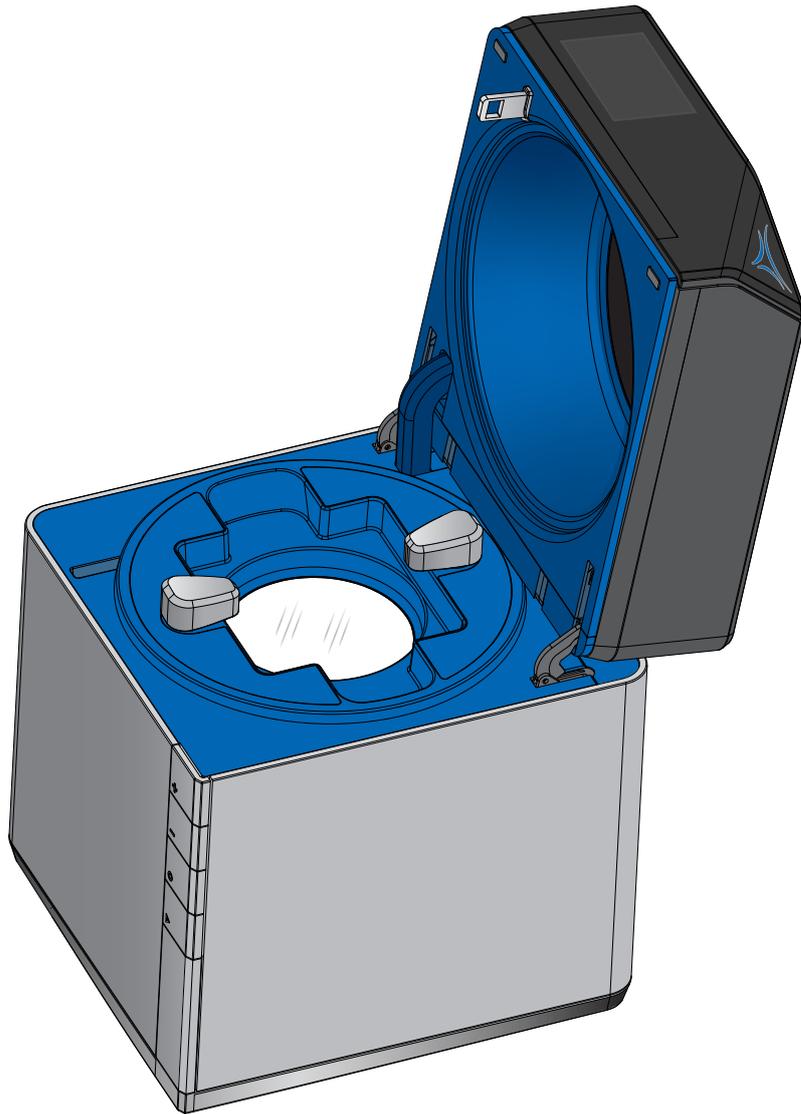


Instruction Manual

ibidi Micro Illumination System



76000 ibidi Micro Illumination System

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1 Preamble

1.1 Introduction

This manual provides instructions on how to use the ibidi Micro Illumination System for microfabrication via UV photolithography. It serves as a guide for first-time users and as a reference for experienced users.

Before using the ibidi Micro Illumination System, please read this instruction manual carefully, and make sure that the content is fully understood. This manual should be easily accessible to the operator at all times during instrument operation. For easy access an online version of this manual is available at ibidi.com, or additional copies can be requested via techsupport@ibidi.com.

To ensure operation safety, the ibidi Micro Illumination System must only be operated and maintained with the supplied components, and according to the instruction manual.

The ibidi Micro Illumination System is for research use only! It is not intended for use in diagnostic procedures.

1.2 Safety Symbols

Note that the signal words **WARNING**, **CAUTION** and **NOTE** have specific meanings in this manual. Do not proceed beyond a signal word until you have performed the indicated actions. Warning messages in the text are displayed in a gray shaded box. Please see Section 1.6 for general safety considerations.

-  **WARNING** – A potentially hazardous situation that, if not avoided, could result in serious injury or even death.
-  **CAUTION** – A potentially hazardous situation that, if not avoided, could result in minor or moderate injury. It is also used to alert against damaging the equipment or the instrument.
-  **NOTE** – Additional information to help achieve optimal instrument and assay performance.

Symbols on the product identification label and back panel of the device:

-  CE Marking: This symbol indicates the product's compliance with EU legislation.
-  This label is positioned on the back of the device and prompts you to read the manual before using the device.
-  This label is positioned on the back of the device and indicates that the device is RoHS compliant. RoHS is an EU regulation, limiting the use of specific hazardous substances in electrical and electronic equipment (EEE).
-  This label is positioned on the back of the device, signifying that a high-power UV-LED is used as a light source.
-  Product disposal: The symbol indicates that this product must be recycled/disposed of separately from other household waste. See page 10 for details.

1.3 Equipment

1.3.1 Standard Equipment

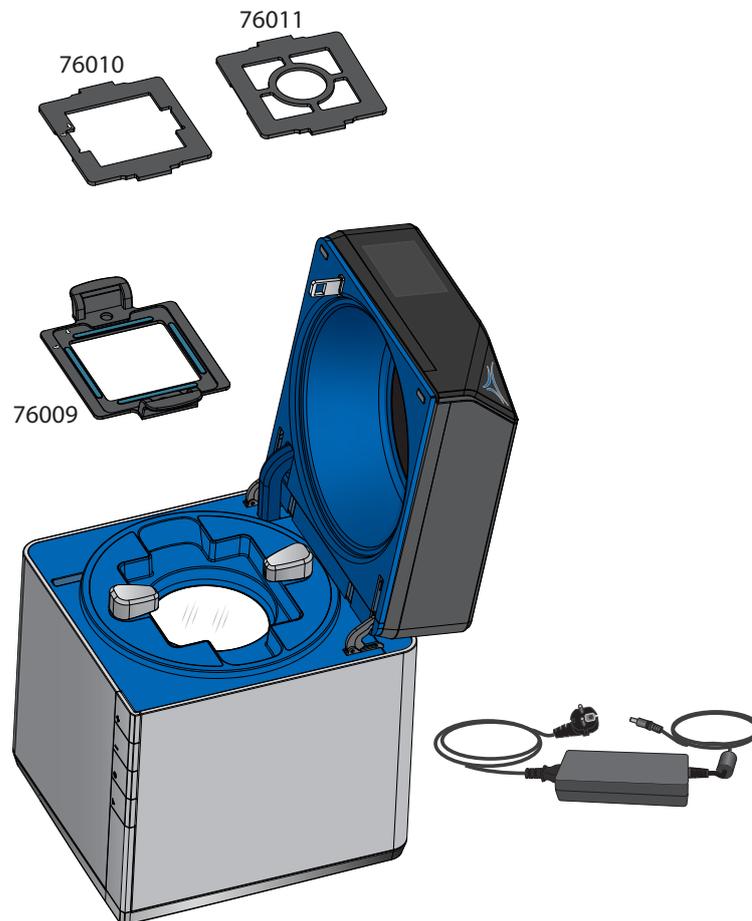


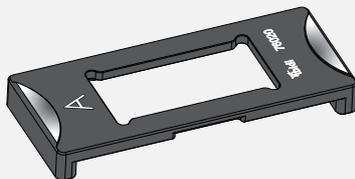
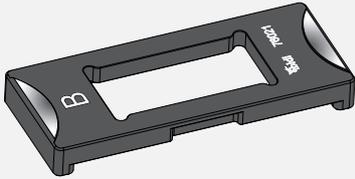
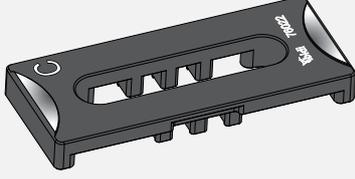
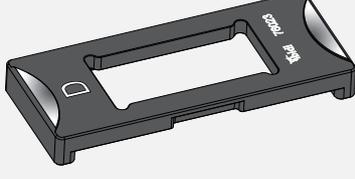
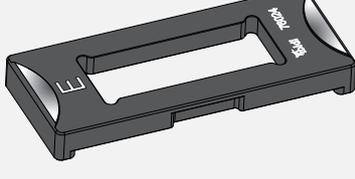
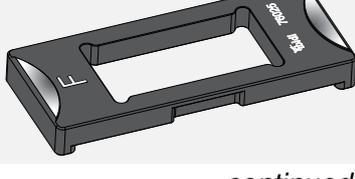
Figure 1: ibidi Micro Illumination System.

The ibidi Micro Illumination System (Cat. No. 76000) consists of the device itself with the external power supply, one mask holder (Cat. No. 76009), one μ -Slide holder (Cat. No. 76010), and one μ -Dish holder (Cat. No. 76011).

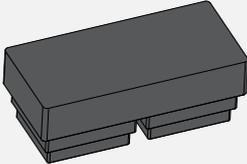
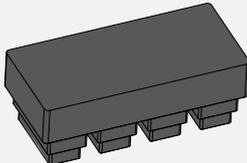
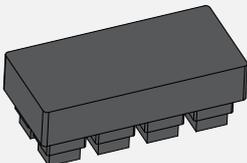
1.3.2 Optional Equipment

The μ -Slide-specific Downholders and the instrument's built-in fasteners can be used to press the μ -Slide onto the photomask gently. This combination reduces the air gap between the sample and the mask, resulting in optimal exposure outcomes.

The μ -Slide-specific Well Inserts significantly reduce both the volume and meniscus in open wells (μ -Slide 2, 4, and 8 Well formats). This helps conserve valuable reagents and minimizes potential artifacts caused by meniscus curvature.

Component Name	Cat. No.	Drawing
Downholder A: For μ -Slide 1, 2, and 4 Well, and for μ -Slide 8 Well ^{high} ; for use with μ -Slide lid.	76020	
Downholder B: For μ -Slides 8 Well, 18 Well, 2 Well Co-Culture, VI ^{0.4} , VI ^{0.5} Glass Bottom, VI ^{0.1} , and III ³ⁱⁿ¹ ; for use with μ -Slide lid.	76021	
Downholder C: For μ -Slide I Luer; for use with μ -Slide lid.	76022	
Downholder D: For μ -Slides Spheroid Perfusion, III 3D Perfusion, and Tissue Engineering; for use with μ -Slide lid.	76023	
Downholder E: For μ -Slide Chemotaxis; for use with μ -Slide lid.	76024	
Downholder F: For Well Inserts; for use without μ -Slide lid.	76025	

continued...

<p>Well Insert for μ-Slide 2 Well: PTFE Well Insert for reducing volume and meniscus; non-sterile.</p>	<p>76040</p>	
<p>Well Insert for μ-Slide 4 Well: PTFE Well Insert for reducing volume and meniscus; non-sterile.</p>	<p>76041</p>	
<p>Well Insert for μ-Slide 8 Well ^{high}: PTFE Well Insert for reducing volume and meniscus; non-sterile.</p>	<p>76042</p>	

1.4 Specifications

Only operate the ibidi Micro Illumination System in the range of the specifications given below:

Electrical Specifications Power Supply	
Protection class	I
International protection marking (IEC 60529)	IP 20
Overvoltage category	II
Pollution degree	2
Input voltage and current	AC 100–240 V, 50/60 Hz, 2 A, 36–40 W
Output voltage and current	DC 24 V, 6.67 A, 160 W
Electrical Specifications ibidi Micro Illumination System	
Protection class	III
Ingress protection rating	IP 20
Overvoltage category	I
Pollution degree	2
Input voltage and current	DC 24 V, 6.67 A, 160 W
Operating and Storage Conditions	
Operating site	Indoor use only
Operating temperature	18–30 °C/64–86 °F
Operating humidity	max. 80% relative humidity (RH)
Storage conditions	-5–50 °C/23–122 °F Humidity <60% relative humidity (RH)

continued...

Outer Dimensions and Characteristics of the ibidi Micro Illumination System

Outer dimensions – lid closed	200 mm × 215 mm × 260 mm
Outer dimensions – lid opened	200 mm × 215 mm × 440 mm
Weight	6.6 kg/14.6 lbs
Power supply cable	Length: 2.0 m (power supply to wall) Length: 1.5 m (power supply to device)

Technical Specifications of the ibidi Micro Illumination System

Type of light source	High-power UV-LED
Wavelength	365 nm ± 5 nm
Intensity	20 mW/cm ² (@20%) – 100 mW/cm ² (@100%)
Time	1 s – 59 min, 59 s
Divergence	≤ 3°
Illumination area	∅ 70 mm
Illumination uniformity	≤ 5% deviation from mean intensity
Compatible photomasks	3" photomasks, 1.4–1.8 mm thick
Resolution, nominal	2 μm

1.5 Disclaimer

- ibidi shall not be held liable, either directly or indirectly, for any damage incurred as a result of product use.
- The contents of this manual are subject to change without notice for product improvement.
- This manual is considered complete and accurate at publication.
- This manual does not guarantee the validity of any patent rights or other rights.
- ibidi is a registered trademark of ibidi GmbH in Germany and other countries.

1.6 Safety Considerations



WARNING

- Only operate the ibidi Micro Illumination System with the supplied components.
- Only use the cable delivered with the system.
- Do not replace detachable power cables by power cables with inadequate specifications. By violating these instructions, you risk electric shock and fire.

- Only use extension cables that have a protective ground wire.
- Do not operate the ibidi Micro Illumination System under conditions that pose a risk of explosion, implosion, or the release of gases.
- Do not place flammable solids, liquids, gases, or gas outlets near the system (e.g., matches, ethanol, propane gas, solvents).
- Do not operate a damaged ibidi Micro Illumination System. If the housing seems damaged or something is rattling inside, contact the [ibidi technical support](#) for repair.
- Avoid strong magnetic fields and sources of high frequency. Strong magnetic fields can compromise the safety precautions designed to protect users from UV irradiation. Additionally, the ibidi Micro Illumination System might not function properly when located near a strong magnetic field or high frequency source.



CAUTION

- Ensure that the external power supply remains easily accessible. The ibidi Micro Illumination System must be installed in a manner that does not obstruct access to the external power supply.
- Immediately replace damaged cords, plugs, or cables to avoid risk of personal injury or damage to the instrument.
- Only ibidi technical staff and technical staff instructed by ibidi are permitted to open and service the ibidi Micro Illumination System.
- The external power supply should not be brought into contact with moisture. If the housing is damaged, the external power supply should not be used.
- Avoid vibrations from lab devices, like vacuum pumps, centrifuges, electric motors, processing equipment, and machine tools.
- Avoid dust and corrosive gas. Do not install the ibidi Micro Illumination System where it could be exposed to high levels of dust, to outside air or ventilation outlets.
- Install the ibidi Micro Illumination System in a location that enables easy access for maintenance.
- Do not place heavy objects on the instrument.
- The weight of the ibidi Micro Illumination System is approx. 6.6 kg/14.6 lbs. Moving the system during operation will pose a risk of personal injury or damage to the instrument.
- Install the ibidi Micro Illumination System in a horizontal and stable position, which includes a table, bench or desk upon which the instrument is installed.
- The optical components of the ibidi Micro Illumination System can break on mechanical impact. If so, the glass shards can lead to injuries if handled.

1.7 Limited Warranty

Products manufactured by ibidi, unless otherwise specified, are warranted for a period of one year from the date of shipment to be free of defects in materials and workmanship. If any defects in the product are found during this warranty period, ibidi will repair or replace the defective part(s) or product free of charge.

This warranty does not apply to defects resulting from the following:

1. Improper or inadequate installation.
2. Improper or inadequate operation, maintenance, adjustment, or calibration.
3. Unauthorized modification or misuse.
4. Use of consumables, disposables, and parts not supplied by an authorized ibidi distributor.
5. Corrosion due to the use of improper solvents, samples, or due to surrounding gases.
6. Accidents beyond ibidi's control, including natural disasters.

This warranty does not cover consumables, such as cell culture slides and dishes, reagents, etc.

The warranty for all parts supplied and repairs provided under this warranty expires on the warranty expiration date of the original product.

1.8 Transporting the ibidi Micro Illumination System

The weight of the ibidi Micro Illumination System is approx. 6.6 kg/14.6 lbs. Moving the device during operation can pose a risk of personal injury or damage to the instrument.

Prior to transportation, switch off the ibidi Micro Illumination System and detach the power supply cable from the device. Handle the device with care to prevent mechanical impacts.

1.9 Repairing the ibidi Micro Illumination System

For inquiries concerning repair service contact ibidi GmbH technical support (techsupport@ibidi.com) and provide the model name and serial number of your system.



CAUTION – Do not try to repair the ibidi Micro Illumination System by yourself. Disassembly of the ibidi Micro Illumination System is not allowed. Disassembly poses a risk of personal injury or damage to the device. Contact the ibidi technical support for repairs.

1.10 Waste Disposal – WEEE/RoHS Compliance Statement

The European Union (EU) has enacted two directives, the first on product recycling (Waste Electrical and Electronic Equipment, WEEE) and the second on limiting the use of certain substances (Restriction on the use of Hazardous Substances, RoHS).

1.10.1 EU Directive WEEE

The ibidi Micro Illumination System must be disposed of in compliance with the WEEE Directive 2012/19/EC.



This symbol on the product is in accordance with the European Union's Waste Electrical and Electronic Equipment (WEEE) Directive. The symbol indicates that this product must be recycled/disposed of separately from other household waste. It is the end user's responsibility to dispose of this product by taking it to a designated WEEE collection facility for the proper collection and recycling of the waste equipment. The separate collection and recycling of waste equipment will help to conserve natural resources and protect human health and the environment. For more information about recycling, please contact your local environmental office, an electrical/electronic waste disposal company or distributor where you purchased the product.

1.10.2 EU Directive RoHS

RoHS conformity is declared in the EU-conformity in Section [1.11](#).

1.11 Regulatory Statement

EG-Konformitätserklärung EC Declaration of Conformity

Wir / We

ibidi GmbH
Lochhamer Schlag 11
D-82166 Gräfelfing

erklären hiermit die Übereinstimmung des genannten Produktes mit der Richtlinie 2014/35/EU - Niederspannungsrichtlinie und mit der Richtlinie 2014/30/EU über die Elektromagnetische Verträglichkeit.
Bei Änderungen am Produkt, die nicht von uns autorisiert wurden, verliert diese Erklärung ihre Gültigkeit.

We declare the compliance of the product with the requirements of the Directive 2014/35/EU - Low Voltage Directive and with the Directive 2014/30/EU about the Electromagnetic Compatibility.
Any modification to the product, not authorized by us, will invalidate this declaration.

Laborgerät / laboratory equipment:

ibidi Micro Illumination System, IL-04-2-1-X-XXXX
with ibidi accessories

Der oben beschriebene Gegenstand erfüllt die Vorschriften der Richtlinie 2011/65/EU vom 08. Juni 2011 zur Beschränkung der Verwendung bestimmter gefährlicher Stoffe in Elektro- und Elektronikgeräten.

The object of the declaration described above is in conformity with Directive 2011/65/EU of 8 June 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment.

Das Produkt entspricht den unten aufgeführten Normen:
The product meets the requirements of the following standards:

DIN EN 61010-1:2020

Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte - Teil 1: Allgemeine Anforderungen Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements

DIN EN 61326-1:2013

Elektrische Mess-, Steuer-, Regel und Laborgeräte. EMV-Anforderungen. Allgemeine Anforderungen
Electrical equipment for measurement, control and laboratory use. EMC requirements. General requirements

Das Produkt ist gekennzeichnet mit/ The product is marked with



Gräfelfing, den 17.09.2025
Gräfelfing, 2025-09-17

Ort/Datum
Place/date

Dr. Valentin Kahl
Geschäftsführer

Name, Funktion
Name, Function

Unterschrift
Signature

Diese Erklärung bescheinigt die Übereinstimmung mit den genannten Richtlinien, ist jedoch keine Zusicherung von Eigenschaften. Die Sicherheitshinweise der Produktdokumentation sind zu beachten.

This declaration certifies the conformity to the specified directives but not includes any warranted quality of the instrument. The safety documentation of the product shall be considered in detail.



2 Intended Use

The ibidi Micro Illumination System is a lab device used for microfabrication based on UV photolithography. This device provides a platform to achieve high spatial and temporal resolution, enabling precise control over exposure patterns using structured photomasks. This allows researchers a broad variety of 2D and 3D patterns with great accuracy, facilitating advanced studies and applications.

The versatile design of the ibidi Micro Illumination System enables the use of a broad range of microscopy labware, including μ -Dishes, μ -Slides, and spin-coated 3-inch wafers with photoresist.

To optimize the UV-exposure process, optional accessories such as a labware-specific Downholder and labware-specific Well Inserts can be used.

The ibidi Micro Illumination System is for research use only! It is not intended for use in diagnostic procedures.

3 Operation

Before starting, ensure that the ibidi Micro Illumination System is placed on a lab bench that meets the operating conditions described in Section 1.4.

3.1 Installation

1. Connect the ibidi Micro Illumination System to the power supply using the cable at the rear of the device.
2. Turn on the device by pressing the main switch located above the power supply port.
3. Confirm that the display has activated, indicating that the ibidi Micro Illumination System is powered on and ready for use.

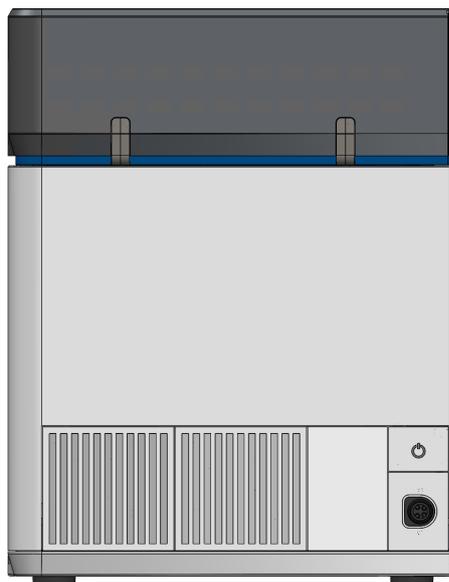


Figure 2: Rear view of the device with power supply port and the main switch.

3.2 Photomask and Sample Preparation



NOTE – Protect your samples from light during the entire process.

1. Place the photomask into the mask holder. Make sure the photomask is face up, i.e. the structures are facing the sample.
2. Insert the mask holder, containing the photomask, into the device.
3. Place the sample on top of the photomask in the correct orientation. Make sure photomask and sample are properly aligned.
4. Close the device.

Optionally, use the μ -Slide holder or the μ -Dish holder to position your sample.

Optionally, use one of the Downholders to minimize the air gap between photomask and μ -Slide. The Downholders are pressed onto the μ -Slide by rotating the sample fasteners.

3.3 Setting Parameters and Starting Operation

All control parameters can be manually set using the four buttons (+, −, ○, and ▷) as shown in Figure 3.

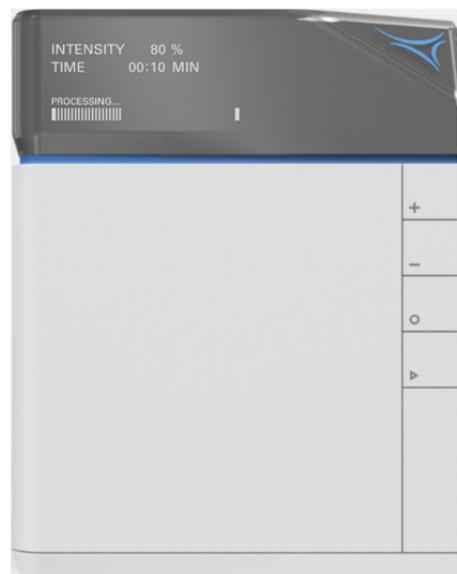


Figure 3: Front view of the device with display and operating buttons.

Immediately after switching on the device, the display shows “READY”, indicating that an exposure with the current parameters can be started by pressing the “▷” button. To configure the parameters and initiate the exposure, follow the next steps:

1. Press the “○” button to enter parameter editing mode. The display shows “SET PARAMETERS”, and an underscore “_” indicates the cursor position.
2. Press the “○” button again to move the cursor. To change the intensity or illumination time, move the cursor to the desired parameter using the “○” button, then press the “+” or “-” buttons to set the value. Higher intensity provides stronger illumination, while longer illumination times are useful when lower intensity is sufficient but extended exposure is required.
3. To confirm the set values, press the “▷” button. The display shows “READY” again.
4. Start the exposure by pressing the “▷” button. The system immediately starts the exposure according to the set parameters.
5. To interrupt the process, press any button, then press the “○” button.



ibidi GmbH

Lochhamer Schlag 11
82166 Gräfelfing
Germany

Toll free within Germany:

Phone: 0800/00 11 11 28
Fax: 0800/00 11 11 29

International calls:

Phone: +49 89/520 46 17 - 0
Fax: +49 89/520 46 17 - 59

E-Mail: info@ibidi.com
ibidi.com

