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www.glwoodpecker.com

DTE® D3 LED

ULTRASONIC SCALER INSTRUCTION MANUAL



FDA CE 0197

(Please read this manual before operating)

GUILIN WOODPECKER MEDICAL INSTRUMENT CO., LTD.

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1.The installation and components of equipment

1.1 Instruction

Guilin Woodpecker Medical Instrument Co., Ltd. is a professional manufacturer in researching, developing and producing ultrasonic scalers. The product is mainly used for teeth cleaning and is also an indispensable equipment for teeth disease prevention and treatment. The product D3 LED ultrasonic scaler has scaling, perio functions.

It contains the following features:

1.1.1 Optical handpiece, more convenient for clinical operation.

1.1.2 Automatic frequency tracking ensures that the machine always works on the best frequency and performs more steadily.

1.1.3 The handpiece is detachable and can be autoclaved to the high temperature of 135℃and the pressure of 0.22MPa.

1.1.4 Digitally controlled, easy operation and more efficient for scaling. These features make D3 LED become a new generation product in the world dental market.

1.2 Components

1.2.1 The components of the machine are listed in the packing list.

1.2.2 Product performance and structure

Ultrasonic scaler is composed of electrocircuit, water way and ultrasonic transducer.

1.2.3 Scope of application

Ultrasonic scaler D3 LED is used for the dental calculus elimination.

1.3 The main technical specifications

1.3.1 Power supply Input: 220-240V~ 50Hz/60Hz 150mA

1.3.2 Main unit input: 24V~ 50Hz/60Hz 1.3A

1.3.3 Output primary tip Vibration excursion: ≤100μm

1.3.4 Output half-excursion force: <2N

1.3.5 Output tip Vibration frequency: 28kHz±3kHz

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1.3.6 Output power: 3W to 20W

1.3.7 Main unit fuse: Tl.6AL 250V

1.3.8 Power supply fuse: T0.5AL 250V

1.3.9 Water pressure: 0.lbar to 5bar (0.01MPa to 0.5MPa)

1.3.10 Weight of main unit: 0.66kg

1.3.11 Weight of power supply:1 kg

1.3.12 Main unit volume: 198mm×134mm×80mm

1.3.13 Operating mode: Continuous operation

1.3.14 Type of protection against electric shock: Class II equipment

1.3.15 Degree of protection against electric shock: Type BF applied part

1.3.16 Degree of protection against harmful ingress of water: Ordinary equipment (IPX0). Protection degree against water (used on foot switch): IPX1

1.3.17 Applied part of the equipment: handpiece and tip

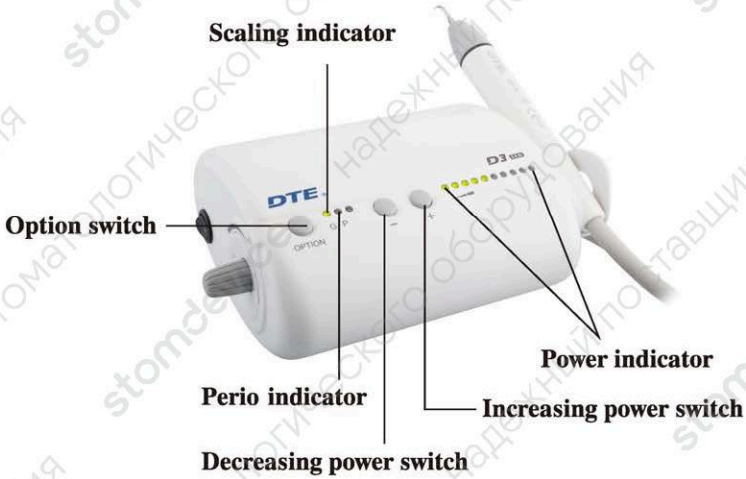
1.3.18 Degree of safety of application in the presence of a Flammable Anesthetic Mixture with air or with Oxygen or Nitrous Oxide: Equipment not suitable for being used in the presence of a flammable anesthetic mixture with air or with oxygen or nitrous oxide

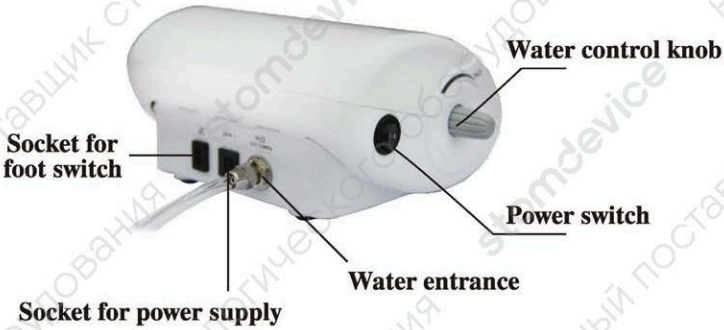
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1.4 Installation of the main components

1.4.1 Sketch map for installation and connection

a) The components of the equipment

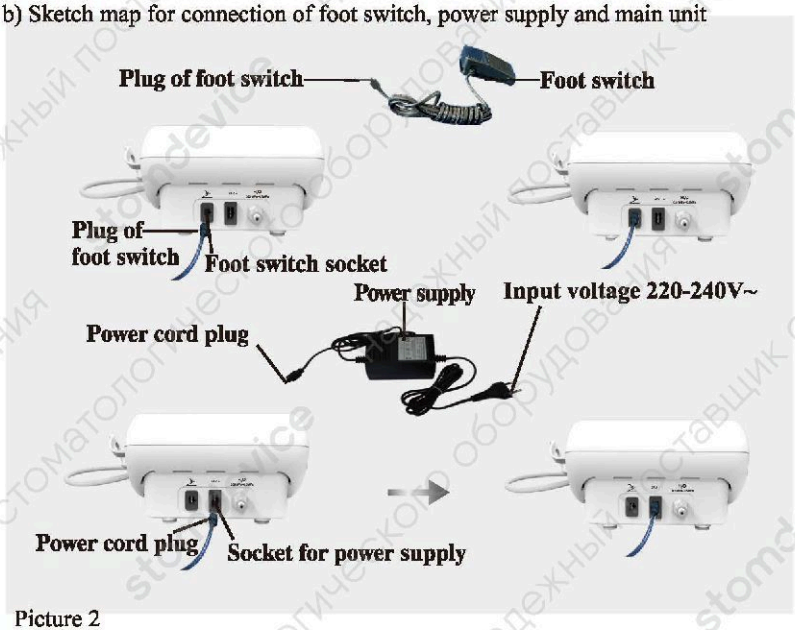




Picture 1

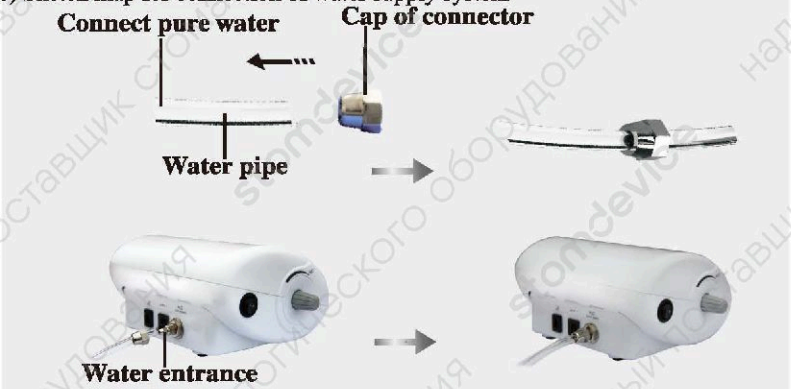
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b) Sketch map for connection of foot switch, power supply and main unit



Picture 2

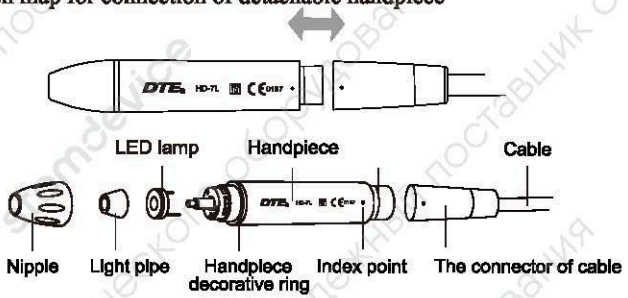
c) Sketch map for connection of water supply system



Picture 3

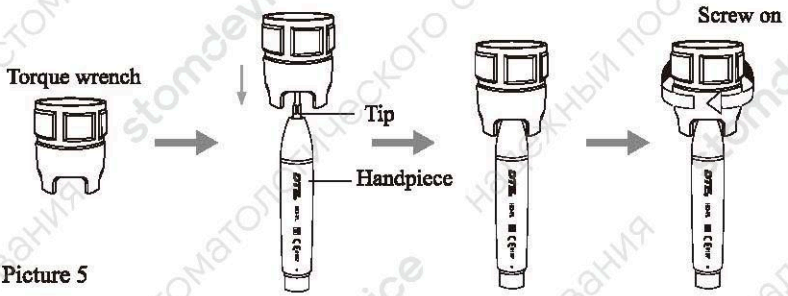
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d) Sketch map for connection of detachable handpiece



Picture 4

e) Sketch map for how to install tip with wrench



Picture 5

2. Product function and operation

2.1 Operation

2.1.1 Open the packing box, make sure that all the parts and accessories are complete according to the packing list. Take the main unit out of the box and put it on a stable plane.

2.1.2 Turn the water control switch to the max based on symbol as shown as 3.5.2 [note 1].

2.1.3 Insert the plug of the foot switch to its socket (picture 2).

2.1.4 Connect one end of the water pipe to the water entrance, and the other end

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to the pure water source (picture 3).

2.1.5 Screw the scaling tip tightly to handpiece by torque wrench, then connect the handpiece and the connector of cable correctly.

2.1.6 Insert the plug of the power supply to its socket, then get through to the power (picture 2).

2.1.7 Switch on the main unit, then the scaling indicator and the first five lights of power regulator shine.

2.1.8 Step on the foot switch, the tip begins to vibrate, and the LED lamp on the top of the handpiece shines. Release the foot switch, the LED lamp keep shining for 10 seconds.

2.1.9 Select a suitable scaling tip as you need, screw it on the handpiece tightly by the torque wrench (picture 5).

2.1.10 The normal frequency is extremely high. Under the normal working state of scaling tips, a light touch and a certain to-and-fro motion will eliminate the tartar without heating. Overexertion and long-time lingering are forbidden.

2.1.11 Vibrating intensity: Adjust the vibration intensity as you need, generally turn the knob to the middle grade. According to patients different sensitivity and the rigidity of the gingival tartar, adjust the vibration intensity during the clinical treatment.

2.1.12 Water volume adjustment: Step on the foot switch, and the tip begins to vibrate, then turn the water control switch to fine spray to cool down the handpiece and clean the teeth.

2.1.13 The handpiece can be handled in the same gesture as a pen in hand.

2.1.14 During the clinical treatment, be sure not to make the end of tip touch the teeth vertically and not to make the tip overexert on the surface of the teeth in case of hurting the teeth and damaging the tip.

2.1.15 After finishing operation, keep the machine working for 30 seconds on the water supply condition in order to clean the handpiece and the scaling tip.

2.1.16 Unscrew the scaling tip and pull out handpiece, then sterilize them.

Notice: Don't pull out the handpiece when the foot switch is stepped on and the machine is working.

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2.2 Instruction for main components of detachable handpiece (showed in picture 4)

a) Nipple: The nipple can be removed. You can screw off the nipple and clean the pole with alcohol termly.

b) Decorative ring: can be disassembled and cleaned with alcohol regularly, can be autoclaved under the high temperature and pressure.

c) Handpiece: The main part of the whole handpiece, can be autoclaved under the high temperature and pressure.

d) The connector of the cable: Connect the handpiece with the water source and power supply of the main unit.

e) LED lamp、Light pipe: Clean them with purified water and sterilize them under the high temperature of 135℃ and high pressure of 0.22Mpa.

Notice: Keep connector dry.

2.3 Torque wrench instruction (showed in picture 5)

2.3.1 The torque wrench's structure is designed in special way which can control the strength of the scaling tip's installation properly and correctly. It also can guarantee the operator screw or unscrew the scaling tip effectively and keep their hands away from being scratched.

2.3.2 Operation

a) Take the scaling tip into the torque wrench; operate as showed in picture 5.

b) Tip installation: Hold the handpiece, turn the tip toward direction as showed in picture 5 with the torque wrench. Turn two more circles when the tip stops, then the tip is installed.

c) Tip uninstallation: Hold the handpiece, turn the wrench toward anti-clockwise direction.

d) Sterilize it in sterilizer after each treatment.

e) The torque wrench must be cooled naturally after sterilization to avoid scalding when using next time.

f) Keep the torque wrench in a cool, dry and ventilated place and keep it clean.

2.3.3 Precaution

The following sterilizing methods are forbidden.

a) Braise in liquor;

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b) Dip in iodine, alcohol or glutaraldehyde;

c) Torrefy in oven or microwave oven.

Notice: we are not responsible for any damage of the torque wrench directly or indirectly made by any way in the above items.

3. Sterilization and maintenance

3.1 Sterilization of detachable handpiece

3.1.1 Autoclaved to high temperature/pressure:

a) 121℃/ 1 bar (0.1MPa).

b) 135℃/2.2bar (0.22MPa).

c) Pull out the handpiece and unscrew the scaling tip after each operation.

d) Pack the handpiece with sterile gauze or sterile bag before sterilizing.

e) Reuse handpiece after it cools naturally in case of scalding hand.

3.1.2 Notice

a) Clear the cleaning liquid on the handpiece with compressed air before sterilization.

b) Be sure that the scaling tip has been unscrewed from the handpiece and it can not be sterilized with others.

c) Please notice whether the outer of the handpiece is damaged during the treatment or sterilization, don't smear any protective oil on the surface of handpiece.

d) There are two waterproof "O" rings at the end of handpiece. Please lubricate them with dental lube frequently, as sterilization and repeated pulling and inserting will reduce their life-span. Change a new one once it is damaged or worn excessively.

e) The following sterilizing methods are forbidden:

① Put handpiece into any liquid for boiling.

② Put handpiece into disinfectors such as iodine, alcohol and glutaraldehyde.

③ Put handpiece into oven or microwave oven for baking.

3.2 Sterilization of scaling tips

All the scaling tips can be autoclaved to 135℃.

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3.3 Sterilization of torque wrench

3.3.1 The torque wrench can be sterilized under high temperature and pressure.

3.3.2 The following sterilization ways for torque wrench are forbidden:

a) Braise in liquor.

b) Dip in iodine, alcohol or glutaraldehyde.

c) Torrefy in oven or microwave oven.

Notice: We are not responsible for any damage of the torque wrench directly or indirectly made by any way in the above items.

3.4 Cleaning of tips and torque wrench

The scaling tip, torque wrench can be cleaned by ultrasonic cleaner.

3.5 Sterilization and cleaning of LED lamp and Light pipe

Clean the LED lamp and Light pipe with purified water and sterilize them under high temperature and high pressure after every operation.

3.6 Troubleshooting and notes

3.6.1 Troubleshooting

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Fault	Possible causes	Solutions
The scaling tip doesn't vibrate and there is no water flowing out when stepping on the foot switch.	The power pipe plug is in loose contact.	Connect the power plug well.
	The foot switch is in loose contact.	Insert the foot switch to its socket tightly.
	The fuse of transformer is broken.	Contact our dealers or us.
	The fuse in the main unit is broken.	Contact our dealers or us.
The scaling tip doesn't vibrate but there is water flowing out when stepping on the foot switch.	The tip is in loose contact.	Screw the tip on the handpiece tightly. (picture5)
	The connect plug between the handpiece and the circuit board is in loose contact.	Contact our dealers or us.
	Something wrong with the handpiece.	Send it to our company to repair.
	Something wrong with the cable.	Contact our dealers or us.
The scaling tip vibrates but there is no spay when stepping on the switch.	The water control switch is not on.	Turn on the water control switch. [note 1]
	There is impurity in the electric-magnetic valve.	Contact our dealers or us.
	The water system is blocked.	Clean the water line by multi-function syringe. [note 2]
There is still water flowing out after the power is off.	There is impurity in the electric-magnetic valve.	Contact our dealers or us.

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Fault	Possible causes	Solutions
The handpiece generates heat.	The water control switch is in a low setting.	Turn the water control switch to a higher grade. [note 2]
The amount of spouting water is too little.	The water pressure is not high enough.	Make the water pressure higher.
	The water line is blocked.	Clean the water pipe by multi-function syringe .[note2]
The vibration of the tip becomes weak.	The tip hasn't been screwed on to the handpiece tightly.	Screw the tip on the handpiece tightly . (as showed in picture 5)
	The tip is loose by because of vibration.	Screw on the tip tightly. (as showed in picture 5)
	The coupling between the handpiece and the cable isn't dry.	Dry it by the hot air.
	The tip is damaged . [note3]	Change a new one.
There is water seeping from the coupling between the handpiece and the cable.	The waterproof "O" ring is damaged.	Change a new "O" ring.

If the problem still can't be solved, please contact with local dealer or manufacturer.

3.6.2 Notes

a)[Note 1] The water control knob can adjust the water volume according to the symbol

b)[Note 2] Clean the water pipe with the multi-function syringe of the dental unit (as showed in picture 6):

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Picture 6

① Cut the water pipe at a distance of 10cm to 20cm from the water entrance

② Turn on the electricity and get through to the electricity.

③ Connect the Multi-function syringe of dental unit to the water pipe.

④Disassemble the tip or handpiece.

⑤Step on the foot switch.

⑥Turn on the switch of the Multi-function syringe, press the water into the machine and the impurity blocked in the water pipe can be eliminated.

c)[Note 3] If the scaling tip has been screwed on tightly and there is fine spray too, the following phenomena show that the scaling tip is damaged:

①The vibrating intensity and the water atomization degree become weak obviously.

②During treatment, it produces the sound like "buzz" from the scaling tip

4. Precaution

4.1 Notice when using equipment

4.1.1 Keep the scaler clean before and after operation.

4.1.2 The handpiece, scaling tip, torque wrench, must be. sterilized before every treatment.

4.1.3 Don't screw the handpiece, scaling tip when stepping on the foot switch.

4.1.4 The scaling tip must be fastened and there must be fine spray or drip coming out from the tip when operating.

4.1.5 Change a new one when the tip and ultrasonic file are damaged or worn

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excessively.

4.1.6 While scaler working ,the heat of scaling tip will become higher if there is no water flowing out.Please keep the water flow smoothly.

4.1.7 Don't twist or rub the tip.

4.1.8 Don't use impure water source and be sure not use normal brine instead of pure water source.

4.1.9 If use the water source without pressure, the water surface should be one meter higher than the head of the patient.

4.1.10 Keep the connector of handpiece and the socket of the cable dry before installing the handpiece.

4.1.11 Don't pull the cable forcibly in case of the handpiece falling off from the cable.

4.1.12 Don't knock or rub the handpiece.

4.1.13 Please put the power plug into the socket easy to pull out, to make sure it can be pull out in emergency.

4.1.14 The power supply is considered as a part of ME equipment. This device can only be equipped with the special power supply of Guilin Woodpecker Medical Instrument Co., Ltd.

4.1.15 The power supply is NOT waterproof. Please keep it dry and away from the water.

4.1.16 After operating, turn off power, then pull out the plug.

4.1.17 We are only responsible for the safety on the following conditions:

a) The maintenance, repair and modification are made by the manufacturer of the authorized dealer.

b) The changed components are original of "DTE" and operated according to instruction manual.

4.1.18 The internal screw thread of the scaling tips produced by some manufacturers maybe coarse, rusty and collapsed. This will damage the external screw thread of the handpiece irretrievably. Please use "DTE" brand scaling tips.

4.1.19 Please select a suitable power when using different type of tips (refer to "TABLE OF OPERATING POWER OF THE TIPS").

4.2 Contraindication

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4.2.1 The hemophilia disease patient is not allowed to use this equipment.

4.2.2 The patients or doctors with heart pacemaker are forbidden to use this equipment.

4.2.3 The heart disease patient, pregnant woman and children should be cautious to use the equipment.

4.3 Storage and maintenance

4.3.1 The equipment should be handled carefully and lightly. Be sure that it is far from the vibration, and is installed or kept in a cool, dry and ventilated place.

4.3.2 Don't store the machine together with the articles that are combustible, caustic, or explosive.

4.3.3 This equipment should be stored in a room where the relative humidity is ≤80%, atmospheric pressure is 50kPa to 106kPa, and the temperature is –10℃ to +50℃.

4.3.4 If the machine is not used for a long time, please make it get through the power and water once per month for five minutes.

4.4 Transportation

4.4.1 Excessive impact and shake should be prevented in transportation. Lay it carefully and lightly and don't invert it.

4.4.2 Don't put it together with dangerous goods during transportation.

4.4.3 Avoid solarization and getting wet in rain or snow during transportation.

4.5 Working condition

a) Environment temperature: 5℃to 40℃

b) Relative humidity: ≤80%

c) Atmosphere pressure: 70kPa to 106kPa

5. After service

We offer one year's free repair to the equipment according to the warranty card. The repair of the equipment should be carried out by our professional technician. We are not responsible for any irretrievable damage caused by the non-professional person.

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6. Symbol instruction

DTE.	Trademark
	Date of manufacture
	Manufacturer
	Class II equipment
	Type BF applied part
-10℃ +50℃	Temperature limitation
0% 80%	Humidity limitation
50 106 kPa	Atmospheric pressure for storage
	Recovery
	Consult the accompanying documents
	Appliance compliance WEEE directive
H_2O 0.01MPa–0.5MPa	Water entrance pressure 0.01MPa-0.5MPa
EC REP	Authorised Representative in the EUROPEAN COMMUNITY
	Used indoor only
~	Alternating current
~24V	24VAC power supply socket
	Connection for the foot switch
H_2O	Adjustment for the water flow
135℃	Can be autoclaved
CE 0197	CE marked product
FDA	FDA marked product
	Handle with care
	Keep dry

7. Environmental protection

There are no harmful factors in our product. You can deal with it based on the local law.

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8. Manufacturer's right

We reserve the right to change the design of the equipment, the technique, fittings, the instruction manual and the content of the original packing list at any time without notice. If there are some differences between blueprint and real equipment, take the real equipment as the norm.

9. For technical data , please contact

EC REP Wellkang Ltd (www.CE-Marking.eu)
29 Harley St.,LONDON,W1G 9QR,UK

10. Declaration of conformity

10.1 Product conforms to the following standards:

EN 60601-1:2006	EN 60601-1-2:2007
EN 60601-1-6:2010	EN 62366:2008
EN 61205:1994	EN ISO 22374:2005
EN 62304:2006	EN 980:2008
EN ISO 9687:1995	EN 1041:2008
ISO 15223-1-2012	EN ISO 14971:2012
EN ISO 7405:2008 +A1:2003	EN ISO 17664:2004
EN ISO 17665-1:2006	EN ISO 10993-1:2009
EN ISO 10993-5:2009	EN ISO 10993-10:2010

10.2 EMC - Declaration of conformity

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Guidance and manufacturer's declaration - electromagnetic emissions		
The model UDS-J, UDS-K, UDS-K LED, UDS-L, UDS-L LED, UDS-A, UDS-A LED, UDS-P, UDS-E, UDS-P LED, UDS-E LED, D1, D3, D5, D7, D3 LED, D5 LED, D7 LED are intended for use in the electromagnetic environment specified below. The customer or the user of the model UDS-J, UDS-K, UDS-K LED, UDS-L, UDS-L LED, UDS-A, UDS-A LED, UDS-P, UDS-E, UDS-P LED, UDS-E LED, D1, D3, D5, D7, D3 LED, D5 LED, D7 LED should assure that it is used in such an environment.		
Emissions test	**Compliance**	**Electromagnetic environment - guidance**
RF emissions CISPR 11	Group 1	The models UDS-J, UDS-K, UDS-K LED, UDS-L, UDS-L LED, UDS-A, UDS-A LED, UDS-P, UDS-E, UDS-P LED, UDS-E LED, D1, D3, D5, D7, D3 LED, D5 LED, D7 LED use RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR11	Class B	The models UDS-J, UDS-K, UDS-K LED, UDS-L, UDS-L LED, UDS-A, UDS-A LED, UDS-P, UDS-E, UDS-P LED, UDS-E LED, D1, D3, D5, D7, D3 LED, D5 LED, D7 LED are suitable for used in domestic establishment and in establishment directly connected to a low voltage power supply network which supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations / flicker emissions IEC 61000-3-3	Complies	

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