

# Dencytee

## Quick Guide



**HAMILTON**® *Fl*

## HAMILTON WARRANTY

Please refer to the General Terms of Sales (GTS).

## IMPORTANT NOTE

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## Intended Use

The Dencytee Sensor Unit is designed to measure turbidity in a liquid medium. The turbidity may be correlated to the total cell density. The measurement may be used for the control of bioprocess within the defined specifications (please see the Cell Density Monitoring Operating Instructions, Chapter 16).

## About this Quick Guide

The Quick Guide will help the users to mount the Dencytee Sensor Unit. It does not replace the Cell Density Monitoring System Operating Instructions, which are available at [www.hamiltoncompany.com](http://www.hamiltoncompany.com). All further information such as Liability, the Safety Precautions, Disposal Instructions and the Operation description are available therein.



**⚠ ATTENTION! Complete Instructions are available in the Cell Density Monitoring System Operating Instructions, Ref 624702.**

**📄 NOTE:** To ensure that you are using the newest version of the software, go to the «About» menu in the version you have installed. Compare the version listed here to the version available under [www.hamiltoncompany.com/Arc\\_View\\_Update](http://www.hamiltoncompany.com/Arc_View_Update)

If you are running a previous version, run an update as described in the «Cell Density Monitoring: Operating Instructions» Chapter 9.7.1.

## 1 Hardware Compatibility

**⚠ ATTENTION! Fogale devices are only partially compatible with Hamilton products.**

Please do not combine Hamilton labelled Pre-Amplifier and sensors with a Control Unit having a software version below 3.0.

Evo200 and ibiomass cannot be updated with the current Hamilton Software.

## 2 Overview of the Dencytee Sensor Unit

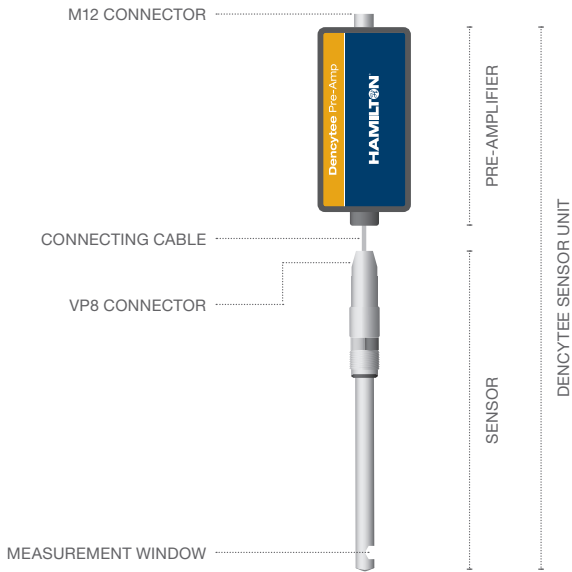


Figure 1: Picture of the assembled Dencytee Unit.

A Dencytee Sensor Unit consists of a Pre-amplifier and a Sensor (Figure 1). They are linked together via a Connecting cable with a VP8 connector. The measurement window has an optical path length of 5 mm. The seal-less, sapphire window design assures the highest level of sterility, cleanability and sensor integrity. All wetted parts are USP Class VI certified.



## 3 Connect the Sensor to the Pre-amplifier

1. Unpack the Sensor and Pre-amplifier from the protective box.
2. Inspect for shipping damage or missing parts.
3. Align the pins of the M12 connector and connect the Pre-amplifier to the Arc View Controller using the Sensor Unit Cable.
4. Verify that the sensor's male VP connector and the Pre-amplifier's female VP connector are dry and clean.
5. Align the sensor VP head and the Pre-amplifier connector and connect the Sensor in the Pre-amplifier.
6. Hand-tighten the connecting nut of the Pre-amplifier's VP Connector to ensure a robust and waterproof seal.
7. Switch on the Arc View Controller (the Status LED on the main screen turns green and an automated firmware update starts).

**⚠ ATTENTION! Make sure that the connecting nut is tightened by hand. Never use a wrench or another tool to tighten or loosen the nut.**

## 4 Calibrate the Dencytee Unit

Calibration of a Sensor Unit is required if the Sensor Unit Verification did not pass successfully.

**⚠ ATTENTION! Make sure that the Val/Cal Solution (Ref 243886) is not expired and avoid contamination or dilution.**

1. Connect a Dencytee Sensor Unit and power on the Arc View Controller. Equilibrate the Val/Cal Solution (Ref 243886) at 23°C +/- 1°C for at least 30 min prior to starting the Calibration procedure.
2. Go to the Main Menu and enter the Calibration Menu. Select Calibrate Unit to run the Calibration procedure.
3. Select the channel. The sensor type is automatically detected.
4. Enter the user name.
5. Make sure that the light path is clean, dust-free and placed in the dark. Press Measure in air to proceed with the Calibration procedure.
6. Insert the sensor directly in the bottle of the Val/Cal solution. Make sure that the light path is well immersed and placed in the dark. Press Measure in solution.
7. The successful Calibration is indicated. If this procedure fails it is recommended to contact the local representative.
8. Choose the directory, where the Calibration Report should be stored and press Generate Calibration Report. The valid calibration is automatically saved in the memory of the Pre-amplifier.

## 5 Mount the Sensor Unit in the Bioreactor

1. Select the most appropriate port for mounting the sensor. Choose a position where gas bubbles may not interfere with the measurement, for example in ports opposite to the sparger or at a significant distance. Gas bubbles interfere with the measurement and may cause reading errors.

## 6 Operation of Dencytee Unit

1. Go to the Measure Settings Menu. Choose the measurement mode, from the predefined settings of Measure Mode 1, 2 or 3, which are a combination of pulse filter and signal integration.
2. Enter the User password if one has been defined. Press OK.
3. Go to the Culture Settings Menu and press the Record Button.
4. Enter the User password if one has been defined. Press OK.
5. Follow the guided procedure to start recording the Culture file. Define the directory to save the file, per default it is the home directory. Select the acquisition time, enter the optional name of the Culture file. Add possible comments and the user name.
6. Equilibrate the Incyte Sensor in culture medium, for at least 30 minutes prior to product calibration and inoculation.
7. Go to the Measure Settings Menu and press the Mark Zero Button to perform a product calibration.
8. Enter the user password if one has been defined. Press OK.
9. Select automatic. The cell density measurement is now compensated for an offset shown in the measurement values above the Main Graph on the Run Menu.

 **NOTE:** Please refer to Chapter 8 in the Cell density Operating Instructions for the detailed information.



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