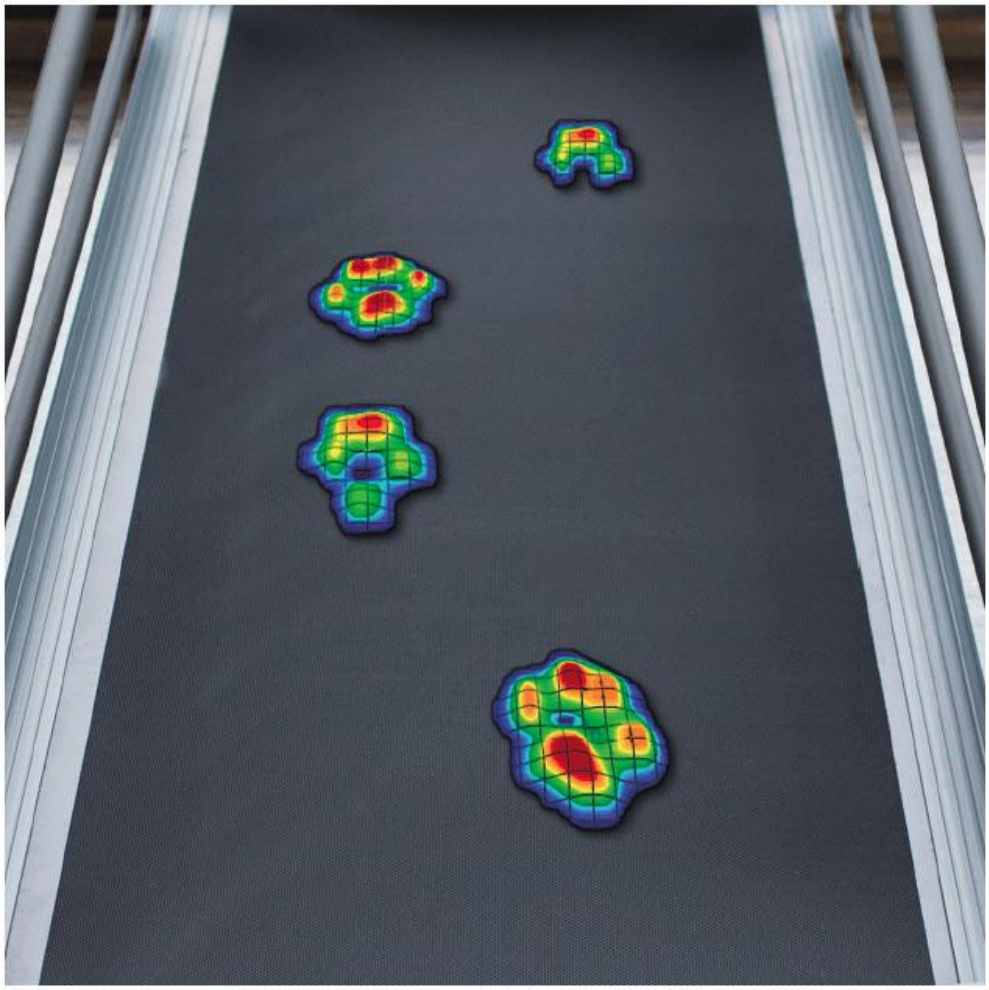
Specifications
and
Operating Instructions



CANID GAIT ANALYSIS

zebris

Inhalt

1 Introduction

Illustrations of this manual may differ.

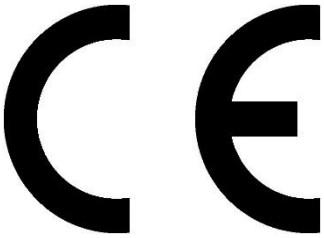
1.1 Manufacturer Information

Manufacturer

zebris Medical GmbH	Phone	+49 (0)7562 9726 - 0
Am Galgenbühl 14	Fax	+49 (0)7562 9726 - 50
88316 Isny im Allgäu	E-Mail	info@zebris.de
Germany	Web	www.zebris.de

Sales / Support

zebris Medical GmbH	Phone	+49 (0)7562 9726 - 300
Am Galgenbühl 14	Fax	+49 (0)7562 9726 - 50
88316 Isny im Allgäu	E-Mail	support@zebris.de
Germany	Web	www.zebris.de



NOTE

Please always provide the serial number of the product for inquiries!

1.2 Structure of the CanidGait® System user manual

The CanidGait® measuring system consists of the pressure distribution measuring sensors and the corresponding application software, including the PC. The measuring device is provided in two configurations:

- FDM2 CanidGait® platform: The measurement sensor unit as a stand-alone floor platform
- Treadmill system: The measurement sensors are installed in a dog treadmill. The sensor system and treadmill can also be used completely independently and have a separate power supply and CE marking.

The user manual for the CanidGait® measuring system therefore consists of several instructions:

1. CanidGait® specifications and hardware user manual
2. Animal Analysis Suite user manual for the application software
3. Specifications and user manual supplied by the treadmill manufacturer.
4. User manual and specifications of accessories like projector or PC

NOTE

When installing, using, maintaining, and transporting the CanidGait® measuring system, it is essential that you also observe the operating instructions for the components.

NOTE

Please also be sure to adhere to the user manuals supplied by manufacturers of the treadmill and the accessories when setting the system into operation, while using it, maintaining it and transporting it.

The section CanidGait® specifications and hardware user manual mainly contains information regarding the specifications and operation of the CanidGait® pressure distribution measuring sensors and their safe operation in combination with the treadmill, as a measuring system. Instructions regarding the treadmill are restricted to the main safety and servicing measures.

WARNING

Read these instructions before using the product for the first time to avoid operating errors and damage.

The exact adherence to the instructions in all sections of the operating instructions for the measuring system is a precondition for its intended use.

1.3 Conventions and Symbols Used

"**WARNING**" symbols indicate a potential hazard to the health and safety of the users and/or patients. The warnings describe the risks involved and those that can be avoided.

Note symbols indicate a potential hazard that can result in damage of the device. The notes explain the type of hazard and how it can be prevented.

CE mark according to EC Directives 2014/30/EEC and 2014/35/EEC (Low Voltage Directive and EMC Directive).

Manufacturer

Date of production

Item number

Serial number

Observe instructions for use

Symbol for the connection of the external power supply unit (DC voltage 15-20V with indicated polarity)

USB-Interface

This symbol shows that pursuant to the Directive on Waste Electrical and Electronic

Devices (2012/19/EU) and national legislation, a product cannot be disposed of via the household waste

Symbol indicates a potential hazard that can cause damage to the eyesight. This warning explains the nature of the hazard and how it can be avoided.

2 Safety

2.1 Environmental conditions

CanidGait® measuring systems are suitable for application in dry interiors with level ground such as those in hospitals, doctors' surgeries, and laboratories.

Temperature	10°C to 40°C
Relative humidity	30% to 70%, non-condensing
Air pressure	700 to 1100 hPa

WARNING

CanidGait® systems must NOT be operated in wet zones, wet rooms (swimming pools, saunas) or climatic chambers.

Direct contact with liquids must always be avoided, as the measuring system is not protected against the entry of liquids. Liquids penetrating the device can cause fire, electrical shock, or other severe accidents.

The CanidGait® system is NOT specified for the operation in vacuum, hyperbaric or altitude chambers.

The measuring systems are not intended for operation in potentially explosive atmospheres of medically used rooms or oxygen-enriched atmospheres.

The devices must not be operated in proximity to e.g., engines or transformers with a high connected load as well as mains current lines, as electrical or magnetic interference fields can falsify correct measurements resp. turn them impossible. Therefore, the devices must be protected against humidity.

The ventilation slots of the treadmills must be always free, so that air can circulate freely.

2.2 Storage and Transport

Storage and transport of the measuring system are only to be affected in the original packaging provided by zebris.

Temperature	-20°C to +70°C
Relative humidity	max. 95%, non-condensing
Protect from moisture	

NOTE

All CanidGait® systems can be stored without power supply for a maximum of 6 to 9 months. After this period, the battery may be totally discharged due to lacking power supply. If the storage of the device exceeds this period, a re-programming of the treadmill control may be necessary.

2.3 User Obligations

- Users are obliged to:
  - ✓ observe all safety guidelines of the user manual.
  - ✓ carry out any inspection and maintenance work on a regular basis as stipulated in the user manual.
  - ✓ only use work equipment that is free of defects.
  - ✓ check the functional safety and the proper condition of the device before operating.
  - ✓ make all user manuals that are part of the measuring system accessible to all users at all times and keep the manuals in close proximity of the measuring system.
  - ✓ protect him-/herself, the patient or third parties against dangers.
  - ✓ avoid a contamination through the product.
- When using the system, national legal regulations must be observed, in particular:
  - ✓ the valid industrial safety regulations.
  - ✓ the valid accident prevention measures.
- For the safety, reliability and performance of the components delivered by zebris, responsibility is assumed, if:
  - ✓ assembly, extensions, re-settings, changes, or repairs were carried out through zebris or third parties authorised by zebris, trained technicians or employees of authorised dealers. Storage and transport are only to be affected in the original packaging delivered by the manufacturer.
  - ✓ the device is operated in accordance with the user manual.
  - ✓ the components of information technology provided by the operator correspond to the technical requirements of hard and software included in this user manual and were installed and set up according to the relevant descriptions in this user manual.
  - ✓ the set-up room corresponds to the given environmental conditions of the measuring system and the valid installation regulations.
  - ✓ the CanidGait® system including accessories is connected to the mains socket with a protective grounding conductor and is operated with the correct mains voltage.
  - ✓ exclusively the software provided by zebris as well as the components and accessory parts listed in this user manual are used together with the system.

2.4 General safety instructions

- The application and operation of the system and the evaluation of the measuring data and their interpretation may only be carried out by trained qualified personnel. The manufacturer assumes no liability for any injury to persons, damage to property, loss of data or injury of animals, due to improper use of the software, the device, or its component parts.
- The patients' data and measuring data may only be copied, moved, or deleted using the database function provided by the zebris application programs. In the case of data being changed intentionally without using the database functions, the user alone bears the full risks involved.
- Measurement and analysis results should always be interpreted in the light of the clinical history of the patient and in the context of other diagnostic tests by a trained person proven and tested for their relevance.
- Should there be any detectable damage to the device or component parts, they should be returned to the manufacturer for a safety check. It is not permissible to continue using the device or its component parts, as severe damage, and serious injuries – even lethal injuries - may result. The manufacturer or authorized sales partner must always be contacted in all cases of fault or doubt.
- If any fluids should penetrate the device, it is mandatory for the device to undergo a technical, safety test. Damaged plug connections and leads are to be replaced by an authorized service technician. The device must be put out of operation immediately, marked as "Out Of Order“ and prevented from being used by removing the mains cable. Please refer to an authorized technician immediately.
- Be sure that all the mains and connection cables are laid safely and that they are protected against stepping on, so that nobody can trip over them. Check all the cables and the connection plug regularly for any damage. Damaged power supplies and cables must be replaced before further operation.
- Never insert any objects in the components of the measuring system.
- Never attempt to service the measuring system yourself in any way other than that described in the instructions for use supplied. Removing the covers may expose you to life-threatening voltages or other risks.
- It is not permitted to change or modify the measuring system, its components or zebris software in any way without written approval from zebris. In case of modifications without approval, the operator is obliged to perform appropriate examinations and tests to ensure safe use.

2.5 Safety instructions for the Treadmill

- The treadmill belonging to the CanidGait® measuring system is a very powerful device. For safe operation of the CanidGait® system, it is mandatory to adhere exactly to the safety regulations described in the following.
- The measuring procedure on the treadmill must never be commenced without a thorough instruction of the patient by trained personnel. No measurements may be taken without a supervisor.
- Do not place the treadmill on an unstable ground.
- Do not set up the system near a source of heating or in direct sunlight in front of a window as a strong rise in temperature can lead to inaccurate measuring results.
- Directly behind the treadmill it is mandatory for a safety zone of 2 m in length and 1 m in width to be kept free, and ought to be padded (with a soft mat). No items may be left in this zone during operation (such as video camera, lighting equipment etc.).
- Dangerous drawing-in gaps are located at the rear end of the running belt and along its sides and (if existing) on the elevating mechanism. Do not wear any loose clothing that could get caught up in the rollers. Make sure that if a person trips over, their long hair, loose clothing, jewellery, etc., do not come into contact with the rear part of the treadmill belt (e.g., wear a hair net). Due to danger of stumbling, do not place any clothing or jewellery on or within close proximity of the treadmill.
- During operation, the Emergency STOP facilities must always be within easy reach for the user and the operating personnel.
- Pull out the power plug before transporting the treadmill.

2.6 Prohibited Use

- Improper and/or prohibited use of the measuring system is impermissible and zebris warn explicitly against all prohibitions included in this section.
- Do not try to service the treadmill in any manner other than that described in this user manual. By the removal of the protective covers, it is possible that you could expose yourself to lethal high voltages or other hazards.
- We also point out that if any changes are made to this certified device or its accessories without the prior written consent of zebris, your legal right to operate the device will be void. If changes are made to the device without obtaining approval, the operator is obligated to carry out suitable investigations and tests in order to guarantee safe use.
- The use of the measuring system under the influence of alcohol, drugs or narcotics is strictly prohibited.
- zebris measuring systems may not be operated in any other environmental conditions than those listed in the section "Specifications", (e.g., in wet zones, moisture-prone areas, or in climatic, vacuum, hyperbaric or decompression chambers, etc.). Direct contact with liquids must always be avoided, as the measuring system is not protected against entering liquids. Liquids entering the device can cause fire, electric shock, or other severe accidents.

3 Product description

3.1 System Components

In its basic configuration the measuring system consists of the following components:

- Sensor equipment for measuring the pressure distribution
- External power supply unit for the pressure measuring platform
- USB cable
- zebris application software Animal Analysis Suite
- Windows-compatible computer or notebook
- Cable guard with screws
- User manual for CanidGait® system, treadmill, Animal Analysis Suite software

3.1.1 Treadmill system

The CanidGait® treadmill system also includes the following components:

- Treadmill with integrated measuring sensors
- Power cable for the power supply of the treadmill
- Silicone oil to lubricate the treadmill belt
- Instruction manual for the treadmill

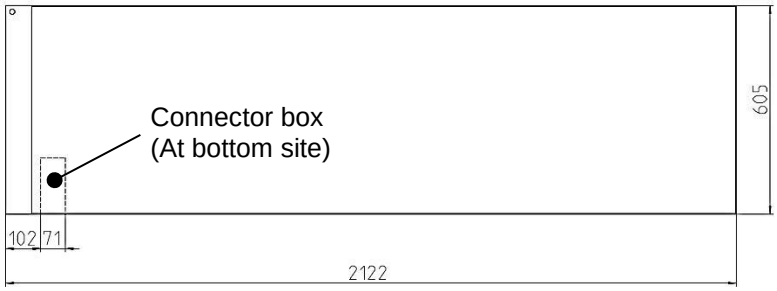
3.2 Specifications CanidGait® Sensor

The sensors of the different CanidGait® systems only vary in size of the measuring area, the number of single sensors included in the sensor module and the supported sampling frequency. All other technical specifications are identical.

Interfaces	USB synchronization input/output video synchronization infrared synchronization (optional)
Connectors	cable socket resp. interface box at the bottom of the device
Measuring principle	capacitive pressure measurement
Operating voltage	16-18 V DC
Power consumption	maximum 60 W (depending on the type)
Power supply via external power supply unit	100 – 240 V AC / 50/60 Hz
Accuracy of the calibrated measuring range	(1 – 80 N/cm^2) ±5 % of maximum range
Hysterese	≤ 3%
Mechanical cross talk	-25 dB
Pressure threshold	1 N/cm^2

3.3 Technical specifications

Type	FDM2 CanidGait® FDM System



Platform	
REF.-No.	01543090
Outer dimensions	2122 x 605 x 21 mm (L x W x H)
Weight	Approx. 25 kg
Infrared interface	Integrated
Sensor	
Sensor Surface	2030 x 560 mm (L x W)
Number of sensors	64 x 240 / 15360
Resolution	1/3“ resp. 1,38 Sensors / cm²
Measuring frequency	100 Hz / optional 200 Hz

Type	FDM-TSTD CanidGait® Treadmill System

Treadmill	FFL Fit Fur Life Treadmill
Speed	1 - 12 km/h in 0,1 km/h Schritten
Running surface	200 x 46 cm
Engine Power	1,5 kW
Power Supply	230 V, 50Hz / 60Hz
Weight	93 kg
Dimensions (L x W x H)	214 x 88 x 116 cm
Track access height	26 cm
Elevation	-5 bis +10 % elektrisch
Max. user weight	130 kg

Version	FDM-TSTD
REF-Nr.	**01543191**

Platform	
REF-No.	01244231
Sensor Area / cm	163 x 41
Number of Sensors	48 x 192 / 9216
Resolution	1,38 Sensoren /cm^2
Sampling Frequency	100 Hz

Type	FDM-TPROF CanidGait® Treadmill System

Treadmill	FFL Fit Fur Life Treadmill
Speed	1 – 20 km/h in 0.1 km/h intervals
Running surface	200 x 46 cm
Engine Power	1,5 kW
Power Supply	220 V – 230 V, 50 Hz / 60 Hz
Weight	93 kg
Dimensions (L x W x H)	214 x 88 x 116 cm
Track access height	26 cm
Elevation	-5 to +10 %
Max. user weight	130 kg

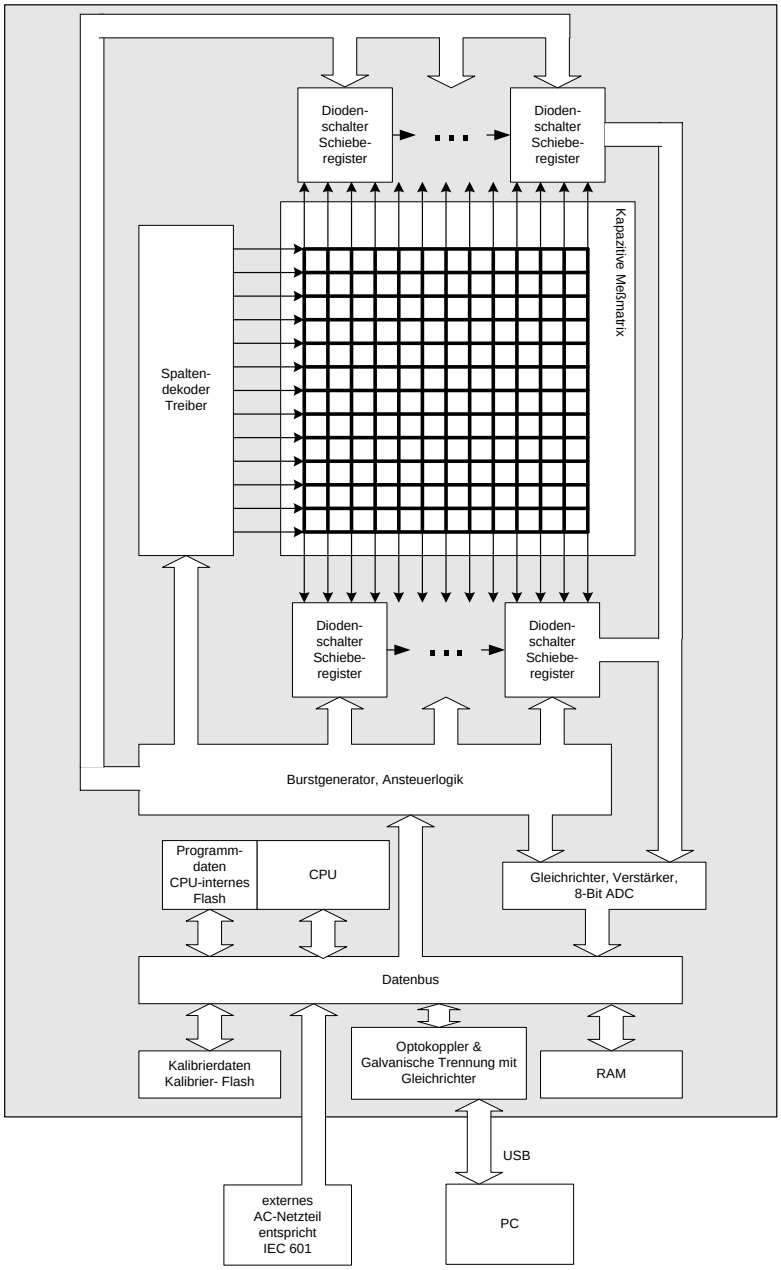
Version	FDM-TPROF
REF-No.	**01543191**

Platform	
REF-No.	01244231
Sensor Area / cm	163 x 41
Number of Sensors	48 x 192 / 9216
Resolution	1,38 Sensors / cm^2
Sampling Frequency	200 Hz

3.4 Measuring principle

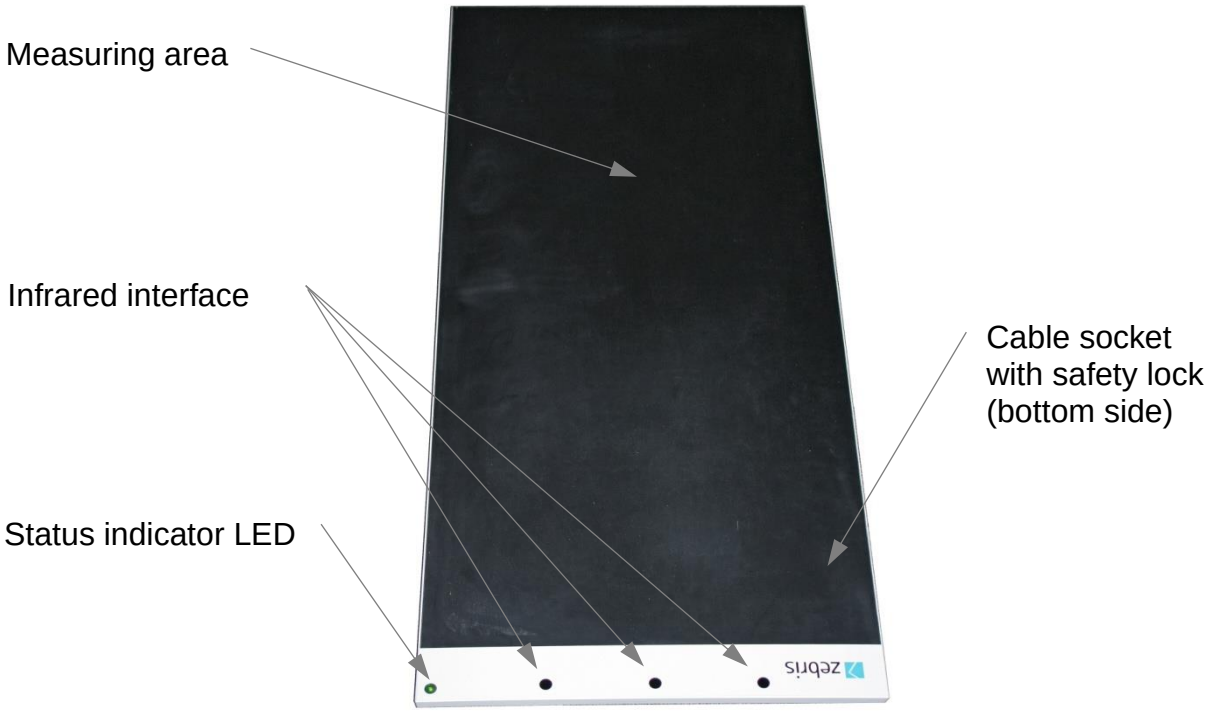
The system contains a measuring matrix consisting of capacitive pressure sensors that are arranged in columns and lines running closely next to each other. For determining the force distribution over the measuring matrix, the capacity proportional to the force exerted is determined for each individual sensor. To do this, the drive logic generates several sinus burst signals equivalent to the number of columns via the column decoder and transmits them to the respective measuring column. The analog signal coupled into the shift register over the lines is proportional to the pressure-dependent capacity and is passed on for further processing to the control and signal-processing electronics and transmitted to the PC from there and shown on the display.

Schematic circuit diagram of the measuring system



3.5 Controls and Connectors

3.5.1 Type FDM2 CanidGait®



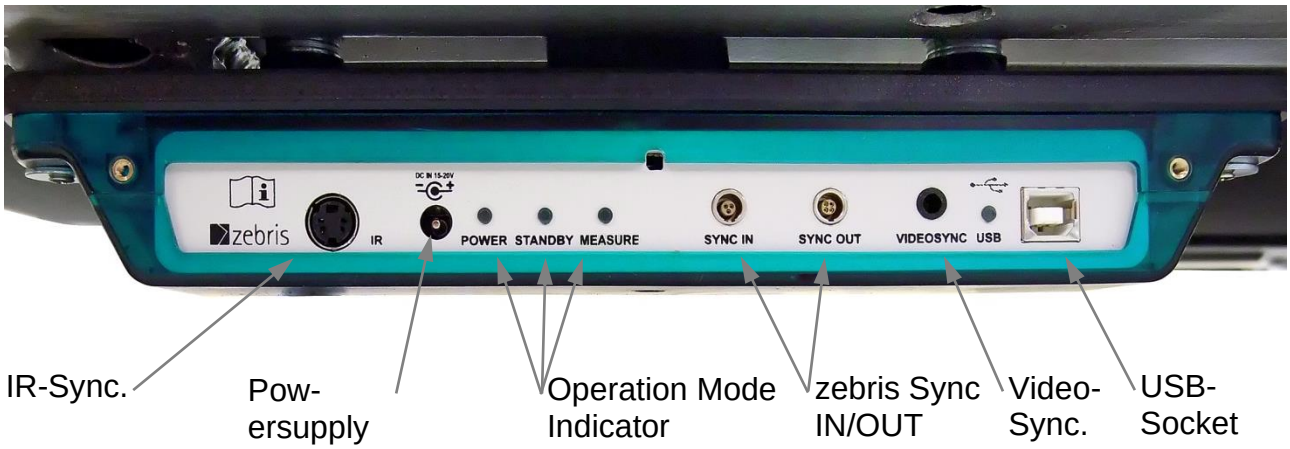
All cable connections between platform and PC will be connected by the cable socket located at the bottom of the platform.

3.5.1.1 Status indicator LED

green flashing	the power supply unit is connected to mains and a correct supply voltage is provided. A USB connection is not established yet or recognized. The platform is not ready for initialization or measurement.
green permanent	the power supply unit is connected to mains and a correct supply voltage is provided. A USB connection is established and recognized. The platform is ready for initialization or measurement.
orange permanent	A measurement is in process.
orange / green flashing	A measurement is in process and infrared synchronization signals (from other zebris devices) are received. The orange flashing signalizes that valid synchronization signals are received.

3.5.2 Type CanidGait® Treadmill system

All the cable connections are carried out via the interface box which is located on the underneath of the treadmill frame on the back.



3.5.2.1 LED indicator lights of the interface box

POWER lights up as soon as the power supply unit is plugged to the interface box and connected to mains.

STANDBY lights up if the power supply unit is connected to mains, the USB socket is connected to the PC and the hardware driver of the platform is installed properly.

MEASURE lights up during the measurement.

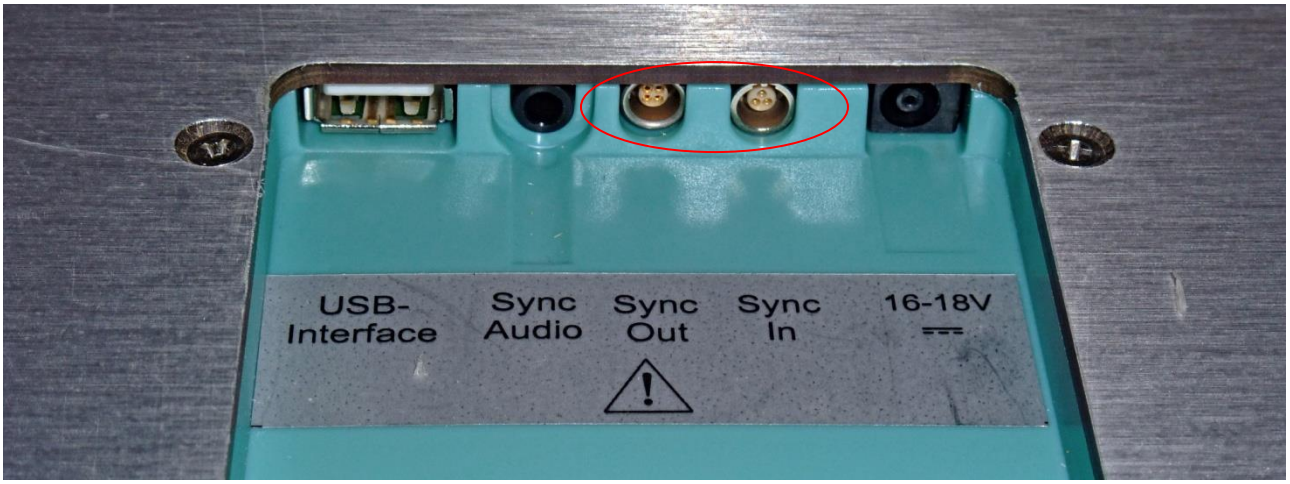
USB lights up when the USB socket is connected to the PC and the hardware driver of the platform is installed properly.

3.6 zebris SYNC

The **zebris SYNC** is the standard solution for synchronization of the CanidGait® system with third party measuring devices.

The **SYNC-IN** and **SYNC-OUT** sockets provide input and output for support of „sample by sample“ In- and Out synchronization. Both sockets provide galvanic protection between third party systems and CanidGait® sensor.

FDM-2 CanidGait® platform



CanidGait® Treadmill

WARNING

The user is completely responsible for the safety of all third-party devices used in combination with the CanidGait® system.

The correct synchronisation of all measurement data must be verified in case devices are connected to zebris SYNC which have not been manufactured by zebris Medical GmbH.

zebris does not accept any liability for correct function and reliability of the system if the clock signal of external devices does not comply with the signal specifications provided with in this user manual.

3.6.1 Synchronization Input (SYNC-IN)

If a third-party device is connected to the synchronization input SYNC-IN then depending on the setting of the configuration window from the application software the measurement will start/stop or “sample by sample” synchronized by a signal from the third party device.

Input is protected against faulty polarisation and pin 1 is set to +5V ("1") by an internal pull-up- resistor (2.7 kΩ). If this input is set to 0 V ("0") i.e., by a switch or break contact than the SYNC-IN is triggered.

Electrical Specifications

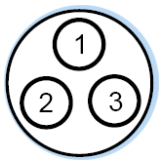
Input Resistance (Pull-Up 5V)	2.7 kΩ
V_{IH} (High-Level Input Voltage)	≥ 2.0 V
V_{IL} (Low-Level Input Voltage)	≤ 0.8 V
Required min. pulse time for triggering	1ms

Integrated LEMO socket in the interspace box

Series "00", three pole, coding 30°

LEMO-Part-No.: EPA.00.303.NLN

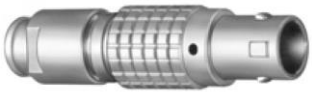
View
Socket, Front Side



Socket Coding: 30°

Suitable Plug for SYNC-IN:

LEMO-Part-No.: FGA.00 303.CLADxxxx



Pin Assignment

Pin 1	Clk_IN
Pin 2	Activ_IN
Pin 3	GND

View
Plug, Solder Side

Plug Coding: 30°

3.6.2 Synchronization Output (SYNC-OUT)

If a third-party device is connected to the synchronization output SYNC-OUT then depending on the setting of the configuration window of the application software, a CANIDGAIT® system controlled, will trigger a synchronized measurement of the third-party device either via start/ stop or “sample by sample” mode.

Electrical Specifications

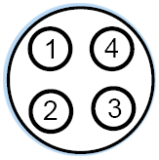
Output Resistance	100 Ω
V_{OH} (High-Level Output Voltage)	≥ 2.0 V
V_{OL} (Low-Level Output Voltage)	≤ 0.8 V

Integrated LEMO socket in the interspace box

Series "00", four pole, Coding 0°

LEMO-Part-No.: EPG.00.304.NLN

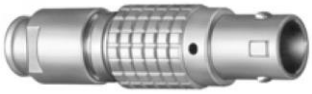
View
Socket, Front Side



Socket Coding: 0°

Suitable Plug for SYNC-OUT

LEMO-Part-No.: FGG.00 304.CLADxxxx



Pin-Assignment

Pin 1	+5 V
Pin 2	GND
Pin 3	Activ_OUT
Pin 4	Clk_OUT

View
Plug, Solder Side

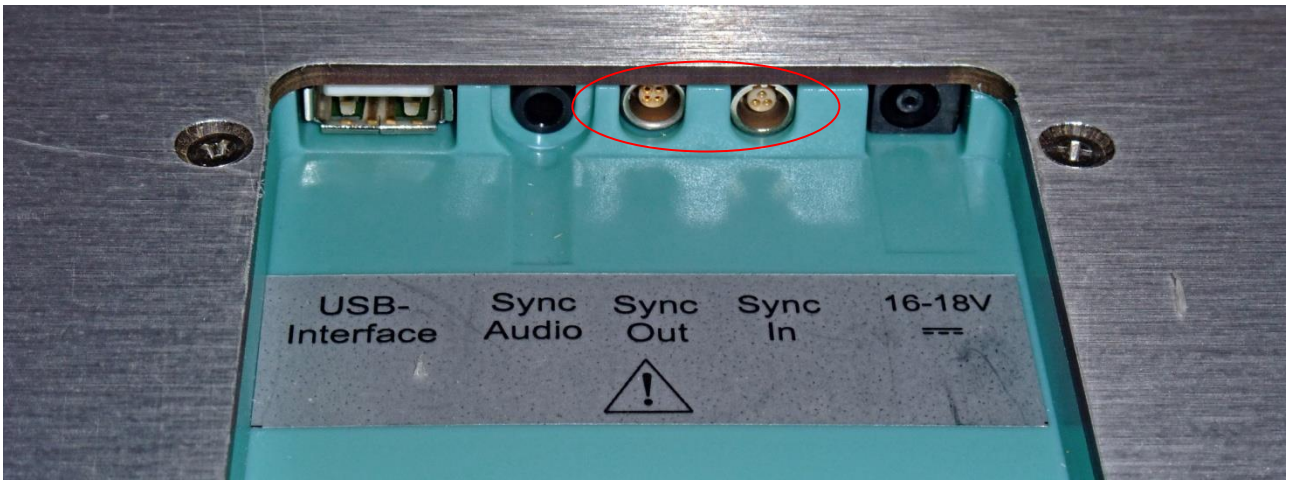
Plug Coding: 0°

3.6.3 Combine two FDM platforms of the same type

Two FDM platforms of the same type can be combined (Master – Slave) to double usable walking range. To accomplish this task a synchronization cable is required.

REF No. 01830019 SC-PP Sync. Cable, length 10m

Both platforms must be connected to separate USB ports of the same PC. By means of the synchronization cable the “Sync Out“ socket of the master platform has to be connected to the „Sync In“ socket of the slave platform. The WinFDM software then will recognize the platform combination automatically and show the corresponding sized measuring area.



NOTE

Be sure to position both platforms as shown below when connecting them for doubling the walking range.

NOTE

When using the zebris SYNCCam with two combinded plattforms it must be connected to the “Sync Audio” input of the master platform.

3.7 Spare Parts CanidGait® FDM2 Platform

REF- No.	Description	Illustrations
33102230	**Power Supply MASCOT Blueline Type 3320** FDM2 CanidGait® platform complies with EN 60601-1 & UL	
21030071	**USB2.0 cable A-A** Data connection of measuring platform and PC Length 5 m	
21030073	**USB2.0 Extension cable** A male /A female Length 5m	
07200011	**zebris Animal Analysis Suite** for operating system Windows 11 Pro	

3.8 Spare Parts CanidGait® Treadmill System

REF-No.	Description	Illustrations
01832035	**Interface Box 2** incl. fixation screws	
33102231	**Power Supply MASCOT Blueline Type 3320** Power supply 60W / 16V DC for FDM-T sensors complies with EN 60601-1 & UL	
21030071	**USB2.0 cable A-B, 3 m long** Data connection between interface box and PC	
21030073	**USB2.0 Extension cable** A male /A female Length 5m	
07200012	**zebris Animal Analysis Suite** for operating system Windows 11 Pro	

3.9 Accessories CanidGait® Measuring System

REF-No.	Description	Illustrations
01540191	**SYNCCam** Camera with USB-Cable, synchronization cable, tripod, inclusive software extension	
01540192	**SYNCCam HS** Camera with USB-Cable, synchronization-cable, removable aperture, synchronisation optionally via cable or infrared, includes software extension.	
01540194	**SYNCLightCam** Combined solution with Camera and illuminetion, USB-Cable, synchronization cable, tripod, inclusive software extension	
21030321	**SYNCCam USB-Cable A-B** USB-Cable for HD-video signal with high quality plugs, EMC-shielding, length 5 m	
21030110	**USB 3.0 fibre optical cable A-male/ A-female** Extension cable between USB3.0 cable A-B 1 m and PC, length 20 m	
21030316	**Video Sync-Control Cable 5** Length 5 m, both sides phone jack 3.5 mm	
21030312	**Video Sync-Control Extension Cable** Length 5 m, phone jack & socket 3.5 mm	
33102232	**Power Supply Mascot 3721** **SYNCLightCam** Meets requirements of EN 60601-1 & UL	

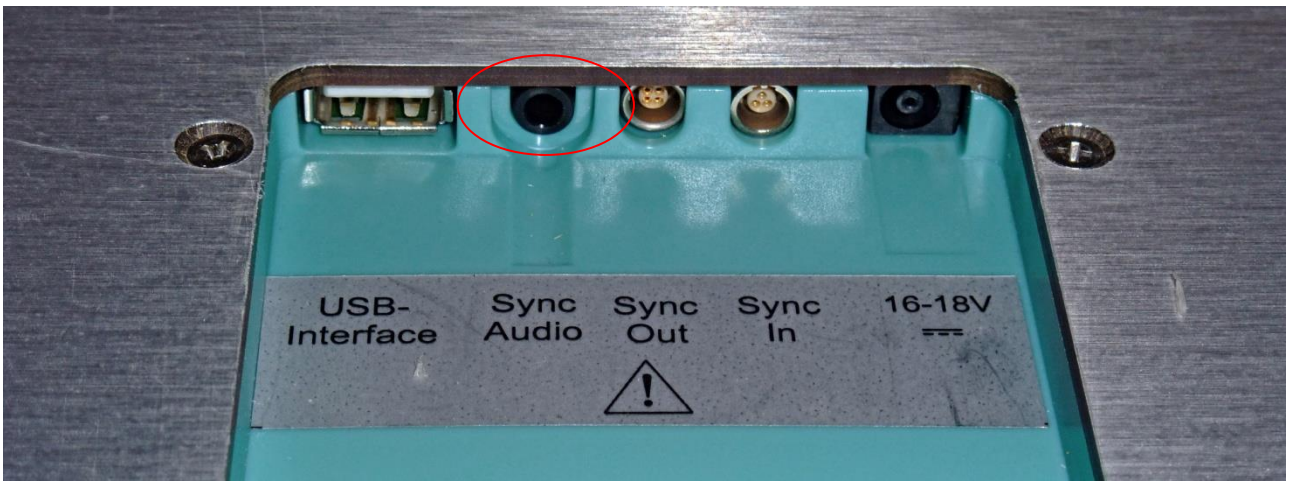
4 Video-Module

4.1 Connection to the CanidGait® System

The CanidGait® system can capture data simultaneously with up to 2 video cameras. For this purpose, the **zebris SYNCCam** is available as an accessory. Alternatively, high-quality DV-camcorders with an external microphone socket can be used for video capture.

To capture video data synchronized with pressure data the camera has to be connected to the galvanically isolated **SYNC Audio** resp. **VIDEOSYNC socket** on the interface box.

FDM2 CanidGait® platform



CanidGait® Treadmill

4.1.1 Connection to the zebris SYNCCam

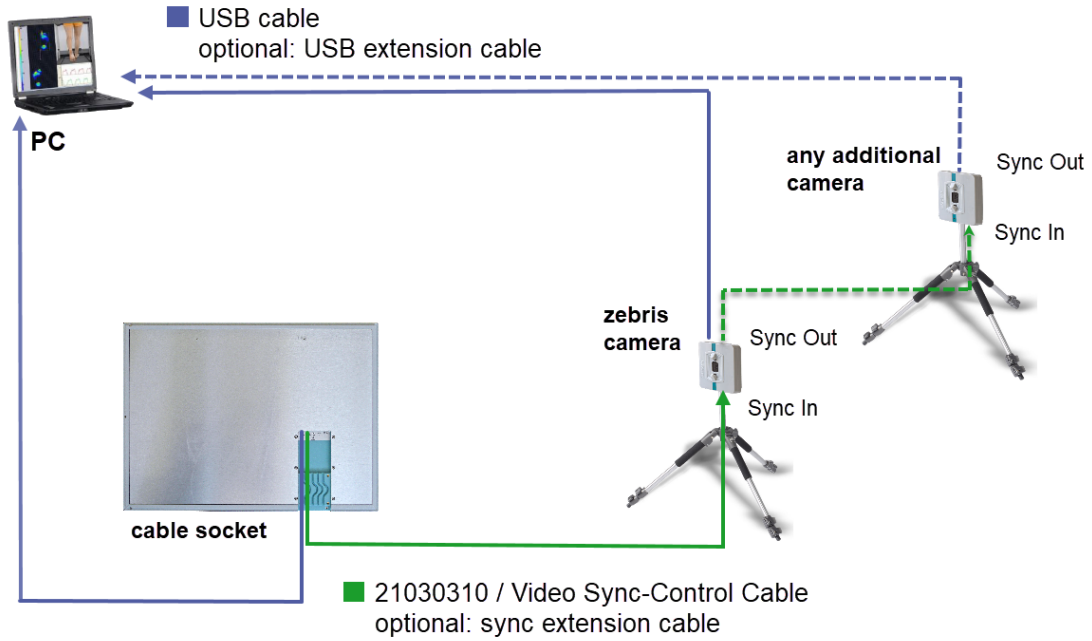
The zebris **SYNCCam** uses its integrated synchronization flash to synchronize video data with pressure data.

For connecting the SYNCCam the following synchronization cable is required:

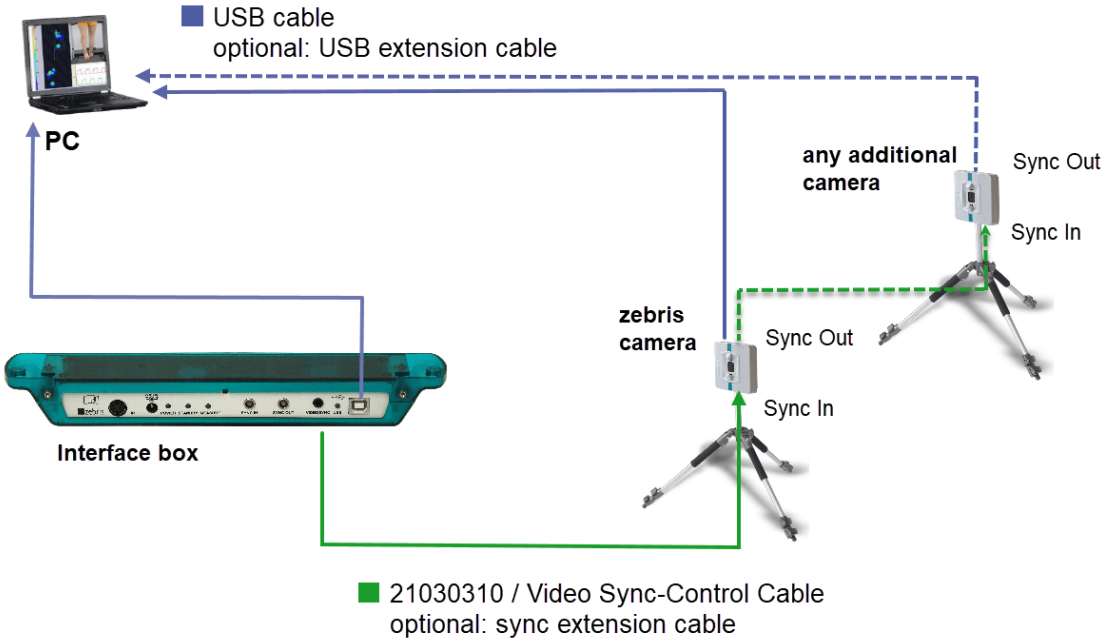
REF-Nr. **21030310** **Video Sync-Control Cable 5**
Length 5 m, both sides phone jack 3.5 mm

4.1.2 Connection scheme SYNCCam/ SYNCCam HS

FDM2 CanidGait® platform

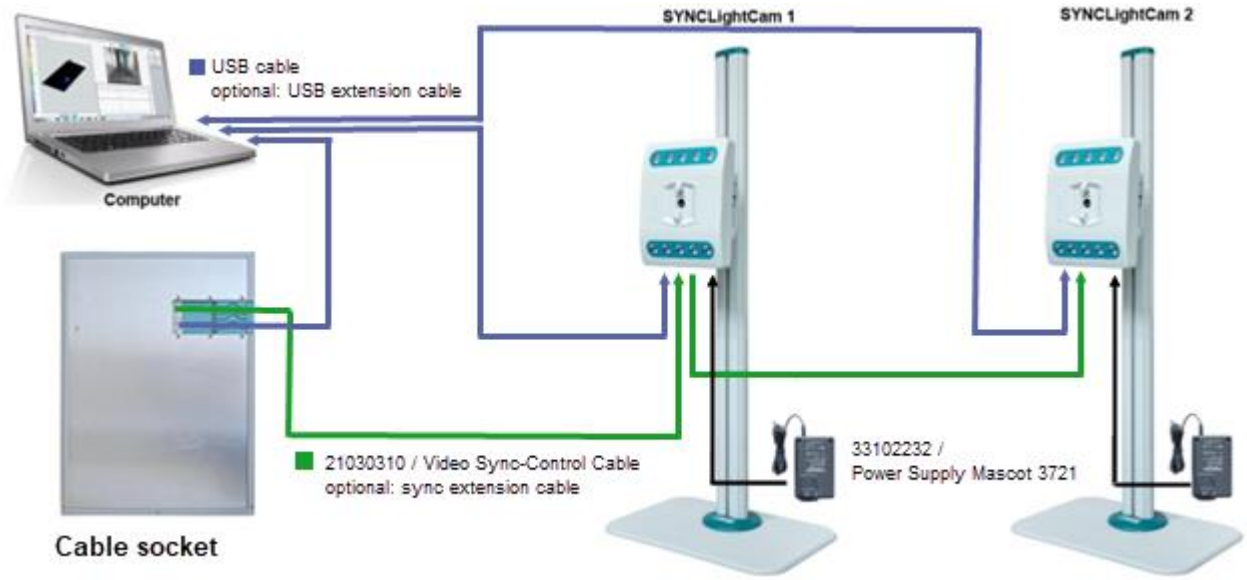


CanidGait® Treadmill

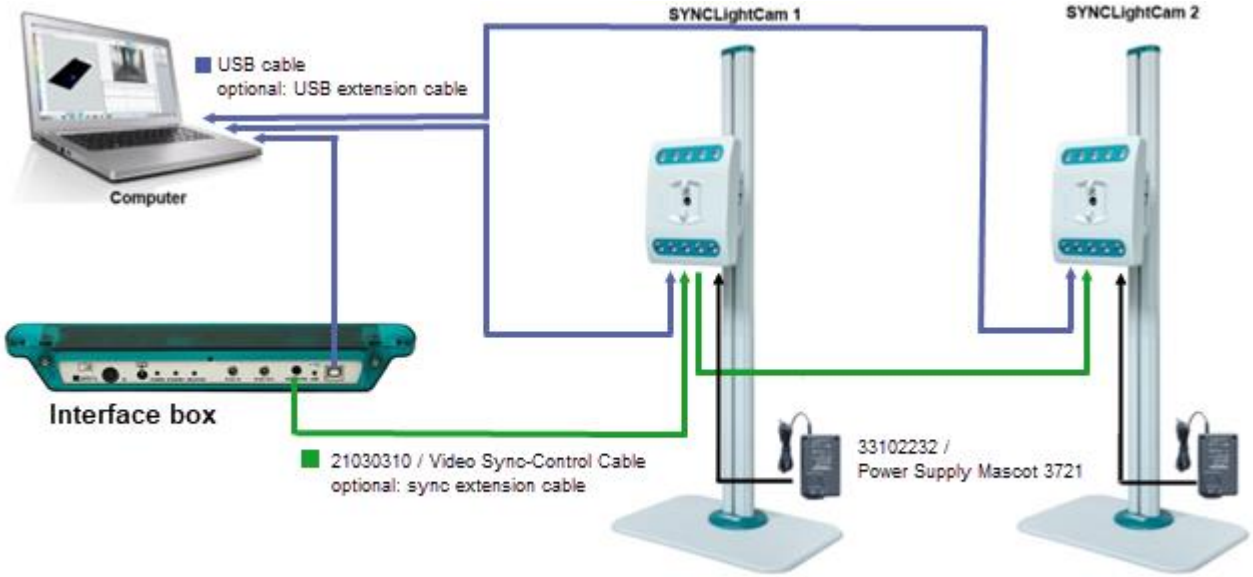


4.1.3 Connection scheme SYNCLightCam

FDM2 CanidGait® platform



CanidGait® Treadmill



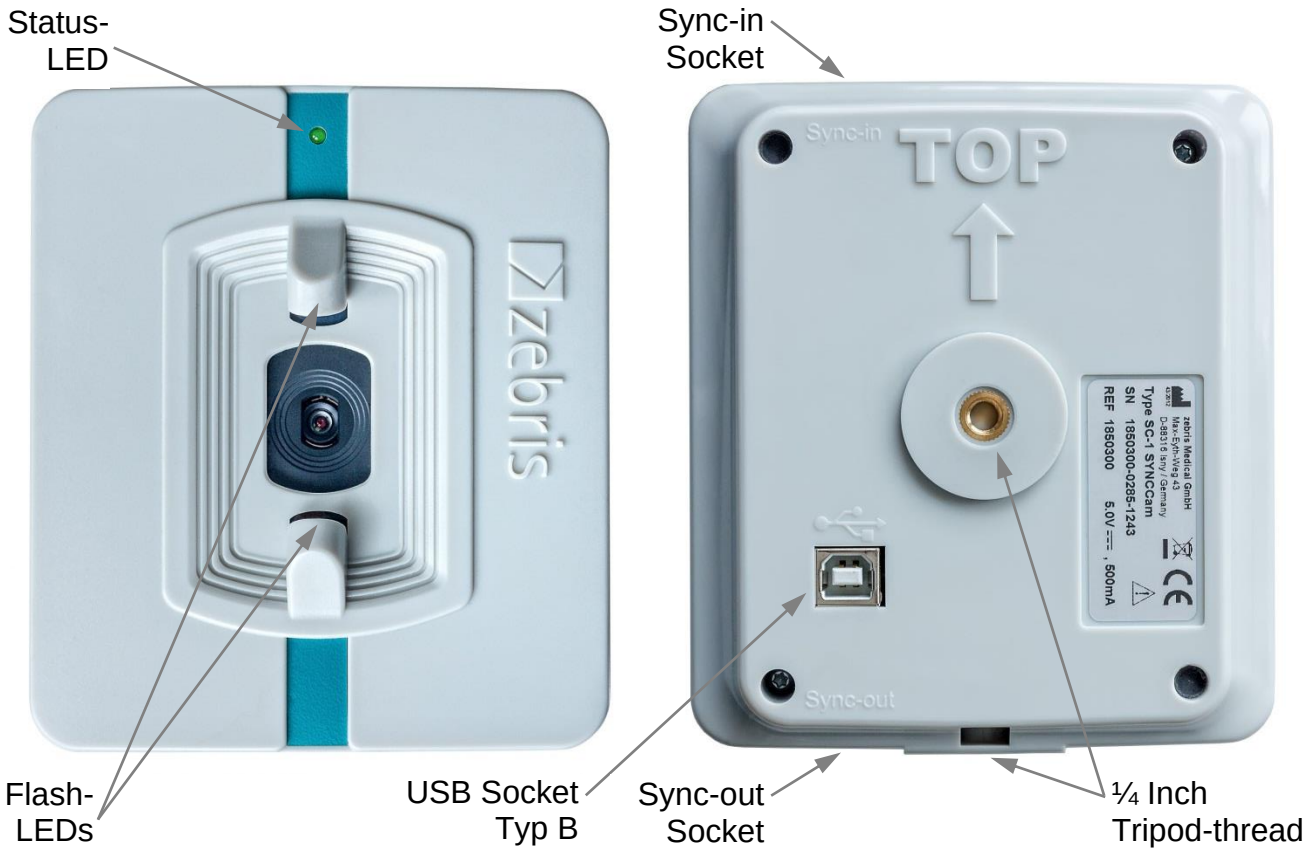
4.2 SYNCCam

The **SYNCCam** is an accessory of the CanidGait® system and perfectly adapted to be used in combination with the pressure distribution measurement. All adjustments of the camera are carried out via hardware setup integrated to the Animal Analysis Suite Software. The camera is connected to the PC by a USB cable of type A-B included within the shipment.

The camera is equipped with ¼ inch tripod threads and can be adapted to zebris tripods as wells as commercially available camera tripods.

WARNING

The Sync-LEDs are flashing when the camera is disconnected from the USB port. Therefore, it is strongly advised not to look directly into the camera when it is disconnected to avoid dazzling.



Technical Specifications

REF-No.	01540190
Dimensions	110 x 125 x 15 mm (L x W x H)
Weight	approx. 190 g
Power Supply	USB (5 V DC / 500 mA)
Resolution	1920 x 1080 Pixel (Full-HD) / Autofocus
Frame Rate	30 Hz
Synchronization	LED-Flash triggered by Sync-IN socket
Mounting	¼ Inch tripod-thread at bottom and back side

NOTE

To maintain undisturbed transmission of the video signal it is mandatory to use high quality USB cables.

Please, only use cables supplied or recommended by zebris for connecting SYNCCam and PC.

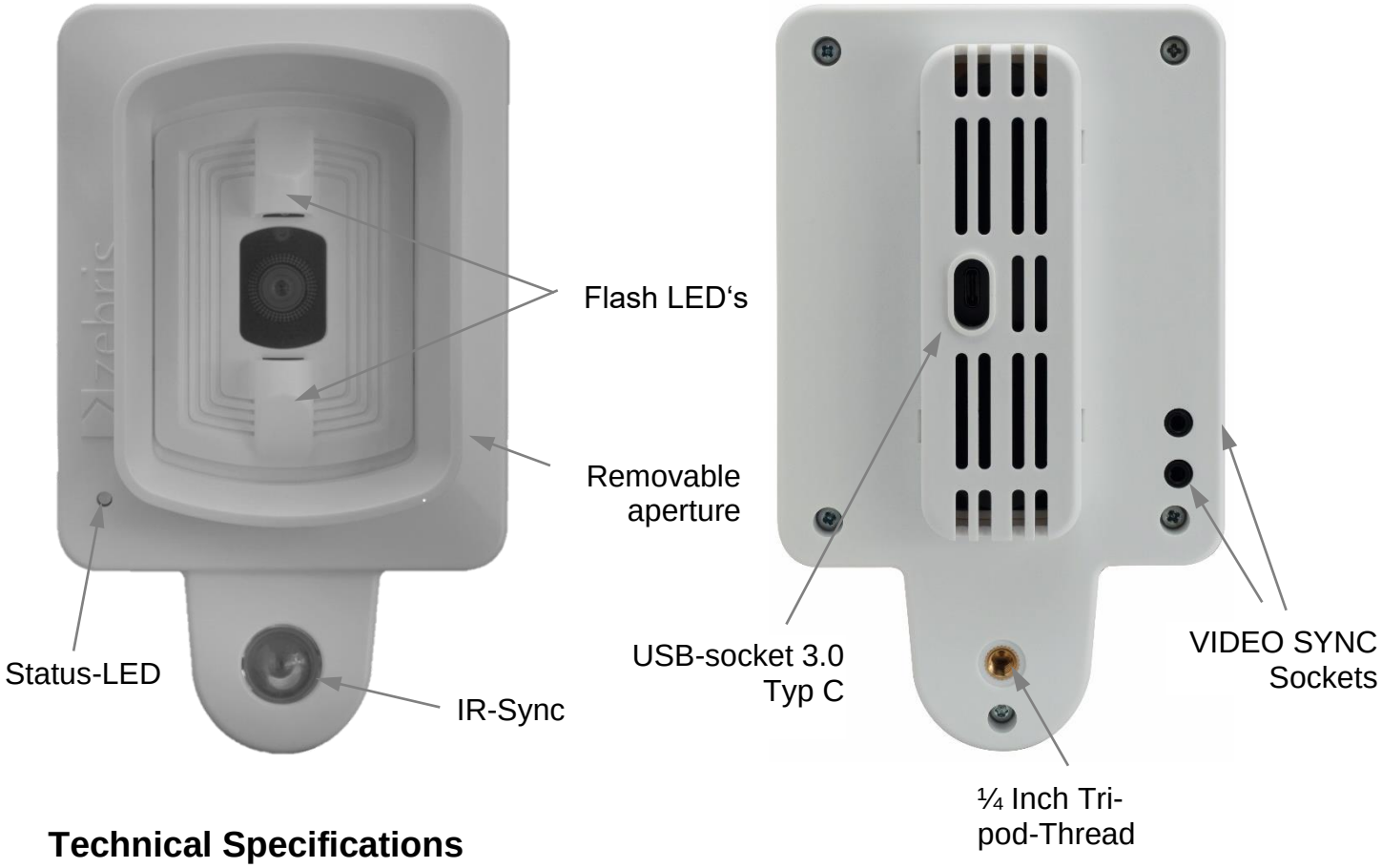
4.3 SYNCCam HS

The **SYNCCam HS** is an accessory of the CanidGait® system and perfectly adapted to be used in combination with the force distribution measurement. All adjustments of the camera are carried out via hardware setup integrated to the zebris Animal Analysis Suite Software. The camera is connected to the PC by a USB cable of type A-C included within the shipment.

The camera is equipped with one ¼ inch tripod thread and can be adapted to zebris tripods as wells as commercially available camera tripods.

WARNING

The Sync-LEDs are flashing when the camera is disconnected from the USB port. Therefore, it is strongly advised not to look directly into the camera when it is disconnected to avoid dazzling.



Technical Specifications

REF	01540192
Dimensions	174 x 104 x 59mm (L x H x W) – with aperture 78mm width
Weight	approx. 275g
Power Supply	USB 3.0 (5V DC / 500mA)
Resolution	max. 1920 x 1080 Pixel (Full-HD) / Autofocus
Frame Rate	max. 120Hz
Synchronization	LED-Flash triggered by Sync-IN socket or infrared
Mounting	¼ Inch tripod-thread at back side

NOTE

To maintain undisturbed transmission of the video signal it is mandatory to use high quality USB cables.

Please, only use cables supplied or recommended by zebris for connecting SYNCCam and PC.

Resolution and Frame Rate

Resolution	Frame Rate
1920 x 1080 (Full HD)	60 Hz
1280 x 720 (HD)	90 Hz
640 x 480 (VGA)	120 Hz

Synchronization Options

VIDEO SYNC Wired synchronization with special synchronization cable included in the scope of delivery

Infrared Synchronization via infrared signal without synchronization cable (not compatible with every zebris pressure platform). Cannot be used with the IR interface for zebris EMG.

Interpretation of the STATUS-LED

Green USB connected and infrared connection available.

Red Only USB connected; no active infrared connection available.

4.4 SYNCLightCam

The **SYNCLightCam** is an accessory of the CanidGait® system and perfectly adapted to be used in combination with the pressure distribution measurement. All adjustments of the camera are carried out via hardware setup integrated to the Animal Analysis Suite Software. The camera is connected to the PC by a USB cable of type A-B included within the shipment.

The **SYNCLightCam** is equipped with ¼ inch tripod threads and can be adapted to zebris tripods as wells as commercially available camera tripods.

WARNING

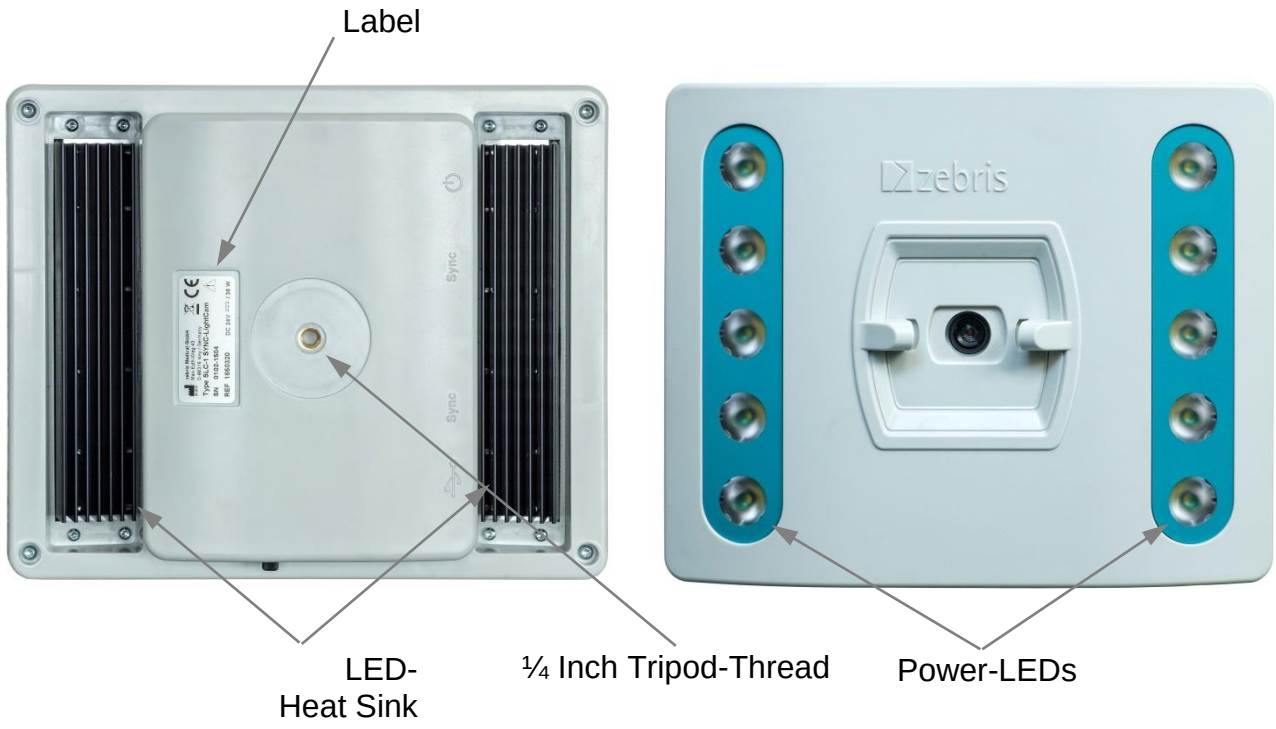
The Sync-LEDs are flashing when the camera is disconnected from the USB port. Therefore, it is strongly advised not to look directly into the camera when it is disconnected to avoid dazzling.

Furthermore, contains the SYNCLightCam as an integral solution, the LED video illumination.

In order to produce well lighted and tack sharp video captures it is essential to maintain perfect lighting conditions at the patient's side. Only with adequate lighting conditions video cameras can work with shutter times short enough to freeze fast movements and capture sharp images.

This solution is perfectly matched on the interaction with the CanidGait® system and can be regulated infinitely in its brightness.

The integrated synchronization unit automatically switches the lights on at the start of a measurement and turns them off again after stopping it.

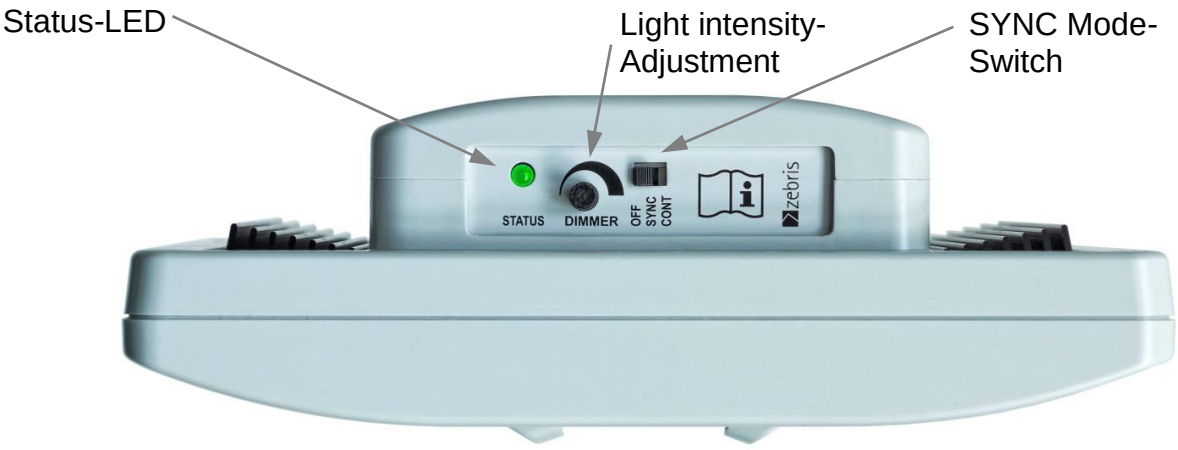


NOTE

To ensure failure-free operation of the SYNCLights it is mandatory to keep the black heat sinks at their back side uncovered and well air always circulated.

Technical Specifications

REF-No.	01540194
Dimensions	220 x 183 x 80 mm (B x H x T)
Weight	ca. 790 g
Power Supply	24 V / 36 W
Resolution	1920 x 1080 Pixel (Full-HD) / Autofokus
Frame Rate	30 Hz
Light Colour / Light	Current 6200 K / 1550 Lumen
Synchronization	VIDEOSYNC (Switch on/off with the measurement) SYNC IN Standard zebris Synchronisation (compatible with SYNC IN/OUT platform)
Mounting	¼ inch tripod thread at the back



NOTE

To maintain undisturbed transmission of the video signal it is mandatory to use high quality USB cables.

Please, only use cables supplied or recommended by zebris for connecting SYNCCam and PC.

Interpretation of the STATUS-LED

Green Device is ready for use or in operation.

Orange The orange colour indicates when the maximum operation temperature has been reached. At this point the operation current is reduced automatically (which results in reduced brightness) to prevent the SYNCLight plus from being damaged by excessive heat.

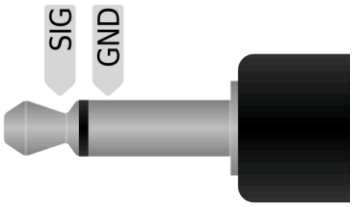
Power Supply Unit

For operation of the SYNCLight plus a power supply unit needs to be connected.

REF-No. 33102220

Input	Output	Cable	Length
100 – 240 V AC	24 V DC	DC-Lead	1.7 m
50 – 60 Hz	40 W	Mains Lead	Plug Adapter

SYNC-Modus

Modes	Characteristics	Pin Assignment
VIDEO SYNC IN	ESD - protected, voltage reversal proof input Input resistance: 38 kΩ (AC) Signal-Level: AC Trigger Level: 15 mV	

5 Setup and Operation of the CanidGait® System

5.1 CanidGait® FDM-2 Platform

5.1.1 Setting up the measuring system

For the commissioning of the FDM platform the suitable power supply, a USB cable type A-A as well as the installation CD with the AAS application software are necessary. All components are included in the scope of delivery of the FDM measuring system.

- The underground of the set-up location must be plain and horizontal.
- The platform must be set up on a slip-proof underlay or installed in a catwalk, to exclude any danger to the test person caused by the platform sliding.
- Do not set up the platform near a source of heating or in direct sunlight in front of a window as a rise in temperature can lead to inaccurate measuring results.
- Set-up the measuring system in a way, that the socket for the mains connection is always accessible easily and that the device can be separated from the power supply without obstacles.
- Once the measuring system is set up safely and horizontally, it can be connected to the power supply and put into operation.

WARNING

Be sure that all the mains and connection cables of the FDM Platform are laid safely and that they are protected against stepping on, so that nobody can trip over them. Check all the cables and the connection plug regularly for any damage.

The cables therefore can be laid under a cable protection or fixed to the floor using a tape if necessary.

5.1.2 Connection of the measuring system to mains supply

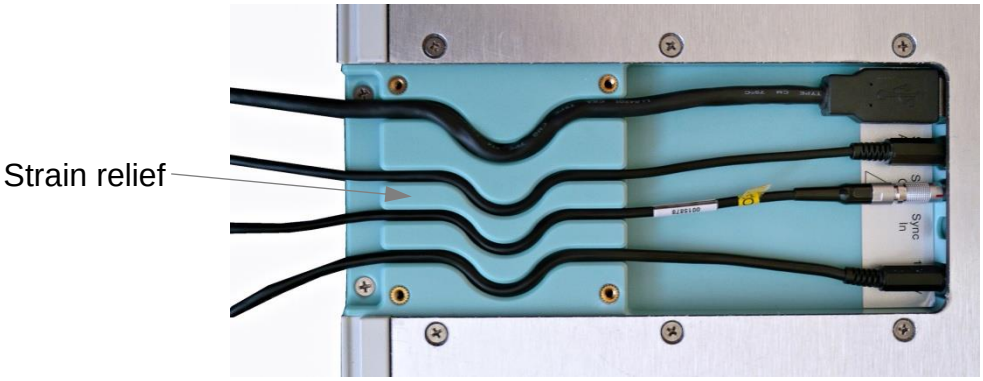
For the connection of the FDM platform with the mains, connect the power supply with the mains socket and the power socket in the cable socket at the bottom.

WARNING

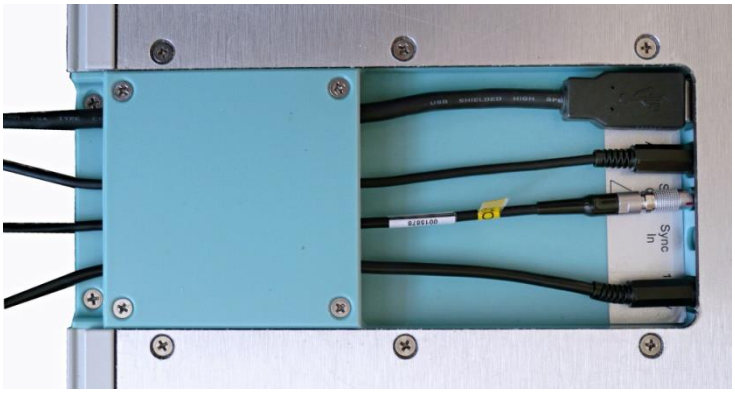
Exclusively use the power supply unit approved by zebris for the operation of the FDM platform, which is suitable for the power supply of your platform.

5.1.3 Closing the strain relief of the cable socket

Finally connect the USB socket in the cable socket and a free USB interface of your computer by using the provided USB cable. Your measuring system is now ready for use. The control of a measurement exclusively is carried out via the zebris Animal Analysis software. Therefore, please carefully read the zebris AAS software user manual.



If the power supply unit and the USB cable are connected to the sockets of the platform, please close the lid of the safety lock, and fasten it to the housing by means of the four screws supplied with the platform.



5.2 Treadmill system

5.2.1 Positioning of the measuring system

NOTE

For setup, installation and safety related instructions of the treadmill please refer to the user manual of the treadmill manufacturer.

WARNING

A safety zone of at least 2 m in length and 1 m in width must be kept free directly behind the treadmill. No items may be left in this zone (video camera, etc.).

NOTE

When using SYNCCam or SYNCLightCam, approximately 1.5 m between the camera and the treadmill is recommended on the side of the treadmill to achieve optimum video recordings.

- Preferably place a gym mat or other padding in the safety zone behind the treadmill in order to soften falls.
- The floor where the device is installed must be absolutely even and horizontal.
- The belt of the treadmill must be checked after installation, or if the treadmill is moved to another place, and adjusted if required. (Please refer to the user manual of the treadmill manufacturer for this purpose.)
- Set up the measuring system such that the socket for the mains connection is always easily accessible and the device can be disconnected from the power supply.
- Once the treadmill has been installed securely and is horizontally levelled, it can be connected to a suitable mains socket and set into operation.

For the commissioning of the CanidGait® system for the stance and gait analysis, the associated power supply, a USB cable type A-B as well as the installation CD with the Animal Analysis Suite application software are necessary. All components are included in the scope of delivery of the CanidGait® measuring system.

All cable connections of the CanidGait® sensor are integrated in the interface box, which is positioned on the underside of the treadmill frame.

5.2.2 Connection of the measuring system to mains supply

NOTE

The FDM-T CanidGait treadmill system with the Dog-Tread Pro Large treadmill has an integrated power supply, which is powered by the treadmill power supply.

For connecting the CanidGait® sensor to the power supply, connect the power supply unit to the mains socket and the power socket on the interface box.

WARNING

For operating the CanidGait® sensor, exclusively use the power adapter approved by zebris, which is suitable for the power supply of all CanidGait® systems.

5.3 Power supply of the sensor

Power Supply MASCOT 3320 REF 33102231

Input	**Output**	**Cable**	**Length**
100 - 240 V AC	16 V DC	Mains lead	1.7 m
50 - 60 Hz	60 W	DC lead	5 m

Technical Data

Input Voltage:	90 - 264 VAC
Mains frequency:	47 - 63 Hz
Standby	0,15 W

Pin arrangement / polarity

„-“Contact: Outer contact of the hollow plug

„+“Contact: Inner contact of the hollow plug

NOTE

Before connecting the measuring system to the power supply, compare the label specifications on the power supply unit and on the treadmill regarding the mains voltage and mains frequency, with the local characteristics. Connect only if they are compatible.

WARNING

Before connecting or using the measuring system, carry out a visual check of the power supply unit, power supply cable and socket, as well as the earthing contacts. Damaged power supply units, cables or plug and socket devices are to be replaced immediately by an authorized person.

5.3.1 Connection of the System

For connecting the treadmill to the power supply, please additionally observe the respective instructions in the user manual provided by the treadmill manufacturer.

WARNING

The connection of the treadmill and the CanidGait® power supply unit must be done at a separate wall socket. It is not permissible to use extension cables and/or multiple sockets.

WARNING

Set all connection cables in a way that prevents patients, or persons taking part in the measuring procedure from tripping over them or damaging them mechanically. For this purpose, run the cables using cable protections or if necessary, fasten the cables with adhesive tape to the floor.

5.4 Computer Requirements

If the CanidGait® system is not delivered with a computer that includes pre-installed Animal Analysis Suite software, the user must then inquire whether the intended coupling guarantees the necessary safety for the test person, the operator, and the surroundings by consulting the manufacturer, the authorized zebris sales partner or by asking a specialist.

The requirements for the PC are specified in the user manual of the Animal Analysis Suite software.

WARNING

If the computer is not supplied with the measuring system, the manufacturer shall not be held liable for any damage or malfunctions that result from defective software installation or incompatible hardware. Should additional hardware be built into the computer or third-party software be installed, the manufacturer shall not be liable for any malfunctions or damage occurring thereof.

WARNING

The CanidGait® measuring system is not intended for operation in a network/data network. Connecting the system to a network/data network can cause unforeseen risks for the patient or third persons. If the database of the zebris Animal Analysis Suite software is to be installed in a network/data network, the operator is then obligated to determine, analyse, assess, and overcome any risks in this connection. Of particular importance are aspects concerning data protection, virus security, updates of the operating system and regular backups. The risk considerations must also include any changes made to the network/data network, e.g., update/upgrade of devices and components that are connected to the network.

5.5 Installing the zebris Animal Analysis Suite

If your measuring system is delivered without PC/laptop, please install the application software before connecting the measuring system to the computer. Please find information on the installation in the user manual of the Animal Analysis Suite software.

Note

Please make sure that you have installed the zebris software before connecting the CanidGait® sensor to the computer using the USB cable.

If the CanidGait® sensor is connected without installing the software first, problems when installing the device driver may occur and the system does not work.

Finally connect the Interface box and a free USB interface of your computer by using the provided USB cable. Your measuring system is now ready for use. The control of a measurement exclusively is carried out via the Animal Analysis Suite software. Therefore, please carefully read the Animal Analysis Suite user manual.

Note

Should problems with the hardware driver of the CanidGait® platform occur then disconnect the platform from the PC and restart it. Now proceed with installing the Animal Analysis Suite again and reestablish the USB connection.

5.6 How to switch the CanidGait® sensor On/Off

The Candi Gait sensor is switched on and off by software control as soon as the Animal Analysis Suite software on the PC is started or shut down.

If the device has been connected correctly, the green power LED lights up on the interface box.

5.7 Setting the system out of operation

To set the system out of operation, please close the Animal Analysis Suite software first, then exit the Windows operating system and shut down the PC. In the next step disconnect the power supply unit of the CanidGait® sensor and the treadmill from mains supply.

6 Maintenance and Safety Inspections

- Scheduled maintenance of the system is essential to prevent damage and guarantees the safety of the device. All processes concerning maintenance and disinfection of the device should be carried out regularly.
- Should any malfunctions and/or defects be determined or suspected, the device must be put out of operation immediately, marked as "Out of Service" and prevented from being used by removing the mains cable. In such case be sure to contact the manufacturer or an authorized sales partner.
- All maintenance and repair work of the measuring system or of single components that goes beyond the activities described in this user manual must exclusively be carried out by zebris Medical GmbH or a person who has been explicitly authorized by zebris to do so.
- Be sure to switch off the measuring system and disconnect it from mains supply before starting any maintenance work.

6.1 Mandatory periodic inspections

- For maintaining the correct state of the electrical equipment, checks and technical safety inspections must be carried out repeatedly (e.g., within Germany, acc. to BGV A3, and accident prevention regulations and technical safety tests according to the Medical Device Operating Regulations). Here it should be noted that standard regulations for electrical devices are concerned here and not measures that are specific to zebris.
- For safety reasons it is recommended before each use of the measuring system, to check the correct state of all the connection leads, as well as the mains cable, mains plug and mains socket. Should certain parts be damaged, these must be replaced before continuing to use the measuring system.
- Immediate maintenance measures are to be carried out if:

  a) Fluid enters the device.
  b) Cable or cable connections have been damaged.
  c) Parts of the sensors were damaged.
  d) Covers have been damaged
  e) A malfunction or a fault is suspected or has been detected.

- If the specification label or other important labels (warning notices) are damaged or obliterated, they have to be replaced by the manufacturer for safety reasons.

6.2 General Maintenance Procedures for the treadmill system

- Immediate maintenance procedures are to be carried out if:
  f) fluid enters the device.
  g) cable or cable connections have been damaged.
  h) covers have been damaged or have fallen off.
  i) the running belt shows any signs of wear or cracks.
  j) the running belt no longer runs centrally.
  k) the sliding surface underneath the treadmill belt is no longer sufficiently lubricated.
  l) a malfunction or a defect is suspected or has been detected.
- Check regularly (approx. every 25 operating hours) whether all the screws are tight, the belt tension is sufficient, and the running belt is correctly centered. For the exact sequence of these maintenance procedures, please refer to the user manual supplied by the treadmill manufacturer.
- To keep the friction between the running belt and the CanidGait® sensor as low as possible, the system must be lubricated at regular intervals with silicone oil. zebris recommends lubricating at least every 6 months. For detailed information concerning the lubrication procedure please refer to the user manual of the treadmill manufacturer.
- Should the treadmill be relocated to another place, it is necessary to check that the belt is running correctly. The belt should always run centrally on the rear guide pulley.
- After a longer period of use, or if the adjustment is suboptimal, the belt can loosen and with every step, a jolt can occur between the drive shaft and the belt. This can possibly influence the measuring result of the system. Therefore, control the belt tension regularly in accordance with the instructions supplied by the treadmill manufacturer.
- Should you hear "mechanical knocking sounds" during operation, check whether the device is standing level on the ground as incorrectly adjusted feet may often cause knocking noises.

6.3 Maintenance of the CanidGait® Sensor

6.3.1 Control Procedures

WARNING

The measuring system must be checked at regular intervals to ensure its correct function and patient safety.

In case the running belt has been exposed to hard knocks or heavy items have fallen onto it, the surface of the CanidGait® sensor must be checked for damaging (cracks, dents, and scratches on the surface). If visible damages are detected, no further measurements must be carried out.

After carrying out a zero measurement, no measuring values may be shown for a condition without any load. In addition, the pressure distribution images are to be checked regularly for untypical measuring patterns. These include above all, line or column-shaped measuring patterns deviating from the surrounding values.

NOTE

To guarantee the correct functioning of the speedometer in the long term, the central position of the belt must be checked monthly according to the instructions supplied by the treadmill manufacturer, and readjusted, if required.

Whenever faults occur or in case of doubt, the manufacturer or sales partner authorized by zebris must always be contacted.

6.4 Troubleshooting

In the case of faults, please check the following points first:

- ✓ Are the Candi Gait sensor and treadmill connected correctly to the mains? (Green Power LED on the interface box and power switch on the treadmill lights up.)
- ✓ Is the USB connection between the interface box and the measuring PC correct? (Green USB LED lights up when the USB is connected to the PC and the device driver is correctly installed.)
- ✓ Are all the other components of the measuring system (infrared synchronization with zebris DAB Bluetooth, video camera) connected correctly?

NOTE

For additional information on error messages and their troubleshooting, please refer to the user manual for the Animal Analysis Suite software.

Check list for noting down error messages:

NOTE

To provide best possible support in the event of system malfunctions our service personnel will need the following information:

- ✓ Device type + serial no. of the CanidGait® sensor and treadmill

  The serial no. can be found on the label

  - on the left side of the platform near to the cable socket
  - on the frame of the treadmill or on the back of the interface box.
- ✓ Version of the Animal Analysis Suite Software
- ✓ Operating system version of your measuring PC

  e.g., Windows 10 Professional
  (can be found under Start → Settings → System → Info)
- ✓ Further components connected to the measuring system

  e.g., with video camera
- ✓ List of all the USB devices connected to the measuring PC

  e.g., mouse, printer, other measuring systems, etc.
- ✓ Screenshot of the error message or exact wording

  e.g., "COM error 80070003"
- ✓ User's procedure leading to the error message

  e.g., measurement "Type A" started, then clicked on button "B", then movement "C" carried out, switch-over to function "D", when switching back the described error message occurred.

6.5 Cleaning and disinfection

6.5.1 Cleaning Procedure

The treadmill and accessories are cleaned with a moist cloth while the device is switched off and the mains plug taken out.

NOTE	Do not use any aggressive agents to clean the measuring system.
WARNING	Please make sure to switch off the device and pull the mains plug out of the socket before you commence disinfecting and cleaning.

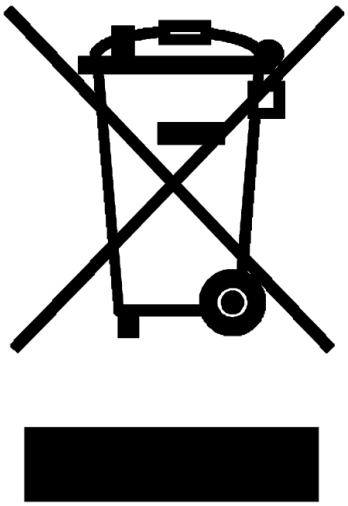
6.6 Disposal

6.6.1 Packaging

All the transport packaging supplied by zebris can be recycled within Germany via the local recycling depots. In order to guarantee the re-use of the recyclables contained in the packaging, zebris Medical GmbH participates in the Dual System ZENTEK which takes over the proper disposal of the packaging.

Please find information concerning the disposal of the treadmill in the Operating Instructions supplied by the treadmill manufacturer.

6.6.2 WEEE-Directive



This symbol indicates that according to the directive on waste electrical and electronic equipment (2012/19/EEC) the product must not be disposed by means of the domestic waste system. Within Europe this device must be forwarded to a specific waste disposal system.

For this purpose, the measuring system can be returned to zebris Medical GmbH at the end of its service life at the customer's own expense and will be forwarded to special recycling companies without any further costs and refund.

The improper use of old devices (measuring systems) could lead to negative effects for the environment and the public health because of potential hazardous materials which are frequently contained within electric and electronic devices. Additionally, with the proper disposal of this product you will contribute to the effective use of natural resources.