MicroDens
QUICK GUIDE

GIBERTINI

INTRODUCTION

Thank you for choosing **MicroDens** , the portable digital densimeter from Gibertini Elettronica.

MicroDens, is designed to accurately measure the density of liquids in seconds.
Compact, precise and intuitive, it represents the evolution of density measurement technology and is the ideal solution for laboratories, quality control, production and field applications.
Designed to combine laboratory precision and operational convenience, **MicroDens** integrates the performance of a benchtop density meter into a handheld format.

Precise
Accuracy ±0.0001 g/cm^3

Laptop
Rechargeable lithium battery with over 10 hours of battery life

Versatile
Ideal for all Food&Beverage liquids analysis.

Intuitive
Color touch display and user-friendly interface

Traceable
Stores up to 2000 measurements with timestamp, and data export via Bluetooth and USB-C.

PACKAGE CONTENTS

Upon receiving the MicroDens, check that the delivery is complete before using it for the first time.
The two PTFE tubes included in the package ensure a spare part is always available.

MicroDens
Portable Densimeter

Li-Ion battery
Rechargeable battery

PTFE tube
Filling tube (×2)

USB-C cable
For charging

Hard case
For transport

Documentation
Quick Guide

⚠ **WARNING:** in case of supply incomplete contact Gibertini Elettronica.

INITIAL ASSEMBLY

Just a few steps separate the instrument from the first measurement: plugging the battery, assembling the tube and a full charge.

Battery Installation

The connector is directional and prevents insertion with incorrect polarity: if you feel resistance, do not force it and check the orientation.

1. Place the instrument with the display facing downwards
2. Open the battery door by pressing the locking clip
3. Insert the battery in the housing
4. Close the door until you hear the click

Recharge

It is recommended to recharge the instrument during periods of inactivity, so that it is always ready for use.

- Charging time: about 3-4 hours
- Battery life: ~10 hours when used continuously
- Connector: USB-C (above display)

Filling Tube Assembly

1. Take one of the supplied PTFE tubes
2. Screw the tube into the appropriate fitting on the instrument body
3. Tighten firmly (without overtightening)

For laboratory use, leave the filling tube attached; for outdoor transport, place the instrument and tube in the case.

TIP: : always keep a spare tube in the case.

INITIAL SETUP

Once assembly is complete, it only takes a few minutes to set up the instrument and prepare it for the first measurement.

Turning On

Press the PWR button for 3-4 seconds to turn on the instrument.

Upon startup , MicroDens automatically performs:

- System initialization
- Piston zero calibration
- Sensor reading

> These automatic checks ensure that the sensor starts from a correct reference condition. Wait for the sequence to complete before operating.

Initial Configuration

Language Setting

Menu > Settings > Device Settings > Language

Available languages: IT, EN, DE, FR, ES

Date and Time

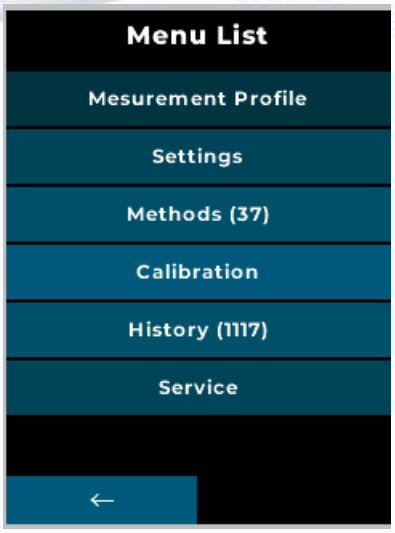
Menu > Settings > Device Settings > Date & Time

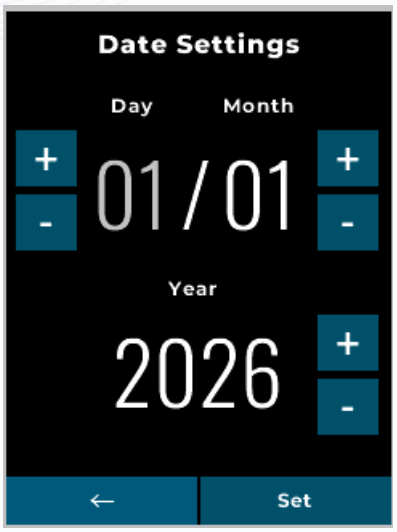
Use the arrow keys to change the values, SET to confirm.

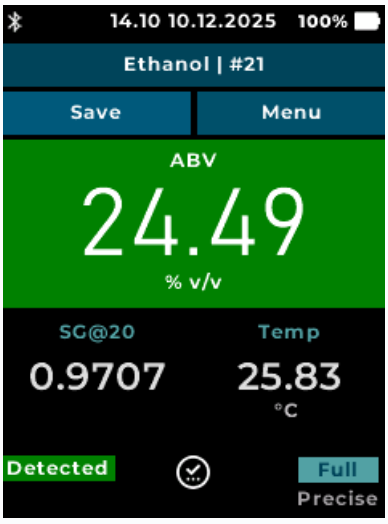
Unit of Measurement

Menu > Settings > Global Units

Density: g/cm³, kg/m³, SG
Temperature: °C, °F







> **Default settings** are already enabled and optimize battery life. You can customize them by going to Menu > Settings > Display.

INTERFACE AND NAVIGATION

Physical Keys

KEY	FUNCTION
PWR	On/Off (3 sec)
UP ▲	Scroll up / Increase value
DOWN ▼	Scroll down / Decrease
SET	Confirm selection / Access submenu
PUSH	Activate filling/rinsing pump

MicroDens features a touchscreen display with integrated touch controls

The physical 'PUSH' button is dedicated to the sample aspiration and expulsion functions and cannot be used for menu navigation.

Touch Display

The 2.8" touchscreen display makes it easy to :

- Direct selection of menu options
- Navigating between pages
- Confirm/cancel operations
- Saving results

Main Menu

Measurement Profile
Select measurement method and sample ID

Settings
Device Setup

Methods
Creating, Editing, or Deleting Methods

Calibration
Calibration procedure and history

History
Measurement archive (2000) and BLE data sending / Printer

Service
O-ring cleaning

TAKE A MEASUREMENT

Preparation : Startup Requirements

Check battery level
Icon at the top right with charge

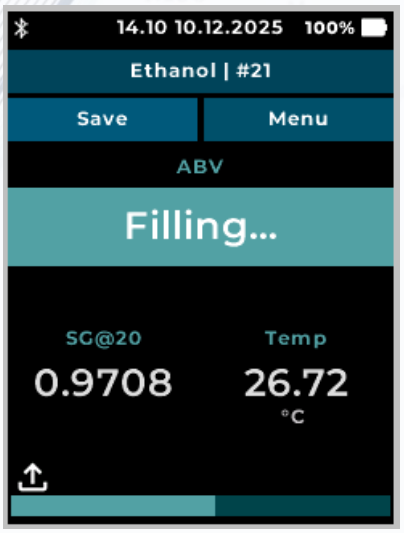
Measuring cell clean
Free from residues of previous samples

Sample Quantity
keep at least 10 mL in the container ; the instrument aspirates ~1 mL

Waste container
Make sure you have a suitable container for disposing of the tested sample.

Measurement

1. Select the METHOD and set the Sample ID
2. Immerse the filling tube in the sample
3. Press PUSH to aspirate the sample (~1 mL)
4. Wait for stabilization (background turns GREEN)
5. Read the result on the display
6. Press SAVE to store data (optional)
7. Press PUSH to eject the sample
8. Repeat the procedure until it comes view the icon stable measurement : " **Detected** " (bottom left).



If the cell remains full for more than ~5 min, the instrument stops and asks for emptying.

Measurement

PRECISE
result in 5-20 sec.,
maximum accuracy

FAST
result in 1-5 sec,
routine checks

MANUAL
Operator decides
when to save

The GREEN background indicates a stable measure or in Limits.
The RED background indicates the measure is Out of Limits of the method settings .

CLEANING PROCEDURE

Thorough cleaning after each work session is essential to maintain the product over time. consistently accurate results and ensure proper operation of the instrument.

Standard Procedure:

1. Immerse the tube in the solution detergent indicated In the instruction manual
2. Press PUSH to fill with liquid
3. Wait 5-10 seconds
4. Press PUSH to rinse
5. Repeat 3-5 times until completely clean.

Solutions detergents and solvents recommended

Always select the solvent based on the nature of the sample.
For stubborn residue, rinse with acetone followed by isopropyl alcohol (IPA) and water.

SAMPLE TYPE	SOLVENT
Aqueous / Sugars	Deionized water
Spirits / Wines	Deionized Water or Water + Solution Ethanol
Oils / Fats	Isopropanol (IPA)
Difficult residues	Acetone followed by rinsing with IPA and water

CAUTION: Do not use concentrated acetone or aromatic solvents (benzene, toluene).

O-Ring Maintenance

O-ring maintenance is simple and infrequent: the tool guides you through each step and requires only a minimal amount of silicone grease.

Frequency and maintenance recommended : every 9-12 months lubricate the piston O -ring by going to Menu > Service > Clean Pump

TROUBLESHOOTING

Most problems can be resolved with simple checks.
If the problem persists, contact Gibertini technical support.

The instrument does not turn on

→ Check battery integrity and connection

→ Press and hold PWR for at least 4 seconds

Unstable measurement

→ Check that there are no air bubbles in the sample

→ Use PRECISE mode

→ Wait for the temperature to stabilise

Inaccurate results

→ Perform calibration using ISO 3696 water

→ Clean the measuring cell thoroughly

→ Check sample temperature (0-60°C)

Technical Support

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Thanks

Gibertini Elettronica would like to thank everyone who has contributed to the development of MicroDens with their valuable feedback and suggestions.

Our technical support team is always available to help you use the tool and ensure you have the best possible experience.

Enjoy using MicroDens!

The Gibertini Elettronica Team