

## Binocular Autorefractor



reddot award 2014  
winner



### Short Manual 4

### “Entering, retrieving or deleting patient data”

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## Table of Contents

1	Entering or retrieving patient data – an overview .....	3
2	Entering or retrieving patient data before the measurement .....	3
3	Entering or retrieving patient data after the measurement .....	6
4	Importing patients from the EMR software before the measurement (CSV) .....	9
5	Importing patient data via the USB interface .....	9
6	Deleting entries from the database .....	11

## List of figures

Figure 1:	Entering patient data .....	3
Figure 2:	Allocating entered patient data .....	4
Figure 3:	Missing patient data.....	4
Figure 4:	Shortlist with entries with identical character strings .....	5
Figure 5:	Patient data overview .....	5
Figure 6:	Entering patient data .....	6
Figure 7:	Allocating entered patient data .....	6
Figure 8:	Missing patient data.....	7
Figure 9:	Shortlist with entries with identical character strings .....	7
Figure 10:	New entry on the “database” results page .....	8
Figure 11:	Sample of a CSV table .....	10
Figure 12:	Deleting entries from the database .....	11
Figure 13:	Deleting patients from the database .....	11



This manual is a supplementary short manual. For general information about your Plusoptix device, such as its intended use, basic handling, technical information, maintenance, service, and warranty information, please refer to the user manual that was delivered with your device. This user manual can also be downloaded on our homepage [www.plusoptix.com](http://www.plusoptix.com), under support.

## List of further supplementary short manuals

1. Adjusting settings and setting up WLAN
2. Preparing and performing a measurement
3. Viewing the measurement results
4. Entering, retrieving or deleting patient data
5. Documenting measurement results electronically
6. Documenting measurement results on paper
7. Exporting back-ups and reports (only plusoptiX A12C and A16)
8. Downloading software updates
9. Troubleshooting malfunctions and measuring interruptions

## 1 Entering or retrieving patient data – an overview

In the plusoptix A12C and A16 model, patient data can be entered or retrieved before a measurement to prepare for an examination (see Chapter 2) or assigned after a measurement to document the measurement results (see Chapter 3)

As an alternative to manual entry of the patient data, the Plusoptix Binocular Autorefractor can also be integrated into your EMR software (see Chapter 4) or the patient data can be imported into the database through the USB interface in the form of a CSV table (see Chapter 5).

The “plusoptix A12R” model does not have an internal patient database. Touching the printer button after the measurement in the “plusoptix A12R” model will display a single line to enter individual patient data. This data will be portrayed on the measurement report and on the self-adhesive label. Following explanations are for the “plusoptix A12C” and “plusoptix A16” model, only.

If the measurement results are to be documented anonymously, touch the checkmark (2) in the navigation bar as well. This will allow you to skip the patient data entry screen. The “plusoptix A12” saves the measurement under a consecutive patient ID. This is composed as follows: <last 4 digits of the serial number>-<consecutive number>-<date>-<time>

## 2 Entering or retrieving patient data before the measurement

To prepare for a measurement, the patient data can be entered or retrieved from the database before the measurement. The subsequently started measurement will then be performed under the previously entered or selected patient data.



**Note:**

In the plusoptix A16 model, a USB keyboard must be connected for entering the patient data.

You do not have to switch between individual fields on the intuitive patient data entry screen. Simply enter the personal details of the patient into the entry field, separated by a space, e.g. “Emily Atlanta”.

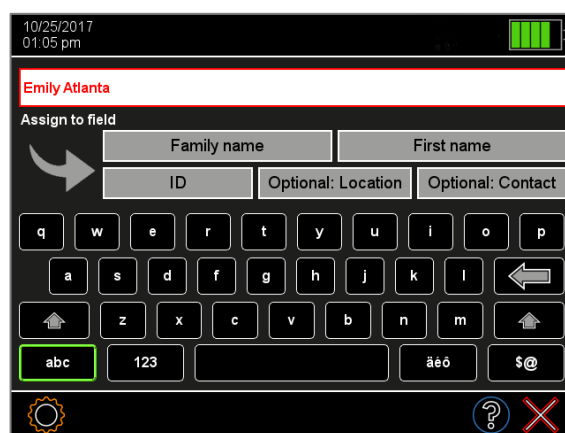


Figure 1: Entering patient data

To be able to clearly identify a patient in the database, the first name and last name, or a patient ID, must be entered. Information about the date of birth, examination location and contact information are optional.

Now allocate the entered data by tapping the relevant field in order of the information:

“Emily” is the first name

→ Tap the “First name” field

“Atlanta” is the location

→ Tap the field “Optional: Location”

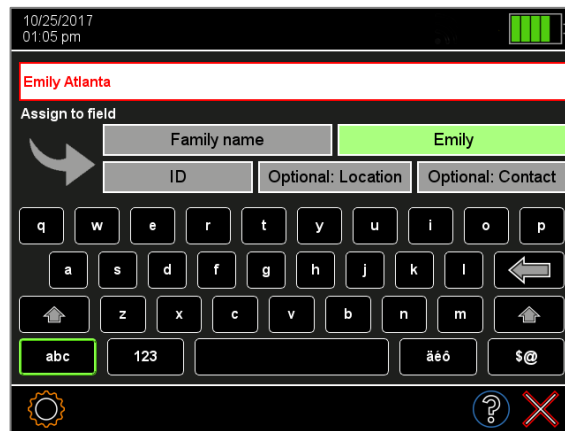


Figure 2: Allocating entered patient data

After allocating all the entered data, the display will change to the input overview page. If any information needed to enable an identifiable patient data entry is missing, the relevant field will be marked in red. The data can only be saved when all the red fields have been filled.



Figure 3: Missing patient data

As soon as all the necessary patient data, i.e. either first name and last name or patient ID, have been entered, a green checkmark (1) will appear in the navigation bar. You can now save the patient data by touching the green checkmark (1) or reallocate the data by touching the red “X” (2). By touching the red “X” (2) again, you can discard all the entered data.

If data is already saved in the database, the software will automatically search for matching database entries during the entry process. If up to 4 data records with the same character string are found, these are displayed in a shortlist (see figure 4). To select a patient from this shortlist, simply touch the relevant entry in the shortlist.

If no entries with identical character strings are found, the patient data entry screen will be displayed in order to enter new patient data (see Figure 2).



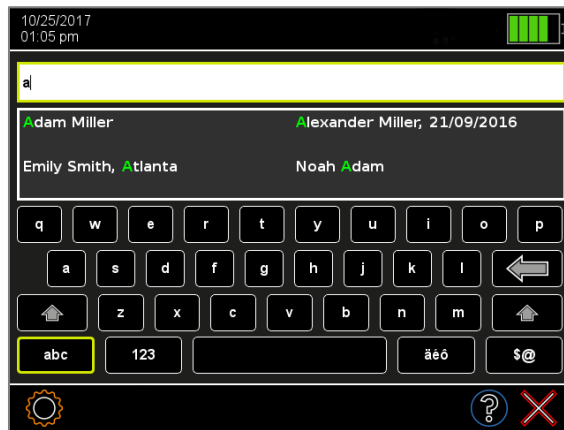


Figure 4: Shortlist with entries with identical character strings

After selecting an entry, you will see the patient data overview. If the patient has been retrieved from the database, all this patient's saved measurement values are shown.

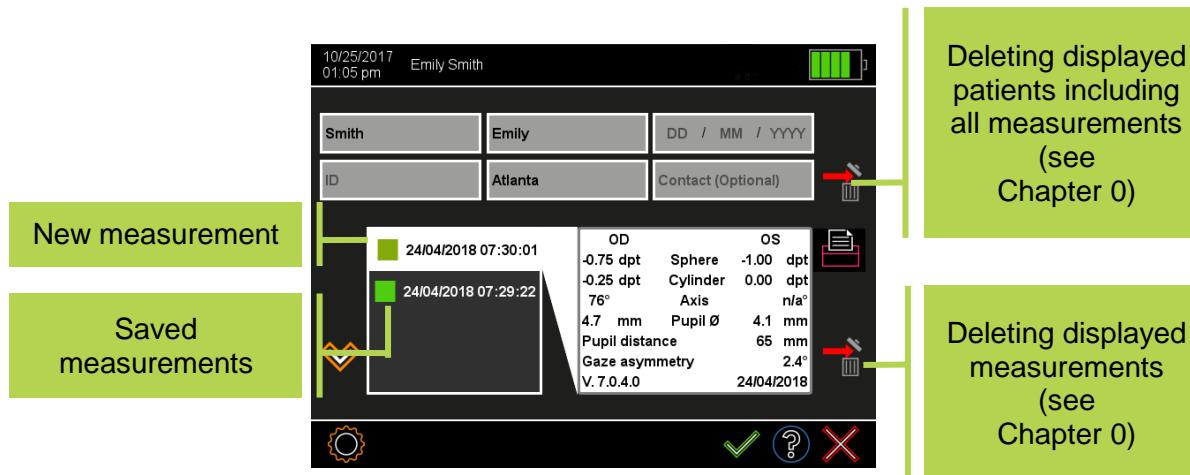


Figure 5: Patient data overview

From the patient data overview, you can:

	<p>Measure the entered or selected patient in the pre-selected measurement mode by pressing the trigger.</p>
	<p>Carry out a measurement of the entered or selected patient in another measurement mode (e.g. monocular). To do this, touch the green checkmark in the navigation bar to carry over the previously entered or selected patient data for the next measurement.</p>
	<p>Return to the home page by touching the red "X" button". Previously entered or selected patient data is discarded.</p>

## 3 Entering or retrieving patient data after the measurement

Patient data can be entered after a measurement to document the measurement results or existing or imported patient data can be retrieved from the database. An already performed measurement can thus be assigned to a specific patient in the database.



**Note:**

In the plusoptix A16 model, a USB keyboard must be connected for entering the patient data.

You do not have to switch between individual fields on the intuitive patient data entry screen. Simply enter the personal details of the patient into the entry field, separated by a space, e.g. "Emily Atlanta".



Figure 6: Entering patient data

To be able to clearly identify a patient in the database, the first name and last name or a patient ID must be entered. Information about the date of birth, examination location and contact information are optional.

Now allocate the entered data by tapping the relevant field in order of the information:

"Emily" is the first name

→ Tap the "First name" field

"Atlanta" is the location

→ Tap the field "Optional: Location"

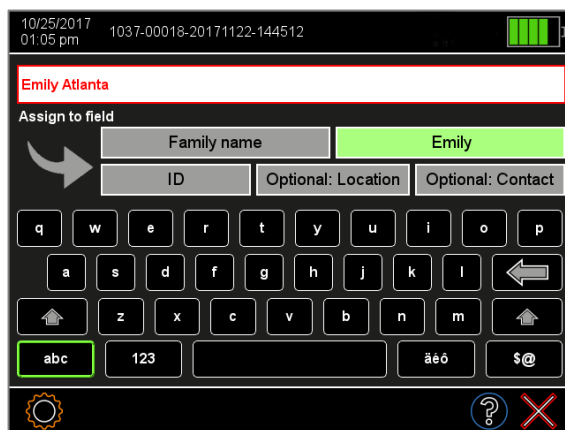


Figure 7: Allocating entered patient data

After allocating all the entered data, the display will change to an overview page. If any information needed to enable an identifiable patient data entry is missing, the relevant field will be marked in red. The data can only be saved when all the red fields have been filled.

After allocating all the entered data, the display will change to an overview page. If any information needed to enable an identifiable patient data entry is missing, the relevant field will be marked in red. The data can only be saved when all the red fields have been filled.



Figure 8: Missing patient data

As soon as all the necessary patient data, i.e. either first name, last name and date of birth or patient ID and date of birth, have been entered, a green checkmark (1) will appear in the navigation bar. You can now save the patient data by touching the green checkmark (1) or reallocate the data by touching the red “X” (2) (Figure 7). By touching the red “X” (2) again, you can discard all the entered data.

If data is already saved in the database, the software will automatically search for matching database entries during the entry process. If up to 4 data records with the same character string are found, these are displayed in a shortlist (see Figure 9). To select a patient from this shortlist, simply touch the relevant entry in the shortlist.

If no entries with identical character strings are found, the patient data entry screen will be displayed in order to entry new patient data (see Figure 7).

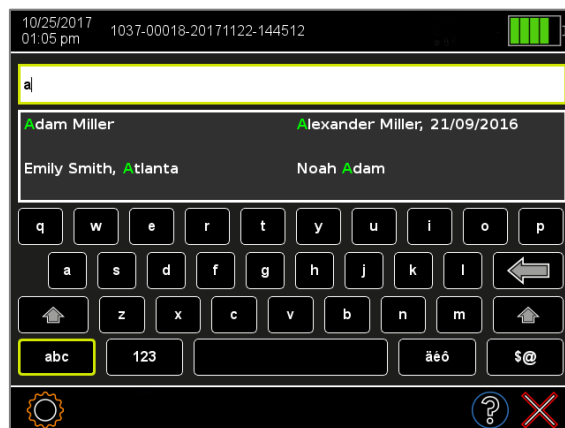


Figure 9: Shortlist with entries with identical character strings



After confirming the entered or selected patient data, you will be returned to the previous results page. The name of the patient (or patient ID) is shown in the header. A database entry (see Figure 10) has been created on the “database” results page, the measurement report is saved on the SD card and a print job has been sent via the infrared interface (see supplementary short manual 6). If the patient has been retrieved from the database, all this patient’s saved measurement values are shown.

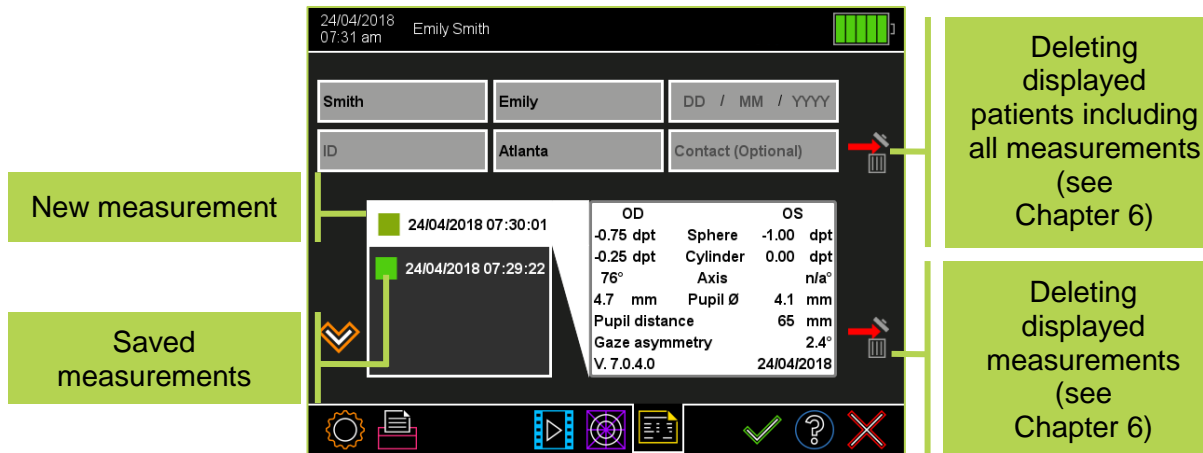







Figure 10: New entry on the “database” results page

From the patient data overview, you can:

  	<p>Measure the entered or selected patient in the pre-selected measurement mode by pressing the trigger.</p>
	<p>Carry out a measurement of the entered or selected patient in another measurement mode (e.g. monocular). To do this, touch the green checkmark in the navigation bar to carry over the previously entered or selected patient data for the next measurement.</p>
	<p>Return to the home page by touching the red “X” button”. Previously entered or selected patient data is discarded.</p>



## 4 Importing patients from the EMR software before the measurement (CSV)

As an alternative to manual entry of the patient data, the “plusoptiX A12C” and “plusoptiX A16” can also be integrated into your EMR software. The patient data is automatically transferred from your EMR software to the Plusoptix Binocular Autorefractor before the measurement and the measurement results are automatically transferred back to your EMR software after the measurement.

You can download instructions about incorporating the Plusoptix Binocular Autorefractor into your EMR software from our homepage ([www.plusoptix.com](http://www.plusoptix.com)). More information about documenting the measurement results via a full integration with your EMR system, see short manual 5 “Documenting measurement results electronically”.



**Note:**

Your EMR software must support this interface to enable data transfer to work with your EMR software. Find out from the supplier of your EMR software whether this is compatible with the Plusoptix device.

## 5 Importing patient data via the USB interface

All patient data and measurement values are archived in a database on the internal memory of the Plusoptix Vision Screener. Back-up copies of the database can be saved and additional patient data can be imported into the database through the USB interface in the form of a CSV table. For more information about exporting back-up copies to a USB stick, refer to supplementary short manual 7 “Exporting data”.

### a) Restoring a back-up copy

To restore the database, connect the USB storage with the exported db file in its directory “db” to the Plusoptix device. You will be asked whether the saved database should be restored. If there are several database in the main directory of the USB stick, the most up-to-date (by save date) will be restored.



**Note:**

When you restore a database, a back-up copy of the internal database will first be saved to the USB stick. Then, the internal database will be overwritten by the restoring database. The two databases will not be merged

b) Importing additional patient data in the form of a CSV table



**Note:**

Imported patient data is always added to existing entries in the database. No pre-existing data records are deleted.

The data fields of any CSV table being imported must:

- be separated with the separator selected in the settings – either “,” (comma) or “;” (semi-colon)
- contain 5 separators (a concluding separator at the end after “contact” can also be added)
- follow this order: LastName,FirstName,DateOfBirth,ID,Location,Contact
- contain either the last name, first name or ID in every line; entry of the date of birth, examination location and contact is optional
- use the same data format as the date format selected in the settings (e.g. 31.01.2013 or 01/31/2013). Years have four digits.

	A	B	C	D	E	F
1	Last name	First name	Date of birth	ID	Location	Contact
2	Chair	Amber	03/02/2012			
3			05/06/2011	0123456789		
4	Smith	Emily	06/24/2014	AB12CD24	Atlanta	Emily@smith.com
5				A-12-B-34-C		030-123456

Figure 11: Sample of a CSV table



**Note:**

The column headings in the first line are not imported.

Save your CSV table (.csv”) under the name “input” on a USB stick in the directory “/db” and then connect this to the Plusoptix Binocular Autorefractor. Following, touch the data import (2) button in the settings (1). A list of all CSV tables in the “/db” directory will be shown. Select the CSV table to be imported and confirm your choice by touching the green checkmark (3) in the navigation bar.

Before the patient data is now imported, the Plusoptix device will automatically check whether the data records are correct (e.g. no figures in the “Name” field). However, muddled data entries (e.g. first names instead of last names) cannot be automatically recognised. You are prompted to check whether the patient data shown on the screen is in the correct order. If yes, confirm the data import by touching the green checkmark (3) in the navigation bar.

## 6 Deleting entries from the database

Saved measurement values can be deleted from the database.

Touch the measurement that you want to delete and then touch the Delete button (1) at the right next to the label. Confirm the confirmation prompt with the green checkmark (2).

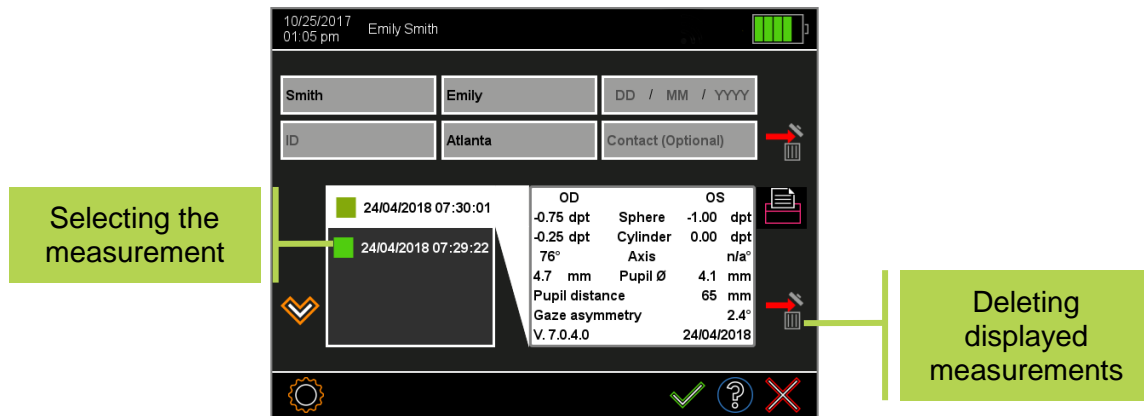


Figure 12: Deleting entries from the database

If you want to delete the patient along with all saved measurement values, touch the symbol (1) next to the entry fields and then confirm the confirmation prompt by touching the green checkmark (2).

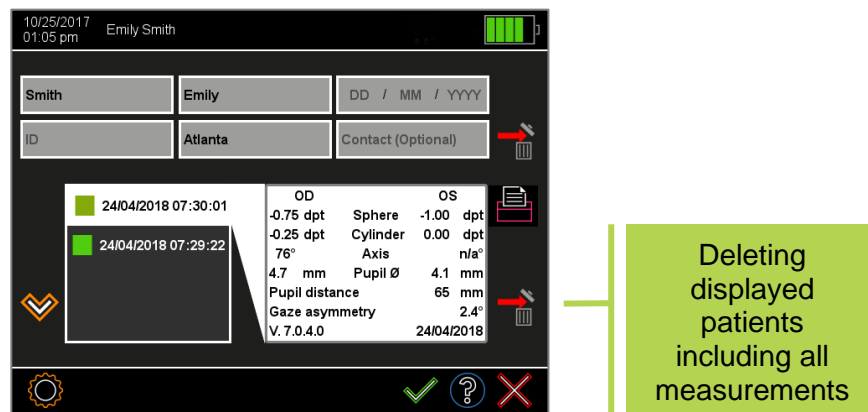


Figure 13: Deleting patients from the database

If you do not want to delete the measurement values or patient, reject the selection by touching the red "X" (3) in the navigation bar. By touching the red "X" (3) or trigger again, you will return to the home page.

### Deleting the whole database

If necessary, the entire database can be deleted at once. Connect a USB stick and go to the settings menu. Touch the button (4) to delete the database and follow the instructions.

A back-up copy of the database is stored on the USB stick and can be restored by importing this back-up copy again. For more information about importing patient data, refer to chapter 5 "Importing patient data via the USB interface".

