Oroboros O Calibration App

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Preface

This manual is a living document and currently a work in progress. While we aim to provide accurate and helpful guidance, there may still be missing sections, outdated explanations, or features not fully described.

If you notice any gaps, have questions, or would like to contribute improvements, please reach out. You can contact me directly

Thank you for your understanding and support while we continue refining this resource.

1 Introduction

The O Calibration App is designed to help Oroboros users visualize and analyze calibration and background oxygen data from DatLab `.dld8` files.

Key features:

- Filtering by volume, sensor, medium, annotation period, and date range.
- Visual plots for R0, R1, delta R1, and oxygen slope/residuals.
- Custom annotation support.
- Data export and clipboard copying.

2 Installation

2.1 Windows

Double-click the standalone .exe file.

2.2 Linux

2.3 MacOS

Currently not supported.

3 Getting Started

- Organize your files into folders: **one folder per instrument**.
- Place `.dld8` files inside this folder. Other (experimental) files will be ignored.
- Launch the application.
- Select your folder containing `.dld8` files.
- The app will parse and load all valid files.
- The main interface will activate and populate with data.

The folder is watched for changes. If you add new files later, the app will automatically include them.

4 Loading Data

Click the folder icon or go to `File > Select Folder.` Choose a directory containing .dld8 files.

The app will process and prepare plots and tables.

5 Interface Overview

Toolbar: folder selector, data table, theme toggle, filters, chamber selector.

Tabs:

- Tab 1: Calibration (R1, ΔR1, R0, R0/R1).
- Tab 2: Background (sV).
- Tab 3: Background (cV).

Filter Dock: open from the toolbar or menu. Use it to filter by volume, sensor, temperature, or medium.

Data Table: shows per-file metadata and results.

6 Filtering Options

6.0.1 Time Filters

- Shows all data in folder by default.
- Last month, 3 months, 6 months
- Custom date range with calendar popup
  - Opens calendar widget
  - Only allows dates with data
  - Applies subset filter and updates plots and table

  Visual Indicator:

  - Text label in plots shows active time window

6.0.2 Advanced filters

- Volume (e.g., 0.5 mL, 2.0 mL)
- Sensor ID
- Temperature
- Medium (“Calibration / Background”)

7 Working with Annotations

Use annotations to mark QC-relevant events (e.g., sensor cleaning).

To Add an Annotation:

1. Open the Annotations menu → Add Annotation.
2. Select:
    - Date and time
    - Reason (e.g., "Sensor Cleaning")
    - Chamber (A or B)
    - Sensor (or "Not applicable" if it affects all)
    - Operator name
3. Confirm to save. Annotations will be drawn on plots and used to reset ΔR1 calculation.

To Remove Annotations: Use the Annotations menu → Remove Annotation.

Annotations are stored in an `annotations.json` file within the folder. Do not remove this file unless you want to delete all annotations with intention.

8 Data Table

- Click “Show Data Table”
- Toggle visibility of columns by category
- Filter data by chamber
- Export as `.csv`
- Copy to clipboard

Note that if any filtering is applied, this will also apply to the data table.

9 Understanding the Plots

9.0.1 Calibration Tab:

- **R1 plot**: absolute values over time.
- **ΔR1 plot**: change in R1 after most recent annotation.
- **R0 plot**: absolute R0 values.
- **R0/R1 ratio**: for QC, flags high noise.
- Sensors are color-coded.
- Hover for tooltip with file/date info.

9.0.2 Background Tabs (sV and cV):

- **Top plots**: all data in the selected folder.
  - Shows regression line and reference line.
  - Toggle labels (*View* button in toolbar) to show J° marks.
- **Bottom plots**: selected file only.

10 Tips and Troubleshooting

- **No data after filtering?** Reset filters or expand date range.
- **Label not showing?** Ensure plots are visible and annotations are enabled.
- **App crashed?** Check `logs/app.log` for debugging info.

11 Getting Started

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12 Contact

Contact Bente Theeuwes Email support

References