RAYPLICKER™

ONE VISION • MILLIONS SHADES

USER MANUAL

En

BOREA

PART 1 - GENERAL INFORMATIONS

1. Introduction 6

1.1. Dear customers 6

1.2. Terms choices 7

1.3. Safety instructions 7

1.4. Symbols description 8

2. Rayplicker™ solution description 9

2.1. Information about Rayplicker™ device 9

2.2. Information about Rayplicker™ software 9

3. Delivered set 10

3.1. Delivered set 10

3.2. Spare parts and accessories 11

PART 2 - RAYPLICKER™ DEVICE

4. First start 12

4.1. Installation of the protective sheath 12

4.2. Installation of the calibration tip 12

4.3. Charging the device 12

4.4. Turning on/off Rayplicker™ device 13

4.5. Battery status 14

4.6. Automatic switch-off 14

4.7. Device Restarting 15

4.8. Observation concerning the device illustrations 15

5. Rayplicker™ device configuration 16

5.1. Basic configuration 16

5.2. Referent shade guide configuration of the Rayplicker™ device 19

5.3. Device information 19

5.4. Automatic calibration 19

6. Realization of an acquisition 20

6.1. Introducing the right way to use the Rayplicker™ device 20

6.3. Shade taking interface presentation 21

6.2. Introducing the different mappings available 21

6.4. Additional information 23

7. Acquisitions processing 24
7.1. Acquisition record. 24
7.2. Acquisitions transfer 25
7.3. Delete recorded acquisitions. 25
8. Cleaning and sterilization 26
PART 3 - RAYPLICKER™ SOFTWARE
9. Install the Rayplicker™ software on a computer 27
9.1. System compatibility 27
9.2. Drivers installation 28
9.3. Install the Rayplicker™ software 28
9.4. Rayplicker™ software account setup 28
9.5. Restore company's data from the Cloud 29
10. The Rayplicker™ software for dentist 30
10.1. Introduction to the main screen 30
10.2. Software Illustration. 31
10.3. Import shade taking. 32
10.4. Open a file 33
10.5. Shade taking tab 34
10.6. Select a laboratory by Cloud. (Rayplicker community) 37
10.7. Production tab. 38
10.8. Validate the order form. 39
10.9. Order form example 40
10.10. Color coding of the sheets 41
11. The Rayplicker™ software for laboratory 42
11.1. Description of the Rayplicker™ Laboratory software. 42
11.2. Receive and process an order 43
11.3. Interpret an order 44
11.4. Analysis tab 46
11.5. Color coding of the sheets 47
11.6. Archived files 47

12. Analysis tools 48
12.1. Comparison tool. 48
12.2. Comparison tool. 50
13. Rayplicker™ Software settings manager 54
13.1. User tab 54
13.2. Company tab 55
13.3. Administration. 55
13.4. Device 55
13.5. Save files on the computer. 56
13.6. Preferences 56
14. Mobile application «Rayplicker™ Pics App Solution» 57
14.1. Download and compatibility.. 57
14.2. Take patient pictures 57
14.3. Import patient pictures. 58
PART 4 - TECHNICAL DATA
15. Technical specifications 59
15.1. Identification. 59
15.2. AC Adapter 59
15.3. Handpiece 59
15.4. Battery 59
15.5. Environmental characteristics 60
15.6. Regulation and standardization 60
15.7. EMC. 60
PART 5 - ANNEX
16. Annex 61
16.1. Error messages 61
16.2. Port configuration. 62
16.3. Glossary 63
16.4. Patents 63
16.5. Warranty 63
NOTES : 64

RAYPLICKER™ USER MANUAL

Document version 1.5 DM
Compatible with the Rayplicker™ software version 1.2
- 2020 -

© Copyright 2020, BOREA SAS.

This document is the property of BOREA SAS and can not be used, reproduced or communicated to third parties without its written authorization.

This new instructions version makes obsolete all the previous versions. The most recent version is always available on: www.borea.dental

PART 1 - GENERAL INFORMATIONS

1. Introduction

1.1. Dear customers

Congratulations on your purchase. The Rayplicker™ is a dental shade and translucency taking device according to the reference standards known in the dental art with a precision of the order of a ΔE=1. This self-calibrated device is intended for dentists and prosthetists.

This French-made wireless electro-optical device is equipped with an on-board environment that makes it possible to determine exactly the shade of natural teeth and prostheses according to most shade guides used to determine teeth color.

Accurate and ergonomic, the Rayplicker ™ solution is also equipped with a software allowing the data processing and recording as well as the creation of a purchase order with ease. The smartphone application « Rayplicker™ Pics App Solution » will give you the possibility to add patient pictures to your file easily, an essential element for the realization of a prosthesis by the dental technician.

In order to realize perfect shade taking, please read carefully this user manual.

Forget about approximative measurements and be more efficient with the Rayplicker™.

Borea Team.

1.2. Terms choices

Terms used in the user manual :

Dentist, dental surgeon = Practitioner

Dental technician, dental prosthesis manufacturing laboratory, Prosthetist = Laboratory

Dentist and Dental technician = Users

1.3. Safety instructions

Warnings

1) Please ensure that you only use rechargeable battery supplied with the device. (Li-polymer battery 3.7V 2200 mAh). The use of another battery is prohibited and may damage the battery or the unit. BOREA SAS will not be held responsible in this case.

2) Do not look into the light source direction.

3) Do not immerse the Rayplicker™ device or charger in water or other liquid.

4) All repairs or maintenance must be performed by authorized persons. More specifically, the access and the replacement of the power source must be realized by BOREA. Failure to comply with this rule will cancel the warranty.

5) Please follow the instructions contained page 26 to clean and sterilize the Rayplicker™ and its calibration tip.

6) Please follow the instructions listed at the page 12 to place the sterilizable calibration tip and the protective sheath.

7) When using the Rayplicker™ device, respect safety instructions for dental practices and dental laboratories.

8) Do not expose to temperatures below 0° C (32°F) or above 40 °C (104°F).

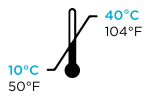
9) Protective sheaths designed against infection are single use.

10) Protect the device from direct sunlight. The device must be stored in a dry place.

11) Do not drop the device (there is a risk of equipment damage and electrical shock).

12) The temperature range for shade taking should be between 10 °C (50°F) and 40 °C (104°F).

1.4. Symbols description

CEM	Certification marking indicating that the product complies with the requirements of the «German Product Safety Act (ProdSG)».	
	Certification C-UL-US means that representative product samples have been evaluated and indicates compliance with the United States requirements. (Regarding mechanics, fire and electrical shock risks)	
CE	The Rayplicker™ is a class 1 medical device. Date of first CE marking: 2017. CE marking in accordance with the applicable standards: • Directive 93/42 EEC concerning Medical Devices. • IEC 60601-1: General requirements for basic safety and essential performance of medical electrical equipment. • IEC 60601-1-2 for the electromagnetic compatibility. • RoHS Directive 2011/65/CE According to standard EN-50581:2013 • RED Directive 2014/53/UE with justification EMF • DEEE Directive 2012/19/CE	
Elimination	This product and all accessories marked with this symbol must not be disposed of with unsorted household waste. Return of the old device to Borea SAS.	
Protection class	Equipment of protection class II.	
	Read instructions before use.	
	Serial number	
	Catalog Number	
	Batch number	
	Non-sterile	
	Do not reuse	
	Place of manufacture	
	Temperature limits for using the device	
	Recyclable	

2. Rayplicker™ solution description

The Rayplicker™ is a device for the determination of the shade and translucency of the tooth. It a device working with a multi-spectral measurements built around spectrophotometer based on a two-dimensional optical sensor. This enables acquisition of spectral data at all points on the tooth and the automatic realization of a complete and accurate mapping of color variations of the tooth. The analysis is performed on specific relevant spectral bands for recognition of hues. Due to its geometry, this wireless device allows access to all the teeth in the mouth.

It has a sterilizable calibration tip which comes in contact with the patient's teeth ensuring precise positioning of the device (focus is facilitated and it also reduces the impact of stray light).

These calibration tips play an important role because they incorporate a chromatic reference (pattern of gray) necessary to the proper functioning of the device through a self-calibration step not perceived by the user.

A LCD screen is integrated in the device and displays real-time analyzed area, facilitating the positioning of the measuring head on the tooth. Finally, an interface and algorithms for data processing are embedded within the device and thus allow the user to interact and directly view map of hues and translucence of the analyzed tooth. It will also allow the user to specify the analyzed tooth, the patient name and choose the resolution of the mapping (segmentation of the tooth by three, nine, detailed mapping).

2.1. Information about Rayplicker™ device

The Rayplicker™ works with most shade guides used to determine the dental color (VITA Classical A1-D4®, VITA 3D-MASTER®, Ivoclar Chromascop, ...)
A single acquisition automatically provides all the necessary information to the realization of a dental prosthesis :

- A polarized picture
- A complete and accurate mapping of the shade variations in all the tooth area.
- A translucency mapping.

When charging, the base of the device lights up in blue.
It will turn off automatically when it is fully charged.

2.2. Information about Rayplicker™ software

Rayplicker™ software is intended to follow up customer files, to realize an order form and follow up the order process. It allows, depending on the selected option and thanks to the Service Pack Rayplicker™ (Cloud), to exchange digital data between dentists and dental technicians.

3. Delivered set

3.1. Delivered set

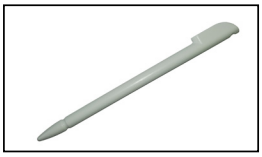
Articles		Quantity	RAYPLICKER™ Items
Hand-piece Rayplicker™	1	1	-
Docking station	2	1	Ref : SF0010
Stylus for touch screen	3	1	Ref : PA0011
Calibration tips (autoclavable)	4	6	-
Protective sheaths		50	Ref : SF0005
USB 2 cable (A type to B mini)	5	1	Ref : CA0005
AC-DC Power supply, universal input (Wall plug adapters 5V 1A)	6	1	Ref : CA0004
Quick start		1	-
Cleaning wipe		1	-
Activation key for Rayplicker™ software		1	-
Rayplicker™ box		1	-

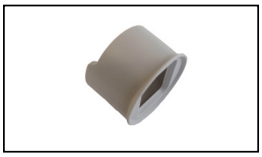
1

5

2

6

3 

4 

3.2. Spare parts and accessories

The following spare parts and accessories are available from Borea SAS or your distributor.

ACCESSORIES		
	50 Protective sheaths	Ref : SF0005
	6 Calibration tips (Autoclavable)	Ref : RA0009

SPARE PARTS		
	Main plug 5V 1A	Ref : CA0004
	USB cable	Ref : CA0005
	Battery	Ref : EA0007
	Stylus	Ref : PA0011
	Docking station	Ref : SF0010

4. First start

4.1. Installation of the protective sheath

Before each utilization on a patient, place a protective sheath over the measuring head of the Rayplicker™.

Be careful, the installation of the protective sheath must always be carried out before the installation of the calibration tip.

These sheaths must be disposed of according to regulations.

Before each use on a new patient :

- The measuring head of the device must be decontaminated / disinfected,
- The calibration tip must be decontaminated / disinfected and sterilized. (See : “8. Cleaning and sterilization”, page 26)

4.2. Installation of the calibration tip

The calibration tip is positioned (clipping) at the end of the measuring head. Thanks to its specific design, it allows to take support on the patient’s teeth, thus ensuring a precise positioning of the device.

It incorporates a chromatic reference (gray scale) necessary to the proper functioning of the device through a self-calibration step, not perceived by the user.

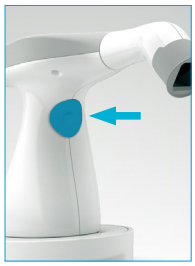
4.3. Charging the device

Before first use, the device must be charged. The charge can last up to four hours. For this, the device must be placed on its base and connected through the cable to a power outlet or USB.

When the device is charging, the base lights up in blue. Once charged, the base turns off.

4.4. Turning on/off Rayplicker™ device

1



Turn on the device by pressing the measurement button in the center of the device handle.

2

The main screen lights on (2) then the main menu appears (3).

3

The top banner gives you indications on battery charge and the selected user.

The « » icon allows you to turn off the device.

The « » icon is used to make an acquisition (see page 21).

The « » icon allows you to choose the user (see page 16).

The « » icon is used to access the basic settings of the device (see page 16).

The « » icon allows the view of the files on the devices. (see page 24). This feature is available from « v_2019_06 » versions.

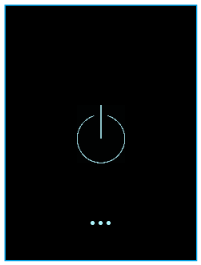
4.5. Battery status

On the main screen of your device, the battery symbol will indicate its charging status.

4.6. Automatic switch-off

To ensure the maximum battery charge, there is an automatic system shutdown.

Stage 1:
Whether there is a current record or not, after five minutes of inactivity, an automatic return to the home screen is done.

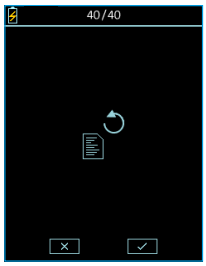


Stage 2:
After three minutes of inactivity, the system stops automatically.

4.7. Device Restarting

From version v_2019_06, files are automatically saved on the device memory just after the acquisition. After an automatic shutdown, files can be viewed with the file viewer.

With the version v_2018_07, if the device stops automatically before the fiel was saved, recovery of this file will be possible when the device is restarted.



This display indicates that there was an unsaved acquisition before the automatic shutdown.

Click on the icon « ✓ » for a recovery, or on « ✗ » to delete this old acquisition.

4.8. Observation concerning the device illustrations

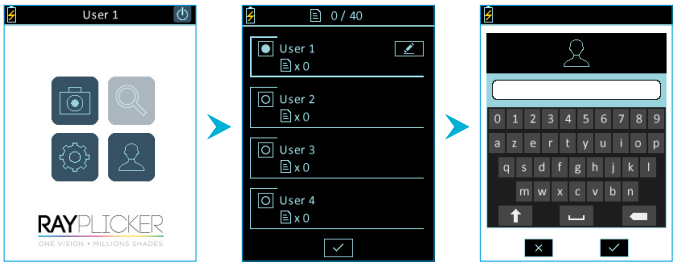
version v_2018_017					
Scroll right	Scroll left	Cancel / Delete	Confirm	Picture	Save
Home	Settings	Charging	Charged	Edit	Turn off
User	Overall shade	3 parts	9 parts	Detailed mapping	Translucency
Unselected	Selected				

From version v_2019_06					
Scroll right	Scroll left	Cancel / Delete	Confirm	Picture	Files explorer
Home	Settings	Charging	Charged	Edit	Turn off
User	Overall shade	3 parts	9 parts	Detailed mapping	Translucency
Unselected	Selected	Dental numbering system	Universal numbering	FDI numbering	Screen luminosity

5. Rayplicker™ device configuration

5.1. Basic configuration

Users personalization and choice



To display the users list, click on the « » icon from the main menu.

Then select the user of your choice and validate.

Modify the user name by clicking on the icon « ».

From version «v_2019_06», the number of saved files per users is also indicated.

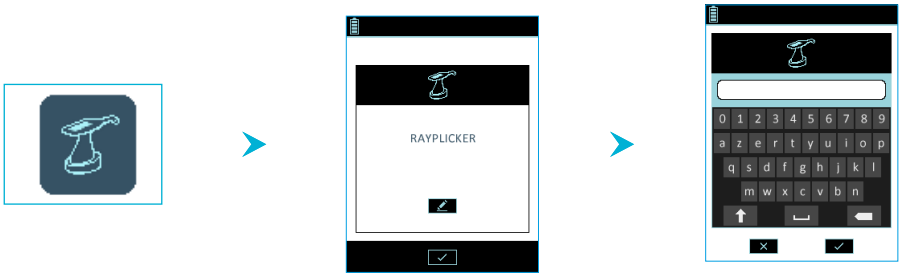
Setting menu

By clicking on the icon « » you will access to the basic settings of the device.

1. Change Rayplicker™'s name.
2. Information concerning the device.
3. Change the Dental Numbering System. (from version v_2019_06)
4. Adjust the screen luminosity. (from version v_2019_06)

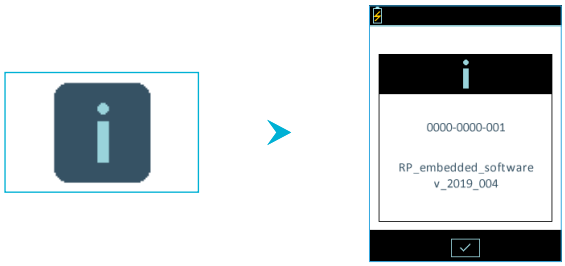
Click on the icon « » to go back on the main screen.

1 Change device name



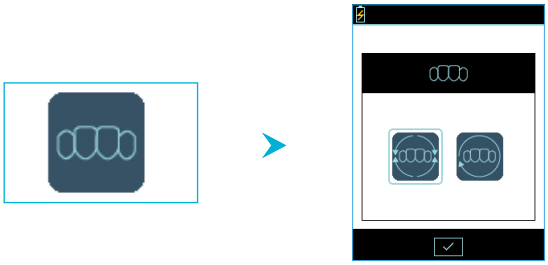
Enter or change the name of the device, for this, click on the icon « », use the keypad and validate.

2 Information concerning the device



Find here information about your device serial number and the software version.

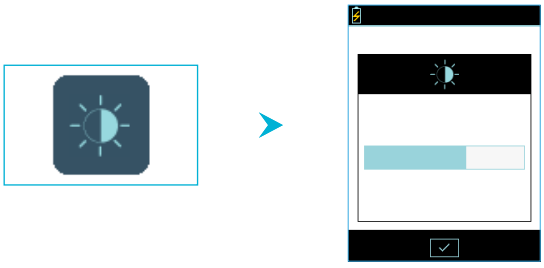
3 Change the Dental Numbering System (from version v_2019_06)



On this menu, it is possible to modify the dental numbering system :

- FDI Numbering system « ».
- Universal Numbering system « ».

4 Personalize the screen luminosity (from version v_2019_06)



To change the brightness of the screen, click on the « » icon.

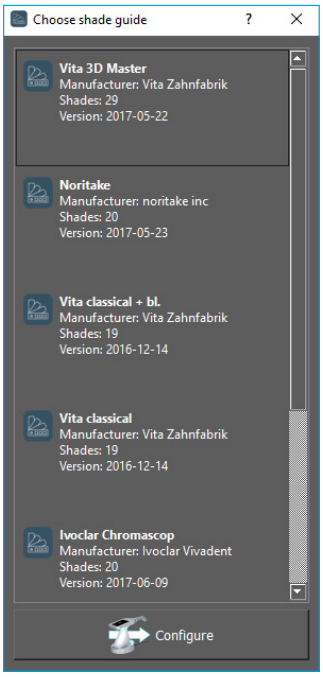
Then select the desired intensity by dragging the stylus on the gauge and then confirm.

5.2. Referent shade guide configuration of the Rayplicker™ device.

To change the referent shade guide of your device, it has to be connected to your computer and turned on the main screen.
See image 3 on point “4.4. Turning on/off Rayplicker™ device”, page 13.

From your Rayplicker™ software, go to:
Settings > Device > Change device shade guide

Click on «Change device shade guide», a window will open.



Select the shade guide you wish and click on « configure ».
Your Rayplicker™ device will automatically turn off.
Next restarting, this one will be configured with the new shade guide.

5.3. Device information

Device serial number	See on the label of the device / Settings (page 18)
Version	See on the label of the device / Settings (page 18)

5.4. Automatic calibration

The Rayplicker™ device performs an auto-calibration before each acquisition.

This is done through the sterilizable calibration tip that has a gray pattern. It is necessary to ensure the good condition and cleanliness of this calibration tip. It will also be needed to protect it from the sun or any other form of external aggression.

The tip condition ensures the quality of the calibration and guarantees the quality of the data collected by the Rayplicker™.

6. Realization of an acquisition

6.1. Introducing the right way to use the Rayplicker™ device

Good practices

- ✓ Grey edges parallel to the image edges
- ✓ Open mouth and breath through the noze
- ✓ Saliva limitation
- ✓ Centered tooth, without angle and without inclination
- ✓ Tip under the lip
- ✓ Tip in contact with adjacent teeth
- ✓ Tip in contact with the gum

Bad practices

Tip in the wrong position

Mouth closed

Mist

Pressure too high on the gum

Not centered tooth

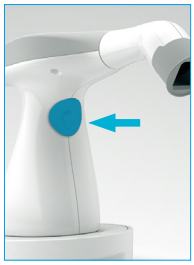
Wrong angle

Wrong inclinaiton

Lip is visible

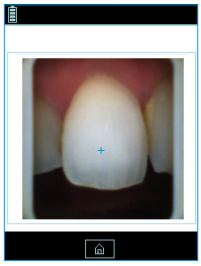
Wrong support

6.3. Shade taking interface presentation



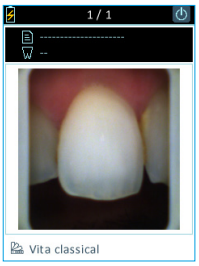
To take a shade, launch the video mode from the Rayplicker™ home screen by clicking on the « » icon.

From version V_2019_06, you can also launch the video mode by pressing the button in the center of the handle.



Video display:

The video display of the target area will allow the user to position the head of the device correctly on the tooth to be analyzed.
The cross is also here to help you in having the tooth right in the middle of the screen.

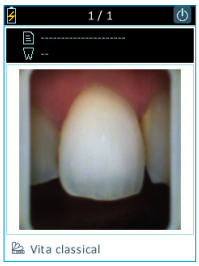


Acquisition:

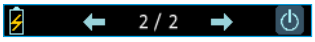
Once the device is correctly positioned on the reference tooth, press the button in the center of the handle.

The acquisition lasts about one second, the device should not move during this period of time. The device can then be removed from the patient's mouth.

Once the acquisition treatment is complete, a photo of the tooth appears on the screen of your device. When the tooth is displayed on the screen after the acquisition, it is possible to view the different mappings available by clicking on the touch screen of the Rayplicker™ device.

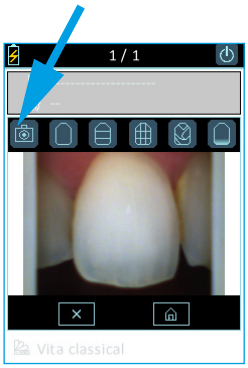


Version v_2018_017: The number displayed on the upper banner indicates the number of free files out of the 40 potentially saved files on the device memory.

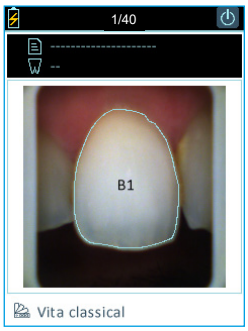


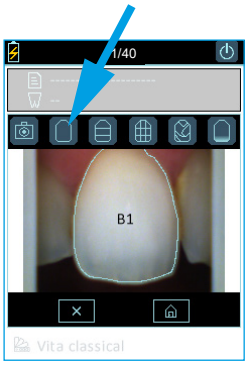
From version v_2019_06 : The number displayed on the upper banner indicates the number of files saved in the device memory for each user. Use the arrows to navigate and see the saved files.

6.2. Introducing the different mappings available



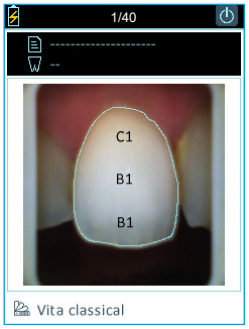
Color polarized picture :
This icon allows you to view a color-polarized picture of the scanned tooth.

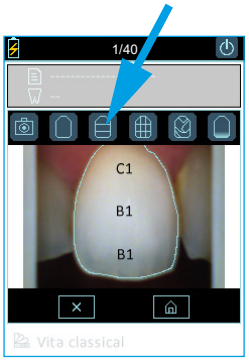




General mapping :
This icon allows you to view the global tooth color.

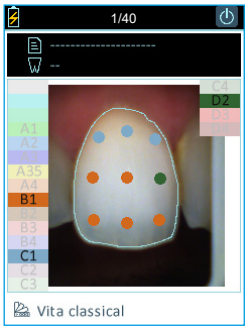
The device automatically detects the contour of the reference tooth.

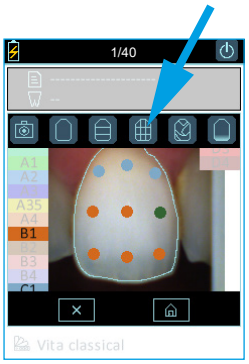




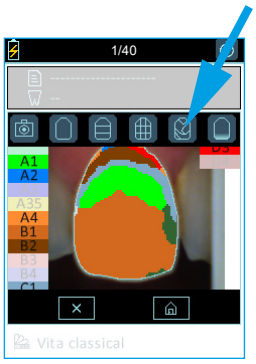
Three parts mapping :
This icon allows you to view a three-thirds color analysis of the tooth:

- Cervical
- Middle
- Incisal

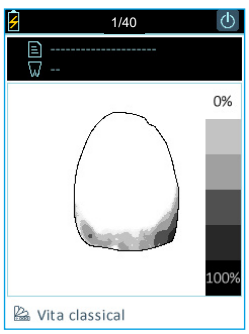




Nine parts mapping :
This icon allows you to view a map into nine areas of the tooth.



Detailed mapping :
This icon allows you to view the complete mapping of the tooth. The referent shade guide is specified under the picture and the references of this shade guide appear on the screen edges.



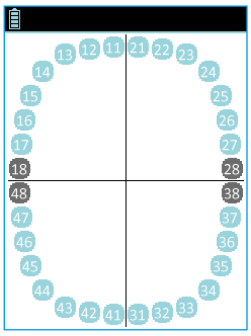
Translucency :
This icon allows you to view indicatively the translucency of the tooth according to the gray scale on the right edge of the screen. In this scale, the darker the area is, the higher the translucency of the area will be.

6.4. Additional information

After taking a shade, you can complete this acquisition with additional information :

*The patient's name

*The referent tooth



Patient's name :

Use the stylus to click on the file icon « », or the field and access to the numeric keypad. Enter a name and validate.

Number of the referent tooth :

Click on tooth icon « ». A representative diagram of the tooth numbers appears, point the number of the referent tooth.

Referent shade guide :

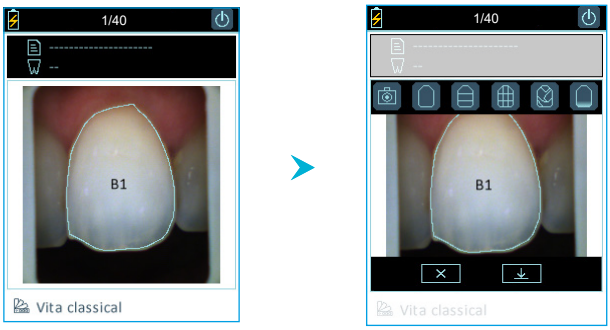
Indication of the referent shade guide configurated on your device. It can be changed from the Rayplicker™ software.
(See "5.2. Referent shade guide configuration of the Rayplicker™ device.", page 19)

Observations:
The information related to the patient (referent tooth number and patient name) can be filled in and/or modified directly from the Rayplicker™ software. With the v_2018_017 version, do not forget to save the file once you have indicated those details.

7. Acquisitions processing

7.1. Acquisition record

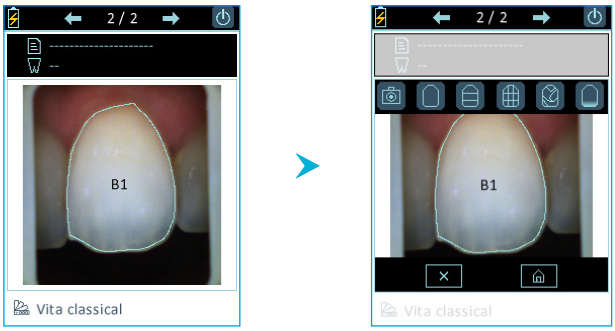
Version v_2018_017



After having taken a shade, you can :

- Either cancel it by clicking on « ✕ » and come back directly to the video mode.
- Either save the file by clicking on « ⬇ » and come back directly to the device main screen.

From version v_2019_06



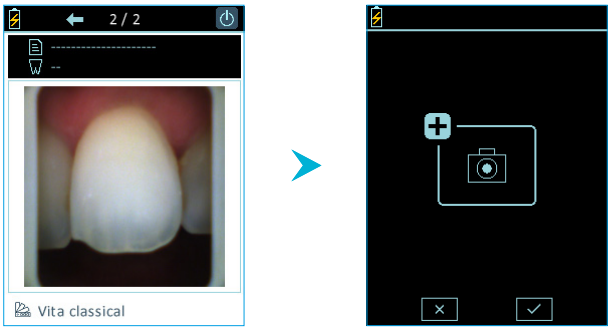
After each shade acquisition, the file is saved automatically.

To navigate between the files, click on the arrow « ⬅ » to see the previous acquisition or on the arrow « ➡ » to see the following one. Files are classified in order of anteriority.

To see the files availables in the device, click on the icon « 🔍 » from the device main screen.

It is also possible to delete this acquisition or return to the main menu.

To make a new acquisition directly after taking a shade, click on the button in the center of the handle.



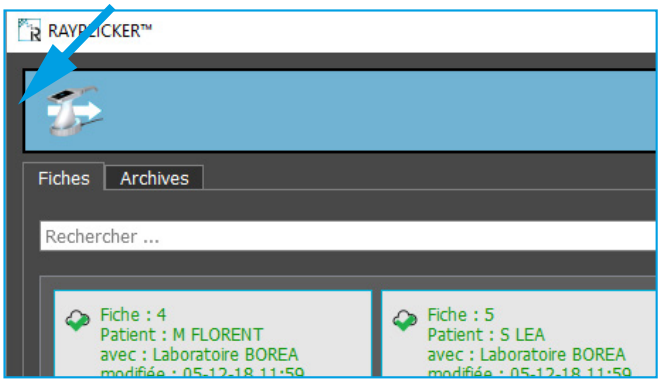
After clicking once on the button in the center of the handle, a validation window appears.

To confirm the request for a new acquisition, click on the button in the center of the handle again or click on the « ✓ » icon. To cancel, click on « ✕ ».

Up to 40 records can be saved to the device's memory.

During registration, the device also records the date, time, file number, as well as the patient's name and the reference tooth number if this information has been specified. You will find this information when the file is imported into Rayplicker™ software, it makes it easier to identify the patient concerned.

7.2. Acquisitions transfer



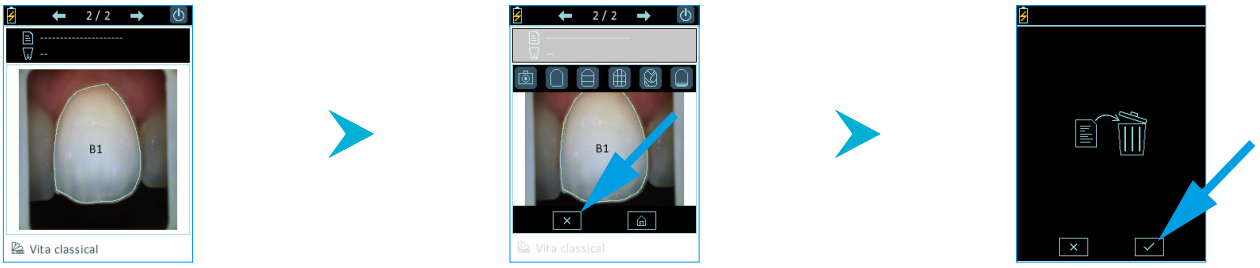
Put the device on its docking station. Connect the docking station to the computer with the USB cable.

In order to import the files, you must:

- Turn on the Rayplicker device and stay on the main menu.
- Open the Rayplicker software and from the main page click on the icon « » then « ». See page "10.3. Import shade taking", page 32.

7.3. Delete recorded acquisitions

Solution 1: Compatible from version v_2019_06



The first way to delete one (or more) acquisition(s) saved on the Rayplicker™ device is to make it directly from the file explorer:

- Display the file you wish to delete on the screen using the « » icon.
- Click on the touch screen to bring up the menu.
- Click on the « » icon.
- Confirm the deletion of the acquisition by clicking on « ».

Solution 2 : Compatible with all versions

Delete the saved acquisitions via software, see “13.4. Device”, page 55.

8. Cleaning and sterilization

The Rayplicker™ device :

To clean the Rayplicker™ it is recommended to use cleaning and disinfection wipes for medical devices. Type FD 350 de chez Durr Dental.

Calibration tips:

The calibration tips (clipped onto the measuring head) are delivered by batches of 6. These must be decontaminated / disinfected and sterilized before use.

- For decontamination / disinfection, it is recommended to use wipes type FD 350 from Durr Dental (contains alcohol) on the interior and exterior parts of the calibration tip or any equivalent product. Attention, take care to respect the manufacturer’s specifications:

  for wipe type products: type of rinse, type of drying, drying time, ...
  for soaking bath type products: dilution, soaking time, rinsing type, drying type, drying time, renewal, ...

- For sterilization: autoclave at 134 ° C for 20 min (Prion Cycle). Life checked for 100 cycles.

WARNING

- If the manufacturer specifications for the use of the decontamination product before autoclaving are not respected, degradation of the calibration tip may be noted. It is then necessary to change it.
- The sterilizable tip has a life-time validated for 100 autoclave sterilization cycles. Beyond this recommended sterilization quota, the calibration tip may be damaged and discoloration of the gray pattern may occur. It is then necessary to change the tip.

Protective sheaths :

Protective sheaths are for single use only and must be disposed of in accordance with the regulations in force.

Download the Rayplicker™ software for free from the BOREA website :
https://borea.dental/Download

9. Install the Rayplicker™ software on a computer

In order to use the maximum capacity of the Rayplicker™ solution, install the software allowing the analysis of your tooth shade, the follow-up of the patient's file and the realization of purchase orders.

9.1. System compatibility

Windows®

Windows® minimum configuration

Operating system : Windows Xp or superior
Processor : Intel Core I3 or AMD equivalent
RAM : 2 GB
Hard disc : 5 GB free
Ports : USB 2.0 x 1
Screen resolution : 720 p
Internet : High speed connection

Windows® recommended configuration

Operating system : Windows Xp or superior
Processor : Intel Core I5 or AMD equivalent
RAM : 4 GB
Hard disc : 5 GB free
Ports : USB 2.0 x 1
Screen resolution : 1080 p
Internet : High speed connection

Mac®

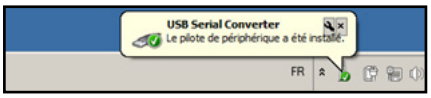
Mac minimum configuration

Operating system : macOS 10.13 High Sierra or ulterior
RAM : 2 GB
Hard disc: 5GB free
Ports : USB 2.0 x 1
Screen resolution : 720 p
Internet : High speed connection

Mac recommended configuration

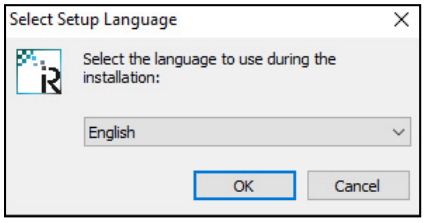
Operating system : macOS 10.13 High Sierra or ulterior
RAM : 4 GB
Hard disc : 5 GB free
Ports : USB 2.0 x 1
Screen resolution : 1080 p
Internet: High speed connection

9.2. Drivers installation



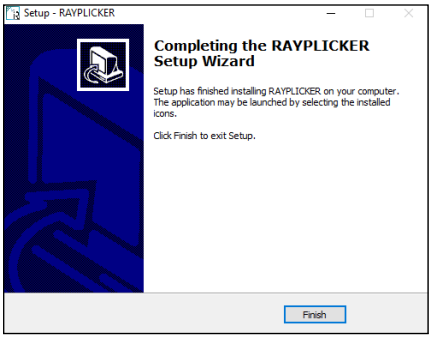
Drivers will be installed automatically at the end of the Rayplicker™ software installation.

9.3. Install the Rayplicker™ software



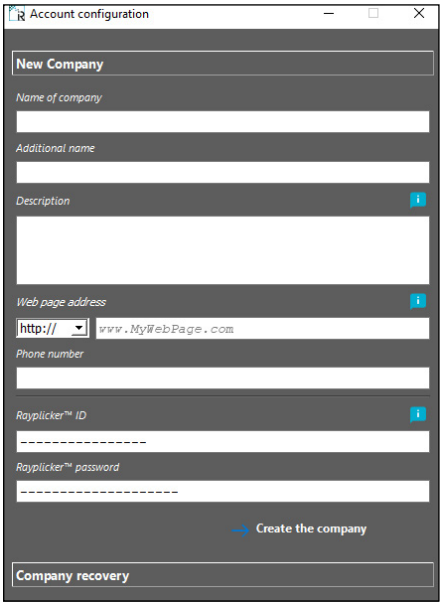
Download for free the file « setup_rayplicker.exe » from the download tab on the website :
https://borea.dental/Download

Double click on the « setup_rayplicker.exe » file to start installing the software and select the installation language.



Follow directions of the different screens.
Click on « finish » to complete the setup.

9.4. Rayplicker™ software account setup

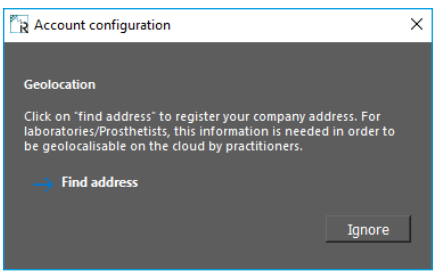


Open the application from your desktop.
First, you must create a company.
To do so, fill the requested information.

Indicate your Rayplicker™ personal login details in order to activate your Rayplicker™ software (you can find them on the first page of the Quickstart). It must be emphasized that a licence can be installed in a single computer.

Click on « create a company » to confirm.

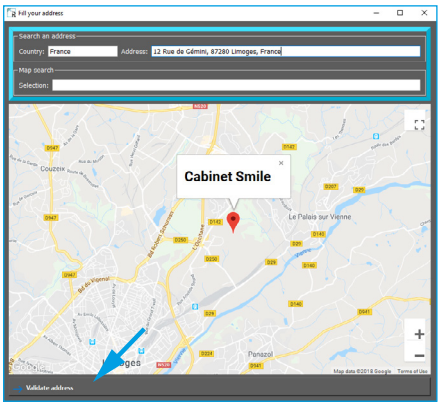
For data recovery, follow the instructions on the page 29.



Geolocation configuration :

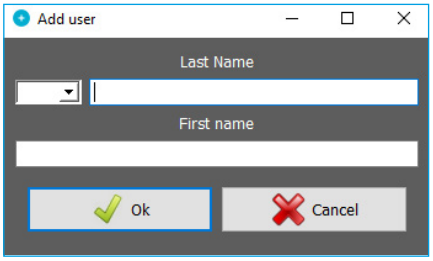
Click on « Adding an address » or « Ignore ». Add a address is a mandatory step in order to activate the Rayplicker ™ service pack and in particular to be able to send or receive digital order forms between dentists and prosthetists.

To complete your address, use the automatic fields or the free search. For each completed field, select the proposal that appears on the drop-down menu by clicking on it.



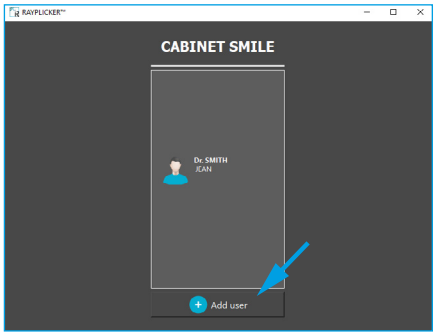
After completed your address, your company is geolocated on the map.

If the data are correct, click on « Validate address » otherwise you have to return to the previous stage.



Identification of the first user :

Fill the requested information then press confirm to create a new user.

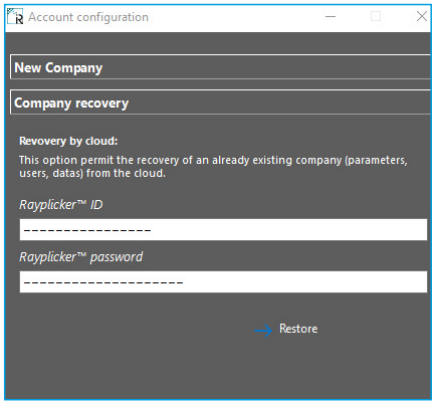


Home screen identification :

Once all the information has been completed, a welcome window will appear.
Click on your user to open the work session.

Click on «Add User» to create a new user.

9.5. Restore company's data from the Cloud

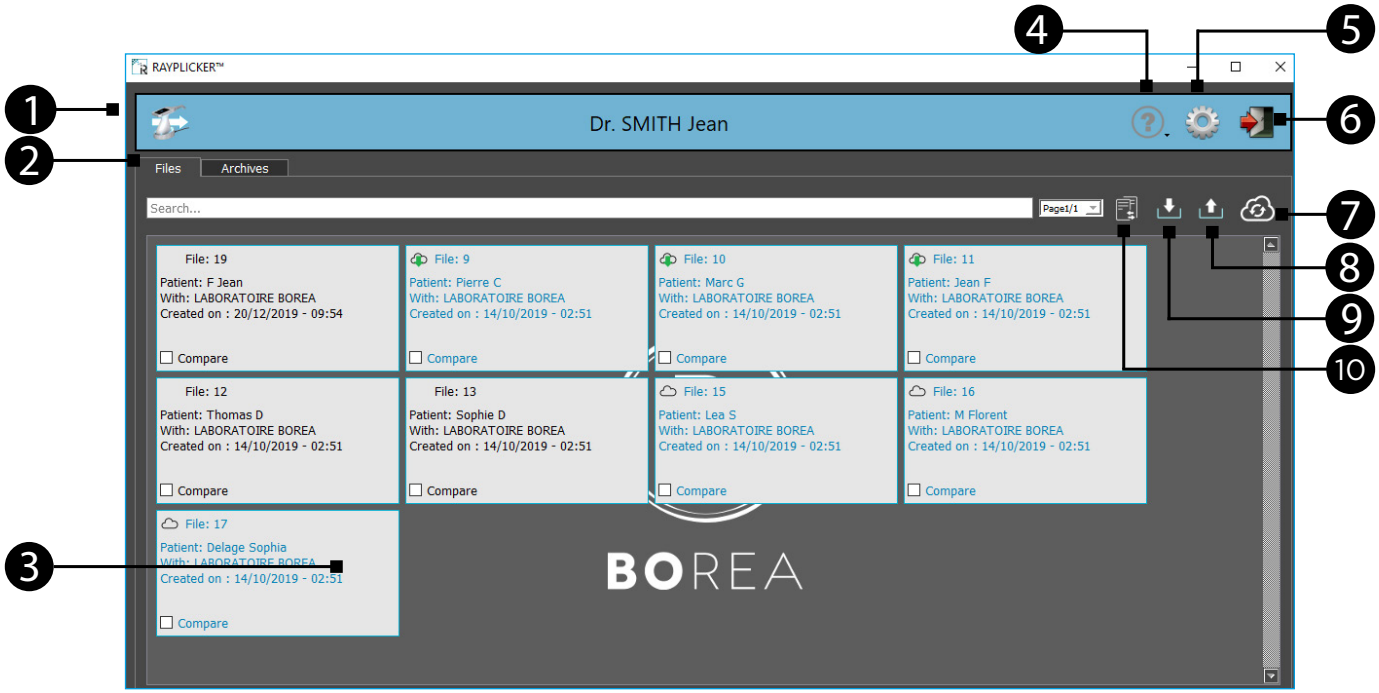


When setting up your account, you can perform a cloud restore. This option is available as part of a re-installation of the software on a new computer for example. To do this, please fill in your Rayplicker™ ID and password in the corresponding fields and click on «Restore».

10. The Rayplicker™ software for dentist

With Rayplicker™ dentist software, shade taking with the Rayplicker™ device can be transferred to your computer. From the software it is possible to make shade data analysis and create production files. These production files can then be transmitted digitally to laboratories using the Rayplicker™ solution thanks to the Rayplicker ™ Service Pack, printed, or sent by email. It is thus possible to follow the progress of the order in time and access a community of users.

10.1. Introduction to the main screen

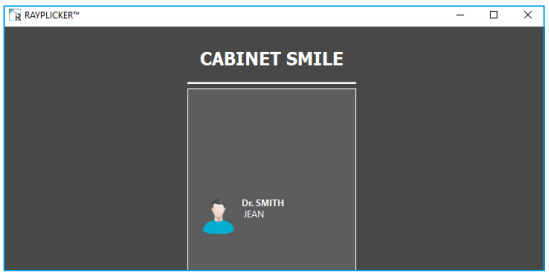


1. Import acquisitions from the Rayplicker™ device
2. Main tabs : Files / Archives
3. Storage area for imported and received files
4. Help / Informations
5. Settings
6. User menu
7. Refresh the page (update files in progress or received)
8. Export a file from the Rayplicker™ software
9. Import a file to the Rayplicker™ software
10. Comparative tool

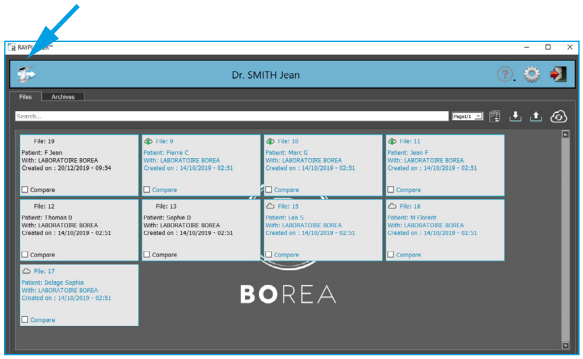
10.2. Software Illustration

Previous	Next	User	Add	Help	Files pending/ refresh cloud	Settings
Disconnect	Import from the Rayplicker™	Import pictures	Delete pictures	Rayplicker usb connected	Polarised image	Overall shade
3 parts	9 parts	Detailed mapping	Shade guides	Tooth border editing	Translucency	B&W picture
Ruler	ΔE analysis	Information	Print	Export	Import	Send
Low	Standard	High	Add translucency	Reduce translucency	Delete translucency	No Colar
360° Collar	Lingual	Occlusal Metal	Pontic design case 1	Pontic design case 2	Pontic design case 3	Pontic design case 4
On the Cloud	Received by the laboratory	Accepted by the laboratory	Files timer	Rayplicker community	Manual add	Validate
Cancel	Mail contact	Cloud contact	Error	Delete data	Company	Administration
Memory Management	Save Files	Save contacts	Connected	Disconnected		

10.3. Import shade taking



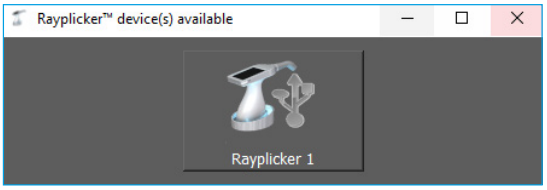
Open the Rayplicker™ software and select a user. To create a new user or recover files, please refer to the explanations described on page 29.



On this main page, selecting several sheets imported form the Rayplicker™ device is possible. They are classified by date.

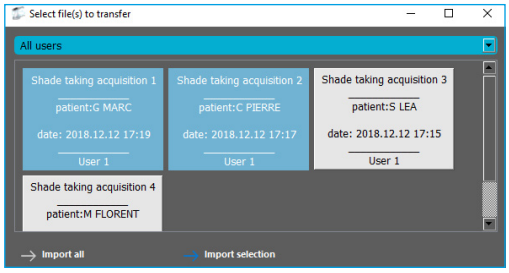
The icons and colors of the sheets give information on their state of progress. All the different states of progress are described on page 41.

Click on this icon « » to import files from your Rayplicker™ device.

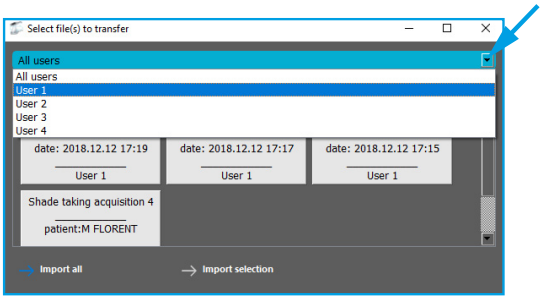


The software will show you the Rayplicker™ device available. To be able to connect your device to the software, make sure your device is light on the main screen and connected by USB to the computer. Click on the corresponding icon to import files.

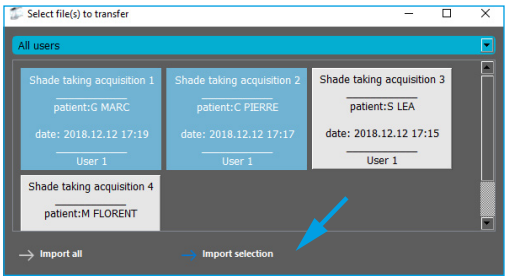
Observation :
The process to connect your Rayplicker™ device to a computer is detailed on page 25.



On this page, it is possible to select « the User », «Import all the files» or, select the files of your choice and « Import the selection ».

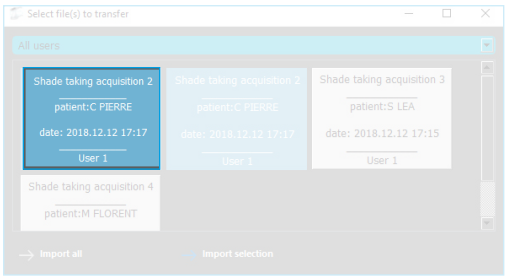


Click on the arrow to chose the user and sort the files.



Then, click on the files you want to import. They appear in blue.

Click on « Import the selection ».



On each file, you will have the following information:

- Patient name (if it was defined on the Rayplicker™ device after the acquisition).
- Date and time of the acquisition.
- User of the Rayplicker™ device.

Note: Once imported, the data is no longer available on your Rayplicker ™ device. The number of free files on your device is then automatically updated.

10.4. Open a file

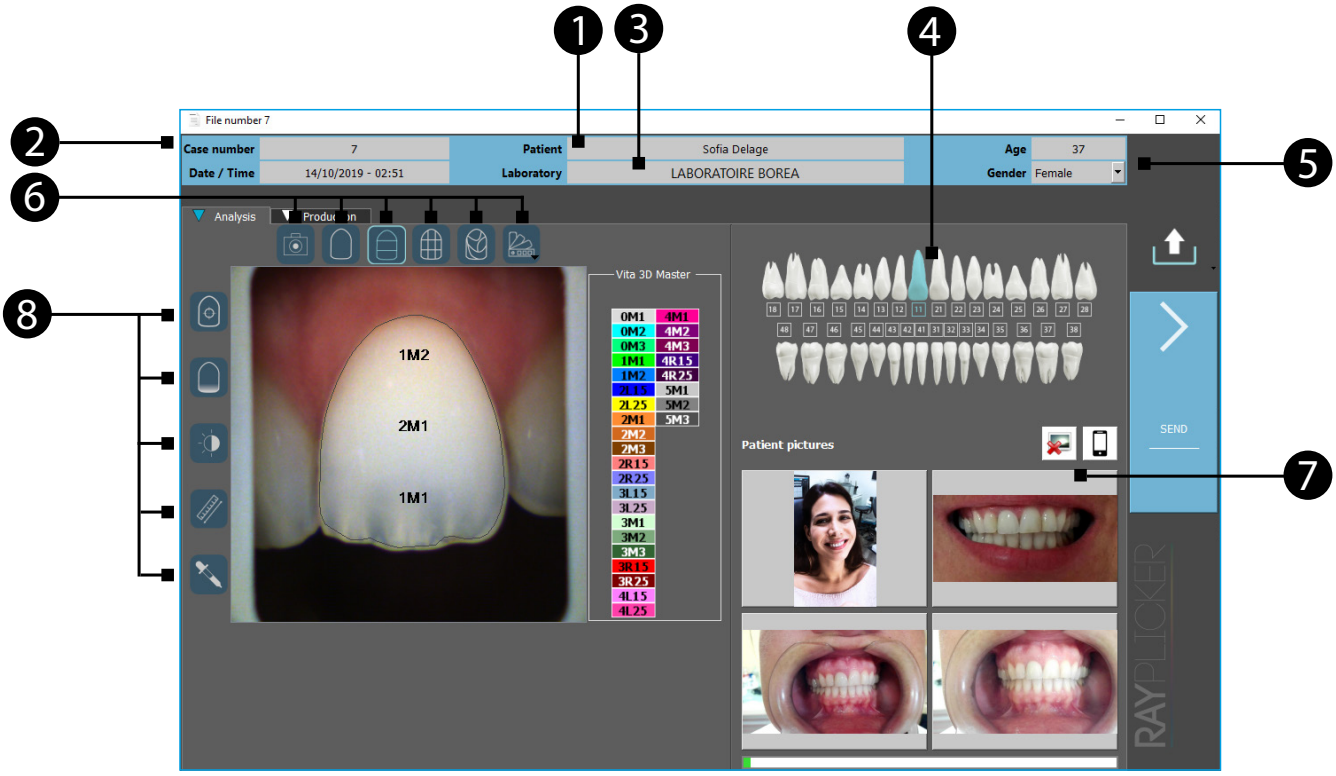
After having imported files from your Rayplicker™ device, they are displayed on the software main page. The files you just imported appears in gray.

Click on a file to open it.

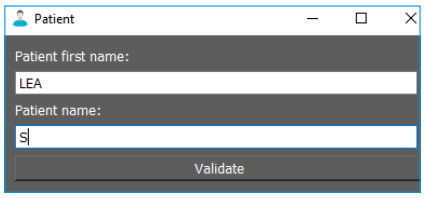
Observations:
Files colors and progress are explained on page 41.

10.5. Shade taking tab

When a file is open, it will display the information of the «analysis» tab.



1 Fill the patient name.

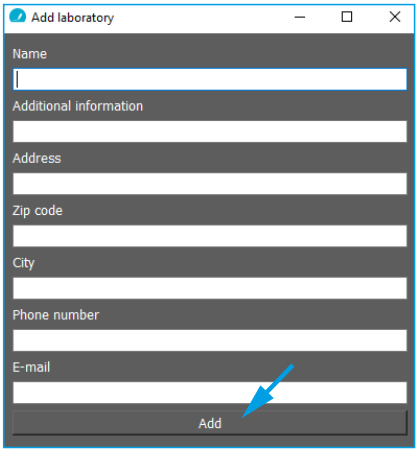


2 File number and date of the acquisition.

3 Add a recipient laboratory for the order form.

Two options are available to add a laboratory to my contact list :

- Manual add
- Rayplicker community

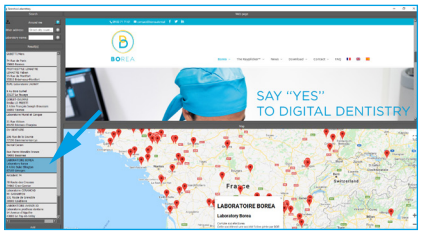


Manual add:

This option is destined to add a Laboratory who does not use the Rayplicker™ solution with the Rayplicker™ Service pack.

It is necessary to add the Laboratory email address in order to send an order form as PDF file but also to fill your own email address in :
Settings » User » Email address.

Fill the other information then click on « Add ».



Cloud add (Rayplicker Community):

Use the map or do a research by address and then double-click on the selected Laboratory to add it to your contact list.

To have more explanation about the cloud add, go to the paragraph «10.6. Select a laboratory by Cloud. (Rayplicker community)», page 37.

The created or added by Cloud contacts appear on the contact list.

If you want to remove a Laboratory, click right on its name then « delete ».

The laboratories registered in your contact list differ in the presence or not of the Cloud icon which shows if they are using the Rayplicker™ Service Pack.

If a laboratory has a «cloud», you can send him numerical order forms by Cloud.

4 Choose the « reference » tooth.

5 Fill the patient « age » and « gender ».

6 Chose the mappings and change the referent shade guide.

- *Polarized picture
- *Overall shade
- *3 parts
- *9 parts
- *Detailed mapping
- * Shade guides

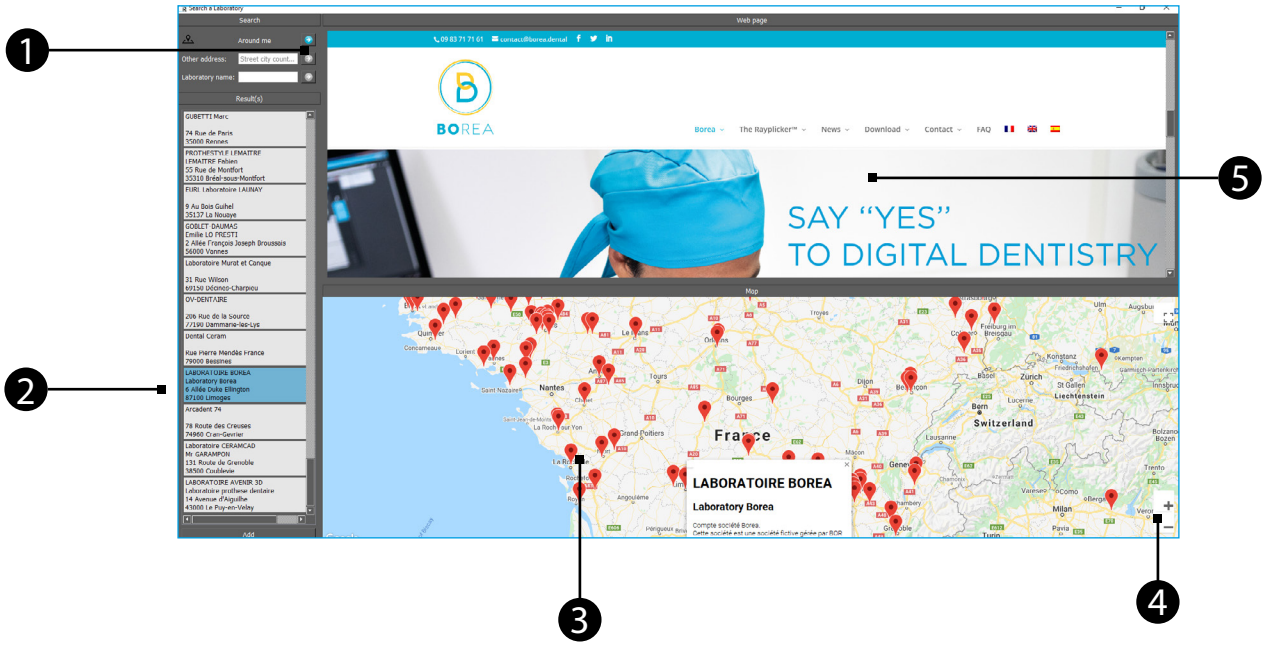
7 Click on the phone icon to import patient pictures taken with the mobile application «Rayplicker™ Pics App Solution». The process is explained on page 57.

8 Click on one of the following icons to show the image treatment tools:

- *Tooth border edition tool
- *Tooth translucency analysis
- *Black & White analysis tool
- *Ruler
- *Colorimetric analysis tool / Colorimetric coordinates

10.6. Select a laboratory by Cloud. (Rayplicker community)

Click on «Add Cloud» and follow the instructions just below.

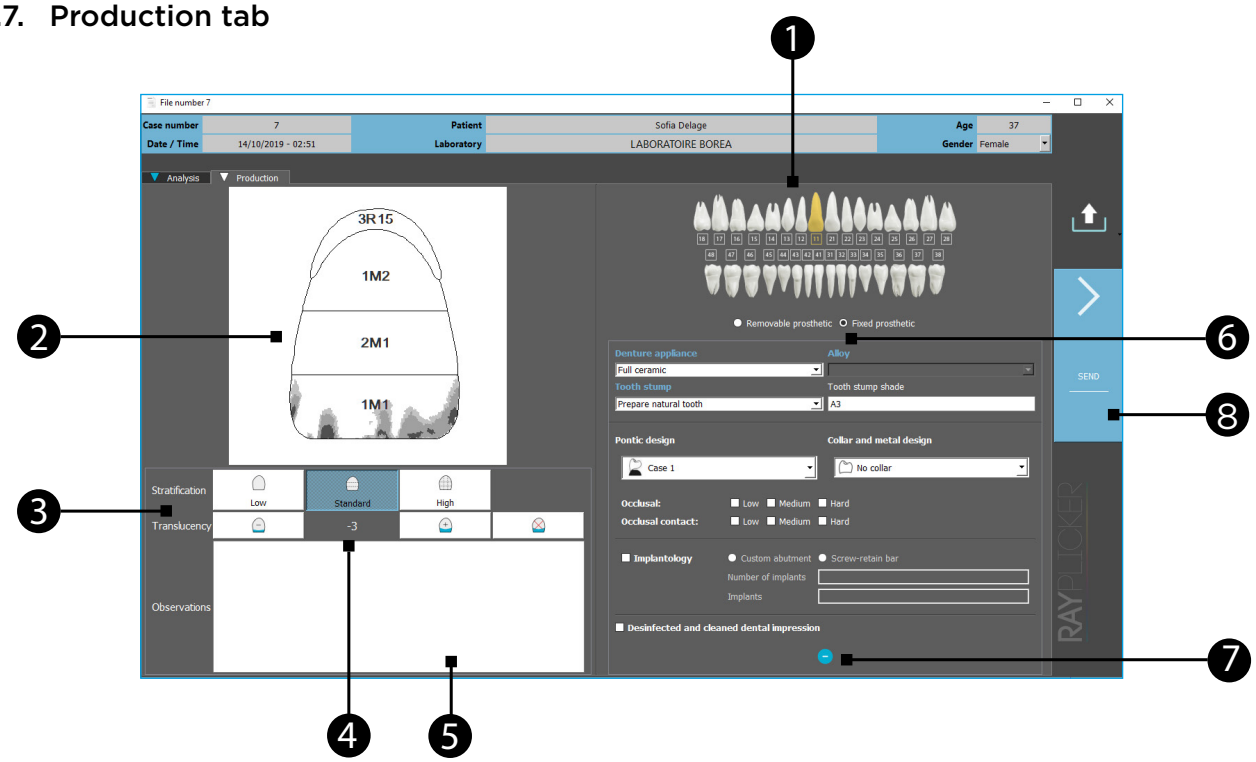


1. Click on the blue arrow to search a laboratory around you.
   Search by address.
   Search by the laboratory name.
2. Once found on the map, the list of laboratories appears on the left.

   If you select it by clicking, its description appears on the map and its website in the top window (only if this information has been entered by the laboratory).

   Double-click on the laboratory of your choice to add it to your contacts list. Or click on «Add» at the bottom left.
3. Use the map to visualize the different laboratories registered on the Cloud.
4. Use the mouse scroll wheel or the « + » and « - » icons to modify the map view.
5. In this window appears the website of the pre-selected laboratory (available only if the laboratory has specified this information).

10.7. Production tab



1. Select the referent tooth/teeth.

2. Scheme of the production tooth.

3. Select the prosthesis stratification needed:

   *Neck of the tooth and overall shade

   *Neck of the tooth and 3 horizontal zones

   *Neck of the tooth and 9 zones

4. Translucency adjustment. Click on:

   *To add translucency

   *To reduce translucency

   *To delete translucency

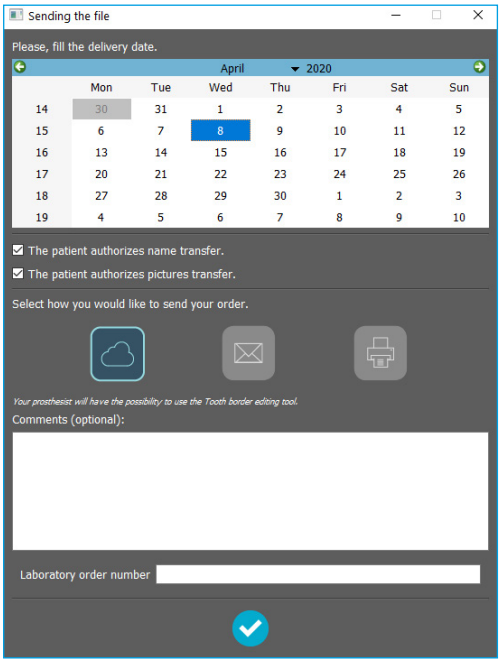
5. Leave notes about the order form to the laboratory in this banner (specific features for the prosthesis wished ...).

6. Fill in here the information linked to the prosthesis realization.
   Use the drop down menu and select the elements.
   This information is compulsory before sending your order form.

7. Click on the arrow to select additional information linked to the order form. This information is optional but allow more informations in prosthetic realization by the laboratory.

8. After filling your order form, click on «send», a new window will open.

10.8. Validate the order form



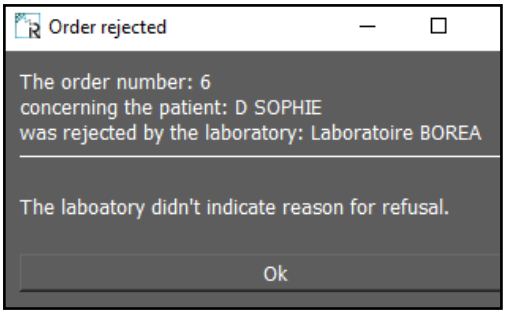
Select the delivery date and the order transfer method.

Check the confidentiality terms.

Write additional information to the dental technician, as you would by sending them your order form by post or email (optional).

Enter a laboratory order form number (if necessary).

Finally, when the fields are filled, click on « » .

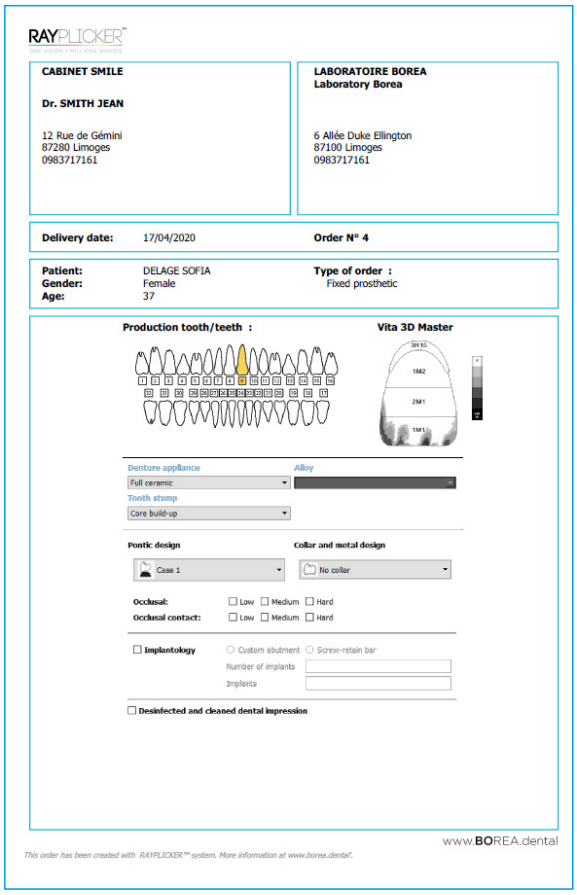


Once the order form has been sent and received, the laboratory can accept or refuse it.

This option is only valid with the Rayplicker™ Service Pack because the order must be sent by Cloud.

- An accepted order will result in a change of state of the form (see the different states on page 41).
- A rejected order will result in the receipt of a message indicating the rejection of the order and its reason (if informed by the laboratory).

10.9. Order form example



RAYPLICKER

CABINET SMILE

Dr. SMITH JEAN

12 Rue de Gémini
87280 Limoges
0983717161

LABORATOIRE BOREA
Laboratory Borea

6 Allée Duke Ellington
87100 Limoges
0983717161

Delivery date: 17/04/2020 Order N° 4

Patient: DELAGE SOFIA
Gender: Female
Age: 37

Type of order : Fixed prosthetic

Production tooth/teeth :

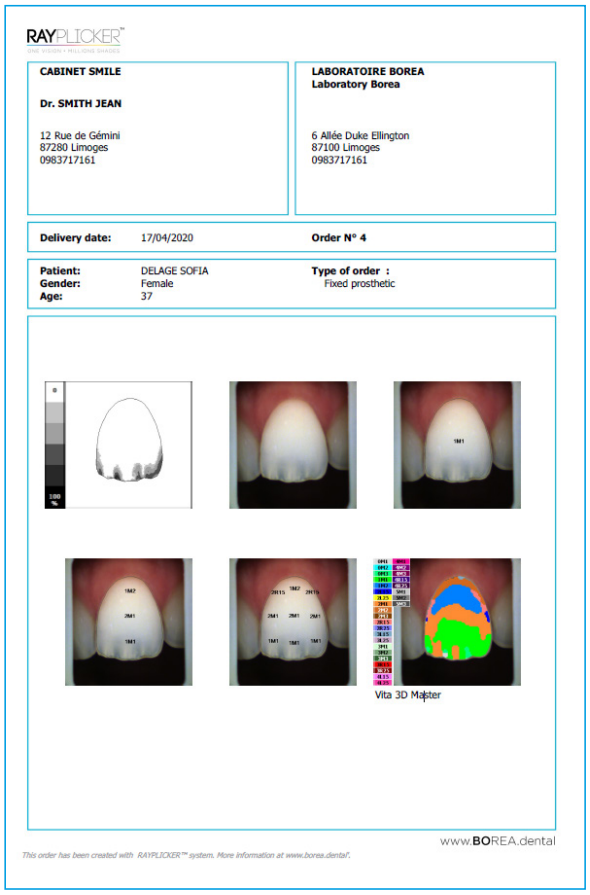
Vita 3D Master

Denture appliance: Full ceramic
Alloy
Tooth stump: Core build-up
Pontic design: Case 1
Collar and metal design: No collar
Occlusal: Low Medium Hard
Occlusal contact: Low Medium Hard
Implantology: Custom abutment Screw-retain bar
Number of implants
Implants
Desinfected and cleaned dental impression

www.BOREA.dental

This order has been created with RAYPLICKER™ system. More information at www.borea.dental.

Page 1 : Production sheet



RAYPLICKER

CABINET SMILE

Dr. SMITH JEAN

12 Rue de Gémini
87280 Limoges
0983717161

LABORATOIRE BOREA
Laboratory Borea

6 Allée Duke Ellington
87100 Limoges
0983717161

Delivery date: 17/04/2020 Order N° 4

Patient: DELAGE SOFIA
Gender: Female
Age: 37

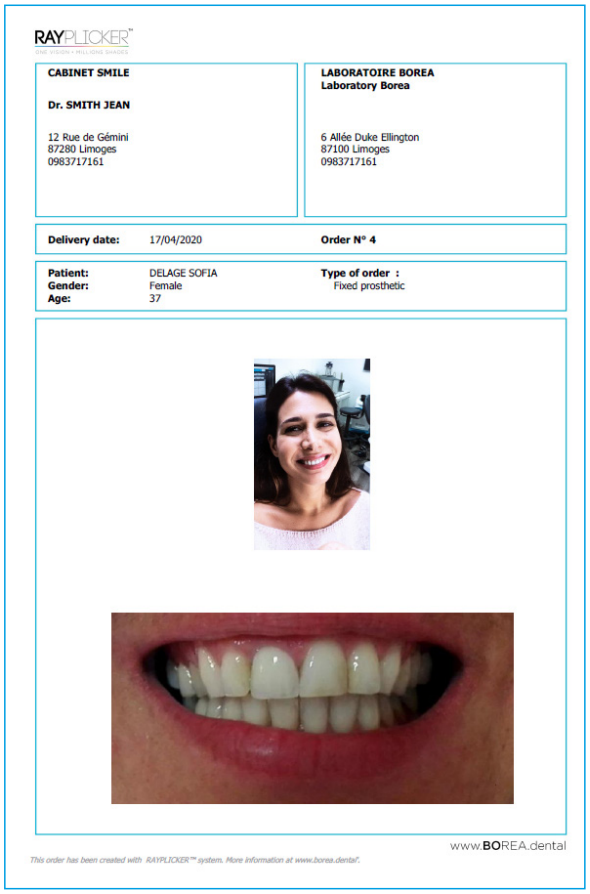
Type of order : Fixed prosthetic

Vita 3D Master

www.BOREA.dental

This order has been created with RAYPLICKER™ system. More information at www.borea.dental.

Page 2 : Mappings



RAYPLICKER

CABINET SMILE

Dr. SMITH JEAN

12 Rue de Gémini
87280 Limoges
0983717161

LABORATOIRE BOREA
Laboratory Borea

6 Allée Duke Ellington
87100 Limoges
0983717161

Delivery date: 17/04/2020 Order N° 4

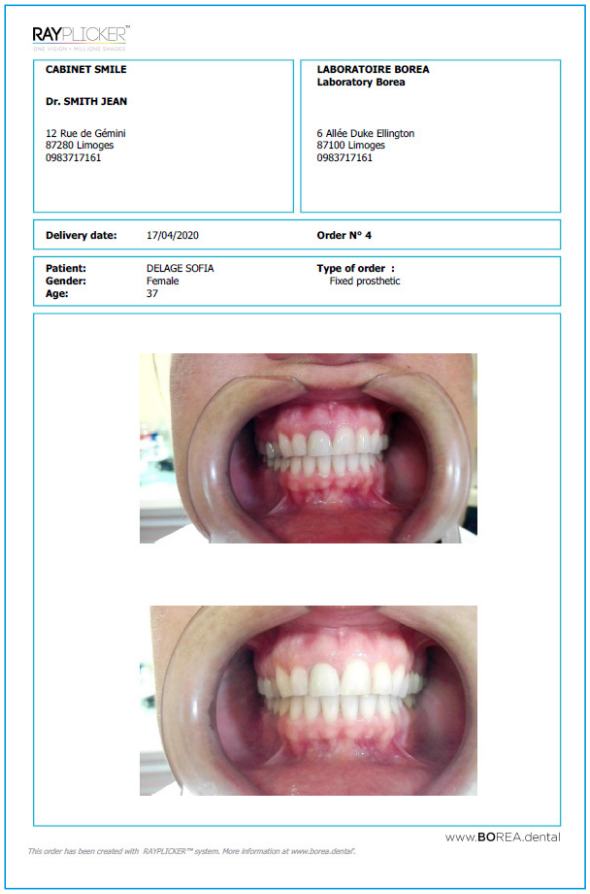
Patient: DELAGE SOFIA
Gender: Female
Age: 37

Type of order : Fixed prosthetic

www.BOREA.dental

This order has been created with RAYPLICKER™ system. More information at www.borea.dental.

Page 3 : Patient pictures



RAYPLICKER

CABINET SMILE

Dr. SMITH JEAN

12 Rue de Gémini
87280 Limoges
0983717161

LABORATOIRE BOREA
Laboratory Borea

6 Allée Duke Ellington
87100 Limoges
0983717161

Delivery date: 17/04/2020 Order N° 4

Patient: DELAGE SOFIA
Gender: Female
Age: 37

Type of order : Fixed prosthetic

www.BOREA.dental

This order has been created with RAYPLICKER™ system. More information at www.borea.dental.

Page 4 : Patient pictures

10.10. Color coding of the sheets

Without using the Rayplicker™ Service Pack option :

File : 1
Patient : DELAGE SOFIA
With : BOREA LABORATORY
Modified : 28-07-17 12:22

Black sheet :

The sheet is just imported from the Rayplicker™ device.
The order form has not been sent.

File : 1
Patient : DELAGE SOFIA
With : BOREA LABORATORY
Modified : 28-07-17 12:22

Green sheet :

The order form has been sent.

Using the Rayplicker™ Service Pack option :

File : 1
Patient : DELAGE SOFIA
With : BOREA LABORATORY
Modified : 28-07-17 12:22

Grey blurred sheet :

The file is blurred when it is transferring on the Cloud.

File : 1
Patient : DELAGE SOFIA
With : BOREA LABORATORY
Modified : 28-07-17 12:22

Blue sheet :

The sheet has been sent. It is on the Cloud.

File : 1
Patient : DELAGE SOFIA
With : BOREA LABORATORY
Modified : 28-07-17 12:22

Blue sheet :

The order has been received by the laboratory.

File : 1
Patient : DELAGE SOFIA
With : BOREA LABORATORY
Modified : 28-07-17 12:22

Blue sheet :

The order has been accepted by the laboratory.

File : 1
Patient : DELAGE SOFIA
With : BOREA LABORATORY
Modified : 28-07-17 12:22

Green sheet :

The order has been sent by the laboratory.

Observation:

This icon indicates that sheets are pending for update (here, three files are pending).

11. The Rayplicker™ software for laboratory

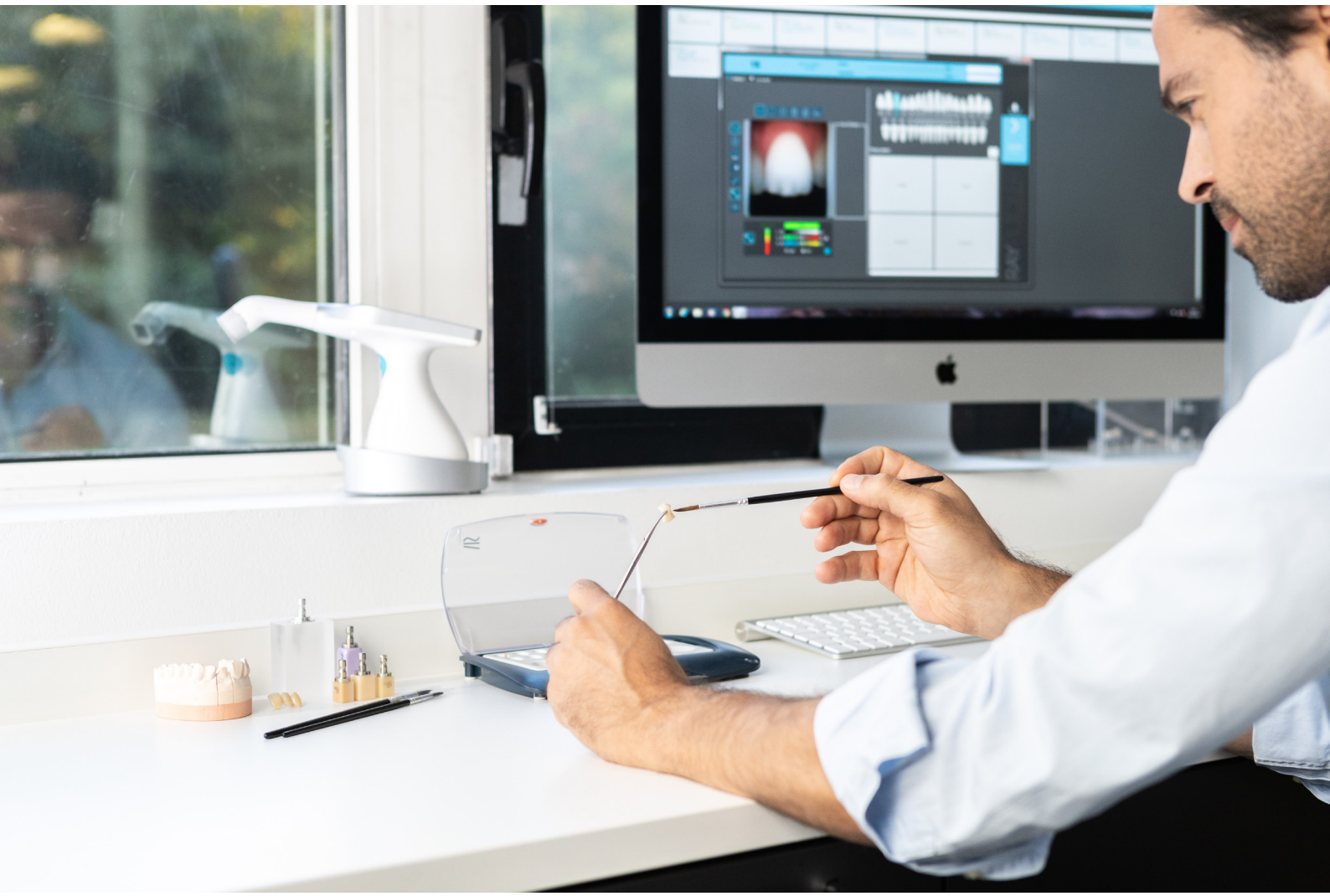
11.1. Description of the Rayplicker™ Laboratory software.

A laboratory can use the Rayplicker™ software solution with or without the Rayplicker ™ shade taking device.

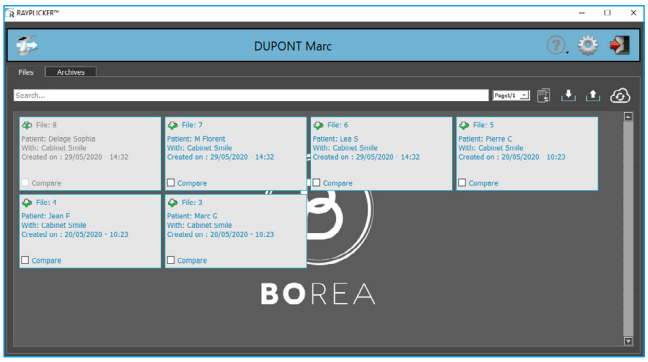
This software version for laboratories allows prosthetists to access the same functionalities as the Rayplicker™ dentist software, this means, importing shade taking files on his computer when the latter is equipped with a device, viewing and performing shade analyzes, create a patient file.

The Rayplicker™ laboratory software has also some specific features, it allows dental technicians to create an account and identify themselves in order to register with the community of laboratories using the Rayplicker™ solution. This functionality allows them increased visibility to dental practices also equipped with the solution, the possibility of receiving orders via the Rayplicker™ platform and thus, standardizing their processes for receiving and processing shade taking information.

Each file on the laboratory software can be exported in different formats (.pdf report / .borea files) and saved on your computer. This optimizes traceability and simplifies the exchange of information.



11.2. Receive and process an order



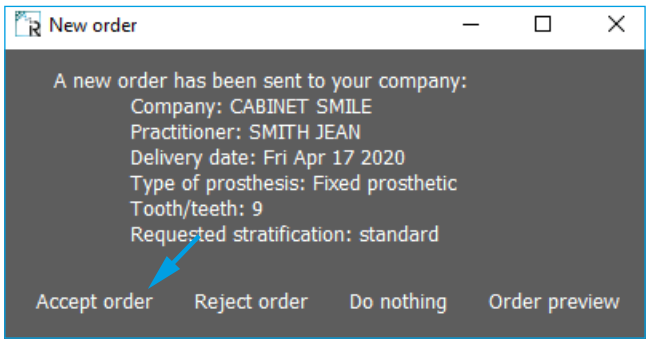
Orders are received on this main page.

Click on the icon « » to actualize the cloud, receive new orders and update existing files.
The cloud is automatically updated every five minutes.

Sheets are sorted by date.

The last received order appears in gray at the top left.

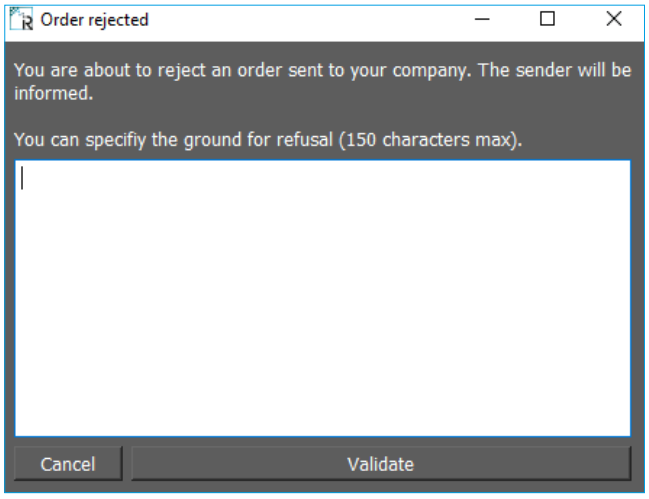
After receiving a file, click on it to see some information.



After receiving a file, click on it to obtain the following information:
The origin of the order, the desired delivery date.
The type of prosthesis and the type of layering are also specified.

Then you have several possibilities:

- Accept the order, it will open in a new window.
- Do nothing, in this case, the tab closes and the order does not open.
- View the command before performing the other actions above.



It is possible to reject the order and specify the reason.

Validate to send the rejection to the practitioner.

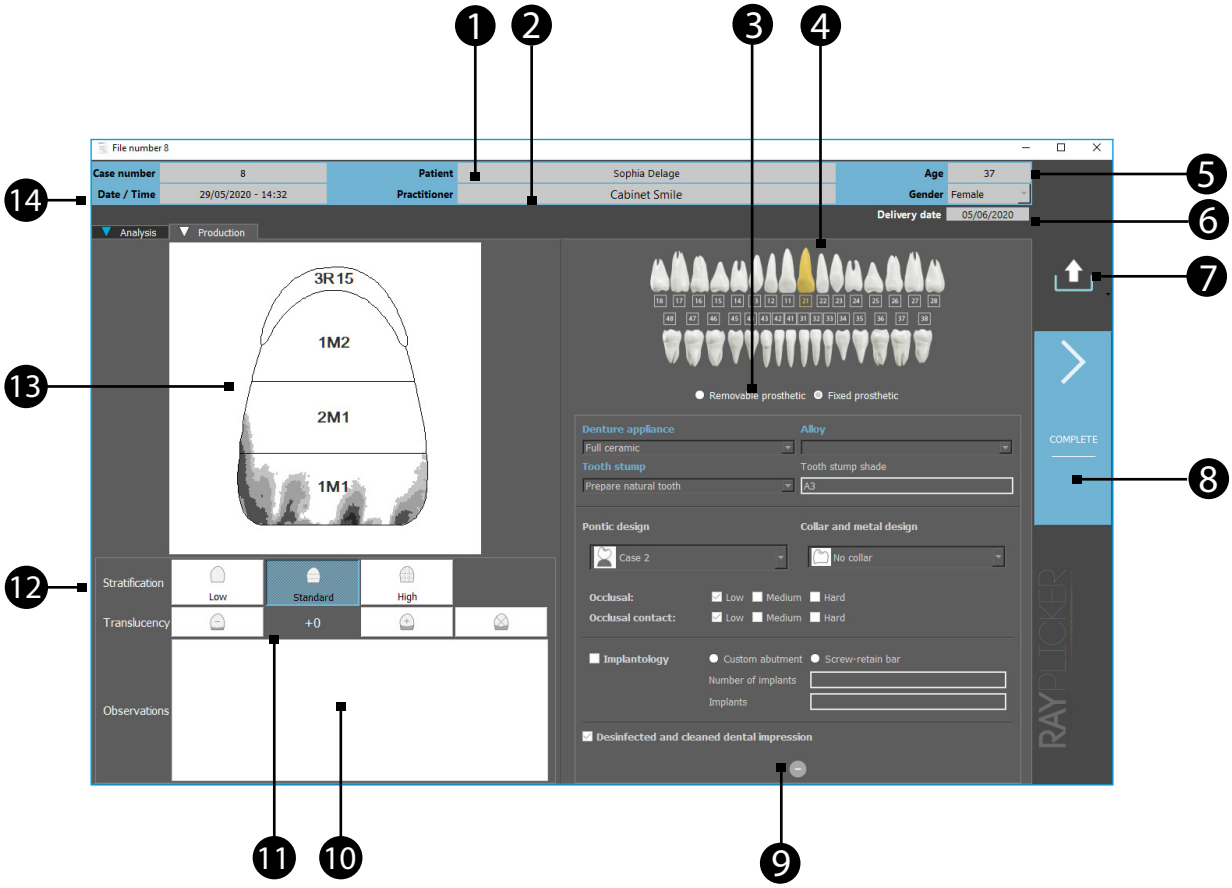
11.3. Interpret an order

After clicking on an order sheet and accept it, it opens on the production tab.

Here are presented the different specifications of the ordered prosthesis.

The upper banner indicates general informations about this order.

Important:
The information specified in the order form by the practitioner cannot be modified. With the exception of the tooth contour for an order received by Cloud.



1 Patient name.

2 Information concerning the practitioner who sent the order form.

Click on the practitioner name to open a window with his contact details.

3 Type of prosthesis ordered (removable or fixed).

4 Number of the production tooth/teeth wished.

5 Patient age and gender.

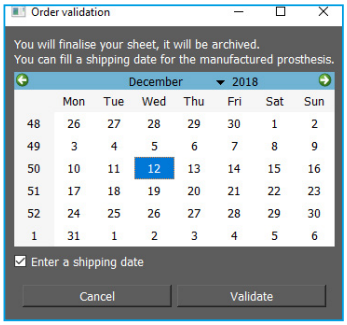
6 Delivery date requested by the practitioner.

7 Click on the icon to export the form:

- Simple form (PDF which includes the order form and the 6 mappings)
- Detailed form (PDF form with patient pictures in addition).
- Files .borea (which enables you to open a patient case again and make modification by using analysis tools and different shade guide).

An example of order form is detailed on page 40.

8 Click here to finish.



Select a shipping date to the practitioner.
The file is then automatically saved.
It can be consulted from the «Archives» tab on the main page.

9 Here is described order additional information.

10 Here are the notes about the order for the laboratory.

11 Indication about translucency of the desired prosthesis.

12 Indication about stratification of the desired prosthesis.

13 Scheme of the production tooth.

14 Information about the file number, date and reception hour of the shade taking.

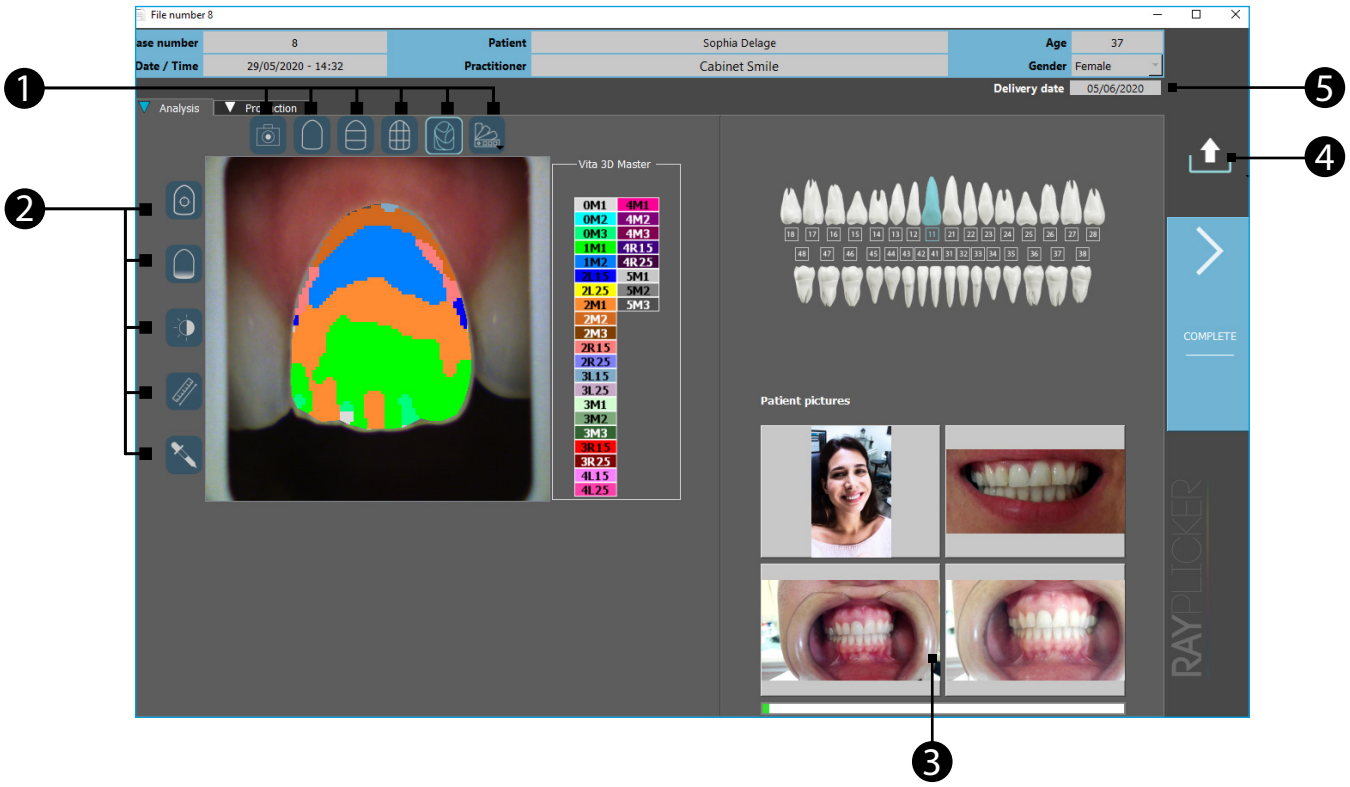
11.4. Analysis tab

The analysis tab is also accessible by clicking on it.

Here are presented details of shade taking registered by the practitioner.

Patient pictures can also be joined.

Important:
The information specified in the analysis tab cannot be changed. With the exception of the tooth contour for a file received by Cloud.



1. See the mappings and change the referent shade guide.

- *Polarized picture
- *Overall shade
- *3 parts
- *9 parts
- *Detailed mapping
- *Shade guide

2. Click on one of the following icons to show the image treatment tools:

- *Tooth border edition tool
- *Tooth translucency analysis
- *Black & White analysis tool
- *Ruler
- *Colorimetric analysis tool

3 Patient pictures. Click on it to enlarge.

4 Export the sheet as a «.borea» file or .pdf.

5 Delivery date requested by the practitioner.

In the upper banner, we find the same information as those presented in the «production» tab. (See page 44)

11.5. Color coding of the sheets

File : 1
Patient : DELAGE SOFIA
With : BOREA LABORATORY
Modified : 28-07-17 12:22

Black sheet :

The sheet is just imported from the Rayplicker™ device. The order form has not been sent.

File : 1
Patient : DELAGE SOFIA
With : BOREA LABORATORY
Modified : 28-07-17 12:22

Gray sheet :

An order came by Cloud. It hasn't yet been opened or accepted.

File : 1
Patient : DELAGE SOFIA
With : BOREA LABORATORY
Modified : 28-07-17 12:22

Blue sheet :

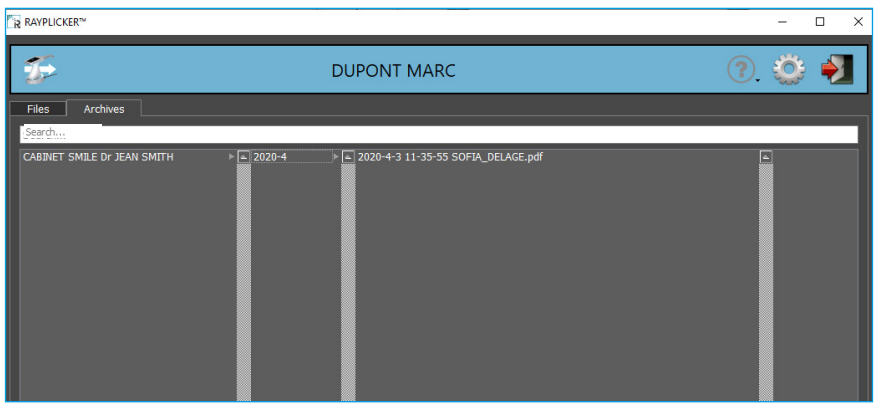
The order has already been opened but hasn't been finished.

Observations:

This icon indicates that sheets are waiting for update (Here, 3 files are pending). To actualize, click on the icon or the software will do it automatically every five minutes.

Observation: Once processed and sent, the order is automatically saved in the «archives» tab on the main page.

11.6. Archived files



From the « archives » tab on the main page, you can access to the saved files as pdf. To open it, double click on it.

12.Analysis tools

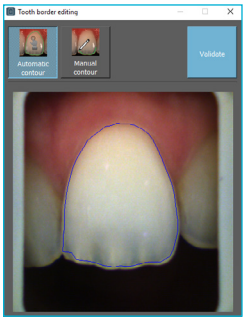
12.1. Comparison tool

The analysis tools are available on the left edge of the image in the "analysis" tab.

- *Tooth border edition tool
- *Tooth translucency analysis
- *Black & White analysis tool
- *Ruler
- *Colorimetric analysis tool

Tooth border edition tool

- **Automatic contour**

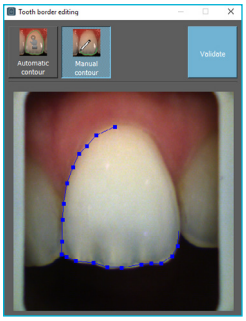


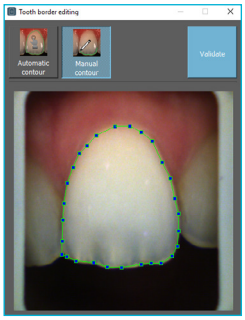
Click on «automatic contour» and then click on the tooth for an automatic border detection.

If the contour is conform click on «Validate».

If the contour is not conform, you can do a manual contour.

- **Manual contour**



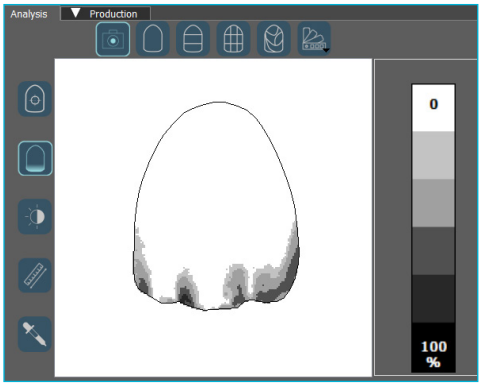


Click on «Manual contour» and then make the contour of the tooth point by point.

Finish the outline by clicking on the starting point.

Once the contour is green, click on «Validate» to confirm the new contour.

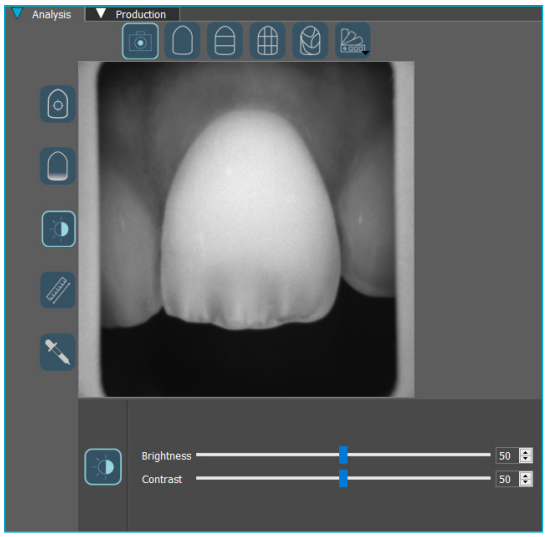
Tooth translucency analysis



This tool allows you to visualize a map of the translucency of the tooth.

This is indicated by a gray scale indicating the presence of translucency on a scale from 0% to 100%.

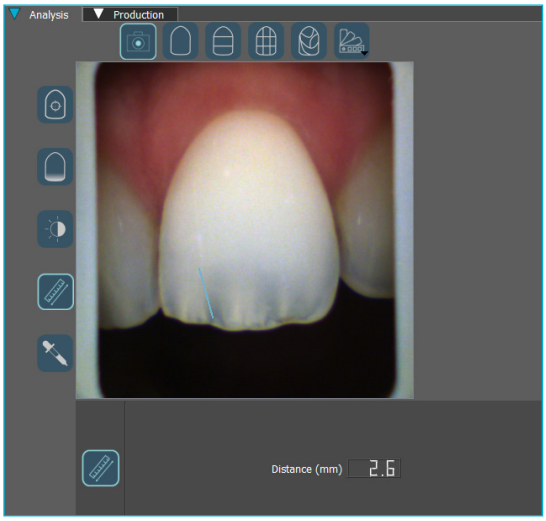
Black & White analysis tool



This Black & White analysis tool allows to convert the color polarized picture into a gray-scale image.

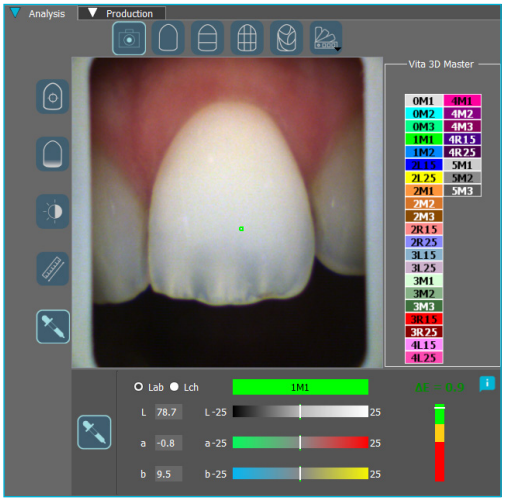
Use the sliders to change the brightness and contrast settings to highlight the distribution of dentin, enamel, or other notable features.

Ruler



This tool makes it easy to locate the location of translucent areas or other notable features.

Colorimetric analysis tool



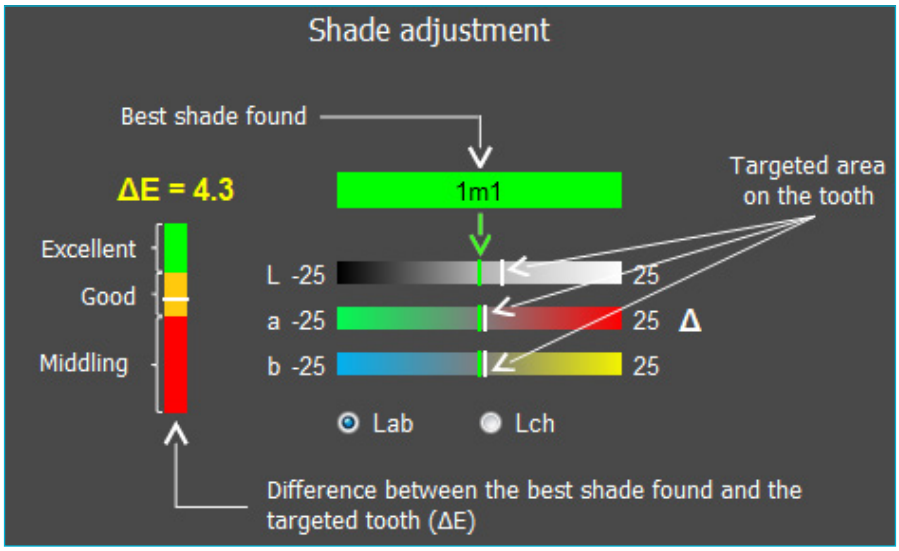
Calculate to the nearest pixel the color difference “Delta E or ΔE” between the actual shade of the tooth and the closest shade according to the selected reference shade guide.

Visualize the differences according to the three dimensions of the color: brightness, saturation and hue.

This analysis can be carried out under the Cie Lab or Lch repository.

Determine pixel by pixel the color coordinates according to the Cie Lab or Lch reference system by clicking on a point on the tooth. You can also access the same information for a larger area by clicking and dragging your mouse over the part to be analyzed.

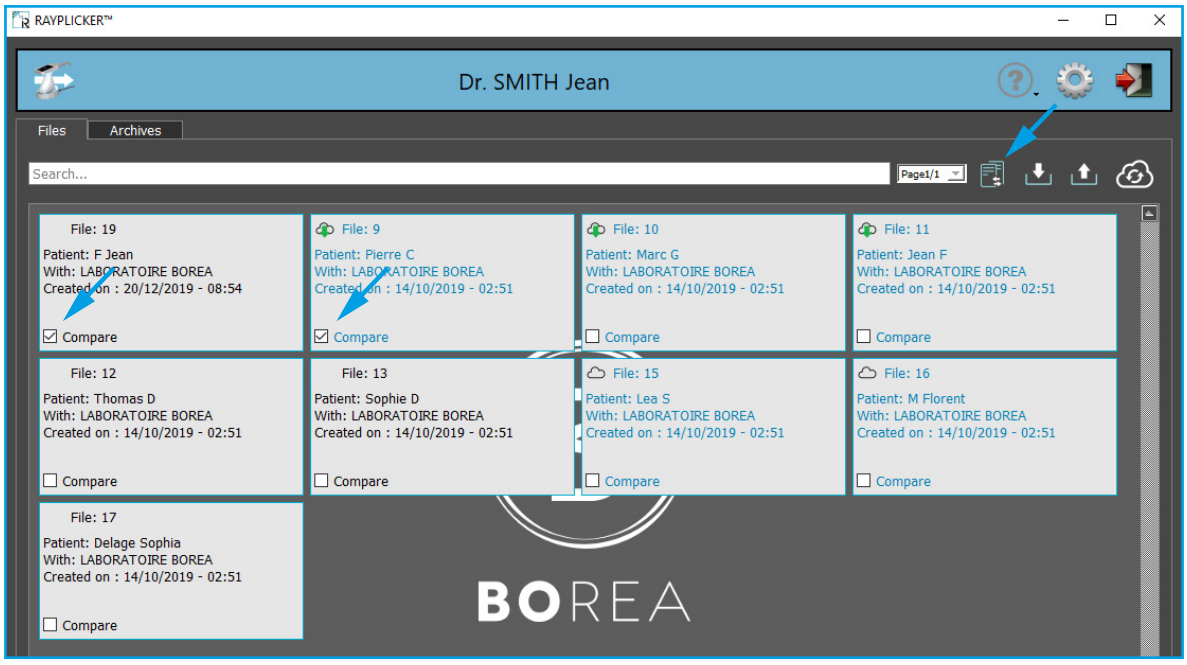
Interpretation of the data communicated by the tool:

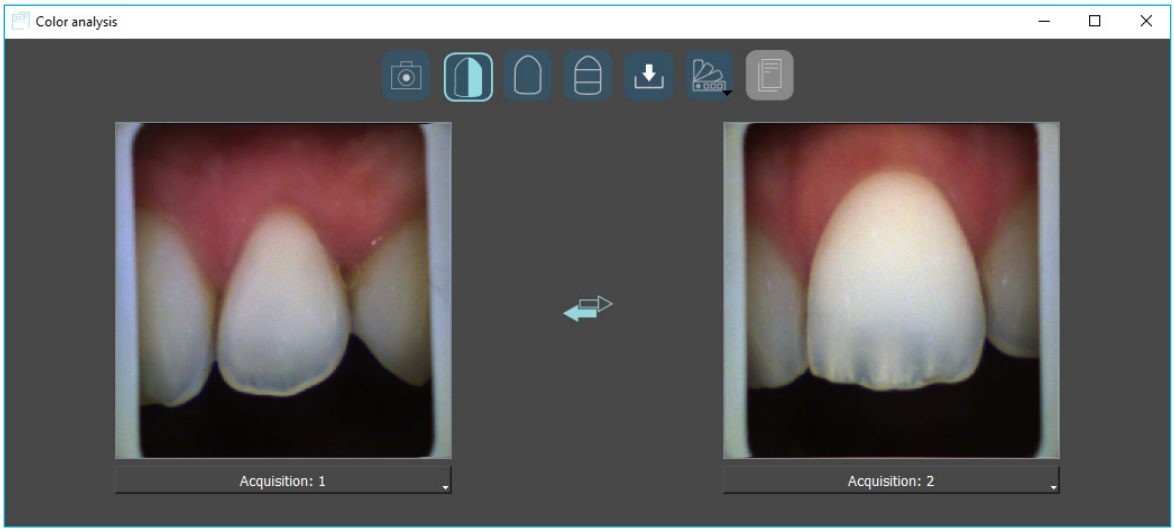


12.2. Comparison tool

The comparison tool allows to carry out comparative analyzes based on Cie Lab values between two or three acquisitions. A comparative report can also be generated and saved in .pdf format.

To launch the comparator window, select two files by clicking on the «compare» box then click on the « » icon or directly select three files and the window opens automatically.





Tools of the comparison tab:

*Polarized Image

*Comparison slider

*1 area

*3 areas

*Import file

*Shade guide

*Generate a report

*reverse acquisitions

Comparison slider

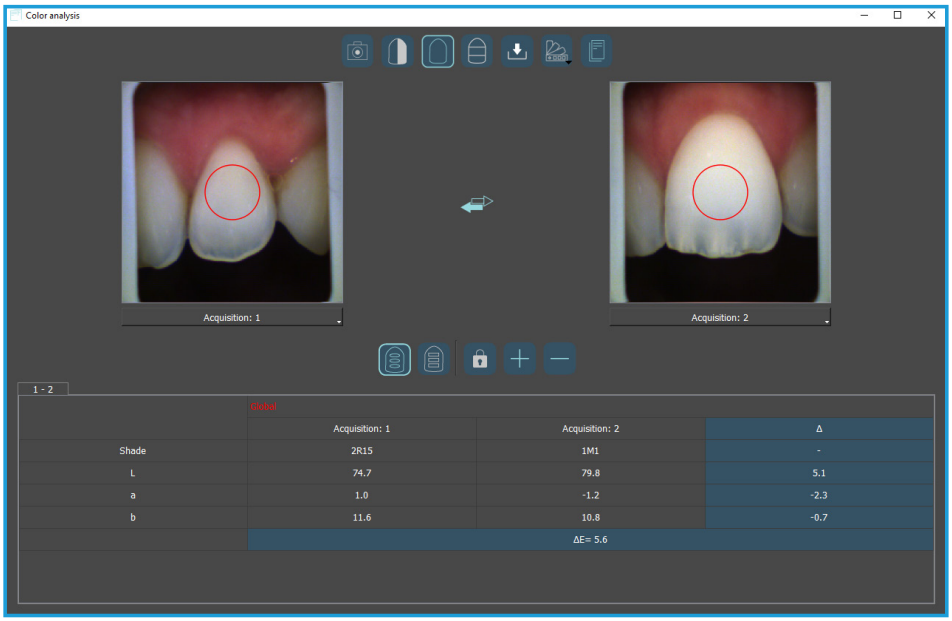
Use the mouse to move the cursor to the right or to the left.

Analysis in 1 area

Select the format of the analysis area

Round

Rectangular



Analysis in 3 areas

Select the format of the analysis area:

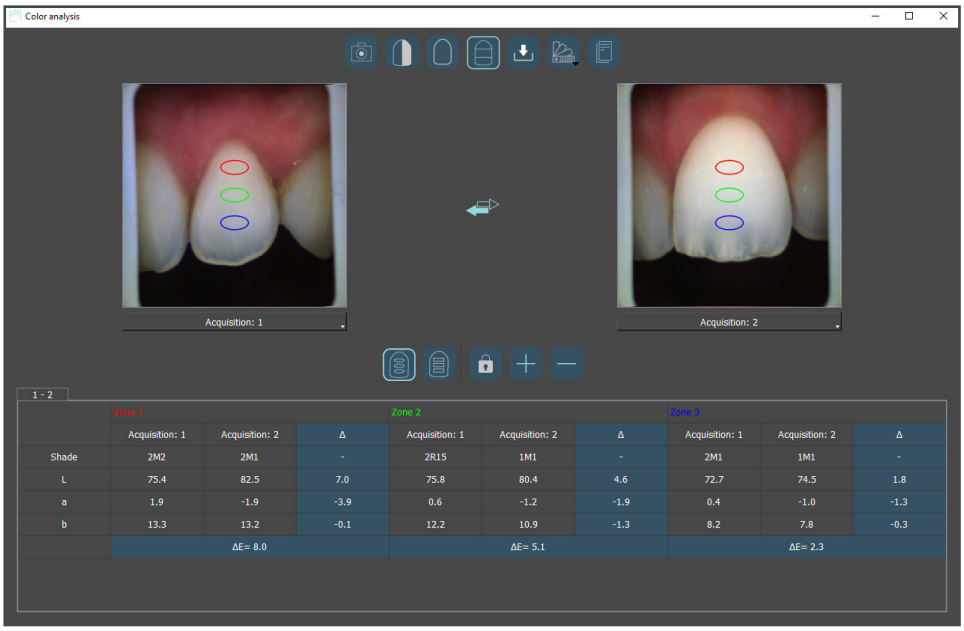
Round

Rectangular

The padlock makes it possible to move the analysis area symmetrically on both sides.

The «+» icon widens the analysis zone(s).

The «-» icon allows you to reduce the analysis zone(s).

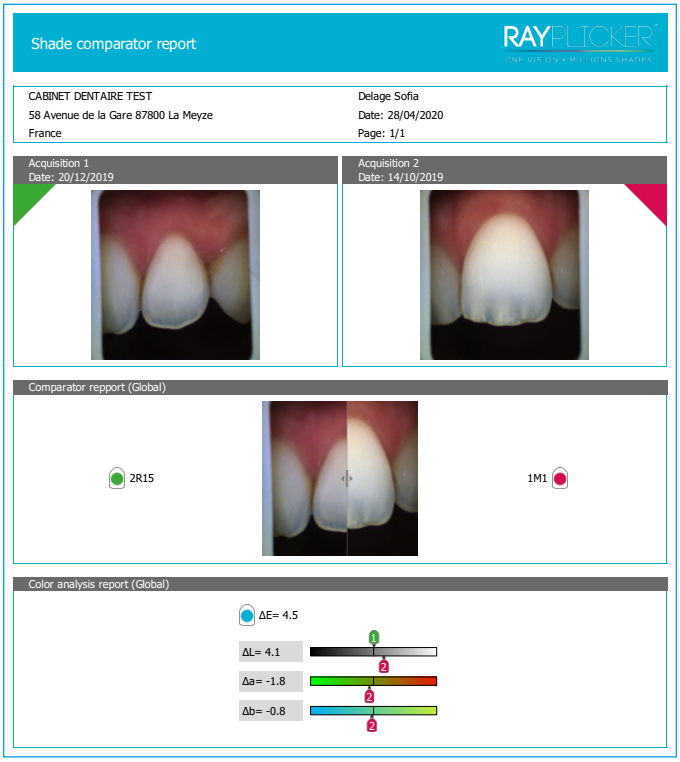


Generate a report

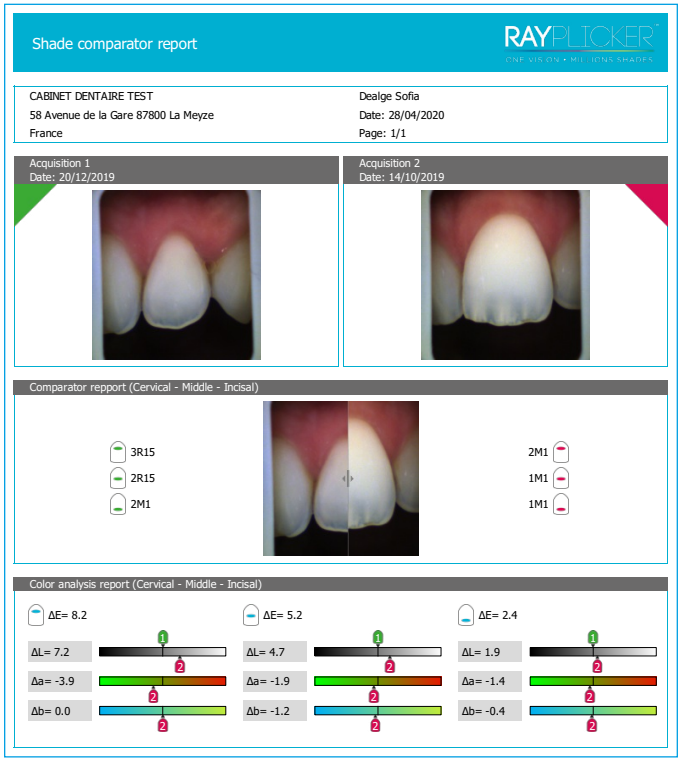
After performing the analysis, a report can be generated by clicking on the icon « ».

Two types of reports can be generated. A comparative report and a bleaching report. The whitening report is generated when the shade guide selected is the Vita Bleachguide 3D Master.

Shade comparator report

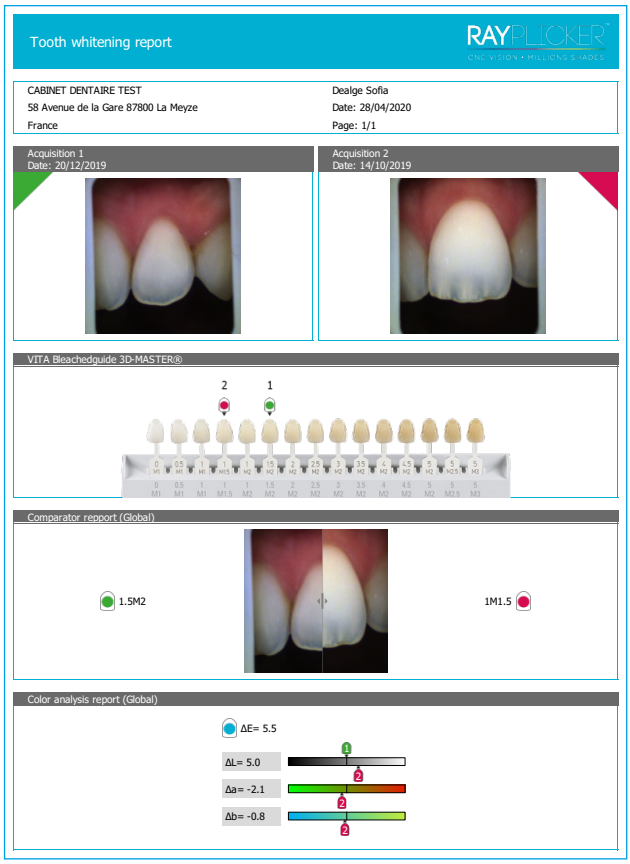


Shade comparator report based on one area analysed only.



Shade comparator report based on a 3 parts analysis.

Tooth withening report

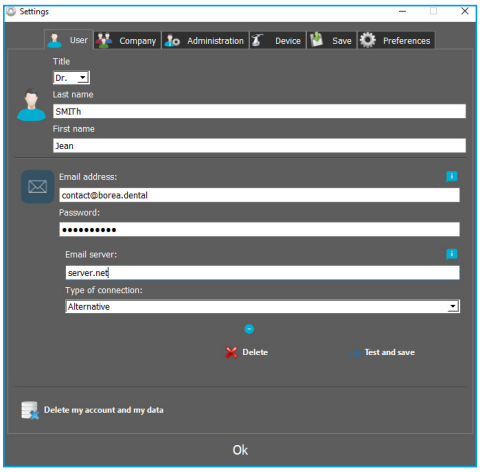


Tooth whitening report based on one area analysed only.

Tooth whitening report based on a 3 parts analysis.

13. Rayplicker™ Software settings manager

13.1. User tab



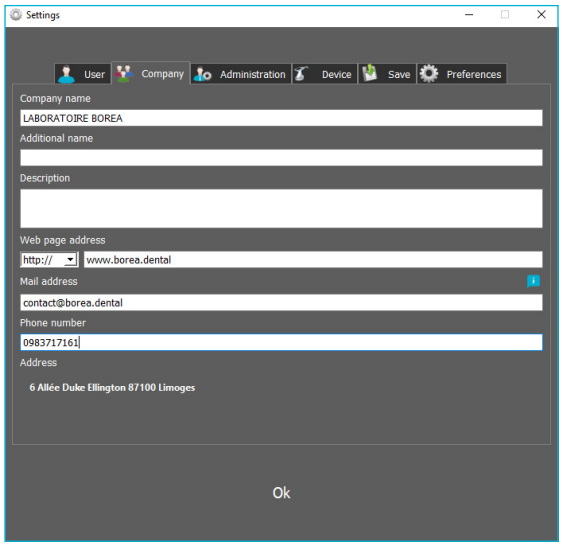
In this user tab, you can edit your user's contact information.

Click on «Delete my account and my data» to delete your user.

Validate to save changes.

For «Dentist» accounts, it is possible to register an e-mail address by specifying your address and your password then click on «Test and save».
(Your server may also be necessary)

13.2. Company tab



Dentist and Prosthetist Accounts :

In this company tab, you can change the company coordinates.

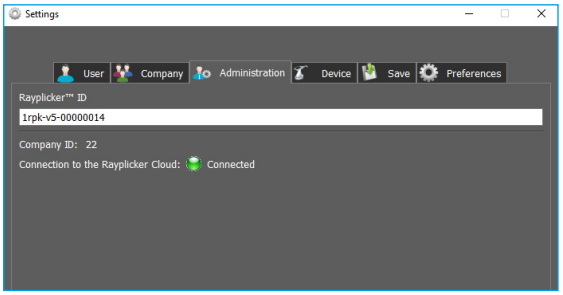
Prosthetist Account only :

Specify a description that will be presented on the geolocation map.

Specify your website address, this information will also be displayed on the Cloud search page for dentists using the Rayplicker™ Service Pack.

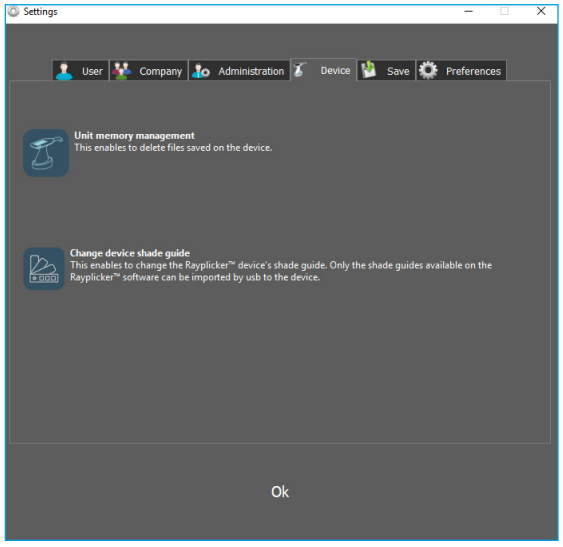
Validate to save the changes.

13.3. Administration



The «Administration» tab lets you access your Rayplicker™ ID and Company ID and check your connection to the Service Pack Rayplicker (Cloud).

13.4. Device

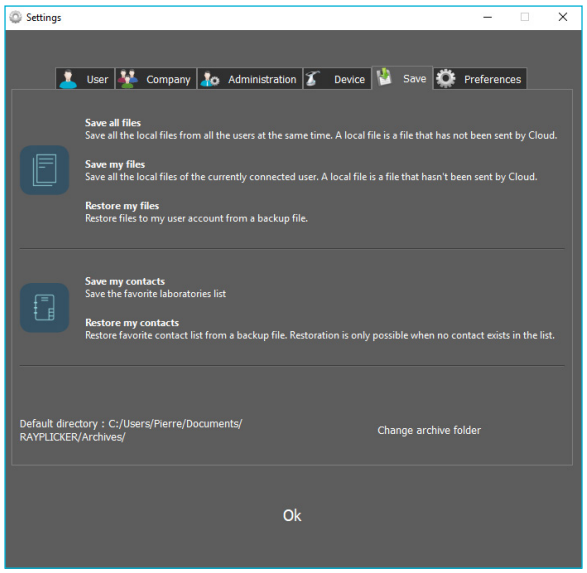


To delete one (or more) acquisition saved on the Rayplicker™ device, this can be done using Rayplicker™ software.

- Place the device on its base connected to the computer by USB cable.
- Turn on the device on the main screen.
- On the software, click on the “Settings” icon then on the “Administration” tab.
- Click on the “Device memory management” option.
- Select the file (s) to delete and confirm the deletion.

To change the shade guide of your Rayplicker™ device, it must be connected to the software and turned on the main screen. Click on «change shade guide», a new window will open. Select the wished shade guide and click on « configure ».

13.5. Save files on the computer

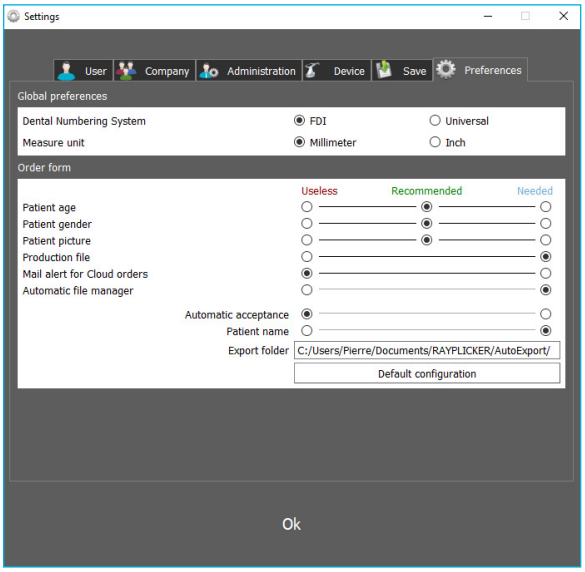


From this tab, you can save unsent files to the Cloud.

Save the list of Laboratories contacts.

Specify the archives folder.

13.6. Preferences



In this “Preferences” tab it is possible to select the teeth numbering system:
- FDI numbering
- Universal numbering

Prosthetist account only:

Configure your preferences in three categories (Useless /Recommended / Mandatory).

The automatic management option allows you to export directly, after validation of the order (manual or automatic), to a chosen folder.

Validate to save the modifications.

14. Mobile application «Rayplicker™ Pics App Solution»

To complete your order form, the mobile application «Rayplicker™ Pics App Solution» allows you to take patient pictures and transfer them by wifi.

Contextual pictures are an additional support to the order form for dental technicians.

Observation : Pictures are temporarily saved on the application until their transfer. If you log off the application without transferring the pictures, they will be lost.

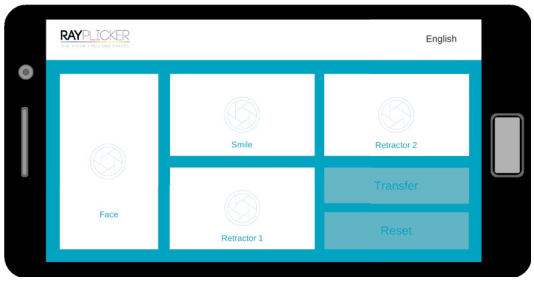
14.1. Download and compatibility.

You can download the application Rayplicker™ Pics App Solution for free on your mobile or tablet on the different online stores :

Available now on the App Store

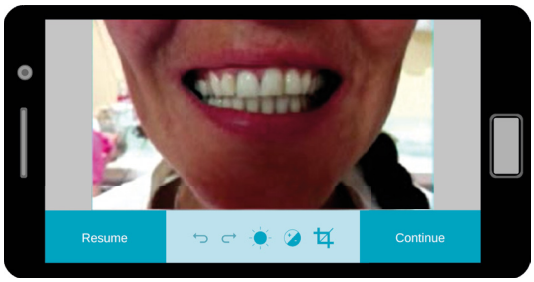
Download it from Google play

14.2. Take patient pictures



There are four shooting views :

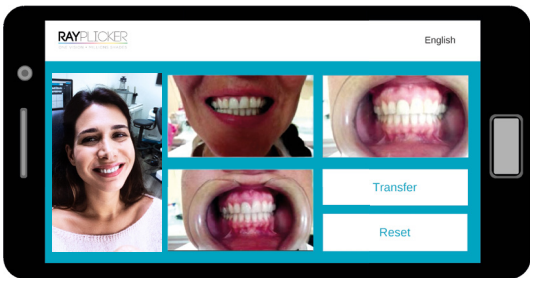
*Face
*Smile
*Retractor 1 and 2



Take the pictures.

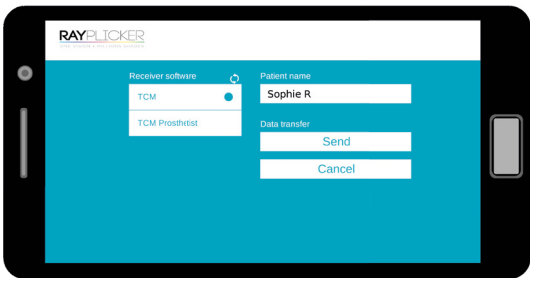
The bottom banner allows pictures improvement :

- Previous
- Cancel
- Brightness
- Contrast
- Cropping



After taking pictures, click on « Transfer » to go to the next step.

Click on « reset » to erase pictures.

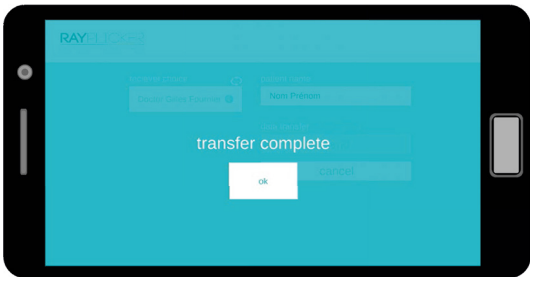


Fill the patient name.

Do a software research by clicking on the arrow «».

Select the software that will receive the data then click on « send ».

Pictures will automatically be transferred to the Rayplicker™ software by wifi.



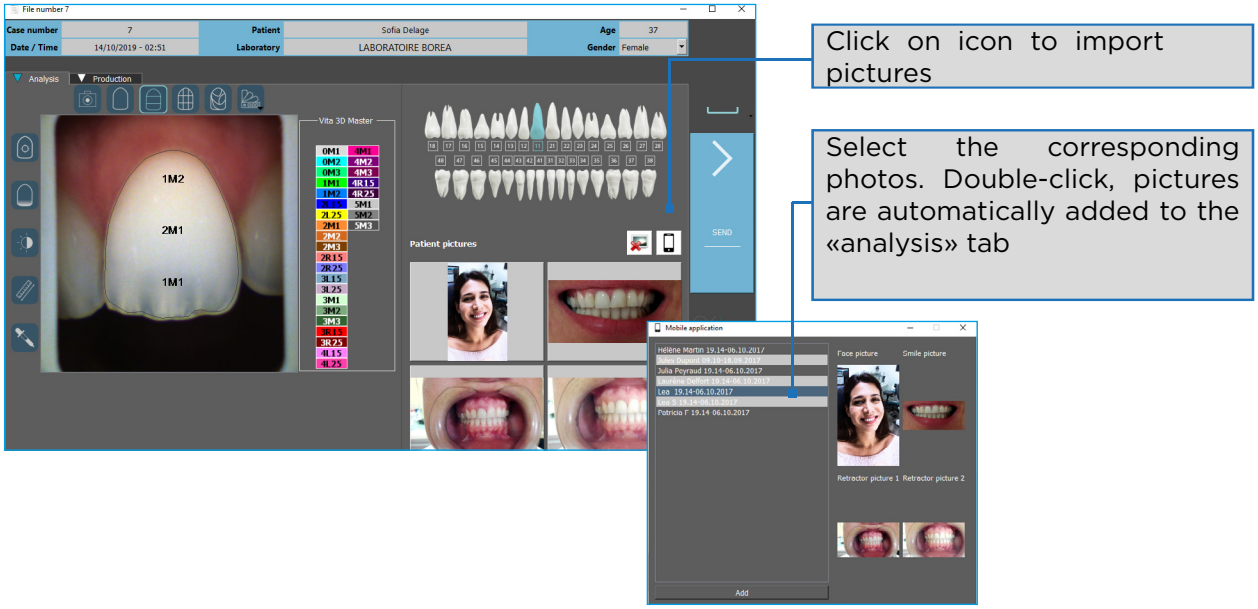
*Important: make sure both your devices (phone/ tablet and computer) are connected on the same wifi network.
It will also be needed to have the Rayplicker™ software launched on the computer.

14.3. Import patient pictures

After pictures transfer from the mobile application, they are available on the «Analysis» tab by clicking on the icon « ».

Files are classified by name and date.

Double-click on the file to add them to the order.



15. Technical specifications

15.1. Identification

Manufacturer	BOREA
Name of the Medical device	Rayplicker

15.2. AC Adapter

Manufacturer	XP POWER
Version	VER05US050-JA
Supply voltage	100-240 V AC
Power frequency	50/60 Hz
Consumed current	0.18 A
Output voltage	5 V DC
Output current	1 A

15.3. Handpiece

Mass (g)	390
Dimension (mm)	L. 210 x l. 75 x H. 155
Sensor	CMOS 400 x 400 px
Spectrophotometer	Measuring range : 400-700 nm
Dimension of the measuring head (mm)	L. 76 x Ø. 25
Screen	TFT LCD Color screen
Resolution	320 x 240 NTSC
Internal storage	40 shade taking files
Docking station mass (g)	340
Docking station dimension (mm)	L. 133 x l. 101 x H. 43
USB	1 output USB 2.0

15.4. Battery

Type	Polymer Lithium
Capacity	2200 mAh / 3.7 V
Lifespan	5 years

15.5. Environmental characteristics

Operating temperature	+10°C (+ 50°F) à +40°C (+ 104°F)
Relative humidity of operation	30% à 75%
Operating atmospheric pressure	800 hPa à 1060 hPa
Maximum operating altitude	< 2000m
Storage temperature	0°C (32°F) à +40°C (104°F)
Relative humidity of storage	10% à 95%, condensation included
Atmospheric storage pressure	500 hPa à 1060 hPa

15.6. Regulation and standardization

The Rayplicker™ is a class 1 medical device. Date of first CE marking: 2017. CE marking in accordance with the applicable standards:

• Directive 93/42 EEC concerning Medical Devices.

• IEC 60601-1: General requirements for basic safety and essential performance of medical electrical equipment.
IEC 60601-1-2 for the electromagnetic compatibility.

• RoHS Directive 2011/65/CE According to standard EN-50581:2013

• RED Directive 2014/53/UE with justification EMF

• DEEE Directive 2012/19/CE

Refer to the technical file RP1 DOC Q RD200 ind 002

15.7. EMC

The use of the Rayplicker™ device at the same time or close to another electronic device should be avoided as this may affect its proper operation.
If this use cannot be avoided, check that both devices are working normally.

The use of accessories and cables other than those specified or provided by the Rayplicker™ manufacturer may result in increased electromagnetic emissions or decreased electromagnetic resistance and may result in improper operation.

Portable radio communication equipment, mobile phones, portable WiFi access points or similar systems should not be used within 30cm of the Rayplicker™ device, including manufacturer specified cables. If these conditions are not respected, the performance of the Rayplicker™ device may be degraded.

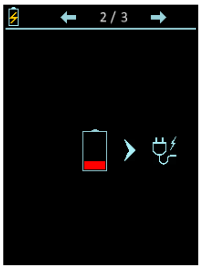
The user can therefore take preventive measures, such as changing the location of the device or orienting it differently.

Regarding electromagnetic compatibility, Rayplicker™ complies with IEC 60601-1-2.

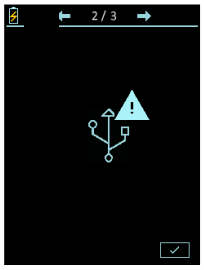
16. Annex

16.1. Errors messages

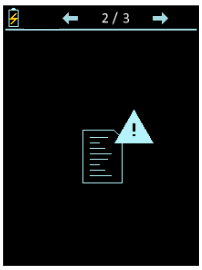
Error messages of the Rayplicker™ device :



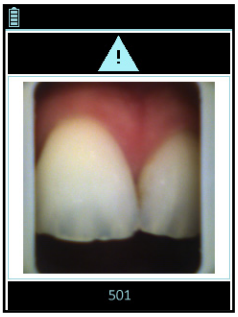
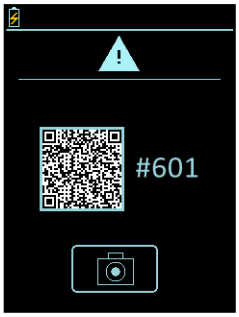
The battery level of the device is low.
The device must be positioned on its docking station and connected by USB or directly to a power outlet.



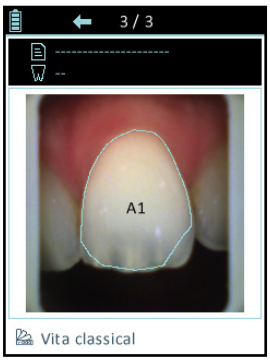
The USB connection failed. Check that the cable is well connected and then re-connect.



The internal memory of the device is full. Please transfer the files via the Rayplicker™ software (See : page 32).

v_2018_017	v_2019_06
	
The device has detected movements during the analysis. Please redo the acquisition without moving during one second (time of the acquisition). See point «6.1. Introducing the right way to use the Rayplicker™ device», page 20.	When the device detects a misuse during the acquisition, a QR code appears. By scanning the QR code with your smartphone, you will get access to the internet page that explains the encountered problem and its solutions.

Error number	Reason	Solution
101 & 102	Error during the tooth border calculation. Misuse.	Redo the acquisition (See page 20)
301, 302, 303, 304, 305, 306 401, 402, 403, 404, 405, 406	The acquisition is out of threshold. Misuse or calibration tip must be changed.	Redo the acquisition (See page 20) Check the calibration tip integrity and change it if damaged (See page 26)
501	Movements detected during the acquisition. Misuse.	Redo the acquisition (See page 20)
201 & 601	Error during data treatment.	Redo the acquisition (See page 20)



Following the acquisition, the automatic contour does not conform to the shape of the tooth. Two possibilities :

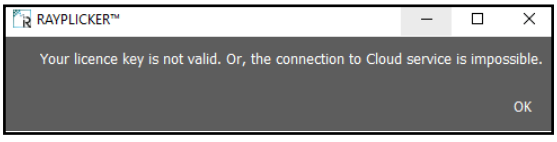
- The acquisition does not respect the good practices presented on page 20. It is thus necessary to erase this acquisition and to start again by following the instructions given on page 20.
- The acquisition respects the good practices presented on page 20. You can adjust the contour from the software after importing the file page 48.

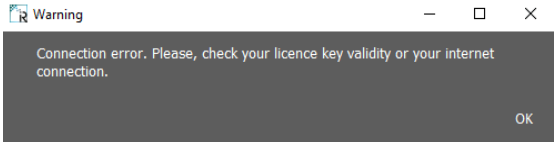
If the screen device freezes when you are using it, turn it over in order to put the screen face down.

When your device is upside down, take an object with a fine nib and hold down during two seconds the point which is in the center of the device.

When it is done, turn over your device and turn it on.

Error messages of the Rayplicker™ software :





Check your username and license number.

IDs and passwords contain only zero «0» digits and no «O» letters.

Check the correct internet connection of your computer and check the ports. (See point 16.2 below)

If the problem persists, contact Borea.

16.2. Port configuration

How to set up the Rayplicker™ solution.

If you are behind a firewall or a network device, such as a router, you may have to modify the configuration to allow your Rayplicker™ device or your Rayplicker™ mobile application to communicate with the Rayplicker™ software on your computer.

This operation is sometimes called “port opening”.

Rayplicker™ software needs the following ports to be opened :
(Mandatory for using Rayplicker™ software)

• Port 3306 (TCP)

Rayplicker™ mobile application «Rayplicker™ Pics App Solution» needs the following ports to be opened:

• Port 7777 (UDP et TCP)
• Port 7778 (UDP et TCP)

Note :
Communications between the different elements of the Rayplicker™ solution take place on the local network. All the different elements of the Rayplicker™ solution need to be connected to the same local network.
If you encounter difficulties to configure your network, call your network administrator or your internet provider to open the ports above, used by the Rayplicker™ solution.

16.3. Glossary

Spectrophotometer :
Device for acquiring spectral data on all points of the tooth. These wavelengths are analyzed and compared to a data basis to deduct the color of a tooth.

Color :
It characterizes the dominant wavelength of light reflected by a tooth. It is the hue that gives this sensation of color (red, yellow, green or blue ...).

Translucency :
Characteristic of a material allowing the light rays undergoing diffusion to pass. We can see through a translucent material but we can not distinguish the shapes.

16.4. Patents

Rayplicker™ is protected by the following patents :

France:
1556140; 1556141; 1651452

US:
14837,449

16.5. Warranty

The guarantees are specified in the terms of sale.
These can be found on the www.BOREA.dental (download tab) .

NOTES :

User manual. Version 1.5 DM - 2020 -

BOREA SAS, 6 Allée Duke Ellington, 87100 Limoges Cedex, France.
+33 (0)9 83 71 71 61 - contact@borea.dental - www.BOREA.dental