

WLC



Laminar Flow Clean Bench

Operating Manual

written for

WLC -V1200/ -V1500/ -V1800

witeg Labortechnik GmbH

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1 Introduction

Thank you for purchasing the **WLC Laminar Flow Clean Bench**. You did a good choice buying a **Wisd** product.

This manual describes the performance and usage instructions of the product, and the precautions in the handling. Please carefully read this manual, before using the product.

The following warnings should be strictly adhered to: (The following warning sign is marked in the part that is required user attention, so please safely use the product after being well - acquainted with the meaning.)

2 Safety Instructions

2.1 Description of symbols

| | |
|---|---|
|  | Warning Failure to follow the instructions may result in injury. |
|  | Caution Failure to follow the instructions may result in product failure. |
|  | Notification Do not disassemble or modify the product or use it for purpose other than its intended function. |
|  | Caution: High Temperature High-temperature heating, pose a risk of burns. |
|  | Danger of Explosion If volatile, explosive chemicals are used, there is a danger of explosion. |
|  | Proximity Caution Keep clear of the product during use |

2.2 Instructions

For a safety and faultless using of the device, it is indispensable that you read the following instructions purposely and follow them by the use.



- Connect the device only to the suitable power supply. Please have a look to the identification plate.

- Use the device only in electric circuits with ground fault circuit interrupter.
- Check the power supply cord before you stick it into the electrical outlet.
- Do not use power bars to extend the power supply cord.
- Only use extension cables with sufficient cable cross section.
- Do not touch the device with wet hands during the usage because this might cause an electrical shock.
- If unexpected sound, smell or smog is generated by the device, pull out the main plug and contact the manufacturer or your supplier immediately.
- Disconnect the power supply plug before cleaning or maintenance.
- If you use radiation or contaminated samples the responsibility is only up to you.
- If the installation place was moved, do not connect the power immediately. It should be connected at least 30 minutes after moving. If you use this product immediately after moving, it may cause failure of the critical parts relevant to the freezer.
- If unusual noise or signs of abnormal behavior are found during use of this product, please immediately contact the supplier or **Witeg Labortechnik GmbH** after turning off the power supply and disconnecting the power line.
- When moving the product, please move it so that the power cord is not damaged after disconnecting the power plug from the electrical outlet. **It may cause electrical shock or ignition due to damage to the cord.**



- Do not put heat-sensitive items on the device.
- Warn all attendees if you leave the device unattended.
- Pay attention when you lift up the lid, hot condensation water may drop down or hot steam could come out.
- Do not clean the scorching device.



- Repairs and amendments should only be made by **witeg** authorized people. Contraventions exclude the warranty.



- Use this device only if you read the whole safety instructions.
- This device should only be used by persons who are familiarized with safety instructions made for laboratories.
- Pay attention that no liquid reaches the controller or inward of the capsule.
- You have to keep the device clean if you want to get a longer life of it.
- Wear corresponding protective work clothing during the usage.
- Pull out the power cable if you didn't want to use the device for a longer time.
- Please, do not put bottles or cans into this product. If the contents in the can or bottle are expanded, it may cause the injury.

- Please do not put commercial bag-type coolants (including ammonium nitrate, urea) into this product. If the contents are leaked, it may cause rust and a malfunction.
- Please do not put goods or water containers on this product. If they fall down, people can be injured, or it may cause poor insulation and short circuit by water overflow.
- Please do not touch the samples or the containers in storage (especially metal goods) with wet hands or bare hands. Your hands may suffer frostbite. Please work after wearing gloves for low-temperature use.
- When moving or installing the product, please do not move it when it is lying down. It can cause malfunction. If you move this product when it is tilted or lying down, please operate it after letting it be stable for approximately 24 hours.



- Make sure that the device can not slip away.
- The device could get damaged if the vibrations are too strong.
- To avoid heat congestions or fires make sure that there is enough space for air circulations.
- Avoid direct solar radiation.
- Do not use the device near highly combustible materials.
- Do not set the device outdoors.
- It is superiorly to set the device in a good illuminated place to avoid accidents engendered by handling errors.
- To set the device in wet or dusty places could cause overheating, short circuits or fires.



- Do not use this device in areas with potentially explosive atmosphere.
- Depending on the material that shall be treated there could exist unhealthy gases that have to be led-out of the room in the most suitable way (by connecting an exhaust pipe).
- Please do not use this product in potentially explosive environment due to the organic evaporative gas, and also in the environment that industrial toxic gas, soot and metal dust exist.
- Please use by distinguishing the valve for Gas and Air when you use the valve. This is to minimize the possibility of contamination.
- Because the air flow may be disturbed when use the flame, LPG gas and Air, please be careful during operating the fan.

3 Product description

3.1 Key features

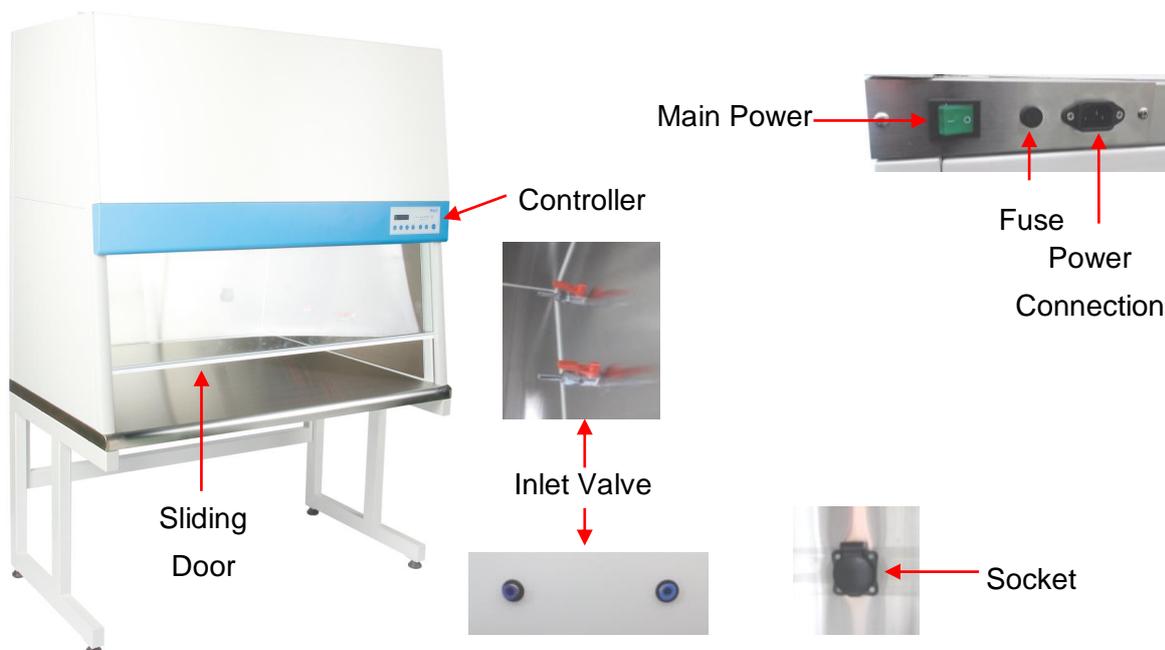
Because this product can block the inflow of external contamination and can protect the internal environment from the biological hazardous materials, the operation can be performed into the flow of the aseptic, dust-free clean air. Also, micro-material is filtered by the mounted HEPA Filter, and the sterilizing effect through UV Lamp is provided. This product was developed and manufactured by considering the convenience and safety for use, and there are the following features:

- It is designed to the vertical air current type that the clean air current filtered by HEPA

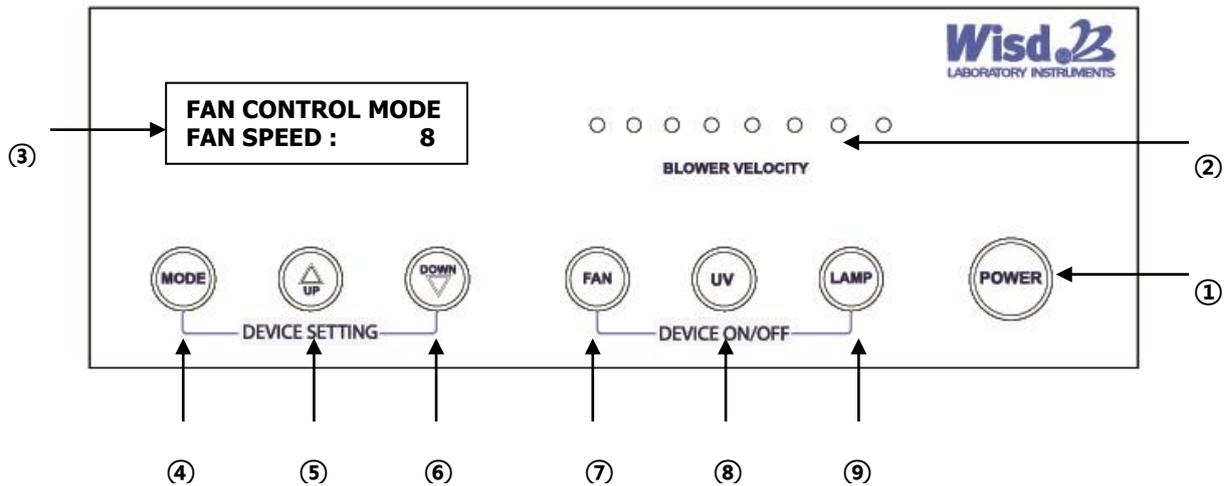
FILTER descends from the ceiling in the vertical direction, so the inside keeps the positive pressure and the internal cleaning operation is realized without the inflow of external air.

- The ergonomic structure that the front face was inclined was designed so that the experimenter's fatigue occurring during the operation was minimized, and it was made better use of a space so that matches with a clear image of the laboratory.
- The clean air is circulated in the inside by filtering up to 99.97% or more of the particles of larger than $0.3\mu\text{m}$ by adopting HEPA Filter.
- The operation of the button became more convenient by adopting Touch Button.
- It is possible to adjust the wind speed to match with the purpose of use by adopting 8 steps wind speed control function.
- Because this product is designed so that UV Lamp and Fluorescent Lamp can not be turned on simultaneously, the accidents by UV Lamp is minimized.
- If the sliding door is opened during the operation of UV Lamp, the stability for use is high because UV Lamp is turned off automatically.
- Because the operation Timer of UV Lamp can be set up to 99:99 (99 hours and 99 minutes), it provides the convenience to the user.
- The sliding doors are installed, so the user can smoothly open and close the door.
- The noise in use of this product is minimized by using a quiet and vibration-free fan motor.
- Because two valves connected with outside are mounted, the maximum support for the situation requiring in service is possible.
- Because two outlets are mounted in inside of this product, the support for various experiments and broad-based use is possible.

3.2 General survey



3.3 Operating surface



| NO | Names | Description |
|----|---------------------|--|
| ① | POWER Button | Power ON/OFF |
| ② | BLOWER VELOCITY LED | Show the state of the FAN Speed level |
| ③ | LCD DISPLAY | Show the state of operation and status |
| ④ | MODE Button | Set the operation mode |
| ⑤ | UP Button | Increase the set value |
| ⑥ | DOWN Button | Decrease the set value. |
| ⑦ | FAN Button | Set the operation of FAN |
| ⑧ | UV Button | Set the operation of UV Lamp |
| ⑨ | LAMP Button | Set the operation of Florescent Lamp |

4 Packing contents

| quantity | denomination |
|----------|-------------------------------------|
| 1 | WLC Laminar Flow Clean Bench |
| 1 | operating manual |

5 Positioning the device and commissioning

- Please be careful when transporting the product because it is heavy.
- Please do not lay the product on the floor or subject it to shock. It can cause damage inside the product.
- Please install the product in a hard, flat, and stable place.
- Please do not install the product in a place where it is exposed to direct sunlight, or in the dangerous places.
- To minimize the risk of short circuits, do not install the product (in the) places where it will be subjected to the inflow of moisture or organic solvents on the regulator part or inside of the body.

- This product was manufactured for normal operation at a rated voltage, so please check the voltage status before installing the product.
- When installing and using the product, please certainly use the power cord provided with the products.
- Please position this product in the place far away from the environment that the flow of air can be interrupted.
- Please do not install this product around the equipment which the high-frequency noise is occurred.
- Please do not install this product in the environment that there is the possibility of flammable gas leakage.
- Please do not install this product the place where there is high humidity or the risk of leakage.
- Please do not install this product around the gas pipes and water pipes.
- Because this product is a stand-alone type, please refer to it when you use this product. In addition, since the stand is delivered in the separated state in the factory shipment, please be careful.
- Move the clean bench to proper location. Casters which are installed in stand will help easy movement.
- When you finish moved it, please adjust "Foot height" by "Foot Height adjustment screw". When you adjust foot to below height of the caster, Clean Bench will be fixed on the floor.
- Please fix all of 4 feet and later please do leveling of Clean Bench. If it has not good in level, please adjust height of foot by "Foot height adjustment screw".

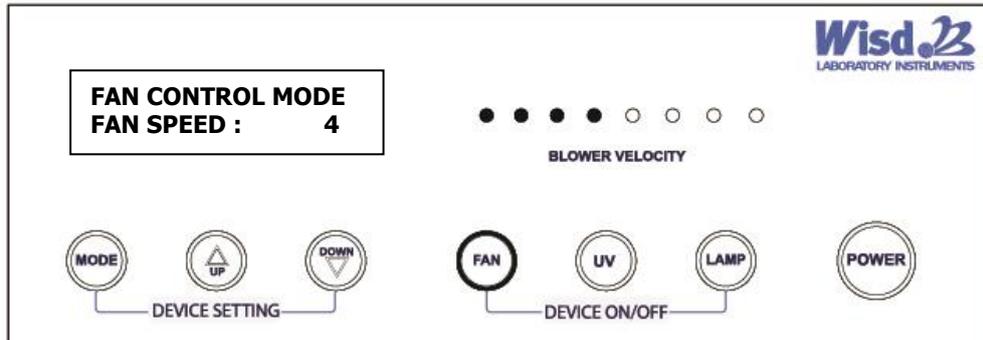


6 Job description

- The button of the regulator in this product is operated by Touch, and the LED of button indicates the state by lighting during operating.
- Please connect the power cord to the rear of the product, and turn ON the power switch.
- When power is applied, POWER button indicates red LED, and if turn ON the POWER by touching, Display LCD screen appears while changing to green LED.

6.1 FAN Control Mode

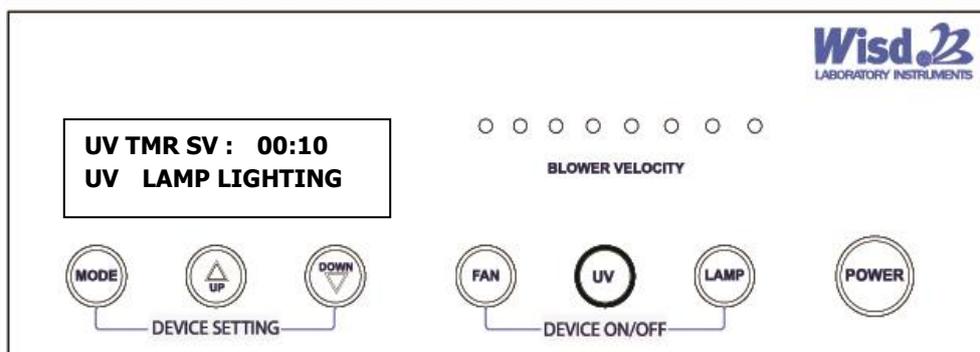
The initial screen when the POWER is turned ON is the setting mode of FAN SPEED.



- FAN operation can be controlled from step 1 up to step 8, and LED is lighted according to the operation step.
- If the initial Display screen appears, please adjust FAN SPEED by "UP"/ "Down" button. (FAN SPEED : 1 ~ 8)
- Please start the operation by pressing "FAN" button. If the operation is started, LED of Blower Velocity is lighted as many as the number of steps of Blower Velocity.
- It is possible to adjust the FAN SPEED by "UP"/ "Down" button also during the operation of FAN.
- While the FAN is operating, the LED of FAN button is lighted regardless of FAN SPEED, which indicates that the FAN is operating.
- The FAN is operated only by ON/OFF button regardless of the Open state of Door. Therefore, when you open the Door while FAN is operating in the maximum, please open the Door by considering the surrounding circumstances.
- While the FAN is operating, Fluorescent Lamp and UV Lamp can turn ON/OFF. However, because for safety reason, the Fluorescent Lamp and UV Lamp do not simultaneously operate, please run by selecting the Lamp which you want to operate.
- If FAN SPEED is weakly set up, because the user is difficult to directly feel the wind speed, please check that the FAN is operating through the LED lighting in Display after completing the use of Clean Bench.

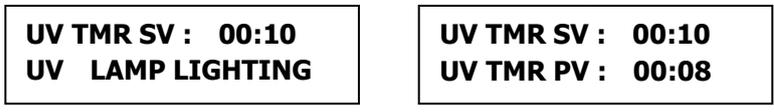
6.2 UV Timer Mode

Pressing the MODE Button, the mode is converted to the UV Lamp timer setting mode.

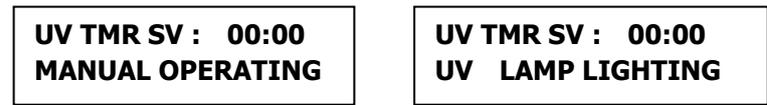


- The timer setting time range of UV Lamp is 00:00 thru 99:99 (99hr and 99min), and 00:00 means the continuous operation.

- The SV value of LCD Display means the setting time of the timer, and the value can be set up by "UP"/"Down" button, and PV value means the remaining time, and the value is reflected from the start of the timer of UV Lamp.
- Pressing briefly "UP"/"DOWN" button when setting the timer, "minute" unit is changed to 5-minute increments, and pressing lengthily "UP"/"DOWN" button, "hour" unit is changed.
- Pressing the UV button, ON/OFF of UV Lamp is run. While Lamp is turned On, "UP"/"Down" button is not applied.
- The LED of UV button flashes while the timer is operating, and the LED of UV button is continuously lit when the timer is set up in the continuous operation (00:00).



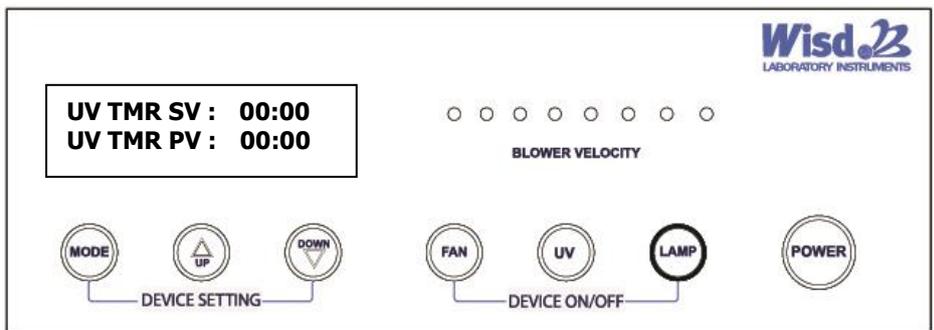
- The SV value of timer is indicated as the fixed value in the LCD Display during the timer operation, and the screen indicating that UV LAMP is operating, and the remaining time of the timer are displayed. If turn Off the UV Lamp while the timer is operating, the timer is initialized, and the remaining time returns to the setting value.



- In the LCD Display which the timer is set in the continuous operation (00:00), the screen indicating that UV LAMP is operating is displayed, and also the message informed which it is the continuous operation is displayed.
- UV Lamp is turned OFF for the user's safety if the Door is opened, and the fluorescent Lamp is turned ON. If the Door is closed again, the UV Lamp is lit, and the fluorescent Lamp is turned OFF.
- If the Door is opened while the timer of UV Lamp is operating, the timer in progress is stopped in the state maintaining SV value and PV value of Display, and the Lamp is turned off while the Door is opened, but it indicates that the LED of UV button blinks and UV operation is the standby state.
- While UV Lamp is operating, the FAN can be also operated, but the Fluorescent Lamp is not simultaneously operated. If the Fluorescent Lamp is turned ON while UV Lamp is operating, the UV Lamp during operating is turned OFF, and the Fluorescent Lamp is turned ON, and the timer operation of UV Lamp during operating is also initialized.

6.3 Operation of LAMP

The Fluorescent Lamp and UV LAMP are not simultaneously lit up for the safety in use.

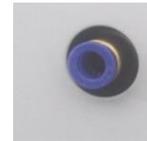


The Lamp is operated to ON/OFF by touching "LAMP" button.

- The Fluorescent Lamp can be operated by ON/OFF button regardless of the current MODE. However, if UV Lamp is turned ON when Fluorescent Lamp is ON, the Fluorescent Lamp is automatically turned off, and the UV Lamp is lit.

6.4 Connection of Valve

- Two valves are installed so that user can use them by Gas, Air and Aspirator, etc. according to his/her need during experimenting.
- If a valve will be used, a shut-off valve should be installed at near position from outside of the device in order to safely use.
- After using the valve, the valve should be shut off so that Gas is not leaked, and the safe use should be maintained by periodically checking whether the Gas is leaked, or not.



* We recommend kind of flexible tube as like silicon which is below 7.5mm size to the valve which is installed in the clean bench.

And we recommend kind of solid tube as like Teflon which is 10mm size to the external pipe line which is installed at right side of unit.

6.5 Replace the Filter

* Replace Filter *

- Life cycle of the filter is 2160 hours and when the time expires, notification of Replace the filter appears when after turn on.
- If you couldn't replace the filter at that time, please press MODE button, Fan control mode appears as usual.

* Replace Filter *
complete replace

- When you complete replace the filter, please press MODE button during 3 seconds. Message of complete replace the filter will appear with blinking. And then "Running time" will be initialized and start record again.

7 Maintenance and cleaning

Laminar Flow Clean Bench was manufactured with the consideration of various situations that may occur during the operation. However, for long-term use with stable performance, please observe the following precautions:

- If the unit is not to be used for an extended period of time, disconnect the power cord from the wall socket.
- **Witeg Labortechnik GmbH** is not responsible for damage to the unit caused by abnormal use or by not heeding warnings and cautions in the manual or unauthorized modifications of the unit.

- The Air Duct is controlled by user's needs, and if it is unused, it should be closed the entrance and then stored in order to prevent the external contaminants entering from the entrance.
- When changing the installation place of the device, please do not apply the mechanical shock and vibration. When changing the installation place, please get help from a professional.
- If you replace the UV Lamp, you must use the Lamp which meets the standard requirement.
- Please exchange periodically the Filter in order to secure the workspace of an aseptic condition.

CLEANING

- Before cleaning the unit, disconnect the power cord from the wall socket. Otherwise, it may cause an electric shock or fire.
- To clean the unit, a neutral detergent and soft cloth is recommended. Do not use coarse cloth, strong chemicals or organic solutions.
- Do not use water, Benzene, Thinner or any alcohol for cleaning the product. It may cause discoloration, damage, an electric shock or fire.
- If you expect damage by a chemical during cleaning, call technical support team.
- Do not pour water directly into the unit. It may cause an electric shock or fire.
- During cleaning of the chamber, be careful cleaning the corners to avoid injury.

Cleaning Method of the Inside

- please wipe with a soft cloth by using the neutral detergent.
- Do not clean the unit aggressively. Otherwise, the coating or painting of the product could be damaged.

Cleaning Method of the Exterior

- Clean the exterior using a neutral detergent and soft cloth.
- Do not clean the unit aggressively. Otherwise, the coating or painting could be damaged.

8 Troubleshooting Guide

| Situation | Confirmations and Solutions |
|---|---|
| Power Failure | <ul style="list-style-type: none"> ✓ Check the supplied voltage is present. ✓ Check the power connection and the power cord for proper connection and integrity. ✓ Check if the MAIN Power Switch is "ON". ✓ Fuse is blown. |
| The case that the inflow of clean air is reduced. | <ul style="list-style-type: none"> ✓ Measure the pollution level of the Filter, and make sure the state of Prefilter and HEPA Filter. |
| The case that the operation of UV Lamp is abnormal. | <ul style="list-style-type: none"> ✓ Check that the Door is open. ✓ Check the period of use of UV Lamp. |
| The case that the Fan does not operate. | <ul style="list-style-type: none"> ✓ Check the operation button of the regulator. |

If other problems arise, or one of the above not solves problems, please contact your official agent or the manufacturer.

Reparations and amendments should only made by witeg authorized people. Contraventions exclude the warranty.

9 Technical data

| Model | | WLC-V1200 | WLC-V1500 | WLC-V1800 |
|---------------------------|---------------|--|--------------------------|------------------------|
| Air Volume | | 1,350m ² /h | 1,700m ² /h | 2,020m ² /h |
| Air Flow-type | | Vertical Air Flow-type | | |
| Air Flow Velocity | | 0.3 ~0.5 m/s | | |
| HEPA Filter | | Class 100, 0.3µm Particle Removal 99.97% | | |
| Prefilter | | 3~30µm Particle Removal | | |
| Controller | | Microprocessor Digital Controller | | |
| Display | | Back Light LCD | | |
| Noise Level | | Under 65 dBA | | |
| Door Type | | Tempered Safety Glass Sliding Door | | |
| Utility Device | | 1xAir Cook, 1xGas Cock, 2x220V Consent | | |
| Lamp | | 1 X UV 20W 1 X FL 36W | 1 X UV 30W 1 X FL 55W | |
| Material | Internal | Stainless steel | | |
| | External | Powder coated steel | | |
| Dimension (w x d x h) | Internal (mm) | 1.200 X 660 X 610 | 1.500 X 660 X 610 | 1.800 X 660 X 610 |
| | External (mm) | 1.280 X 735 X 1.895 | 1.580 X 735 X 1.895 | 1.880 X 735 X 1.895 |
| Power Supply & Cord Plug* | | AC 230V, 50/60Hz, With Cord/Plug | | |

10 Certificate

Certificate

for



LABORATORY INSTRUMENTS

The quality and all features were checked by the manufacturer before the shipment.

We grant from date of purchase

two years guaranty.

This certificate excludes damages by natural disasters or incorrect usages by the customer.

Please look on your account and complete following table:

| | |
|------------------|-------------------------------------|
| Article | WLC Laminar Flow Clean Bench |
| Typ | |
| Serialno. | |
| Date | |

witeg Labortechnik GmbH

Am Bildacker 16
D-97877 Wertheim
TEL: +49-9342-9301-0
FAX: +49-9342-9301-77
Email: info@witeg.de
www.witeg.de

