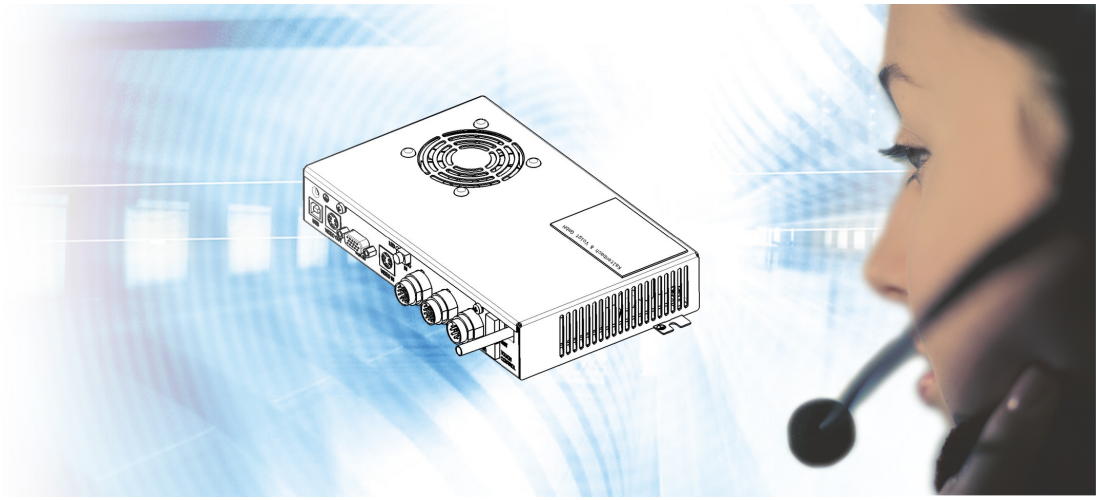
Instructions for use
ERGOcom light



Always be on the safe side.

KaVo. Dental Excellence.

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CE

Contents

1 User instructions

1.1 User Guide

Requirement
Read these instructions before the initial startup to prevent misuse and damage.

1.1.1 Abbreviations

Abbre-viati-ons	Explanation
GA	Instructions for use
PA	Care instructions
MA	Assembly instructions
TA	Technician's instructions
STK	Safety checks
IEC	InternationalElectrotechnicalCommission
RA	Repair instructions
EMC	Electro magnetic compatability

1.1.2 Symbols

	See the section Safety/Warning Symbols
	Important information for users and technicians
CE	CE mark (Communauté Européenne). A product with this mark meets the requirements of the corresponding European directive, i.e., the applicable European standard.
▶	Action required

1.1.3 Target group

This document is for dentists and office personnel.

1.2 Assistência

Service hotline:
+49 7351 56-2700
Service.Multimedia@kavo.com
Please indicate the product serial number in all requests.
Additional information can be obtained at: www.kavo.com

1.3 Warranty terms and conditions

Within the framework of applicable KaVo delivery and payment conditions, KaVo guarantees proper function, freedom from flaws in material and manufacturing for a period of 12 months from the date of purchase demonstrated by the purchaser. In case of justified complaints, KaVo will honor its warranty with a free replacement or repair.
The warranty does not cover defects and their consequences that arose or may have arisen due to natural wear, improper handling, cleaning or maintenance, non-compliance with operating, maintenance or connection instructions, corrosion, contaminated media supply or chemical or electrical influences deemed abnormal or impermissible in accordance with factory specifications.
The warranty does not usually cover lamps, light conductors made of glass and glass fibers, glassware, rubber parts and the colourfastness of plastic parts.
The warranty expires when defects or their consequences can arise from manipulations or changes to the product. Warranty claims can only be asserted when they are immediately reported to KaVo in writing.
This notification must be accompanied by a copy of the invoice or delivery note on which the manufacturing number is clearly visible. In addition to the guaranty, the statutory warranty claims of the purchaser also apply with a warranty period of 12 months.

1.4 Transportation and storage

1.4.1 Packaging ordinance of August 28,1998

Note
Only applicable for the Federal Republic of Germany.

KaVo transport packaging must be disposed of and recycled by local disposal service providers and recycling companies in accordance with Dual System requirements.
For more information about disposal and recycling, and an up-to-date list of local disposal service providers and recycling companies, please visit the following Internet sites:
http://www.umweltdatenbank.de
http://www.quality.de
KaVo will bring KaVo transport packaging returned by the customer at the customer's own cost to the appropriate recycling companies without reimbursement..

1.4.2 Transport damage

In Germany

If external damage to the packaging is visible upon delivery, follow the procedure below:
1. The recipient must record the loss or damage in the notice of delivery. The recipient and employee of the transportation firm must sign the notice of delivery.
2. Leave the product and packaging unchanged.
3. Do not use the product.
4. Report damage to the shipping company.
5. Report damage to KaVo.
6. A damaged product cannot be returned before talking with KaVo.
7. Send the signed notice of delivery to KaVo.

If the product is damaged and there is no discernable damage to the packaging upon delivery, proceed as follows:
1. Report damage immediately or at least 7 days after the delivery to the delivery company. .
2. Report damage to KaVo.
3. Leave the product and packaging unchanged.
4. Do not use a damaged product.

Note
If the recipient does not follow one of the above instructions, the damage will be held to have occurred after the delivery (according to ADSp. Art. 28)..

Outside of Germany

Note
KaVo is not liable for damage arising from transportation.
Immediately inspect the delivery after receipt!

If external damage to the packaging is visible upon delivery, follow the procedure below:
1. The recipient must record the loss or damage in the notice of delivery. The recipient and employee of the transportation firm must sign the notice of delivery. The recipient can only assert damages against the transportation company based on these records.
2. Leave the product and packaging unchanged.
3. Do not use the product.

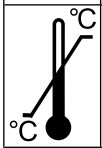
If the product is damaged and there is no discernable damage to the packaging upon delivery, proceed as follows:
1. Report the damage immediately or at least 7 days after the delivery to the delivery company .
2. Leave the product and packaging unchanged.
3. Do not use a damaged product.

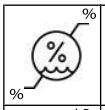
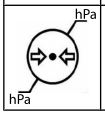
Note
If the recipient does not follow one of the above instructions, the damage will be held to have occurred after the delivery (according to . CMR law , section 5, Art. 30).

1.4.3 Storage

Note
Keep the packaging for returning the product for service or repairs .

The symbols printed on the outside are for transportation and storage, and have the following meaning:

	Transport upright with the arrows pointing upwards
	Fragile - protect against knocks
	Keep dry
	Maximum permitted stacking load
	Temperature range

	Humidity
	Air pressure

2 Safety

2.1 Description of safety instructions

2.1.1 Warning symbol

	Warning symbol

2.1.2 Structure


DANGER

The introduction describes the type and source of the hazard.
This section describes the potential consequences of non-observance.
- The optional step contains necessary measures for avoiding hazards.

2.1.3 Description of hazardous steps

Safety instructions with three hazard levels are used in this document for avoiding personal and property damage.


CAUTION

CAUTION
indicates a hazardous situation that can lead to property damage or minor to moderate injury.


WARNING

WARNING
indicates a hazardous situation that can lead to serious injury or death.


DANGER

DANGER
indicates a maximum hazardous situation that can directly cause serious injury or death.

2.2 Purpose – Proper use

2.2.1 General information

The user must ensure that the machine is functionally reliable and in good order before using each time.
This KaVo product is intended only for use in the field of dentistry. It is impermissible to use the product for a purpose for which it was not intended.
"Proper use" includes following all the instructions for use and ensuring that all inspections and service tasks are performed.
Apply and meet the overarching guidelines and/or national laws, national regulations and the rules of technology for medical devices applicable for startup and use of the KaVo product for the intended purpose.

The user must observe the following:
- - only use properly operating equipment.
- protect himself or herself and third parties from danger.
- avoid contamination from the product.

During use, national legal regulations must be observed, in particular:
- the applicable health and safety regulations.
- the applicable accident prevention regulations.

To ensure that KaVo products maintain their value and are always ready for use, they must be serviced once a year as recommended.
The safety checks must be performed every two years.

Authorised to repair and service the KaVo product:
- The technicians of KaVo branches.
- Technicians of authorised dealers specially trained by KaVo.
In Germany, operators, equipment managers and users are obliged to operate their equipment in accordance with the Medical Device Law. outside of Germany, observe the respective national laws and regulations.
These service tasks include all testing tasks that are stipulated in the Operator Ordinance (MPBetreiber V) § 6.

Note
The product must be cleaned and serviced according to instructions if it is not to be used for a long period.

Note
Only those accessories may be used that are approved for the device.

Information on electromagnetic compatibility

Note
Based on EN 60601-1-2:201 concerning the electromagnetic compatibility of electromedical devices, we need to point out that:
- Medical electrical devices are subject to special measures regarding electromagnetic compatibility and must be operated in accordance with KaVo assembly instructions.
- Portable and mobile high-frequency communications devices can influence medical electronics.
- Further details on the technical EMC-description can be made available on request.

CAUTION

Damage due to unsuitable accessories
The use of other accessories, transformers and lines than those indicated, with the exception of transformers and lines that KaVo sells as replacement parts for internal components, can increase transmission or reduce the electromagnetic immunity of the product.
- ▸ Only use accessories recommended by KaVo!

Note
KaVo cannot guarantee that accessories, lines and transformers not delivered by KaVo will correspond with EMC Directive EN 60601-1-2:2001.

Disposal

Note
The waste that arises must be recycled or disposed of in a manner safe for humans and the environment. Observe the applicable national regulations.
Please direct all questions regarding the proper disposal of KaVo products to the nearest

Disposal of electronics

Note
Based on the EC directive concerning electrical and electronic used devices, this product is subject to the cited directive and must be disposed accordingly within Europe.
Before disassembling and disposing of the product, it must be completely processed (disinfected, sterilised) according to the section "Preparation methods"
Additional information can be obtained from KaVo or your dental supplier.

2.2.2 Product-specific

The ERGOcom light is used to distribute multi media contents from external image and audio sources.
The device is intended for fitting in a dentist's teatment device as per DIN EN ISO 7494.
In the dentist's practice, outside of the patient environment and in conjunction with a KaVo display it corresponds to a medical device in Protection Class 1.

2.3 Safety instructions

2.3.1 General information


WARNING

Injury or damage from damaged functional parts.
When functional parts are damaged, it can cause additional damage or personal injury.
- When operating parts are damaged: Stop working and eliminatethe damage, or notify a service technician.
- Check the electrode lines and accessories for damage to the insulation.


CAUTION

Malfunctions due to electromagnetic fields. Given the complex interactions between equipment and cell phones, the product may be influenced by a cell phone that is in use.
Do not use cell phones in medical offices, hospitals, or laboratories.
- Put electronic devices such as e.g. computer storage media, hearing aids etc. down during operation!


CAUTION

Risks from electromagnetic fields.
The functions of implanted systems (such as pacemakers) can be influenced by electromagnetic fields.
- Ask patients before treatment!

The KaVo product is not permitted to be used in areas subject to an explosion hazard.

Authorised to repair and service the KaVo product:

- The technicians of KaVo branches.
- Technicians of authorised dealers specially trained by KaVo.

2.3.2 Product-specific

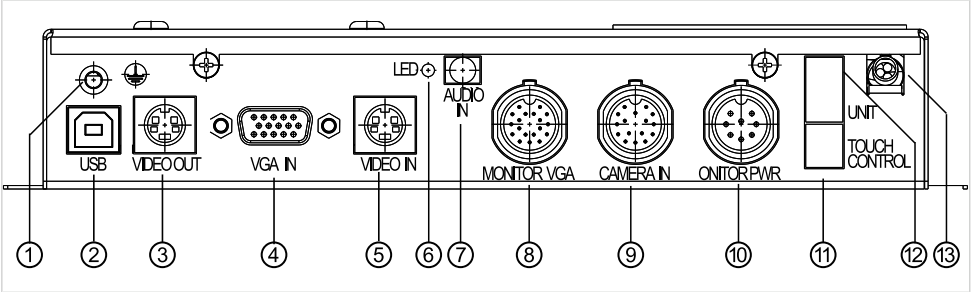

CAUTION

Live parts
Electrical shock.
- Disconnect the power cable from the power supply!

- Check the PE conductor connected to the earth terminal M. R = < 0.1 Ohm
- When using in combination with compatible displays follow the requirements of the standard IEC 60601-1-1.
- When the device is installed in rooms used for medical purposes, the rooms must be equipped in accordance with DIN/VDE 0100-710 (Setting up low voltage systems).
- When connecting a non medical electrical device to the ERGOcom light interfaces IEC60601-1-1 / 3.201.4 (System) is to be followed.
- Only type BF application parts may be connected to ERGOcom light.

3 Product description

3.1 Connections

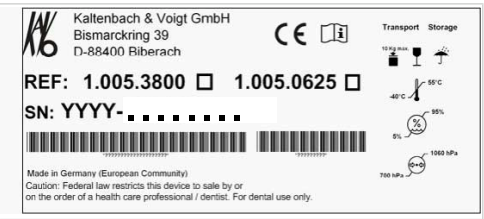


① Earth location
② USB 2.0 connection
③ Video output
④ VGA input
⑤ Video input (only activatable with E80)
⑥ LED
⑦ Audio output
⑧ VGA monitor output
⑨ Camera input
⑩ Output monitor supply
⑪ In / output touchscreen control
⑫ Input control signals
⑬ Mains supply

3.2 Rating Plate

Type	Device type
SN	Year of manufacture - serial number
REF	Material number
	Fuse
C US	CSA mark
VDE	VDE mark
	Note: Read and note the content of accompanying documents.
CE	CE mark
	For disposal information, see use in accordance with intended purpose

3.2.1 Rating plate packaging



3.3 Technical data ERGOcom light

Air pressure	700 hPa to 1060 hPa
Weight	0.8 kg
Case dimensions	
Width:	225 mm
Height:	38 mm
Depth:	139 mm
Electrical supply	
Alternating voltage	100 to 240 V
Nominal frequency:	50/60 Hz
Power consumption:	max. 105 VA
Environmental conditions operating	
Permissible operating temperature:	0 to 40°C
Permissible relative air humidity	5 to 95%
Environmental conditions transportation and storage	
Permissible storage temperature:	-40 to 55°C
Permissible relative air humidity	5 to 95%
Compatible intraoral cameras	
Type:	BF
Compatible displays	
Max. power consumption:	35 VA

3.4 Accessories

Available from dental medical suppliers:

Designation	Mat. No.
ECL Display SXGA wire	1.004.8147
Cord for the ECL Display SCGA 2.4 M	1.006.2956
Cord for the Centro Display SXGA 5.2 M	1.006.6645
Cord for the ECL Display 17_20 power supply	1.005.4877
ECL Display power supply cord 2.4 M	1.006.2955
Cord for the Centro Display 17_20 power supply 5.2 M	1.005.6634
Earthing wire AWG 16 x 700	1.004.0711
Optional cable set	1.005.0938

3.5 Details on electromagnetic compatiblity

3.5.1 Guidelines and manufacturer's declaration - electromagnetic transmission

The ERGOcom light is for use in an environment like the one cited below. The ERGOcom light customer or user should ensure that use takes place in such an environment.

Disturbance signal measurements	Conformity	Electromagnetic environment - Guidelines
HF-transmissions according to CISPR 11	Group 1	The ERGOcom light uses HF energy only for its internal operation. Its HF transmission is therefore very low, and it is improbable that neighbouring electronic devices will be disturbed.
HF-transmissions according to CISPR 11	Class B	The ERGOcom light is for use in all facilities including residential ones, and facilities that are directly connected to a public power supply that also supplies residential buildings.
Transmissions of harmonics according to IEC 61000-3-2	Class A	The ERGOcom light is for use in all facilities including residential ones, and facilities that are directly connected to a public power supply that also supplies residential buildings.
Transmissions of voltage fluctuations or flicker according to IEC 61000-3-3	fulfilled	The ERGOcom light is for use in all facilities including residential ones, and facilities that are directly connected to a public power supply that also supplies residential buildings.

3.5.2 Guidelines and manufacturer's declaration - electromagnetic resistance to jamming

The ERGOcom light is for use in an environment like the one cited below. The ERGOcom light customer or user should ensure that use takes place in such an environment.

Tests for resistance to jamming	IEC 60601-test level	Conformity level	Electromagnetic environment - guidelines
Electrostatic discharge (ESD) according to IEC 61000-4-2	± 6 kV contact discharge ± 8 kV atmospheric discharge	Not tested	Floors should be made of wood or concrete or have ceramic tiles. If the floor is covered with synthe-ticmaterial the relative humidity must be at least 30%.
Fast transient electrical disturbances / bursts according to IEC 61000-4-4	± 2 kV for power lines ± 1 kV for input and output lines	± 2 kV for power lines ± 1 kV for input and output lines	The quality of the supply voltage should correspond to that of a typical business orhospital environment .
Surges according to IEC 61000-4-5	± 1 kV Push-pull voltage (symmetrical) ± 2 kV common mode voltage (unsymmetrical)	± 1 kV Push-pull voltage (symmetrical) ± 2 kV common mode voltage (unsymmetrical)	The quality of the supply voltage should correspond to that of a typical business orhospital environment .
Voltage interruptions, short-term interruptions and fluctuations of the supply voltage according to IEC 61000-4-11	< 5% U_T for 1/2 period (>95% interruption) 40 % U_T for 5 periods (60% interruption) 70 % U_T for 25 periods (30 % interruption) < 5% U_T for 5 s (>95% interruption)	< 5% U_T for 1/2 period (>95% interruption) 40 % U_T for 5 periods (60% interruption) 70 % U_T for 25 periods (30 % interruption) < 5% U_T for 5 s (>95% interruption)	The quality of the supply voltage should correspond to that of a typical business orhospital environment . If the ERGOCOM LIGHT user requires continuousfunction even when there are interruptions to the power supply, it is recommended, that the ERGOCOM LIGHT is supplied from uninterrupted power supply or abattery .
Magnetic field with a supply frequency (50/60 Hz) according to IEC 61000-4-8	3 A/m	3 A/m	Magnetic fields at mains frequency should correspond to typical values in a business andhospital environment .

NOTE: V_T is the alternating mains voltage before the test level is used.

3.5.3 Guidelines and manufacturer's declaration - electromagnetic resistance to jamming

The ERGOcom light is for use in an environment like the one cited below. The ERGOcom light customer or user should ensure that use takes place in such an environment.

Tests for resistance to jamming	IEC 60601-test level	Conformity level	Electromagnetic environment - guidelines
Conducted HF disturbances according to IEC 61000-4-6 Radiated HF disturbances according to IEC 61000-4-3	3 V_{eff} 150 kHz to 80 MHz 3 V/m 80 MHz to 2.5 GHz	3 V_{eff} 3 V/m	Portable and mobile radio devices should not be used closer to the ERGOCOM LIGHT including the wires, than the recommenced safe distance calculated using the equation for the transmission frequency. Recommended safe distance: $d = [3.5/3]\sqrt{P} = 1{,}17\sqrt{P}$ $d = [3.5/3]\sqrt{P} = 1{,}17\sqrt{P}$ for 80 MHz to 800 MHz $d = [7.0/3]\sqrt{P} = 2{,}33\sqrt{P}$ for 800 MHz to 2.5 GHz with P as the maximum rated power of the transmitter in Watts (W) according to the transmitter manufacturer, and d as the recommended safe distance in meters (m). The field strength of stationary radio transmitters should be less than the conformance level at all frequencies in an on-site check[a,b]. Disturbances are possible close to devices that have the following symbol. 

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2: These guidelines may not be applicable in every case. The spread of electromagnetic waves is absorbed and reflected by buildings, objects and people.

[a]The field strength of stationary transmitters such as base stations of mobile telephones and land radio devices, amateur radio stations, AM and FM, radio and television broadcasters cannot be theoretically predetermined. To determine the electromagnetic environment of stationary transmitters, a study of the location should be considered. When the measured field strength at the location on which the ERGOCOM LIGHT is used, exceeds the conformity level, the ERGOCOM LIGHT should be watched to ensure that it is functioning as per the correct usage. Should unusual performance features be observed, additional measures may be required, such as e.g. a different alignment or another location for the ERGOCOM LIGHT.
[b]Within the frequency range of 150 kHz to 80 MHz, the field strength should be less than 3V_{eff} V/m.

3.5.4 Recommended protection distances between portable and mobile HF-telecommunication devices and the ERGOcom light

The ERGOcom light is for use in an environment like the one cited below. The customer or user of the ERGOcom light can help to avoid electromagnetic faults by keeping to the minimum distance apart between portable and mobile HF-telecommunication devices (transmitters) and the ERGOcom light - dependent on the output lines for the communication device - as given below.

Rated power of the transmitter in W	150 kHz to 80 MHz $d=1.17\sqrt{P}$	80 MHz to 800 MHz $d=1.17\sqrt{P}$	800 MHz to 2.5 GHz $d=2.33\sqrt{P}$
0,01	0,12	0,12	0,23
0,1	0,37	0,37	0,74
1	1,17	1,17	2,33
10	3,70	3,70	7,37
100	11,70	11,70	23,30

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.
NOTE 2: These guidelines may not be applicable in every case. The spread of electromagnetic waves is absorbed and reflected by buildings, objects and people.

4 First use

4.1 Fitting requirements

The ERGOcom light is intended for fitting in a dentist's teatment device as per DIN EN ISO 7494.

The following requirements must be fulfilled when fitting:

- Fitting only in fixed equipment in protection class 1.
- Fitting only in a contact-voltage proof environment.
- Operation of the ERGOcom light only in an environment that permits IP 20.
- An additional protective conductor must be fitted to the ERGOcom light.
- It must be possible to switch off the power input connection of the ERGOcom light all-polo. Electrical supply see 3.3
- Functional connections with the dental device must be provided with a base insulated release unit.
- All the requirements of IEC 60 601-1 and the respective national regulations must be adhered to.

4.2 Connecting additional devices to the ERGOcom light

CAUTION

Damage or injuries due to incorrect use of the ERGOcom light
Should the ERGOcom light be connected to devices other than those described here, this can lead to damage to the device, the treatment unit or to injuries.
- Follow all applicable rulings and the information given here!

The following is to be observed in particular when connecting additional devices:

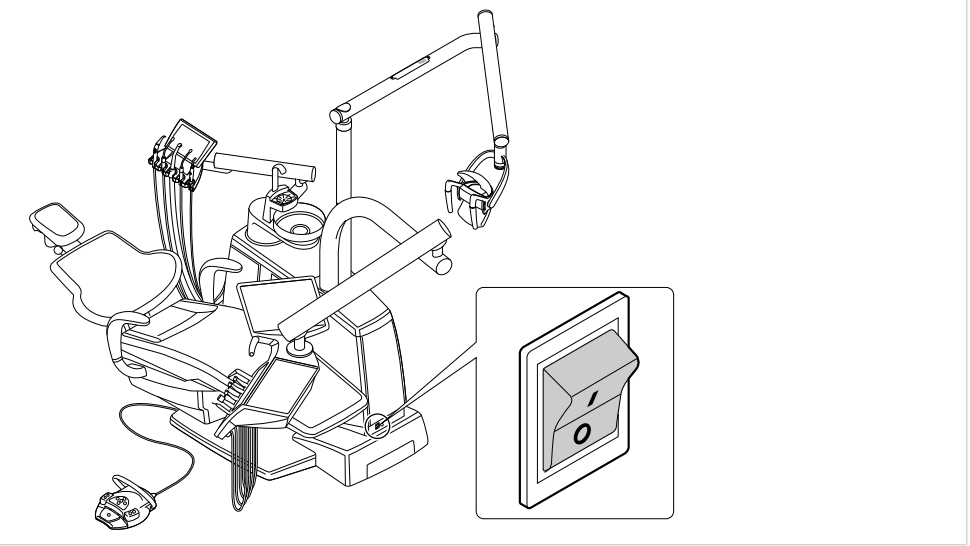
- Only intraoral cameras or type BF application parts may be connected to ERGOcom light.
- Only displays that comply with the requirements of IEC 60601-1 and are either base insulated with live parts (2.5 mm air gap and 4 mm creep distance) or fixed to the metal housing and have a secured protective conductor.
- Only additional devices for which proof is available that they comply with the relevant standards and directives (e.g. IEC60950, IEC60065) may be connected to the ERGOcom light.
- The manufacturerer of a system must ensure that in particular in a patient environment, the system corresponds to the safety degree of a medical device as per IEC 60601-1.
- The manufacturer of a system must follow the complete scope of the requirements as per IEC60601-1-1, Medical-Device-Directive MDD 93/42/EEC and the Medical Product Ruling MPG (Germany).

5 Operation

5.1 General operation

5.1.1 Switch device on

The ERGOcom light device is switched on using the main switch on the dental treatment device.



5.2 Operation with the KaVo 1058 or 1065/1066 dental device

The following description applies: In order to see the chosen setting on the display the respective source must be active.

5.2.1 Show VGA In image source

Switching over the image source between VGA In and camera image signal is carried out by removing the camera from the holder or laying it back in the holder. When the camera is placed in the correct holder, the VGA is displayed in the image signal.

Exception:
When the camera freeze frame is activated, switch over to VGA In takes place when the camera is in place, by using the the "Freeze Frame" button on the foot pedal.

Note
If no image source is connected to the VGA, the logo is displayed.

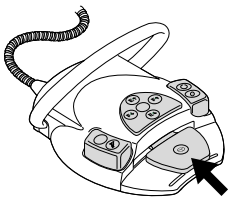
5.2.2 Display camera image

Switching over the image source between VGA In and camera image signal is carried out by removing the camera from the holder or laying it back in the holder. When the camera is removed from the correct holder, the camera image signal is displayed.

5.2.3 Produce camera freeze frame

Requirement: The camera image is shown on the display.

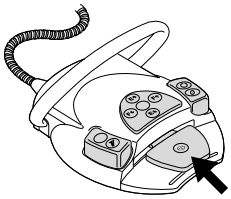
- Push the foot button < 2 sec. A freeze frame of the camera image is produced on the display.



- Push the foot button again, in order to return to the live image and activate the next image (1-4) as a live image.

5.2.4 Save camera freeze frame

Requirement:
- ERGOcom light is connected to a PC via a USB cable
- The KaVo xxxx software is installed on the PC
- A camera freeze frame has been produced

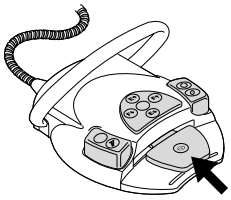


- Push the foot button for > 2 seconds. "Save ?" appears on the display for approx. 2 seconds. Should the foot button be released during fading in, the freeze frame is saved on the PC the camera is connected to. The save procedure is displayed using "Save..".

Should the image not be saved, keep the foot button pressed down until the input commands have cancelled.

5.2.5 Change imaging

Requirement: A camera freeze frame is shown on the display.



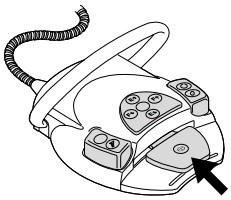
- Push the foot button for > 4 seconds. The input request "Quad Mode?" appears on the display for approx. 2 seconds. (or "Single Mode?") . Should the foot button be released during fade in then a change over into quadruple imaging (or full image) is made.

Should the imaging not change when the input command is displayed, then push the foot button down so long until the input command has cancelled.

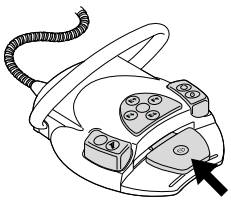
5.2.6 Delete camera freeze frames

This function is only available for quadruple imaging.

Requirement: 4 images were displayed using the multi foot operating element



- Push the foot button again. The input command "Clear all?" appears on the display.



- Push the foot button > 2 seconds, to delete all 4 images. The logo is blended in.

Push the foot button < 2 seconds to switch Image 1 over to liveimage.

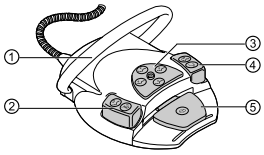
5.3 Operation using the KaVo ESTETICA E80 dental device

The following description applies: In order to see the chosen setting on the display the respective source must be active.

5.3.1 Controls for controlling the ERGcom light

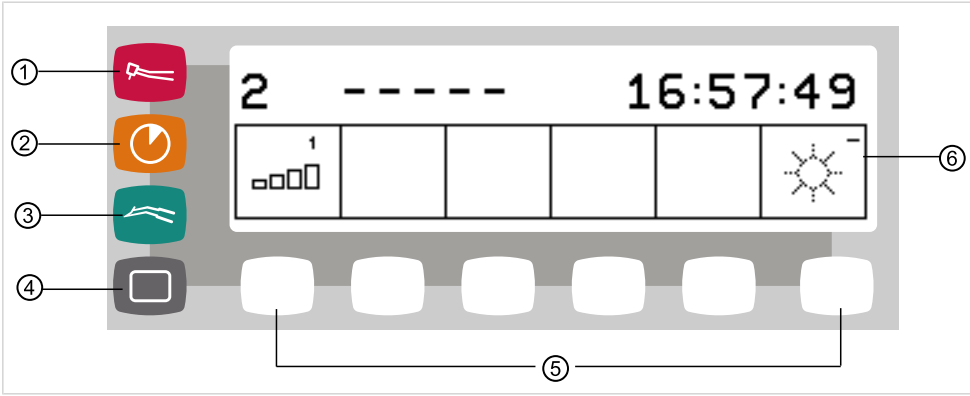
The ERGOcom light is operated for all Alpha series dental devices using the multi foot operating control.

Note
Functions are only available for the activated multi media mode.



1 = U-type switch
2 = Image back
3 = Cross switch
forwards: Switch over Quad/Full picture image
back: Delete image/s
left: Switch over video input
right: Switch over video input
4 = image forwards
5 = Freeze frame

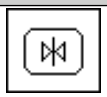
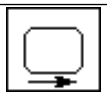
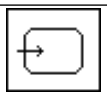
and for models with the Memodent function additionally via the multi media menu.



B Menu selection button group

① "Memodent menu" button
② "Timer menu" button
③ "Patient menu" button
④ "Multimedia menu" button
⑤ Selection buttons for menu functions
⑥ Display

the following functions are available in the multi media menu:

Symbol	The function that is obtained when you briefly press the selection button	The function that is obtained when you press the selection button for a longer period
	Freeze A freeze frame is created.	Save The current image is saved.
	Image back	No function
	Next image	No function
	Setting the image source (camera/video) The image source changes between the camera and video.	No function
	Full image mode / quad mode The display switches between full image mode and quad mode.	No function
	Delete image The current image is deleted.	Delete images All images are deleted.

To activate functions, press the selection button below the display field briefly or longer.

5.3.2 Show VGA In image source

Switching over the image source between VGA In and Video Image signal takes place by activating or deactivating the multi media mode in the dental device
When the multi media mode is deactivated the VGA is displayed in the image signal.

Note
If no image source is connected to the VGA, the logo is displayed.

5.3.3 Display video image

Switching over the image source between VGA In and Video Image signal takes place by activating or deactivating the multi media mode in the dental device.
If the multi media mode is activated the image signal for the video input selected is displayed.

Activate multi media mode:

either: Remove the camera from the holder

or for models with Memodent function

Activate multi media menu

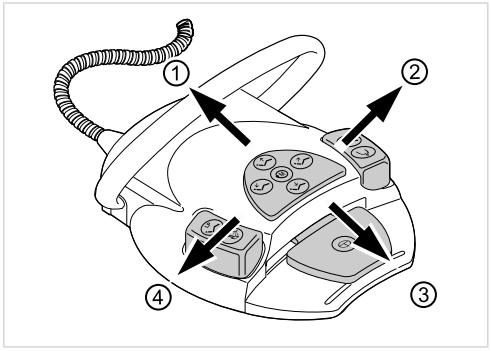
or for models with Memospeed function

Activate remote control

5.3.4 Select video source

Requirement: Multi media mode is activated.

Select video image source camera or video using the cross buttons on the left or right.



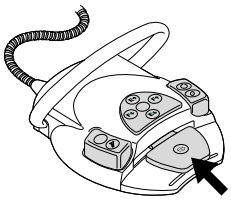
or for devices with Memodent function:

Select the image source camera or video externally using the Video Input button in the multi media menu.

5.3.5 Produce video freeze frame

Requirement: Multi media mode is activated and a video image is shown on the display.

- Push the freeze frame button on the foot control for < 2 sec. A freeze frame of the video image is produced on the display.

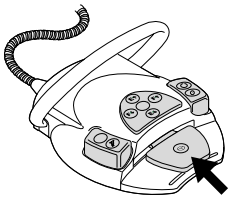


- Push the foot button again, in order to return to the live image and activate the next image (1-4) as a live image.

or for devices with memodent function in the menu push the function button >2 seconds:

5.3.6 Save video freeze frame

Requirement:
- ERGOcom light is connected to a PC via a USB cable
- The KaVo xxxx software is installed on the PC
- A video freeze frame has been produced

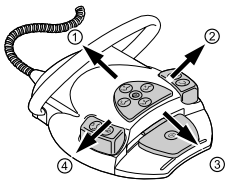


- Push the foot button for > 2 seconds. The freeze frame is saved on the connected PC. The save procedure is displayed using "Save..".

or for devices with memodent function in the menu push the function button >2 seconds:

5.3.7 Change video image representation

Requirement: Multi media mode is activated.

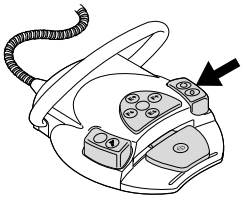


- Push cross button forward. The picture representation changes between full picture and quadruple image representation.

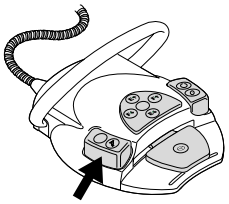
or for devices with memodent function in the menu push the function button >2 seconds:

5.3.8 Select image

Requirement: Multi media mode is activated.



- Select the desired image using the image forward button. Selected image remains as a freeze frame.

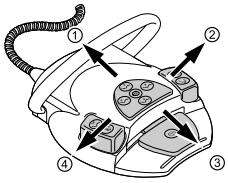


- Select the desired image using the image back button. Selected image remains as a freeze frame.


or for devices with memodent function in the menu push the function buttons:

5.3.9 Delete image

Requirement: Multimedia mode is activated and a freeze frame has been generated.

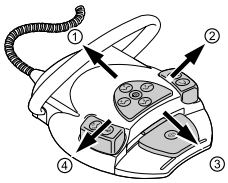


- Push the cross button back for > 2 seconds. The selected freeze frame is deleted and replaced by the logo.

or for devices with memodent function in the menu push the function button >2 seconds:

5.3.10 Delete images

Requirement: Multi media mode is activated and several freeze frames have been generated.



- Push the cross button back for > 2 seconds. All freeze frames are deleted in the memory and replaced by the logo.

or for devices with memodent function in the menu push the function button >2 seconds:

6 Preparation methods

6.1 Cleaning

6.1.1 Manual cleaning of the exterior

Damage can arise due to drips on paint surfaces, as well as on onto plastics due to the variety of medicines and chemicals used in the dentist's practice.
Tests have shown that no one hundred percent surface protection can be found for all materials that are available in the marketplace.
As damage to the surface is very much dependent on the exposure time, it is vital that the affected areas are wiped down immediately with a moist cloth.

Recommended cleaning materials: KaVo Elastoclean.

The following cleaning agents may not be used:

1. Strong alkaline washing solutions
2. Acids
3. Cleaning agents containing flouride
4. Cleaning agents containing ammonia
5. Abrasives of any kind

- Switch main device switch off.
- Clean the surface with a soft cloth and mild liquid cleaning agent.

CAUTION

Damage due to liquids
Protect product openings from penetration of liquids.
- Remove liquids from the inside of the device.

6.2 Disinfection

CAUTION

Damage due to liquids
Faults on electric components.
- Protect product openings from penetration of liquids. Remove liquids from the inside of the device.

- Disinfect the surface by wiping using a soft lint free cloth.

Note
Contaminated parts must be disinfected after each patient.

6.3 Servicing

ERGOcom light does not require any regular maintenance work by the user.

7 Safety checks

7.1 Bases

Should the device be connected into a system, the system manufacturer will determine the system type 2a or 2b and the repeat period for safety checks.
The system must be documented and the measuring points added.
VDE 0751-1 is to be taken into consideration in its full scope.

- Visually inspect the medical device and accessories.
- Check the ratings of fuses that are accessible from outside.
- Protective conductor tests as per VDE 0751.
- Leakage current measurements as per VDE 0751.
- Medical device function test with reference to accompanying documentation.

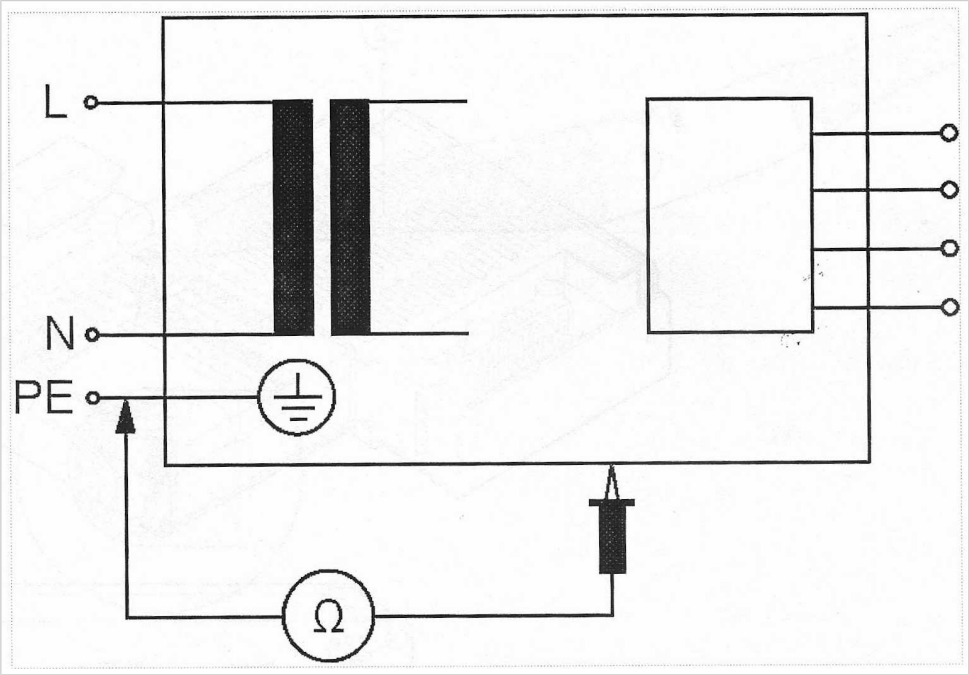
KaVo offers a medical device book for keeping an inventory and recording essential master data on the medical device.
The medical device book is only required in Germany and is therefore only available in the German language Mat no. 0.789.0480.

The following measurements must be documented, for example in the medical device book:

The following requirements apply in accordance with VDE 0751-1:

- Safety check every 2 years.
- Protection class 1
- Device: Fixed.
- Type: B general.
- Measurement in accordance with replacement devices-leakage current.

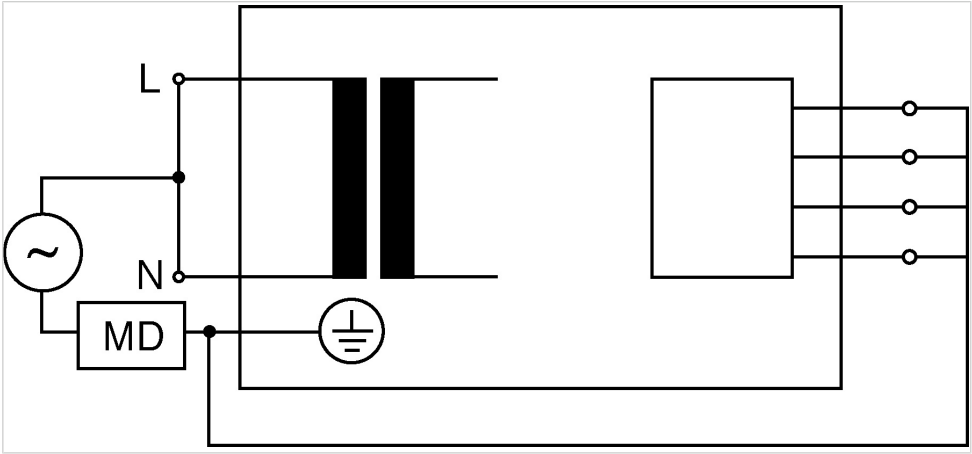
7.1.1 Measuring the protective conductor resistance



The limit of 0.2 Ohm must not be exceeded.

Note
- Switch the device main switch on.
- The signal - GND (connection earth) must be additionally be connected with the equipotential bonding using a wire cross section >= 4mm² as per EN60601-1-1 and EN60601-1.

7.1.2 Measurement replacement devices leakage current



The limit of 5mA must not be exceeded.

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