

VITA Easyshade® V

Operating instructions



VITA shade determination

VITA shade communication

VITA shade reproduction

VITA shade control

Issued 10.15

VITA shade, VITA made.

VITA

VITA Easyshade® V

Purchase date:	
VITA Easyshade® V serial number Handpiece / calibration block holder:	
VITA Easyshade® V charging station serial number:	
Specialist dealer:	

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1 Introduction and Explanation of Symbols

1.1 Dear Customer,

Congratulations on your purchase of the VITA Easyshade® V! VITA Easyshade® V provides accurate shade determination for natural dentition and a variety of restorations. The instrument covers the broad spectrum of the VITA SYSTEM 3D-MASTER® shades, including the BLEACHED SHADE GUIDE shades as well as the VITA classical A1–D4® shades. You also have access to digital tooth shade determination and documentation with the aid of the VITA mobileAssist app or the VITA Assist PC software. To achieve precise shade determinations, please read this manual all the way through before using the instrument.

We wish you much success with this instrument.

1.2 Safety information

VITA Easyshade V	Complies, with regard to electrical safety, fire safety and mechanical breakdowns, with IEC 61010-1
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Warnings

1. Use only the rechargeable batteries of the "eneloop BK-3MCCE, Ni-MH, 1.2 V, min. 1900 mAh, HR6, AA" type which are delivered with the instrument. The use of other batteries is not permitted and can lead to damage to the instrument or the batteries. VITA Zahnfabrik provides no warranty in this case.
2. Never look directly into the measuring tip of the VITA Easyshade® V while the light source is switched on.
3. Do not immerse the VITA Easyshade® V handpiece or the base station in water or other liquids.
4. Pay attention to the instructions in section 4.1 for the correct application of infection protection.
5. Follow the instructions in section 10 for properly cleaning and disinfecting the VITA Easyshade® V.
6. Do not expose the instrument to temperatures over 60 °C or under 0 °C.
7. General dental and technical work and safety measures must be observed during use of the VITA Easyshade® V.
8. The Infection control shield is intended for use with a single patient only.
9. Protect the instrument from direct sunlight.
10. Measurements must be taken within a temperature range between 15°C and 40°C.
11. Do not allow the instrument to fall as there is a danger of breakage and electrical shock.
12. The power cable delivered with the instrument may only be replaced with an identical power cord.

Important information on electromagnetic compatibility (EMC)

Portable and mobile high-frequency communication devices can impair electrical medical instruments. This product is designed for use in the indicated electromagnetic environment. The user of the product must ensure that the instrument is used exclusively in a suitable environment.

1. Power frequency magnetic fields must not exceed the values characteristic of a typical location in a commercial or clinical environment.

Explanation of the symbols on the instrument:		
Hazardous voltage	This pictogram warns the user about hazardous voltage. Before opening the instrument, always disconnect it from the mains by unplugging the AC adapter.	
Note	Opening the housing may cause damage to the instrument.	
Separate disposal	This instrument and all accessories labeled with this symbol are subject to Directive 2002/96/EC (WEEE) and the applicable national regulations and may not be disposed of as unsorted municipal waste in the European Union (EU). Return the old instrument to VITA Zahnfabrik.	
CE marking	The VITA Easyshade® V complies with the applicable regulations of the European Union (EU). The declaration of conformity can be requested from VITA (Regulatory Affairs Department) at: www.vita-zahnfabrik.com	
Protection class II	Resources of protection class II have enhanced or double insulation between the main supply circuit and output voltage and metal housing (VDE 0100 Part 410, 412.1).	

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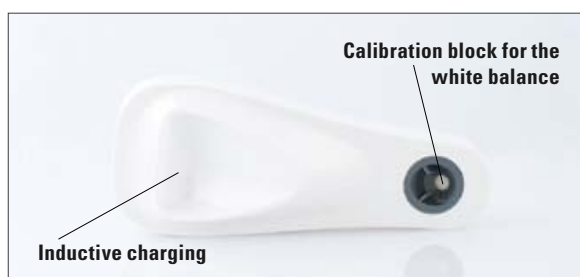
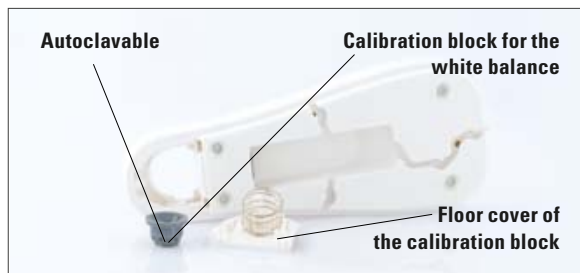
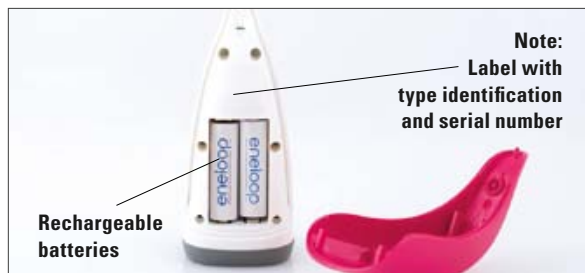
2 General Product Description

With the new VITA Easyshade® V, tooth-shade determination and communication is always in digital focus thanks to high-precision VITA vEye technology. The user-oriented operating concept is rounded off perfectly by a brilliant color OLED touch display that is both convenient and intuitive. The durable and long-lasting battery technology with integrated self-discharge protection ensures particularly stable operation when in continuous use. The innovative software concept in combination with the VITA vBrain neural network guarantees exact tooth-shade determination in accordance with the internationally established shade systems VITA classical A1-D4®, VITA SYSTEM 3D-MASTER®, VITABLOCS® and the bleached shades defined by the American Dental Association (ADA).

2.1 Product information

The software VITA Assist with the VITA ShadeAssist module (included in the scope of delivery or by download at <http://www.vita-zahnfabrik.com/vita-assist>) for the transmission and documentation of the measured natural tooth shade:

- i Note:** Operating system: Windows XP SP2 and above
"VITA mobileAssist," an application for smartphones and tablets available from the Google Play Store (Android).



3 Scope of Delivery and Charging the Instrument

3.1 Scope of delivery

Article	Piece count	VITA article number
VITA Easyshade® V hand piece	1	DEASY5HP
VITA Easyshade® V charging station	1	DEASY5LS
VITA Easyshade® V films for preventing infection (18 pieces)	2	D58000
VITA Easyshade® V Bluetooth Dongle	1	D46008
VITA Easyshade® V Operating Manual	1	10180
VITA Easyshade® V Quickstart	1	10188
VITA Easyshade® V Instrument Warranty Card	1	D58001
Instrument power cable 1.) 220-230 V EU 2.) 110 V 3.) 220-230 V GB 4.) 220-230 V CN		D5800...
VITA Assist	1	DASSIST..
Sales and shipping packaging	1	DEASY5VP

Check the delivery for completeness and any transport damage.

i Note: In the unlikely case that the contents of the package are incomplete or damaged, please contact the VITA Zahnfabrik Service Hotline immediately. Tel. No.: +49 (0)7761 562 222

3.2 Replacement parts and accessories for users

The following replacement parts and accessories can be obtained from VITA:

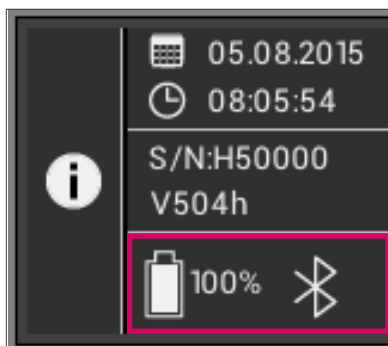
Article	Piece count	VITA article number
Infection control shields (9x18 pieces)	1	D58000S
Sales and shipping packaging	1	DEASY5VP
VITA Assist	1	DASSIST..
Operating manual	1	10180
Brief instructions	1	10188
Instrument power cable 1.) 220-230 V EU 2.) 110 V 3.) 220-230 V GB 4.) 220-230 V CN		D5800...



3.3 Charging the instrument

You should charge the instrument for at least 12 hours before using it for the first time. To do this, connect the charging station with the accompanying power cable to the mains supply and place the handpiece in the designated position. As soon as the instrument is correctly inserted and supply voltage is present, a red LED will light up on the cover of the handpiece.

⚠ Important: Check to make sure that the handpiece and the calibration block in the charging station have the same serial number; if this is not the case, please contact VITA immediately.



3.4 Battery charge status

You can find the current battery status in the information directory in the main menu. The battery symbol shows you the charge status of the battery. If the battery status is low, the battery symbol blinks.

4 First Commissioning



4.1 Placement of the infection control shield

Before using on the patient, you must properly clean and disinfect the instrument. In order to prevent patient cross-infection, you should use a new VITA Easyshade® V infection control shield.

The infection control shield also protects the optical elements of the instrument from damage.

Insert the tip of the handpiece into the shield and make sure that the infection control shield is completely flat over the measuring tip and is not torn. Then perform the white balance, as described in section 4.4.

You should use an infection control shield on the measuring tip during all measurement procedures. These non-sterile covers are intended for single patient use and must be disposed of according to regulations.

i Note: Once the infection control shield comes into contact with a patient, you must take care that it does not touch the calibration block. If this happens anyway, please follow the instructions for cleaning and disinfection of the calibration block in section 10



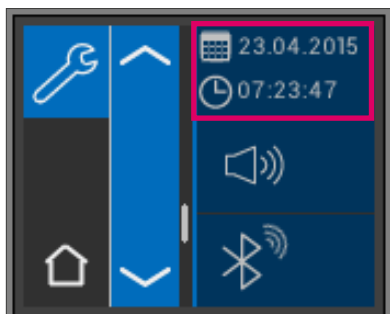
4.2 Switching on

Switch the VITA Easyshade® V on by activating the measurement button on top of the instrument.



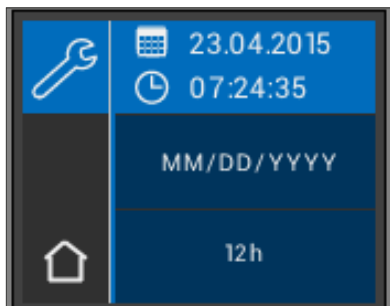
4.3 Basic settings

As soon as you have started up the instrument, you can undertake the basic settings. You can find these on the third page of the main menu by touching the middle button and scrolling to the second settings page using the arrow.

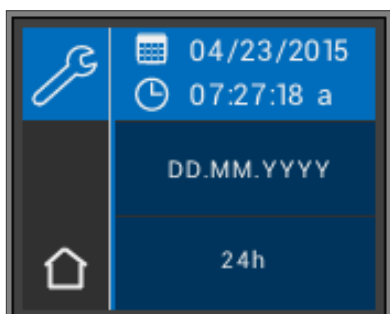


4.3.1 Date and time

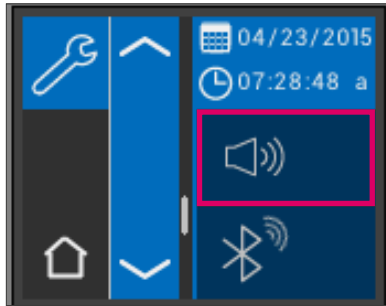
By touching the very top button, the date and time can be set.



Touching the date and time field switches the instrument to processing mode.



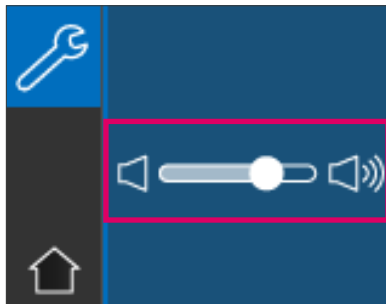
Pressing the date field in Settings allows the user to switch the type of display between DD.MM.YYYY and YYYY.MM.DD as well as between the 12 and 24 hour view.



4.3.2 Regulating volume

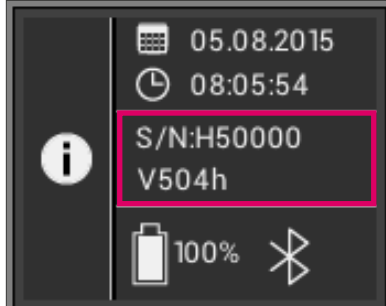
Use the middle button to regulate volume.

By moving the controller to the right, the sound becomes louder, and by moving it to the left, the sound becomes quieter.



4.3.3 Information on the instrument

Under Information, in the button at the very bottom, you will find the serial number of the instrument and the software version.



4.4 Automatic white balance



You should only conduct the white balance with a new infection control shield to prevent cross-patient infections.

After turning it on, place the instrument in the charging station so that the tip lies flush on the calibration block.

Press the measurement button. The VITA Easyshade® V recognizes the calibration block and now performs the white balance automatically.

The conclusion of the white balance is reported by two short signal tones.



Following a successful white balance, you are shown the main menu, and the instrument is ready to use. The last used measuring mode is automatically activated.



If there is only a single signal tone, the white balance could not be correctly performed. In this case, an error message appears on the display. Acknowledge the error message by touching the x-symbol on the display and repeat the white balance. As a matter of principle, we always recommend the use of an infection control shield. If this is not used, the white balance must always take place after the shield is attached and before the tooth shade determination on the patient.

i Note: Do not place the charging station in the vicinity of a strong light source (e.g., sunlight, treatment lamp) as this may lead to a defective white balance.

i Note: The VITA Easyshade® V is calibrated to the supplied calibration block at delivery and may only be used with this calibration block. If you have more than one VITA Easyshade® V, you should ensure that the charging stations are not confused in order to guarantee the precision of the measurements.

4.4.1 Monitoring the white balance

Due to altered environmental conditions or after multiple uses, it may be necessary for you to conduct a white balance again for further measurements. Please conduct this as described under 4.4.

i Note: Once the infection control shield comes into contact with a patient, you must not allow the shield to come into contact with the calibration block. If this happens, please follow the instructions for cleaning and disinfecting the calibration block in section 10.



If Error No. 3 is displayed (see left), a white balance must be performed again.

5 Menu Navigation

5.1 About the illustrations in the Operating Manual

The instrument is operated using a touch screen. Initiate actions by touching the display.

Context-sensitive information	Scroll up	Scroll down	Main menu	Battery status
				
Bluetooth connection	Date and time	User standard	Activate interpolated shades	Deactivate interpolated shades
				
Scroll left or back	Scroll right	save	Classical training mode	3D-MASTER training mode
				
Regulating volume				
				
Base shade determination	Averaged shade determination	Shade determination of the tooth area	Determination of the shade of a ceramic restoration	Determination of the shade of a ceramic crown
				
List overview of measurements	Delete list	Easysshade settings	Switch off Easysshade	
				
Ready symbol for base shade determination	Display of measurement results for the base shade determination	VITABLOCS shade	Natural tooth shade	Bleached shade
				
Ready symbol for the averaged shade determination	Display of measurement results for averaged shade determination	Ready symbol for tooth area shade determination	Standby after 1 st measurement of tooth area shade determination	Standby after 2 nd measurement of tooth area shade determination
				
Display of measurement results for tooth area shade determination	Determination of the shade of a ceramic restoration	Determination of the shade of a ceramic crown	Measurement results of the determination of the shade of a ceramic crown	
				

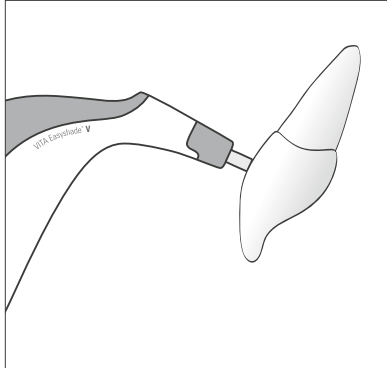
5.2 Correct measuring of tooth shade

You can use the device to measure the shade in the central tooth area ("base shade determination"), distributed over the entire tooth at several points ("averaged shade determination") or the neck, central and cutting areas ("tooth area shade determination") as described in section 6.

Follow the procedure described here as much as possible in order to conduct precise measurements with the VITA Easyshade® V (for clarification, the measuring tip is shown below without an infection control shield):



Let your patient sit down on the chair and rest his or her head on a headrest for stabilization in order to achieve a precise measurement. In the first step, consider the shade gradient of the tooth to be measured in order to correctly locate the center of the dentin. Then you must place the measuring tip in the area of the enamel surface with the underlying dentin (central to cervical area). Finally, you should take care that the measuring tip lies flush on the tooth surface.



While you hold the measuring tip on the central part of the dentin of the tooth, press the measurement button. Hold the measuring tip against the tooth until 2 short consecutive signal tones mark the end of the measurement process.

Function: "Automatic triggering of the measurement."

i Note: You can press the measurement button before placing the measuring tip on the tooth. The VITA Easyshade® V does not trigger the measurement until the instrument is placed on the tooth.

VITA Easyshade® V displays the results of the measurement.

If you lift the measuring tip off the tooth before the instrument produces a signal tone, an error message or erroneous measurement will be displayed and you will have to perform the measurement again.

i Note: Before the shade of a tooth is determined, you should place an infection control shield on the measuring tip of the VITA Easyshade® V and conduct a white balance. Before a measurement procedure, it is recommended that you completely remove specks from the tooth surface. It may be necessary to wipe the tooth off with gauze to prevent any sliding. You must position the measuring tip completely on the natural tooth. Take care that what you are dealing with is natural tooth substance. Filling and restoration materials will influence the measurement results.

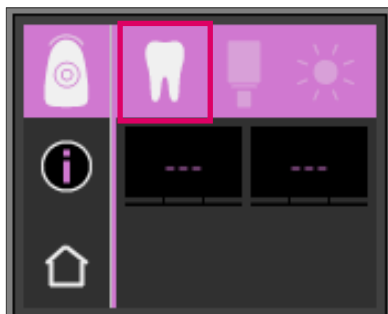
6 Operating Modes

6.1 Base shade determination



This measurement makes it possible for you to determine the base shade of a natural tooth.

In addition to the base tooth shade, you can have the appropriate VITABLOCS® as well as the ADA bleaching index displayed.



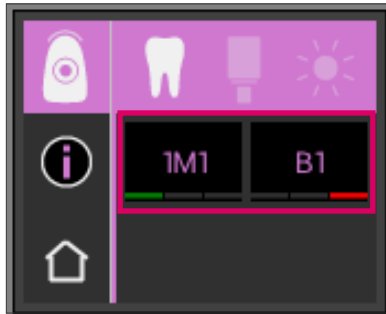
6.1.1 Base shade determination on a natural tooth

To determine the base shade of a natural tooth, touch the symbol for base shade determination in the main menu.

Trigger the measurement by pressing the measurement button and place the measuring tip flush in the central area of the dentin of the tooth. The measurement is performed without further interaction as soon as the instrument is stable on the surface of the tooth.

Once the measurement is completed, the VITA Easyshade® V produces an acoustic signal. As a measurement result, you can have the tooth shade displayed as a suitable VITABLOCS® shade as well as the bleaching index according to the ADA.

i Note: The patient's head should be stabilized during the measuring process. Ideally, the measurement is performed in the treatment chair.



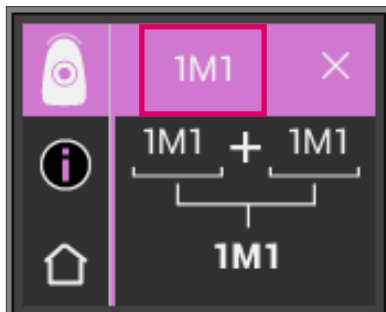
6.1.2 Display of the natural tooth shade

To display the measured tooth shade, select the tooth symbol in the top bar. The measurement result is displayed in the tooth shade systems of the VITA classical A1–D4® and VITA SYSTEM 3D-MASTER® Shade. All 16 VITA classical A1–D4® and all 29 VITA SYSTEM 3D-MASTER® shades can be measured.



To obtain detailed information on the measured VITA classical A1–D4® Shade, touch the displayed VITA classical A1–D4® shade (shade specification on right) on the screen.

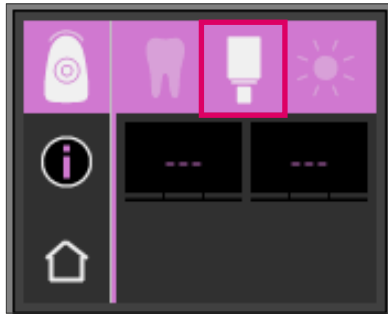
In the detail display, you have information on given shade deviations. A detailed description of the display can be found in section 6.1.5.



To obtain detailed information on the measured VITA SYSTEM 3D-MASTER® shade, touch the displayed VITA SYSTEM 3D-MASTER® shade (shade specification on the left) on the display.

In the detail display, the shade code in the bottom bar provides information on the nearest interpolated shade. A detailed description of the display can be found in section 6.1.6.

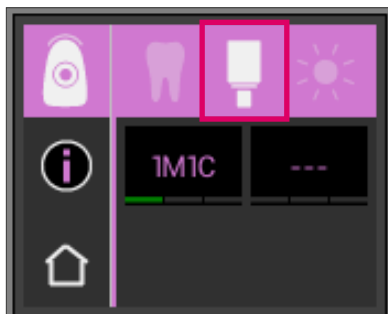
i Note: If you want to compare the measurement results with your visual impressions, please use standardized daylight lamps with a color temperature of 5500 K or 6500 K and only the current shade scales of VITA Zahnfabrik.



6.1.3 Display of the VITABLOCS shade

The VITABLOCS® display provides you with the information on which CAD/CAM material should be used for a shade-true reproduction of the measured tooth. To do this, please select the VITABLOCS® symbol in the top bar.

The appropriate VITABLOCS® are displayed in the VITA classical A1–D4® or VITA SYSTEM 3D-MASTER®. If no appropriate VITABLOC is available in the VITA classical A1–D4® shade system, (---) appears. In this case, use the specified material in the VITA SYSTEM 3D-MASTER®.



Note:

i For the provision and determination of the correct VITABLOCS® shade, 4 starting situations must be differentiated. In principle, measurements on a prepared tooth (stump) do not make sense as these are frequently too small and usually darker than the unprepared tooth.

1. Vital, non-discolored

The base shade is determined with the VITA Easyshade® V on the unprepared tooth, and the restoration can take place without further additional characterization.

2. Vital, discolored

The base shade is determined with the VITA Easyshade® V on the unprepared tooth; however, the restoration must be shaded prior to insertion (VITA AKZENT® Plus).

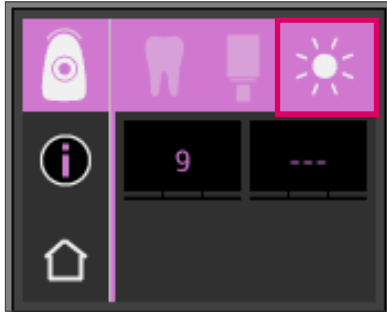
3. Devitalized, non-discolored

The base shade is determined with the VITA Easyshade® V on the unprepared tooth, and the restoration can take place without further additional characterization.

4. Devitalized, discolored

Measurement of the tooth with the VITA Easyshade® V does not make sense. To determine the appropriate VITABLOCS® shade, a neighboring tooth with an acceptable shade must be measured. A devitalized tooth should be bleached internally, if possible prior to treatment (attempt to achieve the shade of a non-discolored, devitalized tooth).

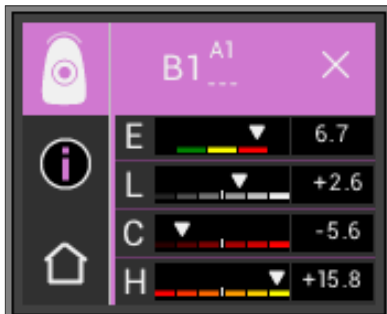
The prepared tooth should be shaded as with a vital, discolored tooth.



6.1.4 Display of the bleached shade

To display the bleached shade, please select the sun symbol in the top bar.

When selecting this display mode, the bleached index according to the VITA Bleachedguide 3D-MASTER® (VITA article number B361) is given for the measured shade. The ADA bleach index enables a simple check of tooth whitening. To do so, the measured bleach index after the treatment is subtracted from the bleach index before the treatment. The difference corresponds to the number of the SGU (Shade Guide Units) achieved by the treatment according to the recommendation of the ADA.



6.1.5 Display of the VITA classical A1–D4® shades

This illustration shows the shade intervals between the measured tooth shade and the closest VITA classical A1–D4® shade in the color space.

The bars represent the shade intervals graphically.

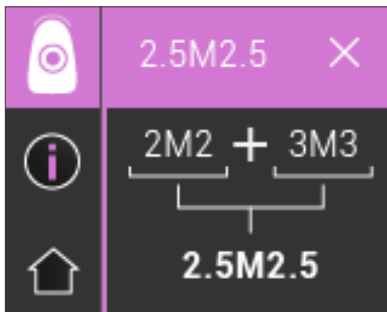
ΔE : The overall shade deviation of the tooth.

ΔL +/- : The **lightness** of the tooth is higher (+) /lower (-) than the VITA classical A1–D4 shade.

ΔC +/- : **Chroma**: The tooth is higher (+) /lower (-) than the VITA classical A1–D4 shade.

Δh +/- : The **hue** of the tooth is yellower (+) / redder (-) than the VITA classical A1–D4 shade.

In addition, the deviation is described with a scale (describes the source, i.e., the respective initial shade) with three steps in the positive or negative area as seen from the mid-point. Here, the lightness, chroma and hue are graphically illustrated.



6.1.6 Display of the VITA SYSTEM 3D-MASTER® shades

This illustration shows how, if necessary, an even more exact adaptation to the measured tooth shade can be achieved with the materials in VITA SYSTEM 3D-MASTER® shades. If the measured tooth shade lies between 2 shades of the VITA SYSTEM 3D-MASTER®, a perfect match can be achieved by mixing the materials in both shades. A 1:1 mixing ratio is sufficient to achieve an aesthetically suitable solution in each case.

6.1.7 VITA SYSTEM 3D-MASTER® interpolated shades

M-shades										
0M1	0.5M1	1M1	1.5M1	2M1	2.5M1	3M1	3.5M1	4M1	4.5M1	5M1
0M1.5	0.5M1.5	1M1.5	1.5M1.5	2M1.5	2.5M1.5	3M1.5	3.5M1.5	4M1.5	4.5M1.5	5M1.5
0M2	0.5M2	1M2	1.5M2	2M2	2.5M2	3M2	3.5M2	4M2	4.5M2	5M2
0M2.5	0.5M2.5		1.5M2.5	2M2.5	2.5M2.5	3M2.5	3.5M2.5	4M2.5	4.5M2.5	5M2.5
0M3				2M3	2.5M3	3M3	3.5M3	4M3	4.5M3	5M3

L-shades				
2L1.5	2.5L1.5	3L1.5	3.5L1.5	4L1.5
2L2	2.5L2	3L2	3.5L2	4L2
2L2.5	2.5L2.5	3L2.5	3.5L2.5	4L2.5

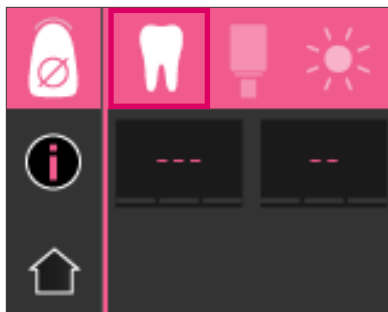
R-shades				
2R1.5	2.5R1.5	3R1.5	3.5R1.5	4R1.5
2R2	2.5R2	3R2	3.5R2	4R2
2R2.5	2.5R2.5	3R2.5	3.5R2.5	4R2.5

The 29 VITA SYSTEM 3D-MASTER® shades can be found in bold print in the tables above. These also show the 52 interpolated shades that can be obtained by the equal mixing of the respective VITA SYSTEM 3D-MASTER® materials. VITA Easyshade® V measures teeth and restorations in relation to the closest VITA SYSTEM 3D-MASTER® interpolated shade.



6.2 Averaged shade measurement

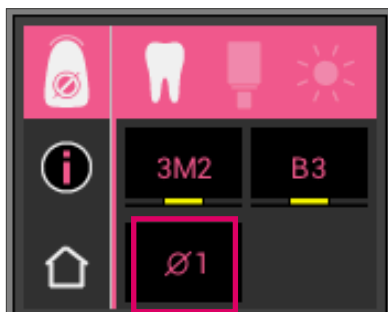
This measurement calculates an average base tooth shade from several base shade measurements. In addition to the base tooth shade, you can have the matching VITABLOCS® shade and the ADA bleach index displayed. To do so, you should perform at least 4 and a maximum of 30 measurements.



6.2.1 Determination of averaged shade of the natural dentition

With averaged shade determination, up to 30 measurements can be performed on a natural tooth. The determined tooth shade is displayed in the tooth shade systems VITA classical A1–D4® and VITA SYSTEM 3D-MASTER®. It is recommended that at least 4 measurements be made.

To do this, the measuring tip is shifted slightly on the tooth after each measurement and a new measurement taken.



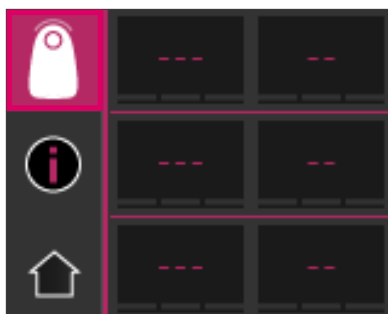
The number of averaged measurements is displayed in the lower part of the screen. The detail display is analogous to the base shade determination.



6.3 Determination of the tooth area

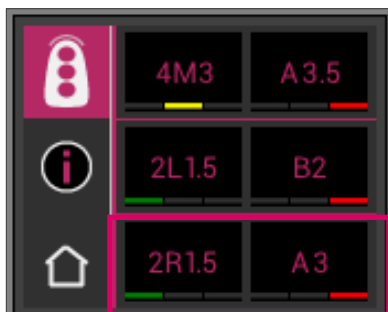
This measurement enables you to determine the shade in the cervical, central and incisal areas of a natural tooth. To do so, touch the symbol for determining tooth area in the main menu.

Measurement process: cervical, central, incisal.



To start (symbol with an empty circle), place the measuring tip in the cervical area of the tooth and press the measurement button. Two short, consecutive signal tones indicate a successful measurement and a filled-in circle appears in the display.

Then measure the central and incisal areas.

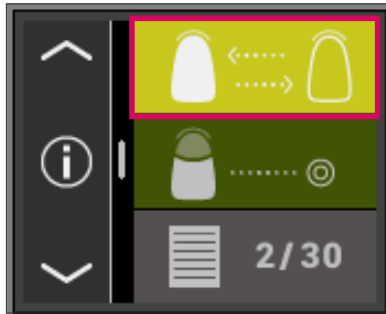


Measurement result

After successfully measuring all areas, the shades are displayed in the VITA classical A1–D4® and VITA SYSTEM 3D-MASTER® tooth shade systems.

If an error occurs during the measurement, the instrument produces a long signal tone, and an "X" is displayed in the corresponding tooth area.

Repeat the measurement of the area until a successful measurement has been performed.



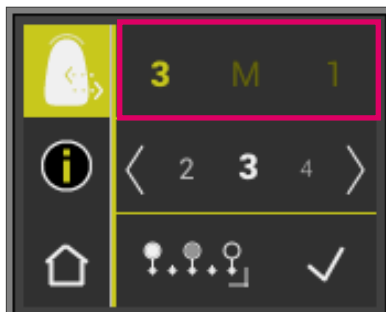
6.4 Determination of the shade of a ceramic restoration

This measurement makes it possible for you to:

- Compare the shade of the ceramic restoration with a tooth shade indicated in the VITA Easyshade® V
- Compare the shade of the ceramic restoration with a previously measured tooth shade (user standard)
- Determine the pure shade of a ceramic tooth restoration (user standard)

You can also activate the VITA SYSTEM 3D-MASTER® interpolated shades.

VITA Easyshade® V enables dental specialists to check how well the shade of the ceramic restoration matches an indicated shade. This enables you to check the 29 VITA SYSTEM 3D-MASTER® shades, the 52 VITA SYSTEM 3D-MASTER® interpolated shades as well as the 16 VITA classical A1–D4® shades. It is also possible to define your own shade standard (user standard) and compare the ceramic restoration with it. It is additionally possible to determine the approximate shade value of the restoration.



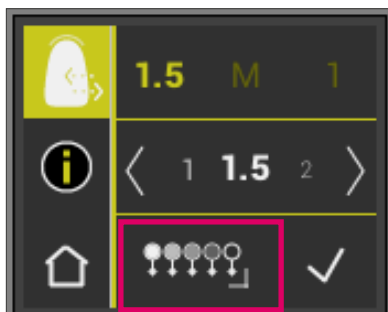
6.4.1 Comparison of the shade with VITA Standard


To check a restoration, please touch the Check Restoration symbol in the main menu. The shade to be checked must be selected before measuring the restoration.

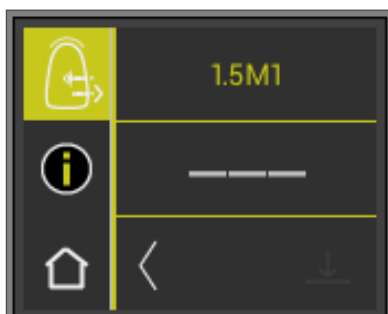
VITA Easyshade® V – Operating modes



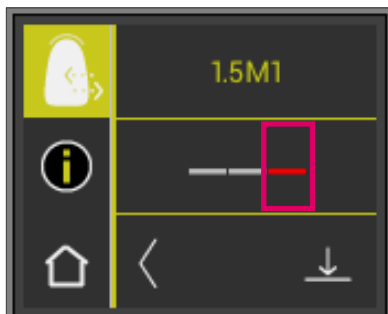
To select a target shade, please choose the first number or letter by touch. After this selection, only those numbers and letters can still be selected which can produce a corresponding VITA SYSTEM 3D-MASTER® or VITA classical A1– D4® shade.



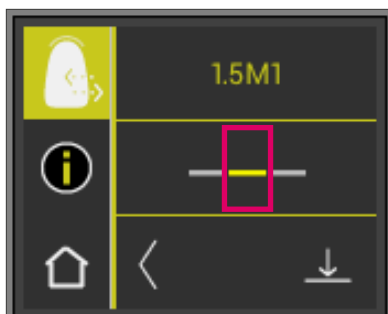
To select interpolated shades, please switch over to the extended mode by using the  button.



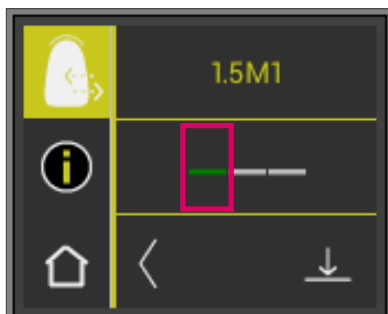
After selecting the target shade, measure the middle third of the restoration. The extent of the match (restoration target shade) is symbolized by red / yellow / green, as shown in the following illustrations.



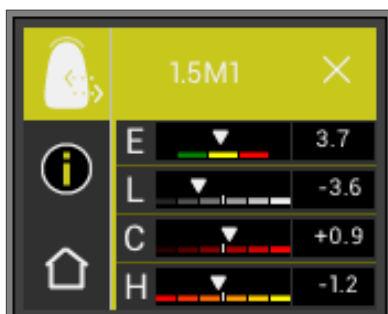
RED means "Adjust." This means that there is a recognizable difference between the base shade of the restoration and the target shade it was compared to. The restoration must be reworked to achieve an acceptable shade match.



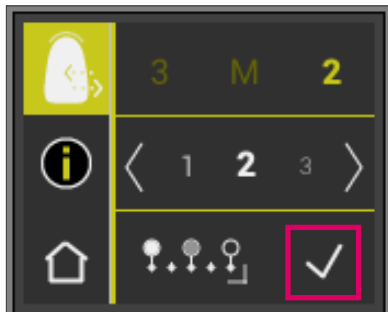
YELLOW means "average." This means that there is a recognizable but still acceptable difference between the base shade of the restoration and the target shade it was compared to. This may not be sufficient for an anterior tooth restoration under certain circumstances, however.



GREEN means "Good." This means that there is little or no difference between the base shade of the restoration and the target shade with which it was compared.



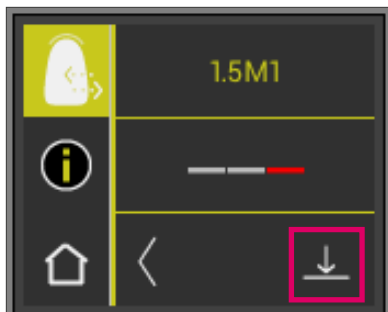
To obtain extended shade information, please touch the colored bar.



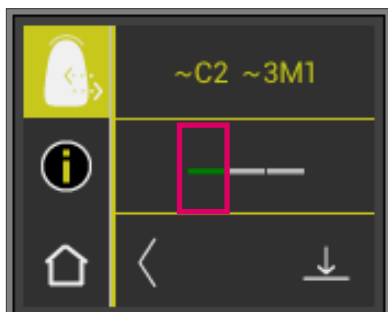
6.4.2 Comparison of the restoration shade with a user standard

To establish a user standard, please touch the Check Restoration symbol in the main menu. Now set any tooth shade desired. Confirm the selection with the check mark.

Measure the target shade of a ceramic restoration that the actual restoration should be compared to.



Touch the Save symbol



The measured shade is now saved and is displayed as an approximate VITA classical A1–D4® and VITA SYSTEM 3D-MASTER® shade. All shade deviations are set to null after saving, and the bar is green. This shade is now defined as a user standard.



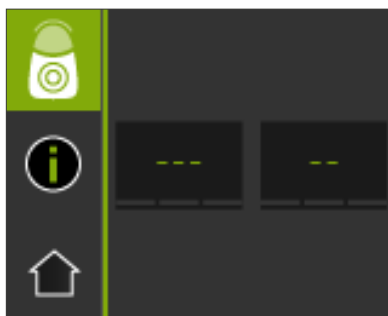
All subsequent shade measurements in this mode (without saving) are compared to the user standard, and the degree of match is displayed in red, yellow or green and with the LCh value deviations.

The user standard can be called up at any time as a target shade by activating the User Standard symbol. To define a new user standard, repeat the process described at the beginning. The previous user standard is overwritten when you do this.



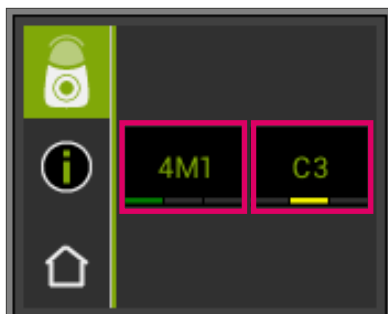
6.5 Determination of the shade of the crown analog for base shade determination

With the crown measurement, you can determine the shade of a ceramic crown. The measurement is performed in the same manner as the base shade measurement of the natural tooth. In this mode as well, you will obtain the measurement results in VITA classical A1-D4® and VITA SYSTEM 3D-MASTER®. The light indicates the precision of the measured shade in comparison to the standard shade of the respective shade system. We recommend that you use the extended measurement values if the light shows "yellow" or "red."



Press the measurement button and place the measuring tip flush in the center of the crown. The measurement is performed without further interaction as soon as the instrument is stable on the surface. After completing a measurement, the VITA Easyshade® V produces an acoustic signal, and the shade of the crown is displayed in the tooth shade systems VITA classical A1-D4® and VITA SYSTEM 3D-MASTER®.

i Note: The patient's head should be against a headrest during the measuring procedure. Ideally, the measurement is performed in the treatment chair.



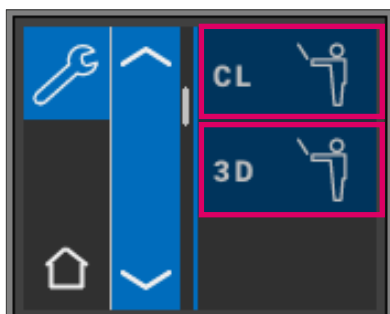
To obtain detailed information on the measured VITA classical A1–D4® Farbe or VITA SYSTEM 3D-MASTER® shades, please touch the respective shade.

In the detail display, you have information on given shade deviations. A detailed description of the display can be found in sections 6.1.5 and 6.1.6.

7 Training Mode



With this function, you can practice the handling of the instrument on a VITA shade scale.

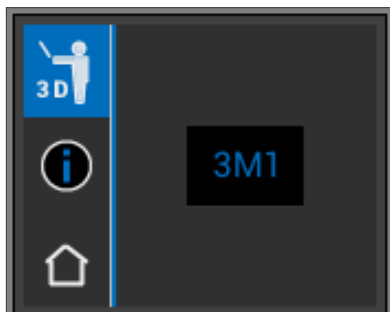


To measure a shade sample, select either the training mode for VITA classical A1–D4® or VITA SYSTEM 3D-MASTER® shade scales in the main menu under Settings.



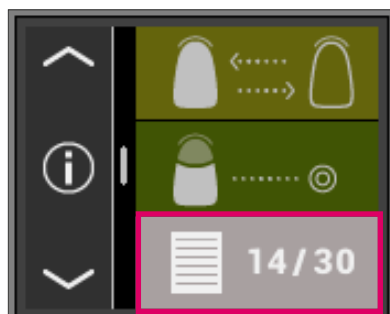
To measure, place the measuring tip flush and with a slight pressure in the upper third (below the neck of the tooth) of the shade tab. Now press the measurement button. The closest tooth shade is displayed.

i Note: In Training Mode, the 29 shades of the VITA SYSTEM 3D-MASTER® and the 16 VITA classical A1–D4® shades are displayed. The measuring of other shade guides or other shade samples leads to deviating results. Due to the slight shade differences and the natural shade variations of the shade samples, it is possible with some shades, with just slight changes in the measurement process, that another closest "neighboring shade" will be displayed.



8 Measurement Memory

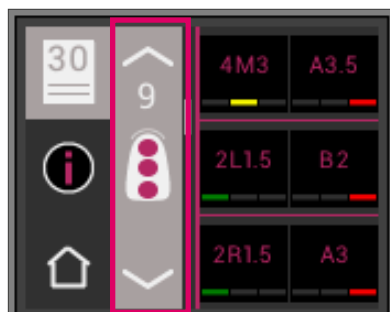
The instrument has a memory in which 30 successful measurements are recorded in the order in which they were determined. Each set of tooth area measurements is saved as one result. In addition to the measurements, the data and the time of the measurement are saved so that the saved measurements can also be easily assigned to a patient at a later time.



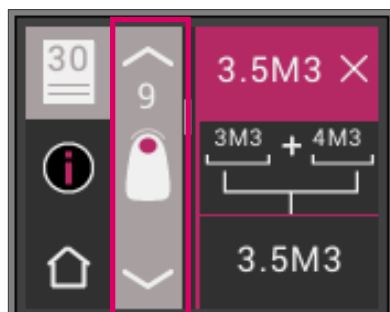
8.1 Retrieving measurements

The measurement memory display can be found in the main menu. As soon as the number of 30 saved measurement results is attained, the last measurement of the full memory is overwritten.

The first 29 measurements within the record remain unchanged.



If the measurement memory already contains measurements, it is possible to navigate within the recorded data by touching the Arrow symbol.

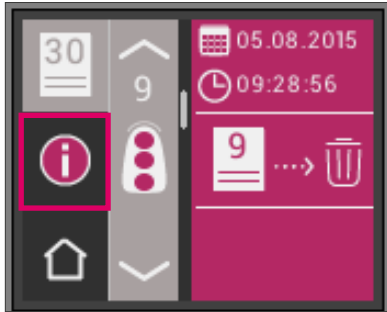


By selecting the VITA classical A1–D4® or VITA SYSTEM 3D-MASTER® shade specification, you will arrive back at the detail display (Fig. shows details of the VITA SYSTEM 3D-MASTER® shade specification) as described in 6.1.5 and 6.1.6.

8.2 Deleting measurements

Single deletions

To delete single measurements from the measurement memory, please select the corresponding measurement in the measurement memory and touch the Info symbol. Then touch the Recycle Bin symbol.

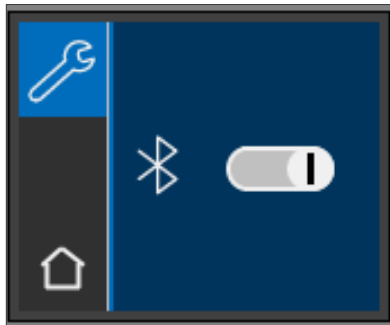


Deleting all records

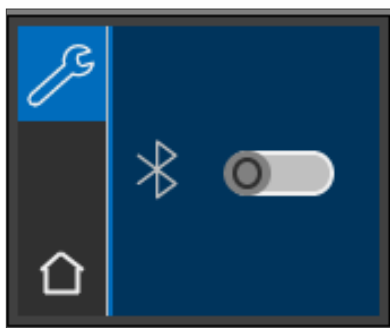
To delete all saved measurements, please select the Recycle Bin symbol in the main menu and delete all measurements permanently.



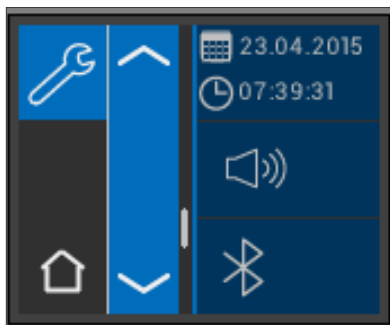
9 Bluetooth® Interface



For the wireless transmission of measurements to a computer, the VITA Easyshade® V has an integrated Bluetooth® module. This module can be switched on and off by the user for the optimization of battery life. The radio module also remains in the last set mode after the VITA Easyshade® V is turned back on.



To switch the integrated Bluetooth® module on or off, please press the Bluetooth® sub-item in the Settings menu and move the controller either to the right to switch it off or to the left to switch it on. The symbol for the Bluetooth® module is displayed according to the selected status. If the module is switched off, the Bluetooth® symbol is displayed as white, and the controller is to the left.



To establish a connection with a computer, you must switch the Bluetooth® module on and stick the Bluetooth® module USB included in the delivery into a USB port on your computer. The first time you insert it, your PC will install the instrument driver automatically. For transmitting data to the computer, use the VITA Assist software also included in the delivery of the VITA Easyshade® V. For transmitting data to a smartphone and/or tablet, please use the VITA mobileAssist app (Android, download from Google Play Store under "VITA mobileAssist").

10 Cleaning and Disinfecting

The surface of the VITA Easyshade® V can be disinfected. We recommend customary disinfectant wipes. These can be obtained from most dental dealers. Please heed the respective manufacturer's instructions for use.











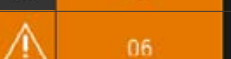



If products containing iodine or phenylphenol or isopropyl alcohol are used to clean or disinfect the VITA Easyshade® V, permanent discoloration and/or cracks may occur which are not covered by the warranty. Disinfectants containing phenol, compounds with phenylphenol groups or methyl ethyl ketone will damage the surface of the instrument.

i Note: General dental and dental-technical working and safety measures must be observed while using the VITA Easyshade® V.

The white balance should only be performed with a new infection control shield. If the calibration block is contaminated, the block must be removed with the holder from the charging station and sterilized in a steam autoclave according to the instructions of the manufacturer of the sterilization agent. Do not use a "heat only" autoclave.

11 Appendix

11.1 Error message

Error No.	Symbol	Meaning
01	 	No measurement object was recognized. Please repeat the measurement procedure.
02	 	The shade is outside of the measurement range.
03	 	Please perform a white balance.
04	 	The infection control shield is missing.
05	 	The Bluetooth data transmission is defective.
06	 	The battery is low.
07	 	The hardware is defective.

11.2 Troubleshooting

Error	Procedure
VITA Easyshade® V cannot be switched on	Please charge the battery.
No white balance of the VITA Easyshade® V is possible, or it repeatedly requests to perform another white balance.	Ensure that the measuring tip is resting properly on the calibration block and is not lifted up before the signal tone which indicates the end of the white balance. Place the measuring tip again as requested.
After switching on, no measurement with VITA Easyshade® V is possible.	With the VITA Easyshade® V, after switching on, a white balance must first be performed. Only after this task is completed, is a measurement in the desired measurement mode possible.
A measurement is performed and VITA Easyshade® V displays "--" instead of a VITA classical A1–D4® shade or a VITA SYSTEM 3D-MASTER® shade.	The shade lies outside of the range of known tooth shades, the measuring tip was not correctly positioned or was moved or removed during the measurement. Conduct another measurement and position the measuring tip correctly.
In the tests with shade samples, imprecise shades are constantly displayed.	Ensure that the VITA Easyshade® V is in Training Mode. Ensure that the calibration block and the measuring tip are clean. Conduct another white balance. Use only approved infection control shield for VITA Easyshade® V. Repeat the measurement and make sure that the measuring tip touches the surface in the middle of the shade sample at an angle of 90° and that the measuring tip does not move during the measurement. Check that the correct calibration block for the VITA Easyshade® V has been installed by comparing the serial numbers. Ensure that only VITA Linearguide or Toothguide 3D-MASTER® and VITA classical A1–D4® shade samples are used.

11.3 Technical data

Length / Width / Height:	20.5 cm / 8.5 cm / 10.5 cm
Weight:	Ca. 420 g (without power cable)
Battery:	2 pcs. Ni-MH 1.2V 1.900mAh
Electrical connection:	100V-240V, 50-60Hz Power consumption max. 5W
Classifications:	EN 60601-1:2010 UL 60601-2:2012 (3 rd Ed.) CAN/CSA-C22.2 NO. 61010-12 CE The instrument is not suitable for use with a flammable narcotic agent with air or nitrous oxide.
Temperature range for use:	15°C to 40°C
Bluetooth:	Range approx. 10 m with a clear line of sight Transmission frequency 2402MHz to 2480MHz FHSS/GFSK modulation, 79 channels 1 MHz intervals 128 bit encryption
Indication range:	Approved for indoor use only.

11.4 Glossary

Spectrophotometer

An instrument for measuring color which measures the spectral distribution of light and converts it into color value (tristimulus value) or an internationally recognized numerical value.

VITA SYSTEM 3D-MASTER® shades

Refers to the 29 shade sample teeth, including 3 bleach shade samples of the lightness group 0 and the 52 interpolated shades of the VITA SYSTEM 3D-MASTER®.

VITA classical A1–D4® shades

Refers to the 16 original VITA classical A1–D4® shades of the VITA classical A1–D4® shade scale.

Lightness (L)

The luminance of a shade. Lightness or darkness of a shade in relation to a series of gray tones ranging from white (L = 100) to black (L = 0).

Chroma (C)

The saturation (intensity) of a shade. The difference between the shade and a gray tone with the same lightness, measured as the distance from the neutral axis. In many cases, also indicated as purity of the shade.

Hue (h)

What we commonly call color (red, yellow, green, blue or other colors). Corresponds to the wave length of light. In the L*C*h* system, it is described as an angle ranging from 0° to 360°. Angles from 0° to 90° are red, orange and yellow tones; angles from 90° to 180° are yellow, yellow-green and green tones; angles from 180° to 270° are green, cyan and blue tones; angles from 270° to 360° are blue, violet and magenta tones, which pass over to red at 360° (as with 0°).

Interpolated shades

The mixing of two or more shades of ceramic materials of the VITA SYSTEM 3D-MASTER® in order to obtain a shade in between. Thus, for example, 2M2 is mixed with 2M3 to obtain the shade 2M2.5.

CIEL*a*b*

A three-coordinate representation (tristimulus) of colors in the color space, defined by the International Commission on Illumination CIE (Commission Internationale d'Éclairage). For further information on color theory, see www.vita-zahnfabrik.com

11.5 Patents and trade marks

VITA Easyshade® V is protected by one or more of the following US patents (6,040,902; 6,233,047; 6,239,868; 6,249,348; 6,264,470; 6,307,629; 6,381,017; 6,417,917; 6,449,041; 6,490,038; 6,519,037; 6,538,726; 6,570,654; 6,888,634; 6,903,813; 6,950,189; 7,069,186; 7,110,096; 7,113,283; 7,116,408; 7,139,068; 7,298,483; 7,301,636; 7,528,956; 7,477,364; 7,477,391) and others patents in the United States and other countries.

VITA Easyshade®, VITA classical A1–D4® and VITA SYSTEM 3D-MASTER® are registered trade marks of VITA Zahnfabrik.

Windows® is a registered trade mark of Microsoft Corporation.

Other trade marks mentioned in this document are the property of the respective company.

11.6 Limited liability for subsequent defects

VITA does not accept any liability for data loss caused by the use of the VITA Assist DVD.

11.7 Warranty

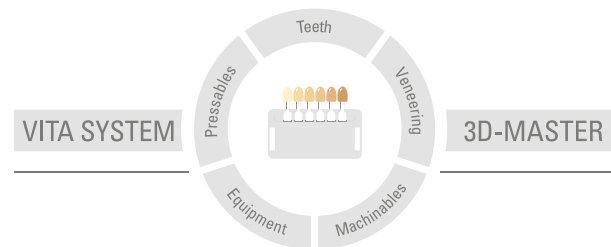
The warranty claims of the first buyer of the VITA Easyshade® V spectrophotometer arise from the General Terms and Conditions of VITA and the regulations of the law.

The General Terms and Conditions of VITA can be seen at www.vita-zahnfabrik.com.

Technical support or service for the VITA Easyshade® V can be obtained from VITA at +49 (0)7761 562 222.

If necessary for the performance of service, you will receive a return of goods number with additional instructions. We recommend that you keep the original packaging in case of service/warranty fulfillment and to return it, if necessary, including accessories.

With the unique VITA SYSTEM 3D-MASTER®, all natural tooth shades are systematically determined and fully reproduced.



Please note: Our products should be used according to the working instructions. We accept no liability for any damage resulting from incorrect handling or usage. The user is furthermore obliged to check the product before use with regard to its suitability for the intended area of applications. We cannot accept any liability if the product is used in conjunction with materials and equipment from other manufacturers which are not compatible or not authorized for use with our product. Furthermore, our liability for the correctness of this information is independent of the legal ground and, insofar as legally permissible, is limited to the invoiced value of the goods supplied excluding turnover tax. In particular, as far as legally permissible, we do not assume any liability for profit loss, for indirect damages, for consequential damages or for claims of third parties against the purchaser. Claims for damages based on fault liability (fault in making the contract, breach of contract, unlawful acts, etc.) can only be made in the case of intent or gross negligence. The VITA Modulbox is not necessarily a component of the product.

Date of issue of this product information: 10.15

On publication of these instructions for use, previous versions will no longer be valid. The current version can be found under www.vita-zahnfabrik.com

VITA Zahnfabrik has been certified in accordance with the Medical Device Directive, and the following products bear the **CE**₀₁₂₄: VITABLOCS®

VITA Easyshade® V is CE marked within the meaning of EC Directive 2006/95/EC, 2004/108/EC and 2011/65/EC.

VITA Easyshade® V · VITA classical A1-D4® · VITA SYSTEM 3D-MASTER® · VITABLOCS®

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