is operated in such an environment.			
<b>Immunity tests</b>	<b>IEC 60601 test level</b>	<b>Compliance level</b>	<b>Electromagnetic environment - Guidelines</b>
Conducted HF disturbance variables according to IEC 610004-6	6V <sub>Effective</sub> 150kHz to 80MHz	6V	Portable and mobile radios should not be used at a distance from the ME equipment, including cables, less than the recommended separation distance calculated according to the equation applicable to the transmission frequency. <b>Recommended safety distance in meters:</b> $d = (3,5/3) * \sqrt{P}$ $d = (3,5/10) * \sqrt{P} \quad \text{for 80MHz to 800MHz}$ $d = (7/10) * \sqrt{P} \quad \text{for 800MHz to 2,7GHz}$ where P is the transmitter rated power in watts (W) according to the transmitter manufacturer's specifications and d is the recommended safety distance in metres (m). The field strength of stationary radio transmitters should be less than the compliance level at all frequencies according to an on-site study <sup>b</sup> . Interference may occur in the vicinity of equipment bearing the following symbol 
Irradiated HF disturbance variables according to IEC 61000-4-3	10V/m 80MHz to 2,7GHz  spot tests: 385MHz at 27V/m; (710,745,780,5240,5500,5785) MHz at 9V/m; (450,810,870,930,1720,1845,1970,2450) MHz at 28V/m	10V/m	
Note 1: At 80 MHz and 800 MHz the higher frequency range applies. Note 2: These guidelines may not be applicable in all cases. The propagation of electromagnetic quantities is influenced by absorption and reflection from buildings, objects and people.			
<sup>a</sup> The field strength of stationary transmitters, such as base stations of radio telephones and land mobile radios, amateur radio stations, AM and FM radio and television transmitters, cannot be predicted theoretically with any accuracy. In order to determine the electromagnetic environment with respect to the stationary transmitters, a study of the electromagnetic phenomena of the site should be considered. If the measured field strength at the location where the ME unit is used exceeds the above compliance levels, the ME unit should be observed to verify its intended function. If unusual performance characteristics are observed, additional measures may be necessary, such as changing the orientation or location of the ME unit.			
<sup>b</sup> Over the frequency range from 150kHz to 80MHz, the field strength should be less than 3V/m.			

## 8.2.5 Recommended safety distances between portable and mobile RF telecommunication equipment and the ME equipment

(Table 6 according to EN 60601-1-2)

### *Recommended safety distances between portable and mobile RF telecommunications equipment and the ME equipment*

The ME equipment is intended for use in an electromagnetic environment in which the RF disturbance variables are controlled. The user of the ME unit can thus help to avoid electromagnetic interference by maintaining the minimum distance between portable and mobile RF telecommunication devices (transmitters) and the ME unit - depending on the output power of the communication device, as specified below.

Nominal power P of the transmitter W	Safety distance, depending on the transmission frequency m		
	<b>150kHz to 80MHz</b> $d=(3,5/3)*\sqrt{P}$	<b>80 Mhz to 800MHz</b> $d=(3,5/10)*\sqrt{P}$	<b>800MHz to 2,7GHz</b> $d=(7/10)*\sqrt{P}$
0,01	0,12	0,04	0,07
0,1	0,37	0,11	0,22
1	1,17	1,35	0,7
10	3,69	1,1	2,2
100	11,67	3,5	7

For transmitters whose maximum rated power is not given in the table above, the recommended separation distance d in meters (m) can be determined using the equation associated with the respective column, where P is the maximum rated power of the transmitter in watts (W) according to the transmitter manufacturer.

Note 1: At 80 MHz and 800 MHz the higher frequency range applies.

Note 2: These guidelines may not be applicable in all cases. The propagation of electromagnetic quantities is affected by absorption and reflection from buildings, objects and people.

### 8.3 EU Certificate of Guarantee

Dear customer,

we would like to thank you for choosing a medilogic system. We are sure that you will be satisfied with your choice, as this product has been designed to meet your needs and ensure trouble-free use.

In addition to the manufacturer's two-year statutory warranty period for defects due to faulty materials or workmanship, we hereby certify the additional EU manufacturer's warranty specified below.

*Warranty conditions:*

1. This warranty is only valid upon presentation of the original invoice. It is important that the information contained is complete and legible.
2. The warranty is not valid if the serial number on the product has been changed or removed in any way or is illegible.
3. The system must be sent to the manufacturer's address with sufficient insurance at your expense. To avoid transport damages, it is necessary to pack the device well. For this purpose, use the system case in which the system was delivered. The costs for the return transport of the repaired or replaced product are borne by the manufacturer.

*Legal warranty obligation of the manufacturer:*

- The warranty period begins on the date of delivery of the system to the customer and ends two years after this date.
- The manufacturer is liable for defects or faults due to faulty materials or faulty workmanship.
- Consumables such as batteries, pressure measuring soles are excluded from the legal warranty obligation, unless they were already demonstrably defective at the time of delivery.

*Additional EU manufacturer's warranty:*

- The additional EU manufacturer's warranty begins on the date of delivery of the system to the customer and ends one year after this date.
- In addition to the statutory warranty, the manufacturer guarantees the perfect functioning of the complete system including the pressure sensors subject to wear and tear.
- The prerequisite for this guarantee is the proper use of the system as described in the instructions for use, observing all cautions and safety instructions.
- The manufacturer checks the complete functioning and in particular the calibration of the sensor system at the end of the additional manufacturer's warranty by means of free service maintenance. For this purpose, the system is sent to the manufacturer at the customer's request and returned after the manufacturer has checked it. At the same time, the current medilogic software version is provided to the customer as an update free of charge.
- The following points are expressly excluded from this guarantee:
  - a) Damage caused by misuse or incorrect use of the product. The system should be used according to the instructions in the user manual.
  - b) Malfunctions of the software caused by any manipulation of the computer after proper installation by the manufacturer.
  - c) Damage caused by repairs carried out by unauthorized service personnel or by the customer himself.
  - d) Damage in transit due to inadequate or incorrect packaging.
  - e) Damage caused by accident and damage caused by lightning, water, fire or vandalism.

Manufacturer: T&T medilogic Medizintechnik GmbH  
Mittelstr. 9, D-12529 Schönefeld, Germany

