B75

SURGICAL AND DENTAL LIGHT
USER'S MANUAL

FARO

EXPERIENCE AND INNOVATION
SINCE 1948

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Dear Customer,
FARO wishes you success with the new high quality B75 Lamp.
To work safely and to take full advantage of the product's performance, please read this manual carefully before using the device. In particular, please follow all warnings and notes described in the Safety Recommendations included in the package.

Warranty Conditions:
FARO offers the end customer a 12-month warranty from the date of installation up to a maximum of 18 months from the date of manufacture.
Warranty repairs must be carried out by FARO or its approved service network.
The guarantee is considered valid only when:
- the user has sent the duly completed Certificate of Warranty to the following e-mail address: service@faro.it
- the user registered the guarantee via the FARO website or the Faro Tech APP;

The guarantee covers manufacturing and engineering defects; in the event of a valid claim, the guarantee only covers the free replacement of parts. Manhour work and shipment costs are not included in the Warranty.
The guarantee shall not be considered valid, at FARO's sole discretion, if the defect is due to tampering, damage, unauthorised modifications to the product, improper use, incorrect maintenance and normal wear and tear.

This product has a service life of: 10 years.

Any serious accident occurring in connection with the device must be reported to the manufacturer and to the competent authority of the Member State in which the user and/or patient is established.

1 FOREWARD

This document constitutes one of the sections that form the technical documentation regarding the medical device called **B75**.
The user manual follows the product and is provided to the user to make him aware of how the device is made and its operating principle, the classification pursuant to Regulation (EU) 2017/745 and the applied standards, the intended use, contraindications and any side effects, warnings and precautions to be aware of for safe use, description of the symbols used, maintenance and disposal procedures.

Hystory of changes of the document:

Edition	Revision	Date	Reason
1	0	April 15 2024	First issue for use

1.1 Symbols used in this manual

	WARNING
Sections marked with this symbol contain instructions that must be followed carefully to avoid damaging the device, causing harm to the operator or patient.	
	PROHIBITION
This icon highlights what not to do to avoid damaging the device and causing harm to user and patient.	
	NOTES
This icon provides information that allows you to use the device more efficiently.	

1.2 Identification of Manufacturer

Name:	FARO S.p.A.
Registered office:	Via Faro, 15 - 20876 Ornago (MB)
Operational headquarter:	Via Faro, 15 - 20876 Ornago (MB)
Single Registration Number (SRN):	IT-MF-000029670
Telephone:	+39 039 6878.1
E-mail:	info@faro.it
Web site:	www.faro.it

1.3 Identification of Medical Device

Product name:	B75
Model or type reference:	B75
REF:	see §2.1
General Description	operating luminaire for dentistry and surgery
Generic group or typology:	Z129004 - LIGHT SOURCES
Basic UDI-DI:	805432051B75BE
Device Classification under Reg. 2017/745:	Class I, rule 10 of Annex VIII

1.4 Essential Performance of the device

The ESSENTIAL PERFORMANCE of a SURGICAL LUMINAIRE is the delivery of sufficient light to the operating field, while limiting the delivery of radiant energy to the operating field and its observers.
This is achieved by providing the capability to deliver CENTRAL ILLUMINANCE of at least 40 klx, while ensuring that the total irradiance at the LIGHT FIELD CENTRE at the MAXIMUM ILLUMINANCE DISTANCE does not exceed 700 W/m^2

1.5 Intended use

The device is intended to provide luminous energy to illuminate the patient body during dental, medical or surgical procedures.

	WARNING
	The device is not single fault safe for the Essential Performance and is not intended to be used in life supporting surgery. To have a single fault safe device, it is necessary to install a system composed by two luminaries connected independently to the mains and to an emergency power supply.

In particular the device is intended for:
- illuminate the patient's body locally during medical and/or surgical treatments when installed in medical or surgical areas; or
- illuminate the oral cavity and oral structures of patients in dentistry, when installed in a dental practices.

Patients can be of all ages.

1.6 Intended user

In the dental application: the intended users are dentists of all specialties or dental assistants
In surgical application: the intended users are dentists, medical doctors, nurses and surgeons of all specialties.

1.6.1 Professional qualification

In the dental application
Medical degree with specialty in dentistry
Degree in Dentistry
Degree in dental hygiene
In outpatient surgical application
Medical Doctor degree with specialty in surgery
Degree or equivalent study in nursing
Appropriately trained support staff

1.6.2 Minimum skills

Those envisaged for the professional qualification
Language comprehension: Those acquired for the professional qualification

1.6.3 Experience

Those outlined for carrying out the profession

1.6.4 Possible user disabilities

At least one upper limb is required for use;
Visual faculty compatible with the profession;
The user with these characteristics requires no special training.

2 DEVICE DESCRIPTION

2.1 Device Identification

The device is sold in different versions. Each Version can be identified by an Article Number (REF) according to the table below:

Type	M		C		T		L		F		CC	
55	U	Dental Unit	0	No Camera	0	No	0	600 mm	X		JJ	
	C	Ceiling	1	With Camera	1	SI	1	820 mm				
	T	Only Head					2	960 mm				
	S	Trolley Mount					3	No Arm				

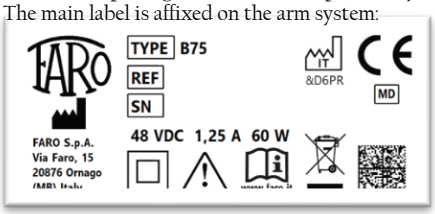
REF is composed by 9 digits: **55MCTLFCC**

55: fixed prefix of two digit to identify the Type of the device: B75
M: one digit. Identifies the type of mounting: Dental Unit Mounting includes also Floor Mounting and Wall Mounting
C: one digit. Identifies the presence of the integrated Camera.
T: one digit. Identifies the presence of the Theia secondary light source on the fixed arm.
L: one digit. Identifies the Length of the fixed arm
F: one digit. Available for internal changes.
CC: two digits. Identifies any customization of any minor feature of the device.

The product is sold in two different packages:

- 1 package contains the illuminating frame (Head of the device)
- 1 package contains the suspension system (Arms of the device)

The main label is affixed on the arm system:



A label identifying the Type and the serial number of the device is affixed on the illuminating frame.

Serial Number Description
for the lamp YYLCNNNNNN
for example: 24LC000001 represents the serial number of the first device manufactured in 2024.

Meaning
- **YY: last two digits of year of manufacture**
- **NNNNNN: progressive counter**
- **LC: Surgical Light**

2.2 Symbols present on the product or on the packaging

The following symbols are also used on the packaging and on the product:

Symbol	Description	Symbol	Description	Symbol	Description	Symbol	Description
CE	European Conformity Mark	135°C	Can be steam sterilized at 134°C	MD	Medical Device according to Reg (EU) 2017/745 of 5 April 2017	www.faro.it	Read the instructions for use. Supplied electronically.
	Manufacturer symbol according to Regulation (EU) 2017/745	SN	Serial number	TYPE	Main type of the device	REF	Article number, Catalogue Code
	Instructions for use include safety warnings	IT &D6PR	Country of Origin: Italy Date of Manufacturing	CH REP	Swiss Mandate for the MedDo Medical Devices Regulation		Double insulation. Class 2 device against electrical hazards
1060 mbar 800 mbar	limits of pressure for use	75% 30% RH	limits of Relative Humidity for use	40 °C 10 °C	limits of temperature for use		limits of temperature for Storage and transportation
	WEEE equipment according to Directive 2012/19/EC.		Relative humidity during storage and transport		Light on/off symbol on the rear arm (Theia Tech)		Do not roll Do not use hooks
	Maximum stackable weight		Recyclable cardboard		Protect packaging from rain and high humidity		Fragile High

2.3 Device principle of functioning

1	Rear Arm (fixed Arm)	ARM SYSTEM
1a	Joint of the Rear Arm	
2	Central Arm (Swivel Arm)	
2a	Rear Joint of the Central Arm	
2b	Head Joint of the Central Arm	
3	HEAD	
3a	Bow	
3b	Bow Joint	
3c	Removable Handle	
3d	Sensor of proximity	
3e	Display	
3f	Mirror	
3g	Camera Auto Focus (optional)	
3h	Bracket	
3i	Knob of the handle	
3j	Reflector of Surgical Light	
3k	Reflector of Dental Light	
3l	3rd axis joint	
4	TROLLEY	

The light source, located on the head (3), consists of 8 LEDs whose light is reflected on 8 parabolas (3j, 3k) passing through secondary lenses.
6 parabolas (3j) are dedicated to the illumination for surgery
2 parabolas (3k) are dedicated to the illumination for dentistry
The reflecting parabolas generate a regular and uniform spot of light at every level of illumination and distribute the light in the operating field, minimizing the hard shadows.
The spot can be directed into the operatory field by the rotation of the lamp throughout 3 different axes of rotation [joints (2a, 2b, 3b, 3l)].
The adjustment of the intensity of the light can be carried out by sensor of proximity (3d) or by touch screen (3e).
The device is equipped with the composave function that allows to work photosensitive materials (i.e. composites) without starting the hardness process of the materials.
The device can be equipped with the following options:

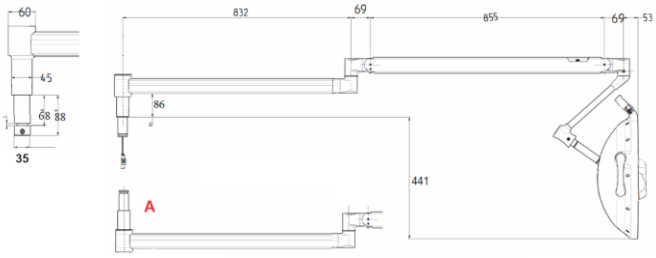
- 4K camera
- Presence of secondary light below the rear arm (Theia Tech)

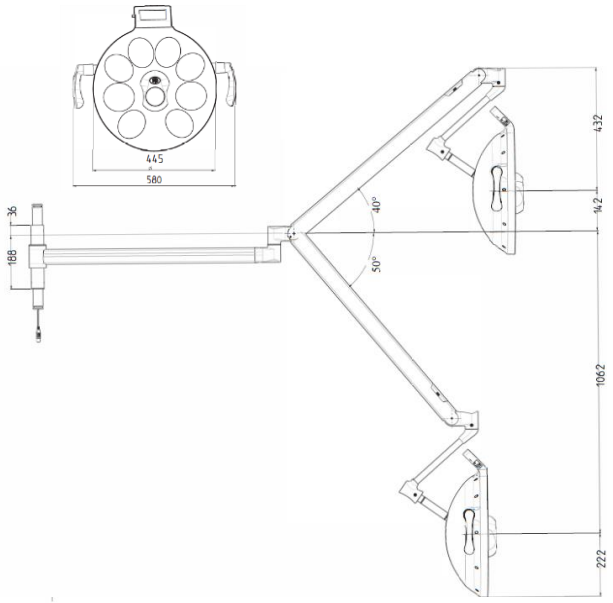
The handles (3c) are detachable and sterilizable. Follow the requirements defined in the dedicated section.
The remote cable allows to bring the lamp controls to the quiver of the dental unit. Follow the instructions provided in the Installation Manual.
The optical radiation emitted by this device complies with the exposure limits for reducing the risk of photobiological hazards in IEC 60601-2-41.
For the electrical connections, follow the instructions provided in the Installation Manual and the electrical diagrams included.

2.4 Main Size

2.4.1 Ceiling mounting and dental unit mounting

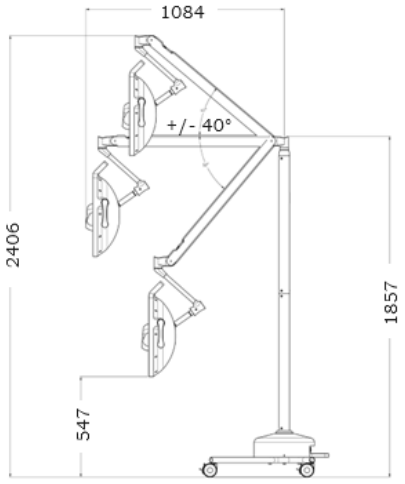
Dimensions in mm:

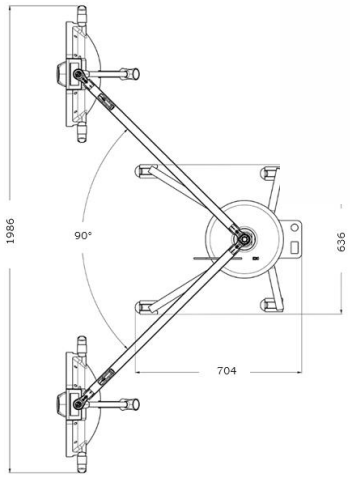




A: Rear Arm of the Ceiling Version

2.4.2 Trolley version





2.5 Main Accessories

Code: 550170 - Switching Power Supply B75 – Mod Cincon TR160MA480
Code: 550400 - Protective Glasses mod. Univet 511 Welding 5

3 INSTRUCTIONS FOR USE

3.1 Preliminary check

- Verify that all instructions, warnings, and limitations of use provided in this document are respected.
- Check that upon arrival of the device, the packaging has not received visible damage and that all components of the DM are present and intact.
- Make sure that the environment where the device is to be used is not influenced by magnetic fields and in any case at a safe distance from possible sources of magnetic fields.
- Check that there are no contraindications for the patient.

NOTE

Remove the insulating tab from the battery.

Take care to leave free the space in front of the proximity sensor.
If an obstacle is placed in front of the sensor at the switching on, the device will return an error.

WARNING – RISK OF PHOTOSENSITIZATION ON SKIN AND EYES

Due to its nature and intended use, the use of device is not indicated on all patients who:
- are affected by a photosensitizing disease on skin or eye;
- are under the effect of drugs, Medicinals or substances (also for topical use) that may have photosensitization as a side effect;
if the User is or became aware that patient suffers of sensitization, the treatment shall be immediately stopped.

This product emits possibly hazardous optical radiation. Do not stare at the light emitted from the surgical luminaire.
Eye injury may occur.
Use the Protective glasses supplied as accessory.

the optical radiation emitted by this product complies with the exposure limits for reducing the risk of photobiological hazards in IEC 60601-2-41

3.2 Warnings related to the use of the device

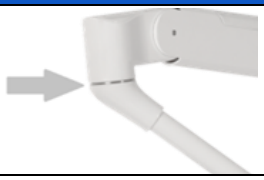
The medical device is intended to be used by qualified medical personnel.
The warnings related to the use of the device are linked to the methods of use in the clinical setting, to the use during the execution phases of the use sessions, and to the methods of treatment of the medical device itself.

NOTES BEFORE USE THE DEVICE

Read carefully the user's manual

The device must be cleaned before use (see Cleaning the device paragraph)

Before each use, check that there is no gap between the arm joint and the head connection (see image on the right)



WARNING

Do not use the device in environmental conditions of use different from those indicated in the user manual.
Do not use the device in flammable or explosive environments
Simultaneous use of the lamp with electrosurgical devices can cause malfunctions (flickering, absence of control, etc.)
All cleaning and maintenance operations, which can be carried out by the operator, must be carried out with the device turned off. Otherwise, you can use the cleaning function.
Do not use solvents, or aggressive detergents to clean the device and its parts, as they may damage/fail the device.
Do not use products containing chlorine or corrosive agents to clean any part of the device
Periodically, with a frequency determined by the actual use of the device, maintenance interventions will be necessary. Fail to comply with the maintenance and routinary checks can lead to malfunction or safety issues.
Some maintenance operations on the device must be carried out by authorized and qualified personnel.
For disposal or recycling of the medical device and its accessories, follow local regulations and the instructions provided by the manufacturer.

The Manufacturer declines all responsibility for damage caused to people by the device or things resulting from
- improper use,
- lack of maintenance
- lack of periodic checks

or non-compliance with the instructions given in the user manual.

PROHIBITION

The user must not make any changes to the DM, any manipulations will exclude the manufacturer from any form of responsibility and will in all respects invalidate the warranty period

NOTE

Every time the lamp is turned on, the light intensity will be that last used before switching off.

WARNING – DANGER OF CONTACT WITH LIVE PARTS

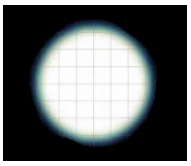
Do not use the device if there are damaged parts or enclosures.
Do not use the device if there is any play or interruption between:
- Head joint / Head bow
- Fixed arm joint / Articulated arm joint

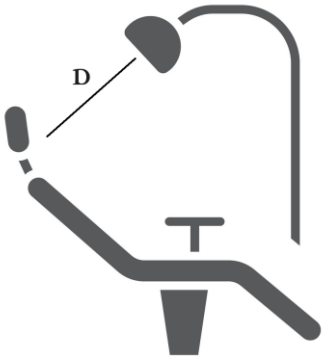
To avoid the risk of electric shock, this medical device must only be connected to power networks with protective earth.
The device must never be opened and/or used with wet hands and must not be put in contact with any liquid as this condition could cause danger for the patient and/or the operator.

3.3 Working distances and Handling

3.3.1 Surgical Mode

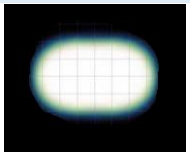
In surgical mode the reference working distance is
D = 1,0 m
from the operatory field.
At this distance the spotlight has the best
focus and optical properties and definition of the
spot (picture on the right)





3.3.2 Dental Mode

In dental mode the reference working distance is
D = 0,7 m
from the operatory field.
At this distance the spotlight has the best
focus and optical properties and definition of the
spot (picture on the right)



3.3.3 Handling the head

By the handles the Head of the lamp can be rotated around 3 axis as shown below:

-10° to 115°

-30° to 30

360° + 90°

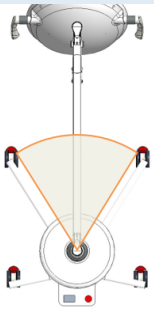
	NOTE Every rotation has a stopper. Take care not to impact with excessive force on the stopper. Pay attention: when pushing down the central arm impacts with the fixed arms are possible. Take care to use the correct span of the swivel arm to avoid impacts.

3.3.4 Handling the Trolley version

Place the lamp as shown in the picture on the right. Release the brakes of the wheels
Hold the lamp in the points shown in the picture to transport and move the device.

	NOTE Take care not to pass with the wheels on the power cable. Take care not to move the arm system out from the area of stability (see picture on the right).

	WARNING – RISK OF ROLLOVER Fail to comply with the transportation position can lead to the rollover of the device with potential danger of crushing of parts of the body.

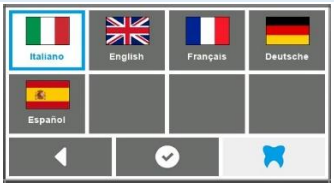


3.4 First power on

When the lamp is turned on, the firmware starts an initialization.
Firmware version is available on the screen.

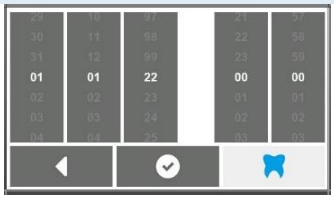
3.4.1 Setting Language

At the first power-on only it is requested to set the language.
Press the button corresponding to the language.
Confirm the choice by pressing the confirmation button



3.4.2 Setting Date and Time

Scroll the first column from the left to select the day
Scroll the second column from the left to select the month
Scroll the third column from the left to select the year
Scroll the fourth column from the left to select the hour
Scroll the fifth column from the left to select the minutes.
Confirm the choice by prssing the confirmation button:
After confirming, the **Home Menu** appears



3.5 Home Menu

From this menu it can be possible:

- select the mode of use: **Dental** or **Surgical.**
- turn on/turn off the lamp
- activate the access commands: **Settings** - **Information** – **Memories**

Command selection of Active Dental Mode

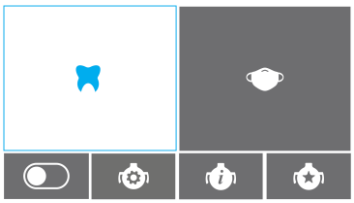
Command selection of Active Surgical Mode

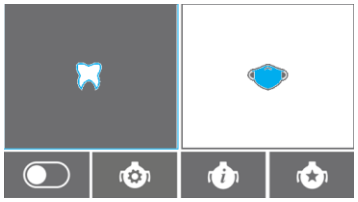
Command ON / OFF

Settings Menu

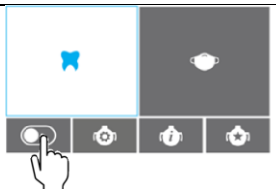
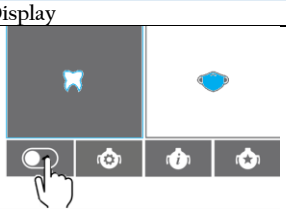
Information Menu

Memory Menu

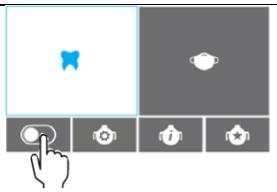
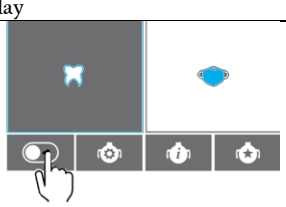
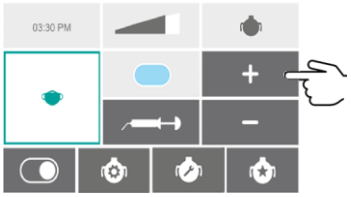




3.5.1 Switching on-off the light

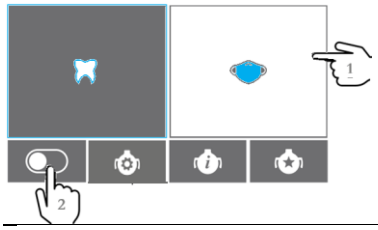
Sensor	Display
Bring your hand towards the sensor up to 2 cm and move it downwards. Acoustic signal: 1 beep	  Press the ON/OFF button on the Home Screen. If Dental Mode (image on the left) is selected (white background) the dental spotlight will turn on. If Surgical Mode (image on the right) is selected (white background) the dental spotlight will turn on. To shift from one mode to another, it is always necessary to shut off the lamp.

3.5.2 Adjusting the intensity of the light

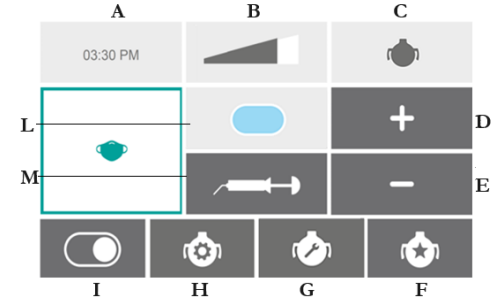
Sensor	Display
Bring your hand towards the sensor up to 2 cm and maintain this distance until the desired light intensity is reached: Acoustic signal: 1 beep at command Maximum intensity reached: 2 beeps Minimum intensity reached: 1 beep the light intensity changes continuously by decreasing to the minimum and increasing to the maximum	  After pressing the ON/OFF button the following screen appear:  Press (+) or (-) to adjust the intensity of the light.

3.6 Surgical Mode

After the selection of surgical mode (1), pressing the ON/OFF button (2) the 6 spot of the surgical light switch on.



On the screen of the display the surgical mode screen is activated:



Color of the background: light grey = informative (A, B, C, L)
Color of the background; dark grey = active buttons (D, E, F, G, H, I, M)
A: information on current time
B: information on the level of illumination (from minimum to maximum)
C: information on the preset user's setting (if activated)
L: information on the activation of composave mode

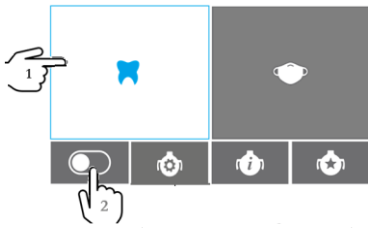
D: command to increases intensity of the light
E: command to decreases the intensity of the light
F: command to access to the preset menu
G: command to access to the information menu
H: command to access to the Setting menu
I: command to switch on/switch off the surgical light
M: command to activate the composave mode

3.6.1 Surgical Mode: Activate composave

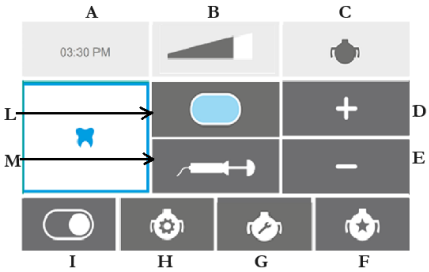
Clicking on the composave icon (M) the two spot of composave light switch on.
On the display the perimeter of the composave icon appears green and (L) changes the temperature display from blue to orange
In composave mode the adjustment of light intensity is not possible.
To exit from Composave mode click on the Composave command (M) again.

3.7 Dental Mode

After the selection of dental mode (1), pressing the ON/OFF button (2) the 2 spots of the dental light switch on.



On the screen of the display the Menu of the dental mode is activated:



Color of the background: light grey = informative (A, B, C)
Color of the background; dark grey = active buttons (D, E, F, G, H, I, L, M)

A: information on current time
B: information on the level of illumination (from minimum to maximum)
C: information on the preset user's setting (if activated)
D: increases intensity of the light

E: decreases the intensity of the light
F: access to the preset menu G: access to the Information menu
H: access to the Setting menu
I: switch on/switch off the surgical light
L: changes the color temperature of the light
M: activates the composave mode

3.7.1 Dental Mode: Activate composave

Clicking on the composave icon (M) the two spot of composave light switch on.
On the display the perimeter of the composave icon (M) appears green and the icon (L) changes the color from blue to orange
In composave mode the adjustment of light intensity is not possible.
To exit from Composave mode click on the Composave command (M) again.

3.7.2 Dental Mode: changing color temperature

Clicking on the icon (L) the color temperature of the light changes.
Every selection change the CCT in one of the following Tk:

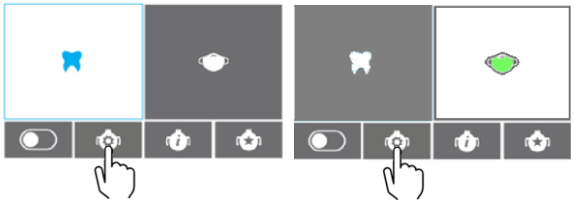
- 4000 K
- 5000 K
- 5700 K

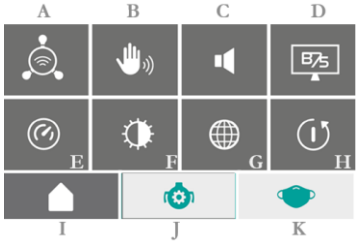
On the display the icon (L) changes color according to the Tk selected.

3.8 Settings Menu

Setting Menu allows the lamp to be configured.
From the Home Menu select Setting Menu by pressing the Setting Command:

	NOTE
	Dental Mode and Surgical Mode have independent settings. A setting saved in Dental Mode is not automatically transferred to the Setting of the Surgical Mode. Take care to apply the Setting for each Modes. The Setting Menu can be selected from the Surgical Mode and Dental Mode Menu. When pressed, the background color of the setting icon will temporarily change, to inform that command has been taken





A access to settings for FARO lights systems
B access to setting of the sensor
C access to setting of the buzzer
D access to settings of language
E access to setting of adjustment of illumination
F access to setting of limits of illumination
G access to setting of the screen-saver settings

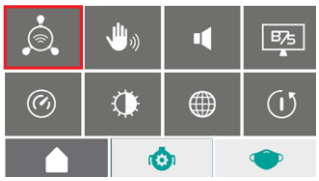
H access to setting of the reset
I access to Home screen return
K Information on the Mode under setting

Surgical Dental

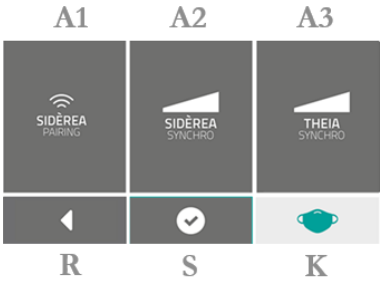
J Information of the Menu selection

3.8.1 Setting for FARO lights system

Press button A from the Setting Menu.



The Menu for the Setting of Faro Light System is opened. →

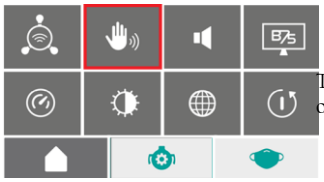


When each command is pressed, the respective sectors will temporarily change the color of background. This means that the command has been accepted by the device.
A1: Pairing command with Siderea. Establishes the connection between the B75 lamp and the Siderea lamp.
A2: Pairing command with Siderea. Activates the control of Siderea by the B75 lamp (dimming).
A3: Synchronization command with Theia. Activates the control of Theia secondary light by lamp B75 (dimming).
R: Return to previous menu command. When pressed, returns to the Setting Menu.
S: Command Save setting
Any selection must always be confirmed to be saved. When Save is pressed there will be a temporary change in the icon graphics.
K: Information on the Mode under setting

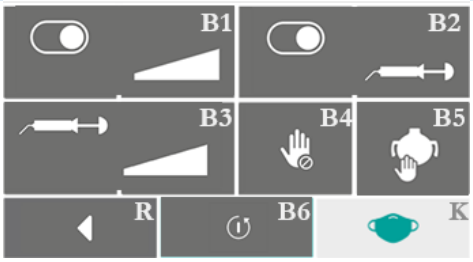
NOTE
Synchronization with Siderea is possible only if paring has been done beforehand (see info in the manual of Siderea and Siderea Slim lamps).
Theia setting is enabled only for B75 equipped with Theia. With the icon switched off, Theia Setting is not enabled.

3.8.2 Setting of Sensor

Press button B from the Setting Menu.



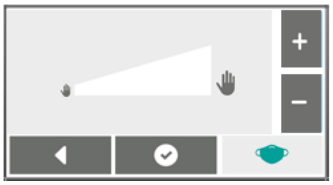
The Menu for the Setting of Sensor is opened. →



When each icon is touched the respective sectors will temporarily change the background color, to inform the user that the command has been taken.
B1 : sensor is settled to the functions on/off and dimmering. Confirm pressing Save button
B2: sensor is settled to the functions on/off and composave. . Confirm pressing Save button
B3: sensor is settled to the functions composave and dimmering, . Confirm pressing Save button

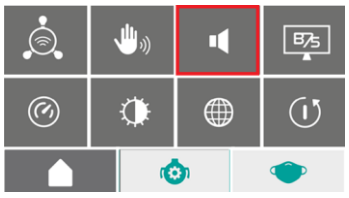
NOTE
Only one of the functions B1, B2 and B3 can be saved. B1 is the default setting.

B4: the sensor is disabled. Confirm pressing Save button
B5: adjustment of the sensibility of the sensor. Pressing this icon, the page of sensibility of the sensor is opened:
Pressing (-) the sensibility is Decreased. The distance of reading is lower.
Pressing (+) the sensibility is increased. The distance of reading is higher.
Press Save icon to memorize the setting
B6: Reset sensor. Selecting this icon, the start procedure is repeated. Errors are restored. Confirm pressing Save button
R: Return to the Setting Menu



3.8.3 Setting of Buzzer

Press button C from the Setting Menu.



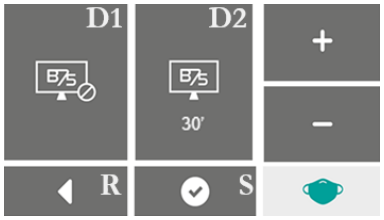
The Menu for the Setting of Buzzer is opened. →

3.8.4 Settings of the Screen saver

In this menu you can turn the screen saver on or off and customize the idle time before the screen saver activates

Press button D from the Setting Menu.

The Menu for the Setting of Screen Saver is opened. →



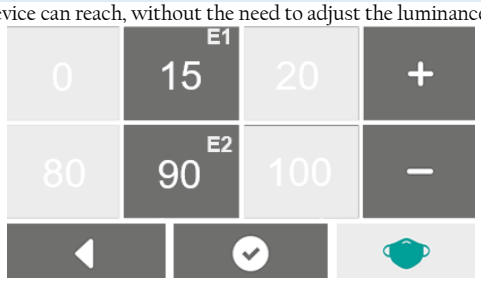
D1: disables the screen saver. Press (S) to save the setting.
D2: enables the adjustment of the idle time. Press (+) or (-) to increase or decrease the inactivation time. Press (S) to save the setting.
R: Return to Setting Menu
S: Save the setting

3.8.5 Setting of limits of luminance

This setting change the maximum and minimum percentage of luminance that the device can reach, without the need to adjust the luminance manually.

Press button E from the Setting Menu.

The Menu for the Setting Of the limits of luminance is active.



> **NOTE**
> Icon with light grey background color are not active.
> When each icon is touched the respective sectors will temporarily change the background color, to inform the user that the command has been taken and the setting can be changed.

E1: press the icon. The change in the lower limit of luminance is enabled. Press (+) or (-) to set the lower limit of luminance in the interval 0 – 20. Confirm the setting by pressing the Save button

E2: press the icon. The change of the upper limit of luminance is enabled. Press (+) or (-) to set the upper limit of luminance in the interval 80 – 100. Confirm the setting by pressing the Save button.

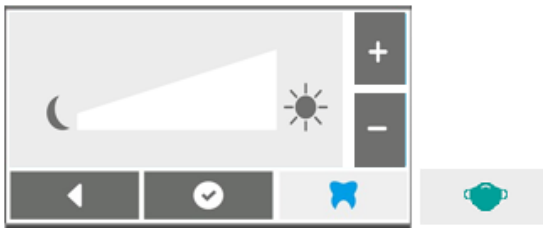
Return to the Setting Menu by pressing

3.8.6 Setting the luminance of the Display

This setting changes the luminance of the display.

Press button F from the Setting Menu

The Menu for the Setting Of the luminance of Display is opened.



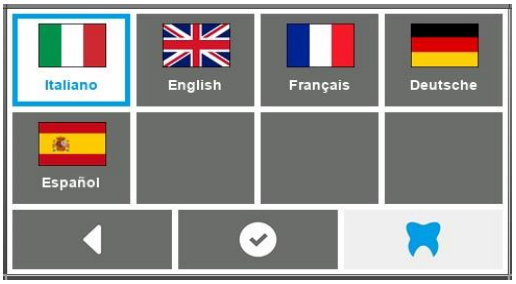
> **NOTE**
> Press (+) or (-) to set the desired luminance of the display. The bar will change from minimum to maximum. Confirm the setting by pressing the Save button
> Return to the Setting Menu by pressing

3.8.7 Setting the languages

This setting changes the language of the user's interface.

Press button G from the Setting Menu

The Menu for the Setting Of the language.



Press the flag of the selected language.

Confirm the setting by pressing the Save button

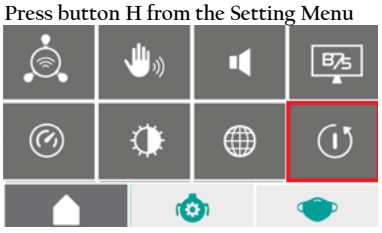
Return to the Setting Menu by pressing

> **NOTE**
> In the event of a blackout with the lamp switched on, the language will temporarily be set to English when switched back on. To reset the language to the given setting simply switch off (remove power) the lamp

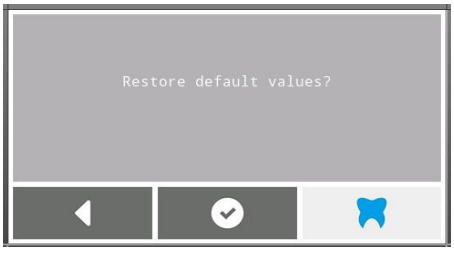
3.8.8 Restore

The Restore resets all settings of the device to the factory settings. This feature is useful when there is the need to delete all settings.

Press button H from the Setting Menu



a warning window will appear asking you to confirm the action



Confirm the Restore by pressing the Save

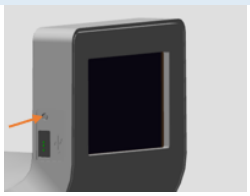
A message of confirmation of the Restore Appears

Return to the Setting Menu by pressing

> **NOTE**
> To Restore both Dental and Surgical Settings it is necessary to repeat the operation for each Mode.

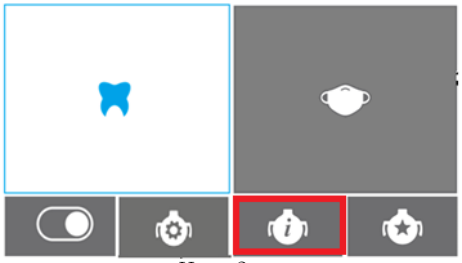
3.8.9 Manual Restore

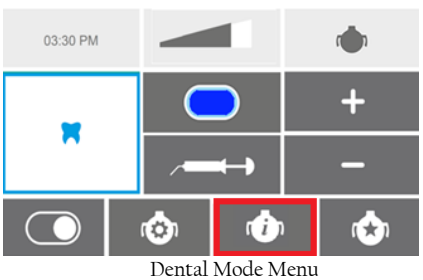
The Restore button will return the lamp to its initial settings, i.e. those set by the factory and which you will find the first time you switch it on.
By the specific button is possible reset the lamp without remove the power supply.
Note: press the reset button for **at least 20 seconds**



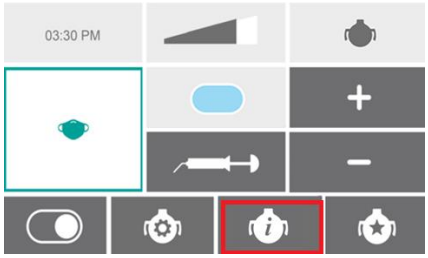
3.9 Information Menu

From the Home Screen or from the Dental Mode or Surgical Mode menu, pressing the icon ; the information Menu will be opened.

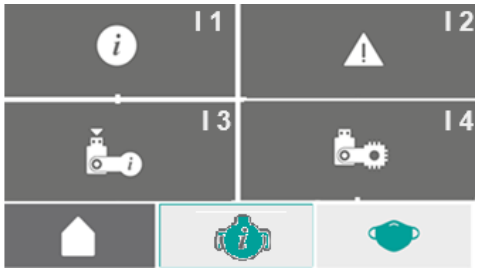

Home Screen



Dental Mode Menu



Surgical Mode Menu



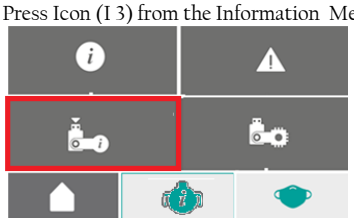
I 1: display information
I 2: display errors
I 3: download log file
I 4: access to firmware update

Return to Home Screen

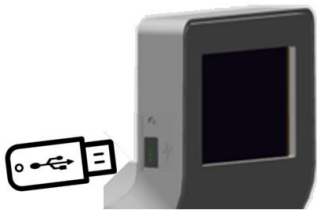
In Dental Mode this Icon is replaced by

3.9.1 Download of the log-file

This command allows to download the main usage parameters of the device,
Press Icon (I 3) from the Information Menu



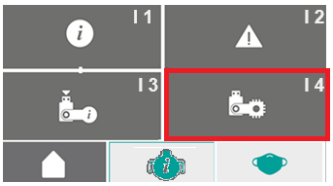
a warning window will appear asking you to insert a USB Key.
- Insert the USB
- Press Save button



	NOTE	
	The device starts writing the USB with the following data: – Hours of functioning in dental mode – Hours of functioning in surgical mode – Number of switch on in surgical mode – Number of switch on in dental mode	– Hardware revision – Firmware revision – Serial numbers of Main Board, CPU Board The display provides detailed information about the download process. Once the download is ended the USB key can be removed and data can be read on a standard PC.

3.9.2 Firmware Update

This command allows to update the firmware of the device to the latest versions released by the manufacturer.
Press button I 4 from the Information Menu

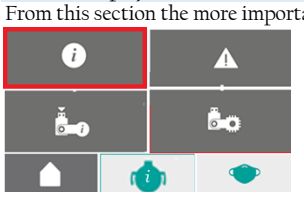


a warning window will appear asking you to insert a USB Key.
- Insert the USB with the new firmware version that must be installed
- Press Save button

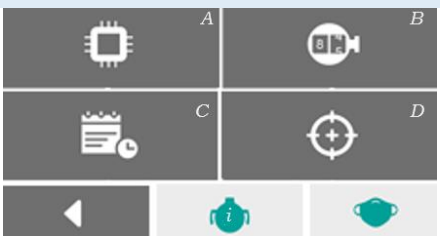
	NOTE
	The system checks if the files into the USB key are different from the files already installed on the device. Don't remove the key or switch off the lamp until the process will be completed. The display provides detailed information about the update process.

3.9.3 Display Information

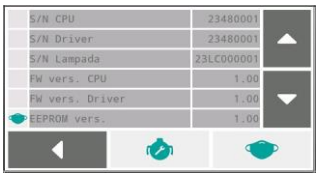
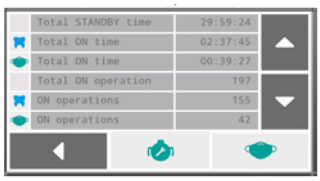
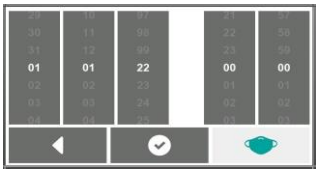
From this section the more important information of the device can be read.



Pressing the I 1 icon on the Information menu
The following screen appears ->



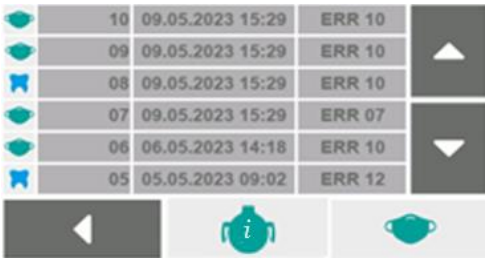
By pressing one of the icons of the screen following information can be displayed.

A Display of System Information	B Display of counter and Log	C Date and time settings	D touch screen calibration settings
			
Information on – Firmware releases – Hardware release – Electronic Board Connfiguration	Main usage data are provided.	– Scroll the first column from the left to select the day – Scroll the second column from the left to select the month – Scroll the third column from the left to select the year – Scroll the fourth column from the left to select the hour – Scroll the fifth column from the left to select the minutes. Confirm the choice by pressing the confirmation button:	The user can calibrates the touch screen (centering). Confirm by touching the five squares that appear in sequence on: – the four corners; and – the center

3.9.4 Display the Errors

From this section the errors and fails of the device can be read.

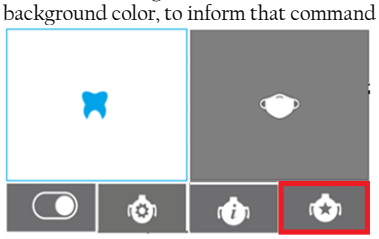
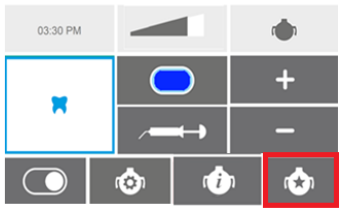
Pressing the I 2 icon on the Information menu
The following screen appears ->
Errors are displayed for each Mode:
– Dental
– Surgical

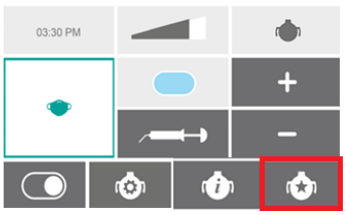


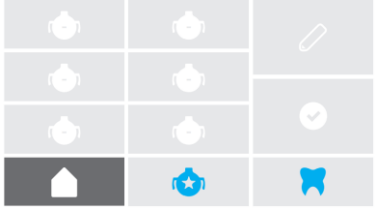
3.10 Preset Settings

Preset allow the creation of customized settings, dedicated to each user. A maximum of 6 presets settings can be stored. The parameters of Preset are independent for the two modes (dental and surgical).
The presets can be performed on all the parameters of the Setting Menu:
– color temperature:
– illuminance level,
– composave,
– sensor setting,
– illuminance limit setting,
– buzzer setting,
– brightness of the display,
– synchronization with Siderea and Theia (if present),
– time of activation of screen saver.

The Preset Setting can be selected from the home screen or from the surgical type / dental type menu; when pressed, the settings icon will temporarily change the background color, to inform that command has been taken

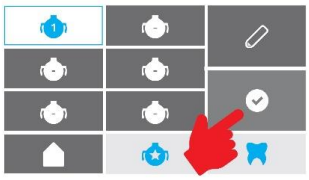
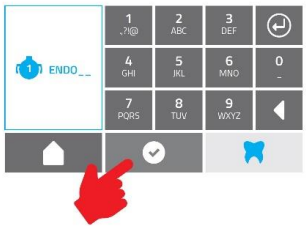







The sequence to save a Preset of the lamp configurations is the following:

	NOTE Preset is allowed only when the lamp is switched on.

A	B	C
Press the button for 3 seconds and, at the beep sounds, it will light up.	To set the Preset on the lamp, press button 1 again which is now selectable, showing the number, and confirm your choice by pressing Save button	Press the Edit button to Rename the Preset saved. The name can be at maximum of 6 characters. Press Save button to confirm the Name of Preset.
		

3.11 Warning message

The device will inform the user of any error or fault on the device. A pop-up will appear on the display with a visible notification.

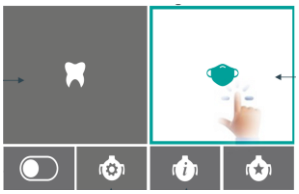
To restore the functioning of the device and enable the display press the Save button

4 CLEANING AND DISINFECTION

	Warning against corrosion due to the risk of falling masses For all metal or plastic parts, it is strictly forbidden to use substances that are - abrasive, - corrosive, - acids, - substances containing chlorine or chloride ions, phosphorus or phosphorous ions, - Trilene-based detergents, petrol, white spirit, ethylene, chlorine or similar. Do not use detergent-disinfectants containing the following substances: - Ammonium hydroxide - Sodium hydroxide - Hydrogen peroxide - Ammonium chloride - Methylene chloride - Methyl alcohol, Ethyl alcohol - Acids and corrosive substances of all kinds. The use of wet wipes without rinsing is forbidden.
	FARO has tested and recommends the use of the following disinfectants: - Durr FD366 Sensitive - Alpro Plastisept Eco - Disinfectants based on water and alcohol with 70% isopropyl alcohol are suitable.

4.1 Cleaning support function

A specific function is installed on the device to start a stand by of the lamp for 30 seconds.
This allows the cleaning procedure between patients.
For safety reasons this function can only be activated when the lamp is switched off.
During this stand the sensor and the display are disabled and do not respond to commands.
Once the stand by of 30 seconds is past, the lamp will return to its normal functioning.
From the Home Screen press and keep pressed for 3 seconds the Surgical Mode or the Dental Mode command.



A new screen will be displayed in which the seconds remaining to the restart are shown.
At the end of the countdown the proximity sensor and the display are enabled.

4.2 Cleaning the surface of the device

Cleaning should be done with a soft cloth soaked with a suitable cleaning or disinfectant solution.
Pass gently the soft cloth on the surface of the device.

	Warning Take care to squeeze all the excess of cleaning solution from the soft cloth Never spray the cleaning solutions directly onto the surfaces. Never use cleaning agents containing surfactants or water repellents, which can leave streaks when deposited. Slight streaks do not impair the quality of light. Products other than those suggested could damage the surfaces. In case of doubt, please contact FARO customer service.

4.3 Sterilization of handles

	Warning - Danger of cross-contamination The handles are not supplied sterile, they must therefore be sterilized before use. The handles must be sterilized between each patient.

4.3.1 Removal of handles

To remove the handle, unscrew grey ring nut A.

4.3.2 Decontamination and disinfection

Before sterilizing handles, they must be decontaminated and disinfected.
For disinfection, Faro tested the following products:

- Durr FD366 Sensitive

Follow the instruction of the manufacturer of the disinfectant to assure the completion of the process of decontamination.

	WARNING - danger of breaking plastic Handles cannot be disinfected by thermodisinfection.

4.3.3 Sterilization

Handles must be packaged in accordance with EN 868-5.
Handles can be sterilized with standard 121°/134° C cycles up to two hundred (200) cycles or until loss of mechanical performance.
The parameters of the sterilization cycle are as follows:

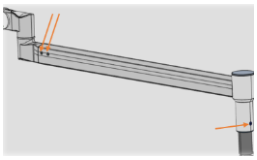
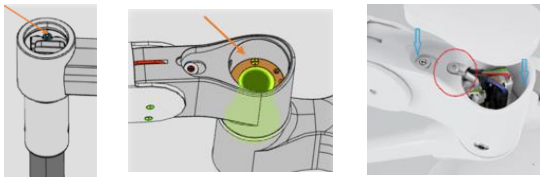
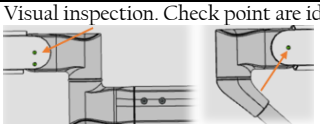
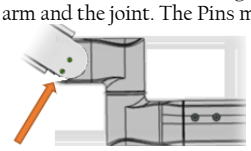
Cycle EN 13060	Temperature	Pressure	Minimum Holding Time
B	121°C	207 kPa	15 min
B	134°C	308 kPa	3 min

Number of cycles validated for maintaining mechanical integrity: 200.

5 MAINTENANCE

5.1 Routine checks

	ATTENTION - Disclaimer
	Routine checks are necessary to maintain functionality and reliability of the product over time, as well as to guarantee the safety of the patient and the user. The user is responsible for having these checks carried out with the indicated frequencies. FARO declines all responsibility if these operations are not performed and recorded.
	Only a trained technician is authorized to perform corrective maintenance and replacement of any part of the device, according to the manufacturer's service manual

Checking Point	Frequency	Procedure	Responsible Organization	Performing Organization
No visible gap between the joints indicated with the orange arrow in the pictures	12 months		End User	Authorized technician
The screws of the connection points must be tight, undamaged and free from traces of corrosion.	12 months		End User	Authorized Technician
The ferrule under the carters must be well secured. The safety screws must be tight and undamaged. The safety cable must be well secured.	12 months		End User	Authorized Technician
Check joints, arms or plastic parts for corrosion.	12 months	Visual inspection. Check point are identified in the picture below:  Rotate the swivel arm in high position. Watch the pins between the arm and the joint. The Pins must not have signs of corrosion. 	End User	Authorized Technician
Check that the main label is legible	12 months	Visual inspection	End User	Authorized Technician
Absence of damage to the enclosures and verification of the integrity of plastic and metal parts	12 months	Visual inspection	End User	Authorized Technician
Electrical safety according to EN 62353	24 months	Use the parameters defined in IEC 60601-1	End User	Authorized Technician
Light quality controls	24 months	Using a spectroradiometer, check the values for: Maximum luminance: ›40.000 lux (Dental Type) ›100.000 lux (Surgical Type) CRI › 90 Radial power on blue light: ‹100 W/m2	End User	Authorized Technician

5.2 Corrective Maintenance

Corrective maintenance will be necessary if technical qualified personnel or the end user identify the need for a replacement of:

- a component that could lead to malfunctions,
- a corrective replacement of a faulty component,
- a preventive replacement of a component in order to ensure the improvement of safety and performance of the device based on technological progress.

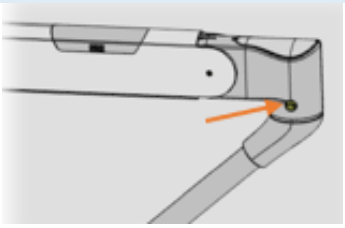
The corrective maintenance operations indicated for components and accessories may also concern the firmware of the device.
Corrective maintenance must be carried out at the manufacturer's premises or at an authorised service centre.
All information concerning the replacement of parts are available in the Service Manual.
No replacement of parts is in charge to the User.

5.3 Adjustment of forces of rotation

The lamp head has 3 axes of rotation that can be adjusted after installation according to user's preferences.

5.3.1 Head Rotation Adjustment on the X-axis:

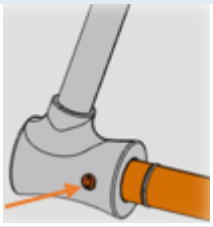
Tighten the screw shown in the image.
Screwing clockwise increases friction.
Unscrewing decreases the friction and the force to rotate the head around the axes.



⚠	**Warning – Risk of falling masses**
	Take care not to remove the screw excessively. In case of accidental removal make sure to put it back in place, do not use the lamp without the screw in the correct position. **Danger of impact with falling masses**

5.3.2 Head Rotation Adjustment on the Y-axis:

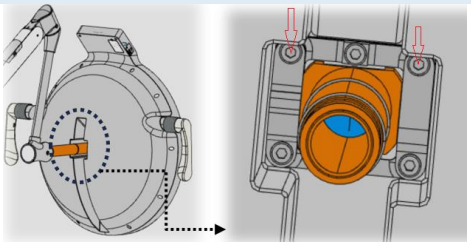
Turn the screw shown in the image on the right.
Screwing clockwise increases friction.
Unscrewing decreases the friction and the force to rotate the head around the axes.



⚠	**Warning – Risk of falling masses**
	Take care not to remove the screw excessively. In case of accidental removal make sure to put it back in place, do not use the lamp without the screw in the correct position. **Danger of impact with falling masses**

5.3.3 Head Rotation Adjustment on the Z-axis:

Turn the 2 screws shown in the image.
Screwing clockwise increases friction and vice versa.



⚠	**Warning – Risk of falling masses**
	Take care not to remove the screw excessively. In case of accidental removal make sure to put it back in place, do not use the lamp without the screw in the correct position. **Danger of impact with falling masses**

5.4 Disposal of the device

The **B75** device contains electrical and electronic components inside; therefore, it is ***mandatory*** to dispose of it separately from household waste as required by Directive 2012/19/EU.
FARO has taken on the social responsibility of contributing to creating the conditions for a better world. Our ideas, our technologies and our actions are placed at the service of society and the environment.
Disposal can only take place at treatment centers for electrical and electronic equipment authorized on national territory; we therefore invite you to locate the nearest authorized center before disposal.
Alternatively, the device can be returned to the manufacturer who will proceed with its recovery and recycling.
Fail to comply with waste requirement generates risks of pollution in soil, air and water with repercussions on human and animal health.
Correct management of waste electrical and electronic equipment allows to use the best techniques to guarantee safety by the removal of dangerous components and the recovery of recyclable materials.
For more detailed information regarding the available collection systems, contact your local waste disposal service or the company from which you purchased the device.

6 TECHNICAL SPECIFICATIONS

6.1.1 Lamp General Specification

Supply voltage	48 Vdc
Maximum Power	60 VA (75 VA with Theia)
Dedicated Switching Power Supply	110-240 Vac 50/60 Hz
IP Classification	X2
Weight of the device	13 Kg
Weight of the device – Trolley version	35 Kg
Environmental conditions: use	Temperature: from 10°C to 40°C Relative humidity: from 30% to 70% Maximum altitude: 2000 m
Environmental conditions transport, storage and shelf life	The device in the original packaging can be transported and stored for a maximum period of 6 months if the following environmental conditions are respected: Temperature: from -20°C to + 70°C Relative humidity: from 10% to 90% Atmospheric pressure: from 50 kPa to 106 kPa

6.1.2 Camera Specification

Supply voltage	5 Vdc via PC USB (Win/Mac)
Sensor	CMOS Sony IMX
Resolution	4K 30fps 1080p 30fps / 720p 30fps 8MP images
Focus	Autofocus
Optic	25 mm UHD-extended lens
Working Distance	700 – 1100 mm
Usage	Foot pedal with cable and wireless (optional)
Output Formats	Video: MP4 Pictures: JPEG
System Requirements	16GB RAM or higher USB2 or USB3 port for the camera Additional USB2 or USB3 port for foot control pedal Network / internet capability CPU Benchmark.net rating of 5000 or higher Power Supply IEC 60601-1 compliant

6.1.3 Classification under EN 60601-1 standard

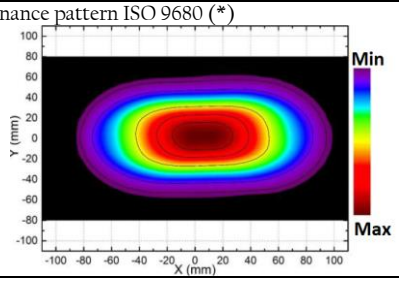
Protection against electric shock:	Class II (2MOOP) with ground protection
Applied parts:	None
IP Protection:	IP54
Sterilization of device or its parts:	handles
Suitability for use in an oxygen rich environment	Unsuitable
Mode of operation:	Continuous operation

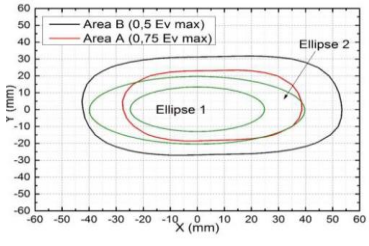
6.1.4 Classification under EN 62304 standard

Classification of software:	A (Failure in Firmware do not lead to risk for the patient)
Definition:	Firmware Main Firmware CPU

6.1.5 ISO 9680 Specification for Dental Mode

	Dental Lamp Dental Lamp Head	Dental Lamp with Secondary Light (Theia)
Number of luminaries	2	
IEC Classification 62471	Class 1 - Labelling Exempt	
Maximum Illuminance	50.000 lux (*)	
Colour Rendering Index (*)	› 95 (*)	
Correlated Colour Temperature CCT (*)	Tunable White: 4000 K - 5000 K - 5700 K Composave: 2700 K	
Spot Dimension (*)	180 mm x 110 mm	
Max Hard Shadow ISO 9680 (*)	10 mm x 5 mm	
Nature of radiation	Non-ionising	
Type of radiation	Visible light	
Typical illuminance pattern ISO 9680 (*)	Typical illuminance pattern ISO 9680	





(*) Typical values subjected to tolerances

6.1.6 IEC 60601-2-41 Specification for Surgical Mode (typical values subject to tolerances)

illuminance	
a) central illuminance measured at reference distance	110.000 lx @ 1000 mm
b) maximum central illuminance	160.000 lx @ 760 mm
light field diameters at reference distance	
a) light field diameter D_10	218 mm
b) light field diameter D_50	145 mm
c) relationship between D_50 and D_10	66%
shadow dilution at reference distance	
a) remaining illuminance with one mask	3,32 %
b) remaining illuminance with two masks	39,67 %
c) remaining illuminance with simulated cavity	89,86 %
d) remaining illuminance with simulated cavity and one mask	3,37 %
e) remaining illuminance with simulated cavity and two masks	40,34 %
depth of illumination	610 mm
chromaticity at field center, reference distance, max irradiation setting	5000 K
colour rendering	
Ra	98
R9	98
Infrared radiation at the light field centre at maximum illuminance distance with the maximum irradiance setting	
IR irradiance 780 nm - 3000 nm	3,09W/m2
Ultraviolet radiation at the light field centre at maximum illuminance distance width the maximum irradiance setting	
UV hazard weighted irradiance 200 nm - 400 nm	6,53E-08 W/m2
UV-A irradiance 315 nm - 400 nm	1,63E-03 W/m2
Broadband radiation at the light field centre at maximum illuminance distance with the maximum irradiance setting	
total irradiance (200 nm - 3000 nm)	577,0 W/m2
relationship IRR to ILL	3,7 mW/m2/lx
blue light hazard IRR 300 nm - 700 nm	110,2 W/m2
retinal thermal hazard IRR 380 nm - 1400 nm	1,48E+03 W/m2
radiance with 11 mrad and 7 mm aperture stop	
blue light hazard RAD 300 nm - 700 nm	2,36 E+03 W/m2/sr
retinal thermal hazard RAD 380 nm - 1400 nm	3,13 E+04 W/m2/sr

6.1.7 IEC 60601-1-2 Electromagnetic Compatibility Specification

- The device requires special precautions regarding EMC and must be installed and put into service in accordance with the EMC information contained in this Manual.
- Portable and mobile radio communication devices can affect the operation of the device.
- The use of accessories, cables and/or other components other than those specified in this Manual or purchased directly from **FARO** may cause an increase in emissions or a decrease in the immunity of the device.
- The device must not be used close to or stacked with other equipment. If it is necessary to use it under such conditions, the device should be observed to verify normal operation under the conditions in which it is used.

Electromagnetic compatibility - Emissions

B75 is intended to operate in the below-specified electromagnetic environment. The customer or user of the **B75** device should ensure that it is used in such an environment.

Emission Test	*Compliance*	*Ambient - Description*
RF emission CISPR 11	Group 1	**B75** must emit electromagnetic energy to perform its intended function. Electronic devices located nearby may be affected.
RF emission CISPR 11	Class B	**B75** is suitable for use in all establishments, including domestic establishments and those directly connected to a public low-voltage mains supply that supplies buildings used for domestic purposes.
Harmonic emission IEC 61000-3-2	A	
Voltage Fluctuation/ Flicker Emission IEC 61000-3-3	Compliance	

Electromagnetic compatibility - Immunity

B75 is intended to operate in the below-specified electromagnetic environment. The customer or user of the **B75** device should ensure that it is used in such an environment.

Immunity	*IEC 60601-1-2 Test Level*	*Compliance*	*Ambient - Description*
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors must be wood, concrete or ceramic tile. If the floors are covered with synthetic material, the relative humidity should be at least 30%.
Electrical fast transient/burst IEC 61000-4-4	± 2kV for supply lines ±1kV for input/output lines	± 2kV for supply lines ±1kV for input/output lines	Mains voltage quality should be that of a typical commercial or hospital environment
Surge IEC 61000-4-5	± 1kV line-line ± 2kV line-earth	± 1kV line-line ± 2kV line-earth	Mains voltage quality should be that of a typical commercial or hospital environment
Voltage dips, short interruptions and voltage variations on power supply lines IEC 61000-4-11	<5% U_T (>95% dip in U_T) for 0,5 cycle <40% U_T (>60% dip in U_T) for 5 cycles <70% U_T (>30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5s	<5% U_T (>95% dip in U_T) for 0,5 cycle <40% U_T (>60% dip in U_T) for 5 cycles <70% U_T (>30% dip in U_T) for 25 cycles <5% U_T (>95% dip in U_T) for 5s	Mains voltage quality should be that of a typical commercial or hospital environment
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should have levels characteristic of a typical location in a commercial or hospital environment

Note: U_T is the AC voltage level before applying the test level

Electromagnetic compatibility - Immunity			
B75 is intended to operate in the below-specified electromagnetic environment. The customer or user of the **B75** device should ensure that it is used in such an environment.			
Immunity	***IEC 60601 Test Level***	***Compliance***	***Ambient - Description***
Portable and mobile RF communications equipment should be used no closer to any part of the B75 device, including cables, than the recommended separation distance, calculated from the equation applicable to the frequency of the transmitter Recommended separation distance			
RF Conducted	3 V 150 kHz to 80 MHz	3 V	d=1.2 x √P
RF Radiated	3 V/m 80 MHz to 2.5 GHz	3 V/m	d=1.2 x √P 80 MHz to 800 MHz d=2.3 x √P 800 MHz to 2.5 GHz
			where P is the maximum rated output power of the transmitter, in watts (W), according to the transmitter manufacturer and d is the recommended separation distance, in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey a should be less than the compliance level for each frequency range b. Interference may occur in the vicinity of equipment marked with the following symbol
NOTE 1: At 80 MHz and 800 MHz the separation distance for the higher frequency range applies. *NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is influenced by absorption and reflection from structures, objects and people.*			
[a] Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess an electromagnetic environment caused by fixed RF transmitters an electromagnetic site survey should be considered. If the measured field strength in the location where the **B75** device is used exceeds the applicable compliance level above, the operation of the **B75** device should be monitored. If abnormal performance is noted, additional measures may be necessary, such as reorienting or relocating the **B75** device. [b] The field strength in the frequency range 150 kHz to 80 MHz should be less than [V1] V/m.			

Separation distances recommended by the device			
The **B75** is intended to operate in an electromagnetic environment in which radiated RF disturbances are under control. The customer or the user of the **B75** can help prevent electromagnetic interference by ensuring a minimum distance between portable and mobile RF communications equipment (transmitters) and the **B75**, as recommended below, according to the maximum output power of the equipment. radiocommunication.			
Maximum declared power of the transmitter (W)	***Separation distance determined according to the transmission frequency (m)***		
	150 kHz to 80 MHz d=1.2 x √P	80 MHz to 800 MHz d=1.2 x √P	800 MHz to 2.5 GHz d=2.3 x √P
0,01	0,12	0,12	0,23
0,1	0,80	0,80	0,73
1	1,20	1,20	2,30
10	3,80	3,80	7,30
100	12,00	12,00	23,00
For transmitters specified for a maximum output power not listed above, the recommended separation distance d, in meters (m.) can be calculated using the equation applicable to the frequency of the transmitter, where P is the rated maximum output power of the transmitter in watts (W) according to the transmitter manufacturer. *NOTE 1: At 80 MHz and 800 MHz the separation distance for the higher frequency range applies.* *NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is influenced by absorption and reflection from structures, objects and people.*			

7 TROUBLESHOOTING

While using the device, anomalies or operating problems may occur. To identify the possible causes and resolve the anomalies, please refer to the following table, which takes into consideration the most common cases.
In case of fails contact the Authorized Technician or the Dealer.

Effect	Cause	Action	Resp
The lamp does not turn on	Mains power not correct or inserted incorrectly.	Check that the power is on and that the unit is turned on.	User
	Interference with electrosurgical or high-energy equipment.	Turn off the electrosurgical unit and check the permanence of the effect.	User
	The sensor is deactivated	Use the display to turn on. Activate the sensor by the display.	User
	Firmware stuck error	Reset the display by the pushbutton near the USB port. Push it for at least 20 seconds, or remove the power supply at least 30 seconds.	User
	If the power supply is correctly provided, hardware block due to flickers of the mains	Press reset button for 2 seconds.	User
	Cable issues	Check all the cables and connectors	Qualified Technician
The lamp flickers	Interference with electrosurgical or high-energy equipment.	Turn off the electrosurgical unit and check the permanence of the effect.	User
	Cable issues	Check all the cables and connections	Qualified Technician
The lamp does not regulate the light intensity	Command on display or sensor applied incorrectly	Use the command correctly as described in this manual	User
	The sensor is disabled	Use the display from the Dental or Surgical menu to adjust the light. Activate the sensor from Setting Menu	User
	temporary block of electronics due to flickers of the mains	Reset the display by the pushbutton near the USB port. Push it for at least 20 seconds, or remove the power supply at least 30 seconds.	User
The light intensity has significantly reduced	Reflectors or secondary lens dirty	Clean the screen	User
	The maximum limit has been changed.	Change the limit value from the Setting Menu	User
Display doesn't work	Breakdown communication from the boards due to voltages pick.	Reset the display by the pushbutton near the USB port. Push it for at least 20 seconds, or remove the power supply at least 30 seconds. If the problem persist remove the power supply for at least 60 seconds and try again.	user
	Blackout in the main power supply.		
	Composave function has been activated	Remove the composave function from Setting Menu	User
The lamp does not maintain balance and tends to fall	Excessive load on the head	Remove excess loads. If the problem persist call the service.	User
Error proxy	Clearance distance from the sensor were not rispected when the lamps has been turned on	Clean the error and reset the sensor by Information Menu	User
	temporary blocking of electronics	Reset by the pushbutton near the USB port. Push it for at least 20 seconds Turn off the mains for at least 30 seconds.	User
Error battery	The plastic strip of the battery was not removed from the back of the display.	Remove the strip and reset the error.	User
	Battery low	Change the battery: remove the cover back the display and change it.	User
The lamp' does not maintain the balance of the head.	the adjusting screws have lost their position	adjust the screws as described at the section of this user manual.	User

7.1 List of errors.

Any operating errors involving the optical, electrical and electronic part of the lamp will be communicated directly via the display.
The display, if available, will provide the following information: error code - error description - available operating options.
All possible errors are recorded by the lamp with also 'indication of the day, hour and minute of reference, this information can be viewed in the information section directly via the display.

Code	Error description	Display messages			
Er1	Otp dental– led over temperature threshold reached.	Er1 - otp	Over-temperature on the leds	Switch off and wait for 60 min.	
Er3	Hight temperature detected on the board	Er3 - otb	Over-temperature on the pcb	Switch off and wait for 60 min.	
Er4	Error while reading or writing to internal eprom	Er4 - eprom	Error on internal eprom	Restart the lamp	
Er5	Dental opl open led condition detected for channel 2700k.	Er5 - opl-27	Error on warm LED channel	Composave unavailable	Surgery function available
Er6	Dental opl open led condition detected for channel 6500k.	Er6 - opl-65	Error on cold LED channel	Tunable-white unavailable	Surgery functions available
Er8	Low input voltage detected.	Er8 - l_volt	Low supply voltage measured	Restart the lamp	
Er9	High input voltage detected.	Er8 - h_volt	High supply voltage measured	Restart the lamp	
Er10	Communication with proxy fails	Er10 – com-l	Communication loss	Restart the lamp	
Er11	Dental open led condition on both channel	Er11 – opl_d	Error on dental leds	Composave unavailable	Surgery function available
Er12	Surgical open led condition detected	Er12 – opl_s	Error on surgery leds	Surgery partially available	Dental function available
Er13	Proxy reference level wrong	Er13 – proxy	Proxy reading out of scale	Clean the sensor	Restart the lamp
Er23	Can comm error	Er23	Canbus error		
Er24	Battery low	Er24	Date and time error	Replace battery	
Er25	Eeprom cpu error	Er25	Eeprom cpu error		
Er26	S/n not matching	Er26	S/n not matching between cpu and driver		
Er27	Lamp locked	Er27	Lamp locked	Call Service	
Er28	Date error	Er28	Inserted date lower than test		
Er29	Display error	Er29	Display error	Press reset 10 sec	
Er54	Invalid command	Er54	Invalid command		
Er55	Command not available	Er55	Command not available		
Er56	Command not recognized	Er56	Command not recognized		
Er57	Value not allowed	Er57	Value not allowed		