



EIE INSTRUMENTS PVT. LTD.

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Organization's ISO 9001:2015 Certificate

QUALITY MANAGEMENT SYSTEM

Certificate of Registration



This is to Certify That The Quality Management System of

EIE INSTRUMENTS PVT. LTD.

13th FLOOR, 1301/A, BVR EK, OPP INDER RESIDENCY HOTEL, NR. WESTEND HOTEL, ELLISBRIDGE, AHMEDABAD - 380006, GUJARAT, INDIA.

has been assessed and found to conform to the requirements of

ISO 9001:2015

for the following scope :

MANUFACTURER & SUPPLIER OF LABORATORY TESTING INSTRUMENTS.

Certificate No	23DQLL85	Issuance Date	: 14/10/2023
Initial Registration Date	: 14/10/2023	Date of Expiry*	: 13/10/2026
1st Surve. Due	: 14/09/2024	2nd Surve. Due	: 14/09/2025




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CB-QMS-035

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Dear valued customer,

We are thankful of you for your keen interest in our company products. We hope you enjoy using them and find them to be helpful and reliable. We greatly appreciate your business and the opportunity you have provided us to assist you. You have joined a selected group of customers who have switched to the technologically superior and quality enhanced laboratory testing products.

Time has changed, so does the technology. Your purchase lists you on the cutting edge of the 21st century technology. To help you get the most out of your EIE Instruments Pvt. Ltd. products, we have created this instruction manual that is an excellent way of expressing and maintaining your trust in EIE's - superior quality testing products. Our continued efforts and commitment are to provide you with the best and efficient services after sales, prompt attention and the highest level of customer satisfaction. If for any reasons, you have questions or comments, we are delighted to hear from you. We welcome your feedback for further improvement in our product(s). We would be happy to help you in any way we can. You can contact us on **+91-9909903582** or send us an email at **service@eieinstruments.com/kunal@eieinstruments.com**. You can expect us to respond to your call or email within 24-48 working hours.

Once again, we would like to thank you for your trust and kind patronage. We look forward to serve you better in the future.

Yours sincerely,

EIE Instruments Private Limited

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1 Introduction to EIE – Vacuum Oven

EIE – Vacuum Oven is designed to take out the tests under specific temperature with high accuracy. The specialty of this oven is that it maintains the temperature in vacuum with high accuracy. There is a programmable microcontroller which controls the heaters in such a way that it maintains the desired temperature.

2 Application

This type of instrument is mainly used in chemical, food processing industries, dehydrating substances under steady temperature, electronic components testing, vacuum impregnation's, laboratories of educational institutions and research organizations and educational institutes.

3 Construction Details

The cylindrical working chamber is made out of thick stainless steel sheet. The outer cabinet is made out of Stainless steel. Sufficient miner wool insulation is provided in between. A hinges type door with a special gasket is fitted to the above oven to eliminate any leakage. Heat resistant – toughen glass is provided on the door for observations of samples. The vacuum oven is fitted with bourdon type vacuum gauge. Two vacuum valves are provided, one for creating the vacuum and other can be used for the applications involving the use of inert gas. The vacuum oven is provided with one tray. There are two sets of heaters uniformly spread and clamped on the outside chamber. They are designed to operate at low heat to provide longevity.

4 Delivery and Uncrating of the Apparatus

1. Inspect equipment and shipping crate immediately upon receipt. If any damage is apparent, immediately discuss it with the delivery person and contact the transportation company immediately. Make notes of any damages on the bill of landing.
2. Retain all shipping material for later inspection.
3. Check packing slip carefully and ensure all materials have been received as indicated in packing slip.
4. Remove packing strip from surroundings of the instrument and all its accessories. Please inspect and note whether any part of the instrument is damaged or any accessory is missing according to packing slip? If it is so, then immediately make note of it and report to the manufacturer.

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5. Due to the vibration incurred during shipping and handling, it is possible that mechanical connection could become loose. Inspect all connection to ensure that they are secure.
6. After visual inspection, if everything is found to be okay, transit the instrument to suitable safe place where it is intended to install. **Caution: Handle with care.**
7. Recycle the packing material. Do not throw it away for environment protection.

4.1 How to Make the Instrument Ready for the Use?

- 1) Keep the equipment in well ventilated place.
- 2) Place the equipment on a plain, even and sturdy surface leaving approx. 4"-5" inch space away from the wall.
- 3) Do not use equipment in a corrosive environment. A corrosive environment may lead to poor performance and deterioration of unit.
- 4) Keep instrument away from draft, sunlight, water or near a place of equipment, which emits heat as well as electromagnetic conduction emission.
- 5) Keep the standard operating manual handy while operating on the apparatus.

5 Installation

- i. Unpack the material without damaging the exterior body.
- ii. Check the items received by comparing it with the packing list or with delivery challan.
- iii. Clean the instrument and place it properly at vibration free place and maintain at least 1 foot to 2 feet distance away from the wall.
- iv. Place the trays on ribs provided on the sides of the inner chamber.
- v. Check if the earthing is proper and the adequate voltage supply is provided.
- vi. Plug in the mains wire to the mains socket.

WARNING!



Burn hazard *

Hot Chamber: The chamber will become hot and remain hot without visual indication for some time after use. Always use the handle and hand-gloves to remove the hot substances from chamber to avoid personnel injury.

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6 Safety Instructions

- Anyone working with, on or around this equipment should read this operating manual. Failure to read, understand and follow the instructions given in this documentation may result in the damage to the unit, injury to operating personnel, and/or poor equipment performance.
- Any internal adjustment, modification or maintenance to this equipment must be undertaken by qualified service personnel.
- The use of any hazardous materials in this equipment must be monitored by an industrial hygienist, safety officer or some other suitably qualified individual. Before the individual process, the operator must thoroughly understand the installation procedures and take note of the environmental and electrical requirements of the equipment.
- In this operating manual, important safety related points will be marked with the symbol. If the equipment is used in a manner not specified by this operating manual, the protection provided by this equipment may be impaired.
- All **EIE** equipment are designed to be operated with the highest level of safety. This standard operating & maintenance manual issues note, caution and warning symbols throughout to draw your attention to provide you the important operational and safety information.

6.1 Safety Symbols & Significance



Read and understand all instructions and safety precautions listed in this manual before installing or operating your unit. If you have any questions regarding operation of the unit or instructions in this manual, contact our service department.



Thoroughly understand the safety features and operation of the equipment. This manual will provide operators with safety concerns and general procedures. Be familiar with correct operating principals and use good judgement. Also refer to the appropriate manuals for system component safety instruction manuals.



Obey all national and local electric code requirements.



Dangerous high voltages present. Do not attempt to open the enclosure or gain to areas where you are not instructed to do so. Refer servicing to qualified service personnel only.

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Warning about an existing or potential hazard, or a note



Necessity to proceed in a specified way or follow safety measures



Proscription of activities or behaviours specified



Burn hazard

7 Introduction to the Control Panel

The control panel consists of the following accessories/parts:

MAINS SWITCH: It is used for on or off the instrument and it also indicates that the mains supply is on/off.

MICROCONTROLLER: A microprocessor based PID controller is fitted here. Please use it as per the instructions given manual.

CONTROL LAMP: Indicating the controlling of the heater.

CONTROL SWITCH: Low, Medium and High, there are three stages given for heater controls. We can place switch on any one stage of them according to our requirement (i.e. if we want to increase the temperature fast, we have to put switch on high stage and on low if we want to increase temperature slowly.) Generally following stages are suggested to set for different range of temperature:

Up to 50°C	Keep the control switch on the low position.
Up to 100°C	Keep the control switch on the medium position.
Up to 150°C	Keep the control switch on the high position.

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7.1 Guidelines for Operating Microprocessor Based PID Controller

PV → For Process Value

SV → For Set Value

There are tactile keys provided on the front panel for configuring the controller and setting up the parameter values.

- **DOWN KEY** : Press to decrease the temperature value.
- **UP KEY** : Press to increase the temperature value.

To set the temperature for heating of the sample, press UP (Arrow key) to increase the temperature value as per desired set point is increased then release the key at that point, set value will be auto saved and repeat the same process to decrease the temperature value by pressing DOWN (Arrow key).

NOTE: The controller is factory set and it does not require any settings except the setting of the required process temperature value.

8 Standard Operating Procedure

1. First of all, apply vacuum grease at the required location. Especially at the joints and threads of the cock to achieve the maximum vacuum.
2. There are two cocks provided at the top of the oven. Join any cock of vacuum oven to the vacuum pump with heavy-duty pressure/vacuum pipe.
3. Apply grease at the joints for higher vacuum. Create vacuum in the vacuum oven as per the requirement with the help of vacuum pump and vacuum regulator.
4. As soon as the required vacuum is achieved, close the valve and then the vacuum pump.
5. Now, switch ON the mains switch. The light of the mains switch will glow.
6. As the mains will turn ON, the digital microprocessor based programmable controller will be turned ON and it will display the ambient temperature. You can change the temperature setting by increment and decrement key.
7. Now Vacuum Oven is ready to control temperature. After a few minutes the set process temperature will appear on display and will be controlled to the accuracy of $\pm 1^\circ\text{C}$ or better.
8. After setting the required temperature, the vacuum oven will automatically maintain the required temperature within 50 minutes – 65 minutes.
9. At the time of process if any vacuum drop is observed, then again turn ON the valve and pump to get the required vacuum.
10. After completion of process, release the vacuum with the provided 2nd valve.

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9 Direction to Clean the Chamber

- 1) Disconnect from the power source supply prior to the cleaning operation.
- 2) The interior surface of the unit should be periodically wiped down with a solution of warm water and baking soda. This solution will remove any odours from the spillage that has occurred.
- 3) Dry the equipment thoroughly.
- 4) Always wear gloves and personal safety equipment kit while cleaning the equipment.
- 5) Remove the shelves and clean with the help of a wet cloth. Dry the shelves thoroughly and then place into the chamber again.
- 6) Never use benzene or paint thinner for cleaning.
- 7) Do not use an abrasive or alkaline solution.

10 Maintenance and Services

- 1) Always disconnect from the main power supply prior to the maintenance & servicing.
- 2) To avoid electric shocks, this equipment must always use a properly grounded electrical outlet with the correct voltage handling. Use of voltage stabiliser is recommended.
- 3) Samples should never be placed / removed at any instance during the operation of the unit.
- 4) Disassembly of this equipment is strictly limited to the qualified personnel and licensed engineers only.
- 5) Do not overload the working chamber with excessive test samples. This will prevent the free air circulation, as a result of which the uniformity of temperature throughout the chamber cannot be attained.
- 6) Apply vacuum grease at the required location.
- 7) Maintain a safe distance of at least 1 foot – 2 feet away from the wall while installing the unit.
- 8) Never place the test samples near the sensor element as it will affect or damage its accuracy.
- 9) Keep the instrument tidy, clean and dry with mint cream. Before initiating the fresh day, use preferably clean soft cloth. Brush up the unit body to maintain its paint and finishing.
- 10) It is recommended to replace the door gasket on a yearly basis.
- 11) Never leave the instrument connected to main supply after completion of your applications.
- 12) In case of any difficulty, please do not try to repair it on your own without consulting the manufacturer, especially when the instrument is under the warranty period.

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Warranty Certificate

Your EIE product is guaranteed to be free from defects in materials and workmanship for one (1) year under normal use from the date of purchase. This warranty does not apply to any product damaged by accident, misuse, mishandling, abuse, negligence, transit, improper line voltage, drop, fire, flood or if the products were altered or repaired by anyone other than the qualified service personnel. The liability of EIE Instruments is limited to repair or replacement and under no circumstances shall EIE be liable for any collateral consequential damages or loss. This guarantee specifically excludes the expendables and consumables. All warranty claims must be directed to your corresponding purchase organization that is responsible for the sale of this equipment. The users are responsible for shipping expense. The warranty cards which are not signed and stamped by the actual user will be treated as void. The warranty card should accompany the defective products sent for repair, without which no claims would be entertained. Please detach the below warranty card from following cut-line.

.....

Attributes	Details
Name of the company	
Address	
Telephone number	
Mobile number	
Email address	
Date of purchase	
Product model	
Serial Number	
Bill or cash memo number	

This card should be detached, filled in properly and posted within 15 days from the date of purchase otherwise the warranty becomes invalid.

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If you have any note or queries,

Please write to us at info@eieinstruments.com, Thank you!

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Calibration Laboratory

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