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DOMINIQUE DUTSCHER SAS

RackScan b

Hardware manual

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1 Operating instructions

1.1 Using this manual

- Read these complete instructions for use and the complete software manual before initial commissioning of the device. Also observe the instructions for use of any accessories if used.
- This operating manual is part of the product. Keep it in a place that is easily accessible.
- Enclose this operating manual when transferring the device to third parties.
- The current version of the operating manual for all available languages can be found on our webpage www.eppendorf.com/manuals.

1.2 Danger symbols and danger levels

1.2.1 Danger symbols

The safety instructions in this manual have the following danger symbols and danger levels:

Hazard point	**Electric shock**
Material damage	

1.2.2 Danger levels

DANGER	Will lead to severe injuries or death.
WARNING	May lead to severe injuries or death.
CAUTION	May lead to light to moderate injuries.
NOTICE	May lead to material damage.

1.3 Symbols used

Symbol	Meaning
1. 2.	Actions in the specified order
▸	Actions without a specified order
•	List:
Text	Display or software texts
Buttons	Button names are in the text
	Additional information

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2 Safety

2.1 Intended use

The **RackScan b** is used to scan 2D data matrix codes on consumables in molecular biological, biochemical and cell biological research laboratories and to transfer the data contained in the 2D data matrix codes to software applications for further use.

The **RackScan b** has been developed as a general laboratory device for use with samples of both biological and non-biological nature.

The **RackScan b** is exclusively intended for indoor use.

The **RackScan b** is designed for research purposes only.

2.2 User profile

The device and accessories may only be operated by trained and skilled personnel.

Before using the device, read the operating manual and the instructions for use of the accessories carefully and familiarize yourself with the device's mode of operation.

2.3 Warnings for intended use

WARNING! Damage to health due to infectious liquids and pathogenic germs.

- When handling infectious liquids and pathogenic germs, observe the national regulations, the biosafety level of your laboratory, the Safety Data Sheets, and the manufacturer's application notes.
- Wear your personal protective equipment.
- For comprehensive regulations about handling germs or biological material of risk group II or higher, please refer to the "Laboratory Biosafety Manual" (source: World Health Organization, Laboratory Biosafety Manual, the current edition).

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3 Product description

3.1 Product overview

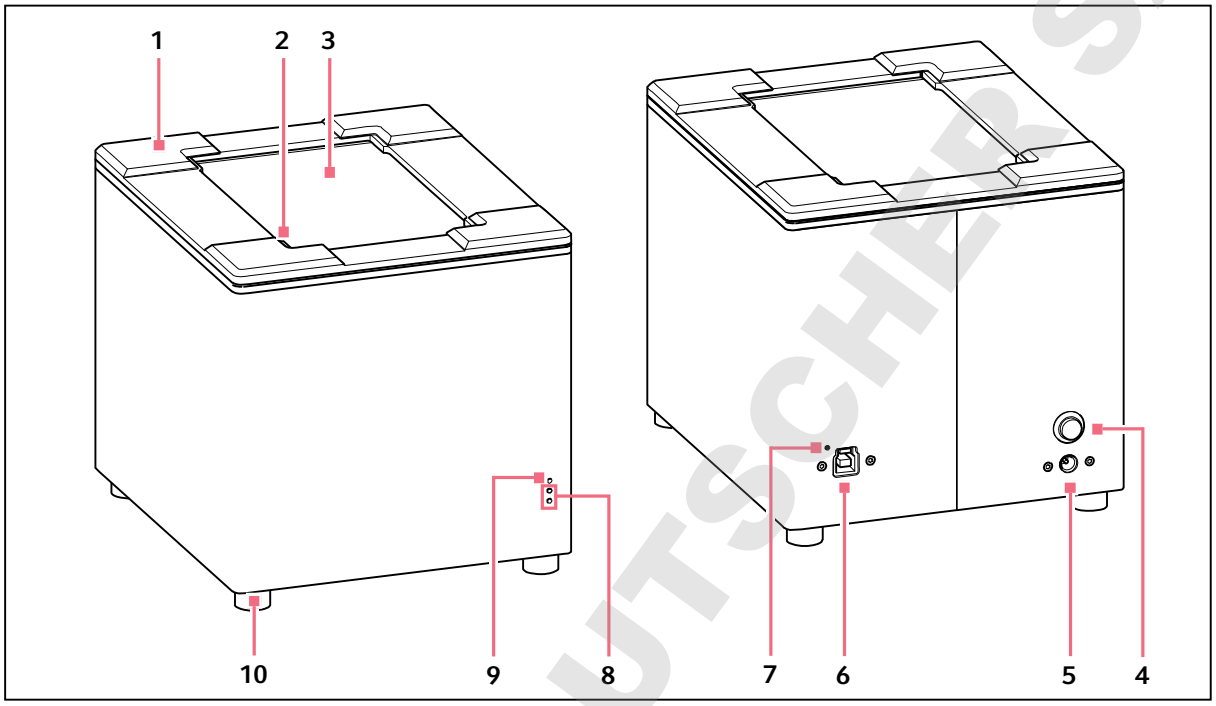

Fig. 3-1: Left: device front, right: device rear (RackScan b)

1 **Exchangeable frame**
2 **Default A1 position for racks**
3 **Scanning window**
4 **Mains/power on/off switch**
5 **Mains/power cord socket**
6 **USB port for PC**
7 **USB control LED**
8 **Status LEDs**
9 **Power LED**
10 **Removable feet**

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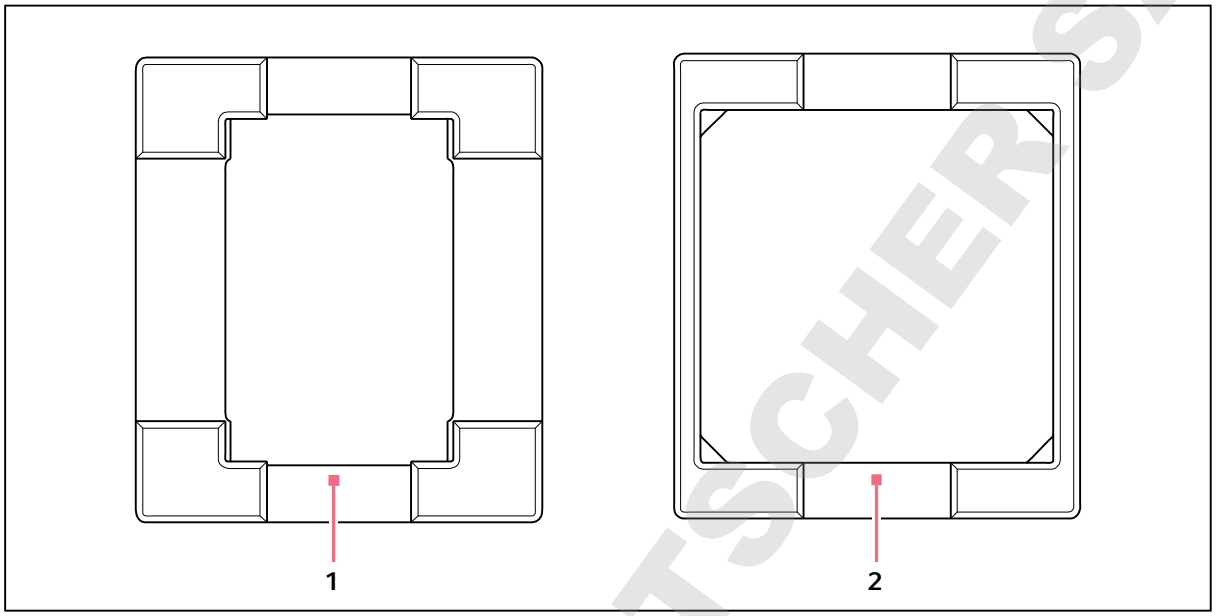
3.1.1 Exchangeable frames



1 ANSI/SBS frame

2 Storagebox frame (not included in the delivery package)

3.2 Delivery package

- Check whether the delivery is complete.
- Check all parts for any transport damage.
- To safely transport and store the device, retain the transport box and packing material.

3.2.1 RackScan b

Quantity	Description
1	Device (RackScan b)
1	USB cable
1	Mains/power cord
1	Mains/power supply device
1	ANSI/SBS rack frame
1	Software CD with hardware manual, software manual and instructions for use
1	Software license key
1	Quick Start Guide

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3.3 Features

The RackScan b scans the 2D data matrix codes from sample tubes that stand upright in ANSI/SBS racks from below.

The following rack types can be used:

- ANSI/SBS racks (24, 48, 96, 240, 384)

The device (RackScan b) is equipped with a camera that facilitates quick and reliable scanning even under less than ideal lighting conditions.

The Cryoprotection-Beschichtung prevents the scanning window from fogging up and facilitates the scanning of 2D data matrix codes from refrigerated samples.

The software can output the scanned data in the following formats:

- Excel file
- Text file
- JSON file
- XML file
- Image file

3.4 Symbols on the device

3.4.1 Name plate of the device

The name plate is located on the bottom of the device.

The following information is provided there:

- Manufacturer's address
- Product name
- Manufacturer
- Serial number
- Maximum rated power
- Designation of origin
- Barcode
- Rated frequency
- Rated voltage
- Device fuse

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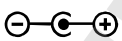
3.4.2 Symbols on the mains/power supply device

The name plate is located directly on the mains/power supply device.

The following information is provided there:

- Manufacturer
- Order number
- Product name
- Model number
- Input: Voltage, frequency, current
- Output: Voltage, current, maximum output

Symbol	Meaning
	The UL listing certification mark verifies that UL has tested sample models of the corresponding product and that all valid UL requirements have been met.
	The CE certification indicates conformity with the corresponding guidelines of the European Union.
	China Compulsory Certificate mark: for electromagnetic compatibility and safety.
	Only use in non-tropical climate zones.
	Only use at a height of no more than 2000 m.
	Symbol for waste electrical and electronic equipment (WEEE) according to EU Directive 2012/19/EU, European Community
	Connection polarity marking - positive
	Safety certification of the German Technical Inspection Association (TÜV) for components and subcomponents.
	German safety approval indicating compliance with the German Equipment Safety Act (Gerätesicherheitsgesetz).

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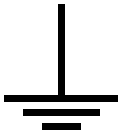
Symbol	Meaning
	BSMI – Tested according to BSMI (Bureau of Standards, Metrology and Inspection) requirements.
	Approval mark for electromagnetic compatibility according to the Federal Communications Commission, USA
	Limited voltage source
	Energy efficiency class V
	For indoor use only.
	Class II device.
	Ground before use.
	EFUP – Environmentally friendly use period.

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4 Installation

4.1 Attaching the frame on the device

The device is delivered with an ANSI/SBS frame.

1. Press the frame onto the device as far as it will go with the holes pointing downward.

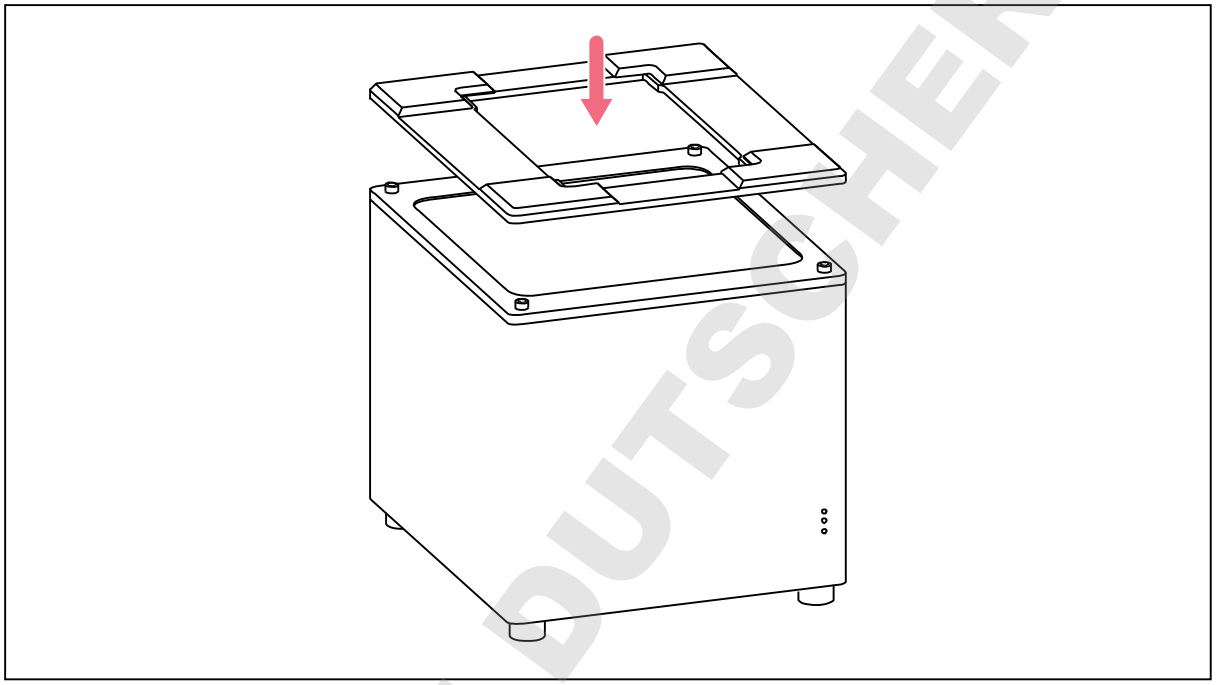

Fig. 4-1: Attaching the frame

4.2 Connecting the device

WARNING! Danger due to incorrect voltage supply.

- Only connect the device to voltage sources which correspond with the electrical requirements on the name plate.
- Only use earth/grounded sockets with a protective earth (PE) conductor.
- Only use the mains/power cord supplied.

NOTICE! Damage to electronic components due to condensation.
Condensate may form in the device when it has been transported from a cool environment to a warmer environment.

- After installing the device, wait for the condensate to evaporate. Only then connect the device to the mains/power line.

- Connect the mains connection socket to the power socket using a power cable.

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- Connect the USB port and the PC with a USB cable.
  The USB control light will light up in green.

If the side scanner is detected, align it and connect it to the PC via USB cable.

The software installation is described in the software manual.

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5 Operation

5.1 Switching on the device

Prerequisites

- The RackScan Analyzer software has been installed and started on a PC.
- The device is connected to the PC via USB.
- The device is connected to the mains/power line via the mains/power cord.

▶ Switch on the device at the mains/power switch on the rear.

The power LED will light up in blue.
The status LEDs will light up in red.
The device will boot up.
In its operational state, the power LED will be lit in blue and the status LEDs in green.

5.2 Configuring the device

The device is operated and configured by means of the connected PC.

All settings necessary for the scanning procedure are described in the RackScan Analyzer software manual.

The A1 position is set to the bottom left corner by default on the device. The A1 position on the rack may vary on racks made by other manufacturers. Adjusting the default A1 position to the diagonal position is possible on the device and in the device software.

5.2.1 Adding the device to the selection list

Prerequisites

- The software has been started.
- The device has been switched on and connected to the PC.
- All necessary settings for data export have been configured.

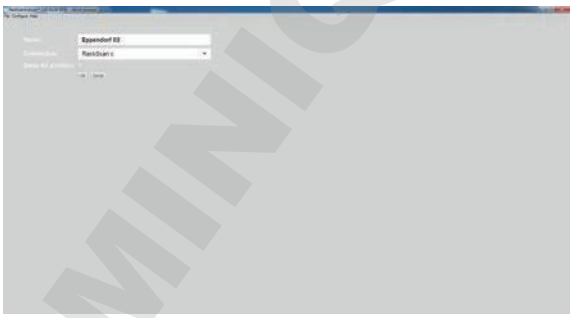

Fig. 5-1: Adding the scanner

1. Select *Add Scanner* in the *Configure* menu on the PC.
2. Enter a name for the device in the *Name* field in the software.
3. If the A1 position of the racks does not correspond to the device's A1 position, the *Swap A1 position* function must be activated.
   The device's A1 position will then be switched from the bottom left corner to the top right corner.
4. Confirm the settings with *OK*.
   The device will appear on the left in the selection list with its settings.

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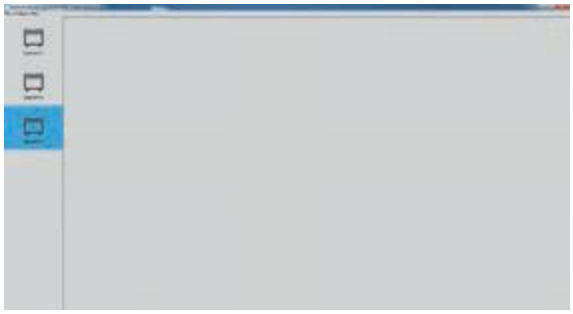
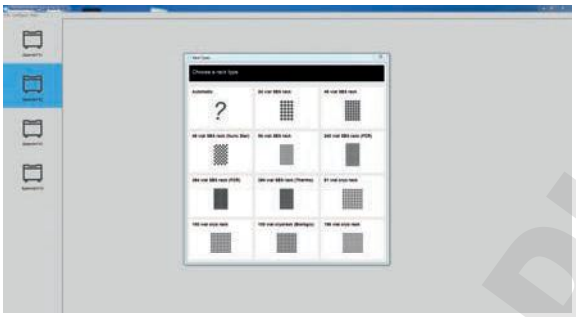


Fig. 5-2: The added device

5.2.2 Selecting the rack for the scanning procedure

After selection of the device, assign the appropriate rack type to the device.

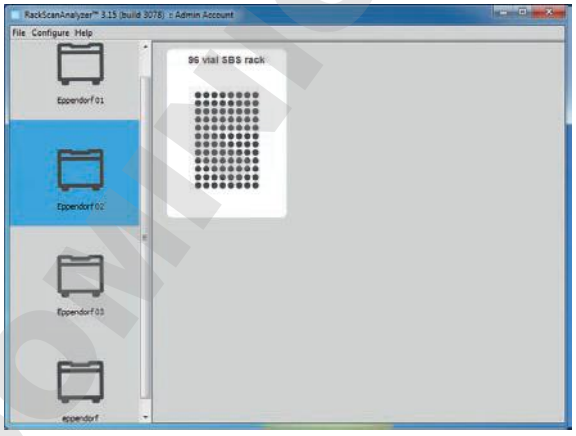


1. Select the correct device on the left in the selection list.
2. Select *Add Rack* in the *Configure* menu.
   The list of rack types will appear.
3. Select the correct rack type.
   The *General Settings* window will appear.
4. Enter the rack ID in the *Name for the scan* field and confirm with *OK*.

Fig. 5-3: Rack selection

If the device is connected to a laboratory information system, the *Unique ID* is queried. Further information on the *Unique ID* can be found in the RackScan Analyzer Remote software manual.

The selected rack then appears in the rack selection.



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The device is then ready for the scanning procedure.

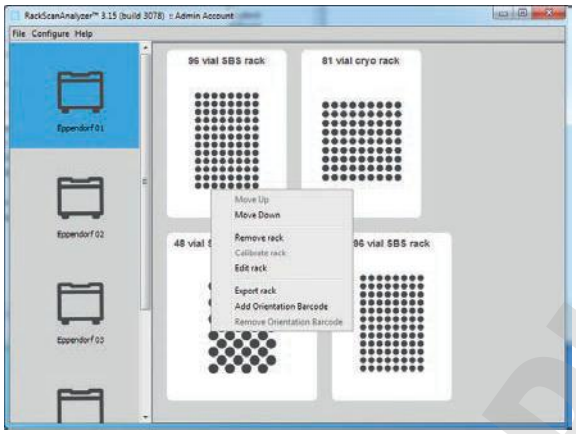
5.2.3 Adding an orientation barcode

The orientation barcode is used for the correct orientation of the racks on the device.

The orientation barcode's position is different on racks of different manufacturers and must be determined before starting the scanning procedure.

Prerequisites

The device is marked in the device selection.



1. Select the appropriate racks in the rack selection with the right mouse button.
   The selection menu will be displayed.

2. Select *Add Orientation Barcode* in the selection menu.
   The window to determine the position of the orientation barcode will appear.
3. Follow the instructions on the right of the screen and confirm with *Finish*.
   The blue flashing position fields will disappear and the selected position will switch to green. *Orientation Barcode* will appear in the rack selection under the rack.
   An orientation bar code has then been added.

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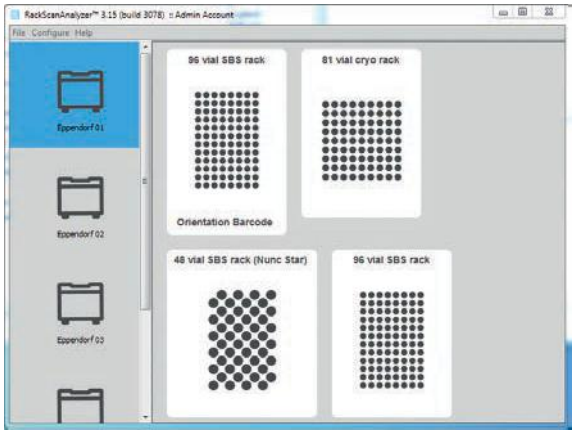

Fig. 5-4: Added orientation barcode

When positioning ANSI/SBS racks with orientation barcodes, ensure that the device's position settings correspond to the position of the orientation barcode on the positioned rack.
When scanning racks without orientation barcodes, ensure that the orientation of the racks on the RackScan Analyzer Remote is always the same (A1 is in the bottom left corner). The set A1 position can be switched as necessary.

5.3 Scanning in samples

Prerequisites

- The sample's 2D data matrix code is located on the bottom of the tube.
- The tubes have been placed in a rack.
- The corresponding frame is in the scan window.

CAUTION! Incorrect positioning of *Racks* on the device
Positioning racks incorrectly on the device will result in the incorrect assignment of samples.

- Always position the *Rack* on the device so that the A1 position of the *Racks* corresponds to the set A1 position of the device.

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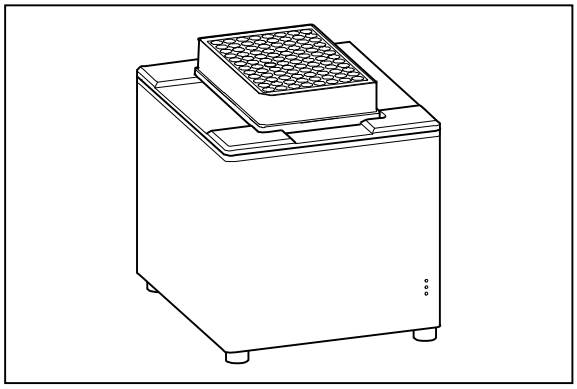

Fig. 5-5: Positioning the rack on the device

1. Position the rack with the samples on the device.
2. Select the correct rack on the PC via mouseclick.
   If the *Scan Time Questions* function is active, a window with queries on the scanning procedure will open.

Additional information is attached to a scanning procedure with the *Scan Time Questions* function. This function is deactivated in the default settings.

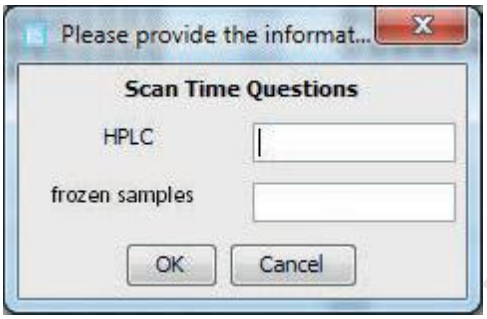

Fig. 5-6: Sample query

3. Fill in the fields in the *Scan Time Questions* window and confirm with *OK*.
   The samples in the rack are then scanned in and decrypted and the data is saved.
   Cancel will appear.
   The scanning procedure results will be displayed on the screen.
   If the scan was successful, the 2D matrix code will be highlighted in green in the *Images* results display.
4. Select the output format for the results and save.
5. Remove the samples with the rack from the device.

Further information on program settings can be found in the software manual.

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5.3.1 Selecting the results preview

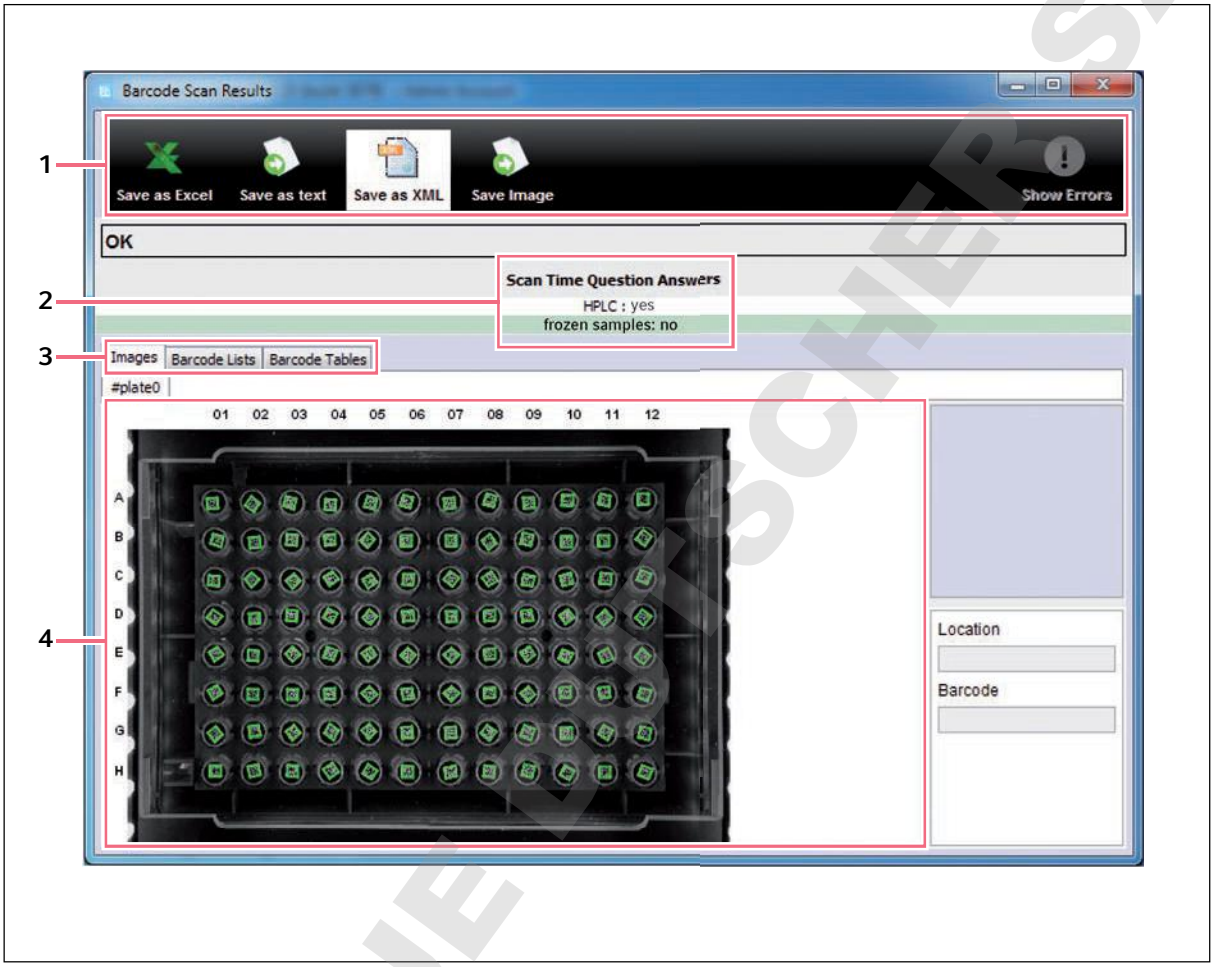

Fig. 5-7: Results preview of a successful scanning procedure

1 Selection list of the output formats to save the results in

2 Scan Time Questions with entries

3 Screen display tabs

4 Results display

The Rack ID is displayed under the screen display tabs.

1. Select the desired display format via the screen display tabs.
   The results are displayed on the screen correspondingly.

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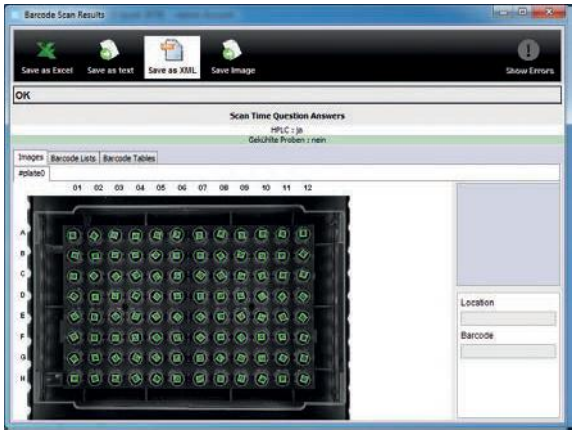

Fig. 5-8: *Images* format

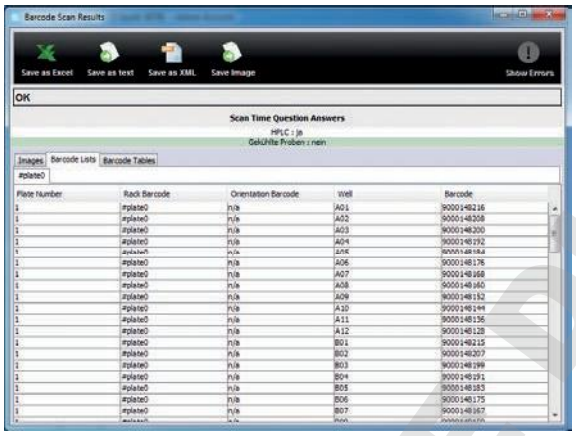

Fig. 5-9: *Barcode Lists* format

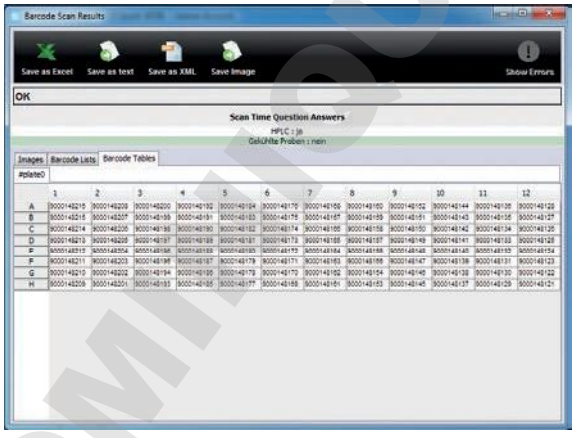

Fig. 5-10: *Barcode Tables* format

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5.4 Switching off the device

- Switch off the device at the mains/power switch on the rear.
  The device will then no longer be powered.

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6 Troubleshooting

6.1 General errors

Follow the instructions that appear on the screen in the event of any error messages.

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7 Maintenance

7.1 Cleaning

NOTICE! Damage to the device due to penetration of liquids.
Penetrating liquids may damage the device.

- Do not allow any liquid to penetrate the inside of the housing.
- Do not immerse the device in any liquid.
- Only clean the device via spray cleaning or with a damp cloth.

NOTICE! Damage to device from unsuitable cleaning fluids or sharp or pointed objects.
Use of unsuitable cleaning agents may damage the device.

- Never use corrosive cleaning agents, aggressive solvents or abrasive polishes.
- Do **not** clean the device using sharp objects.

1. Switch off the device.
2. Disconnect the device from the mains/power line.
3. Remove contamination on the outside using a mild cleaning agent or isopropanol (70 %).
4. Remove cleaning agent residue using a damp cloth.
5. Let the device dry.
6. Connect the dry device to the mains/power line and put it into operation.

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8 Transport, storage and disposal

8.1 Packing

NOTICE! Risk of damage due to incorrect packing.
Eppendorf AG is not liable for any damage caused by improper packing.

- Only store and transport the device in its original packing.

WARNING! Risk to health due to contaminated device and accessories.

- Decontaminate the device and the accessories prior to storage and shipping.

Use the supplied packing material when packing the device for transport or storage. If this is no longer available or damaged, contact your local Eppendorf partner.

Prepare the device as follows prior to packing:

1. Pay attention to the decontamination notes.
2. Switch off the device.
3. Remove the mains/power cord from the mains/power socket and detach the USB cable from the PC.
4. Clean the device according to the decontamination notes.
5. Allow the device to sit for 30 minutes.
6. Package the device.

8.2 Transport

	Air temperature	Relative humidity	Atmospheric pressure
General transport	-20 °C – 60 °C	20 % – 80 %	101 kPa – 70 kPa

1. Only use original packaging for transport.

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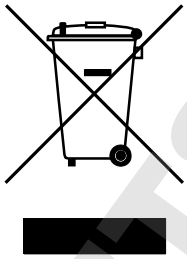
8.3 Disposal

If the product needs to be disposed of, the relevant legal regulations must be observed.

Information on the disposal of electrical and electronic devices in the European Community:

Within the European Community, the disposal of electrical devices is regulated by national regulations based on EU Directive 2012/19/EU pertaining to waste electrical and electronic equipment (WEEE).

According to these regulations, any devices supplied after August 13, 2005, in the business-to-business sphere, to which this product is assigned, may no longer be disposed of in municipal or domestic waste. To document this, they have been marked with the following marking:



Because disposal regulations may differ from one country to another within the EU, please contact your supplier if necessary.

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9 Technical data

9.1 Power supply

Voltage	100 V – 240 V, AC, ± 10 %
Frequency	50 Hz – 60 Hz
Power consumption	20 W
Overvoltage category	II
Degree of pollution	2 (IEC 664)

9.2 Interfaces

PC	USB

9.3 Ambient conditions

Ambience	For indoor use only.
Ambient temperature	18 °C – 30 °C

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10 Ordering information

10.1 RackScan b and RackScan s

Order no. (International)	Description
6002 000.006	**RackScan b** 2D-datamatrix code scanner with software, bottom
6002 000.014	**RackScan s** 1D-datamatrix code scanner, side

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Declaration of Conformity

The product named below fulfills the requirements of directives and standards listed. In the case of unauthorized modifications to the product or an unintended use this declaration becomes invalid. This declaration of conformity is issued under the sole responsibility of the manufacturer.

Product name:

RackScan b

including accessories

Product type:

Barcode scanner

Relevant directives / standards:

2014/35/EU:	EN 61010-1
2014/30/EU:	EN 61326-1, EN 55032, EN 61000-3-2, EN 61000-3-3
2011/65/EU:	EN 50581

Hamburg, August 08, 2019

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