This manual is for the Filalogger diameter data logging software. This software connects to the Filalogger SPC Unit to log and graph real time inline diameter data measured by the Mitutoyo Filameasure.

This solution can improve extrusion settings and provide production quality tracking by displaying and logging filament diameter measurement during extrusion.

Filabot is not responsible for providing customer support for the Windows operating system. Consult Microsoft's online resources for information regarding Windows operating system.
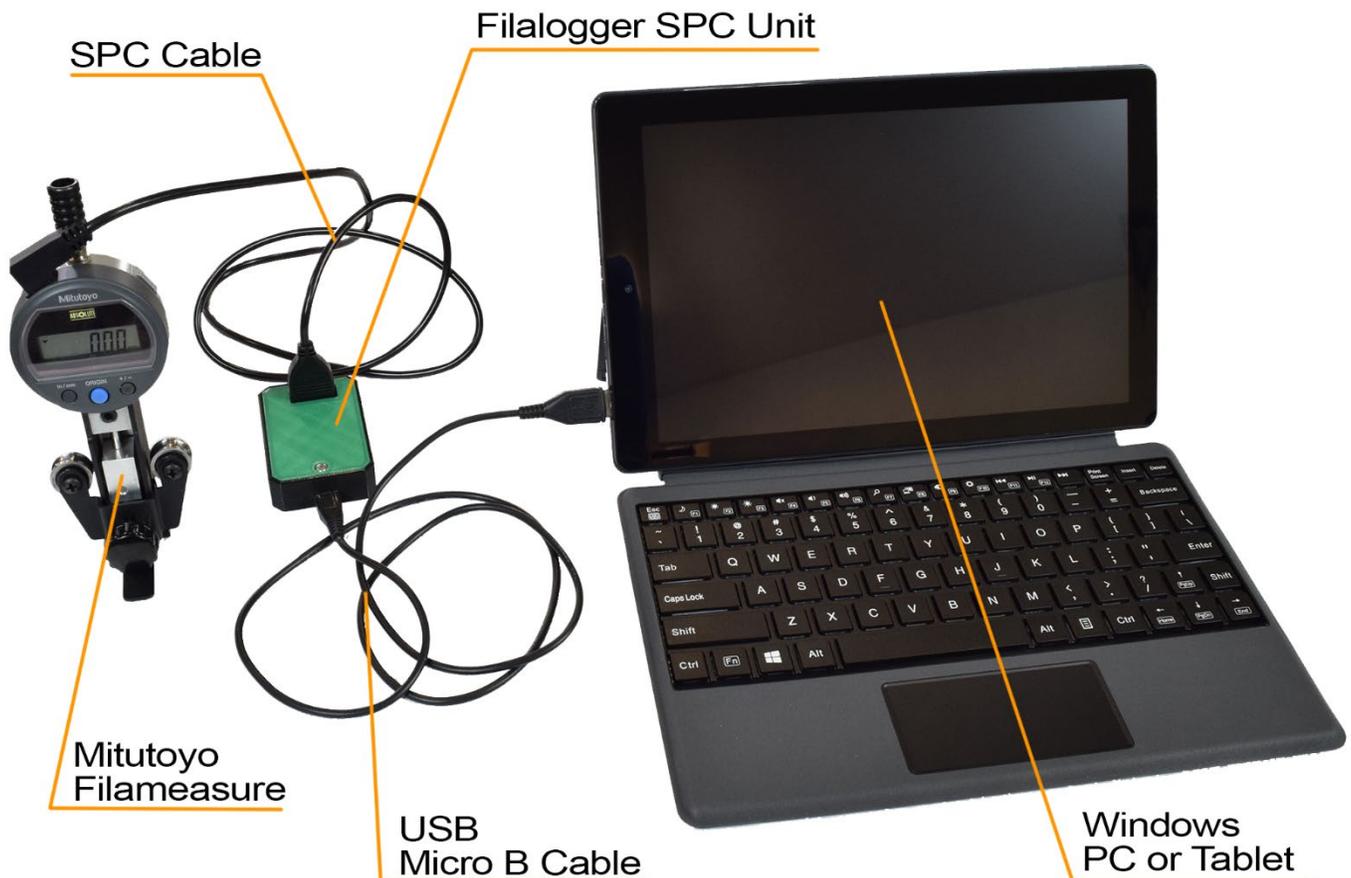

This manual covers Filalogger software operation only. If you want to install the software on your own PC consult the Filalogger Installation Manual linked on the Filameasure product page.

As a convenient alternative to setting up the program on your own PC, we offer a portable Windows tablet with the Filalogger software pre-installed. Check out Filabot.com for more information.

Starting the Filalogger Program

Plug the Mitutoyo Filameasure into the Filalogger SPC Unit with the SPC Cable. Then plug the SPC Unit into a PC with the Filalogger program installed as shown in the illustration on page 1.

Start the Filalogger program from the shortcut on your desktop. You will be prompted to select a COM port. Select "Arduino Leonardo (COM#)".
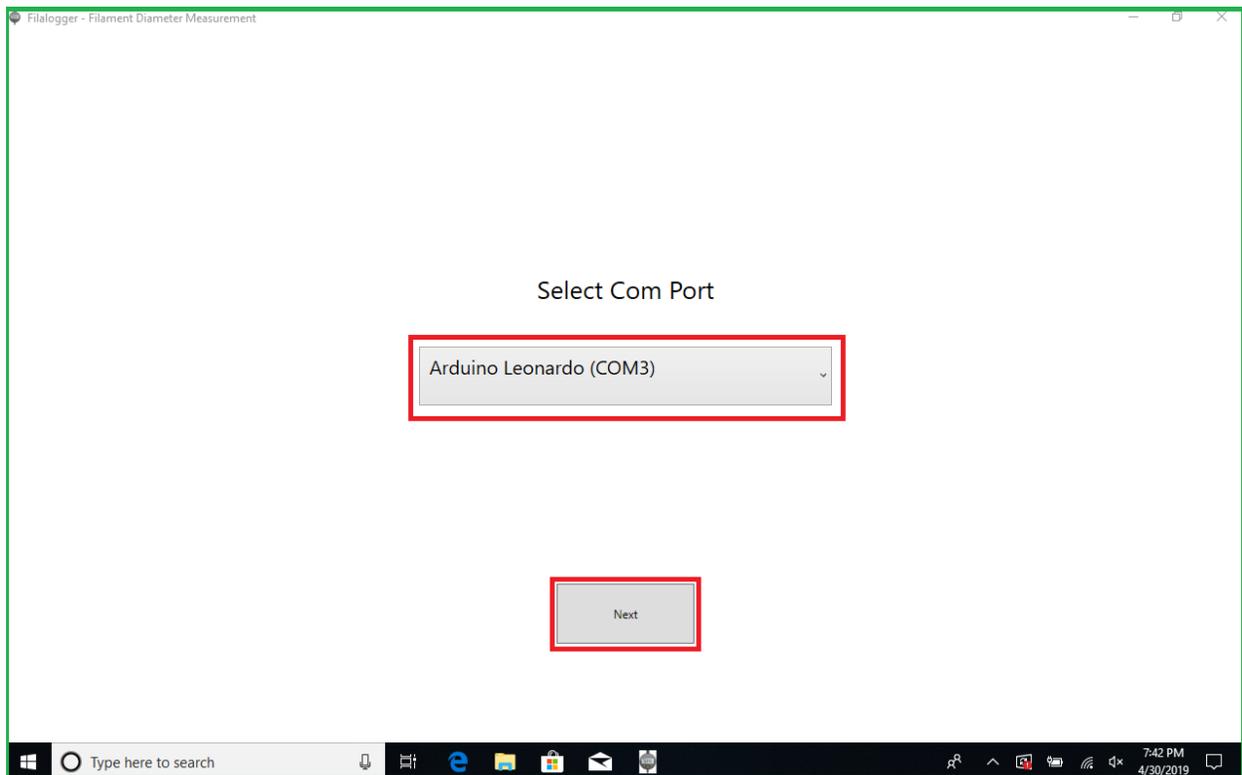
Click next and the program will start. If the connection to the Filameasure is working properly you should see the Diameter reading, in the top left corner of the program window, match and change according to the reading on the Filameasure Indicator screen.

Program Main Screen
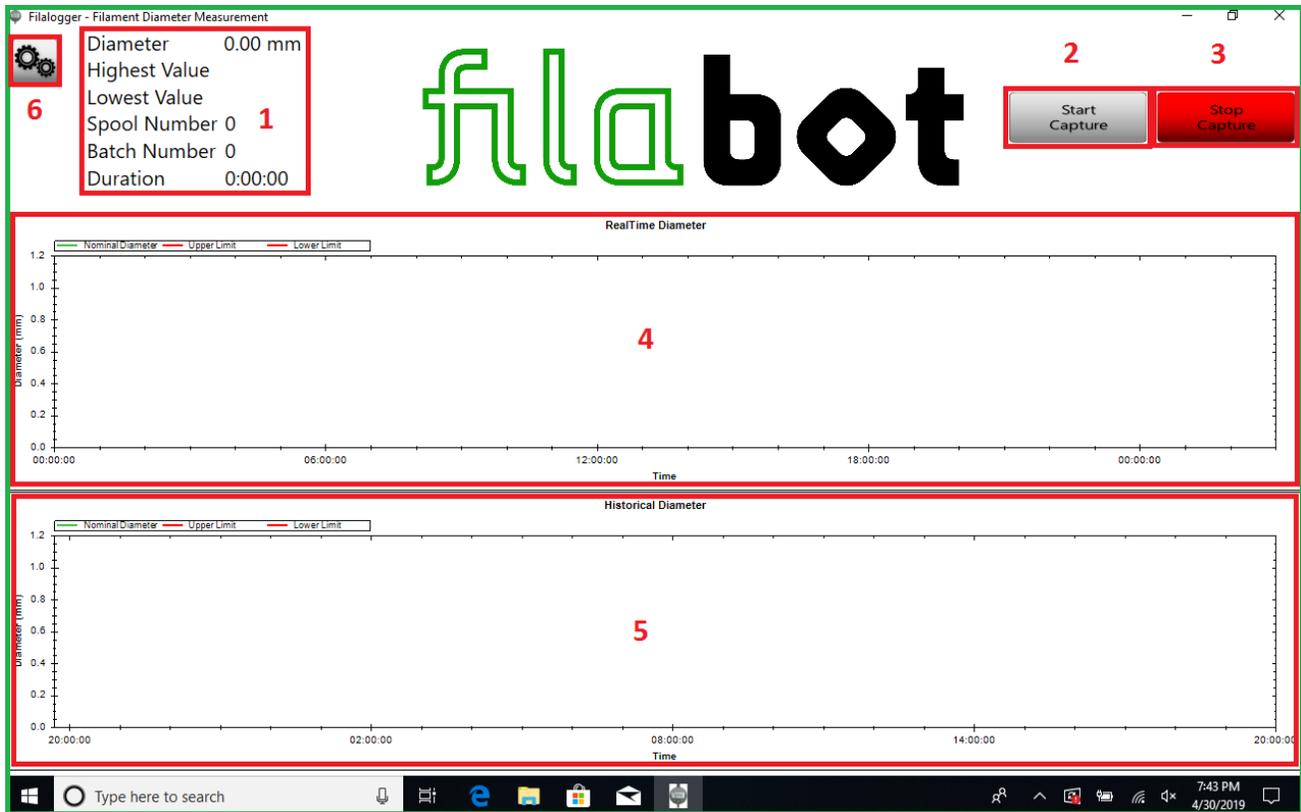

1. **Live data values**:
   - **Diameter**: Live diameter reading from the Filameasure. This value should always match the reading on the Filameasure Indicator display
   - **Highest Value**: The highest diameter value measured since clicking the "Start Capture" button
   - **Lowest Value**: The lowest diameter value measured since clicking the "Start Capture" button
   - **Spool Number**: When producing filament this can help track which log file goes with which spool during production. This number is set in the settings tab and will increase by 1 each time capture is started and stopped. Spool number is added to the filename of the log file.
   - **Batch Number**: Additional value for production tracking
   - **Duration**: Time elapsed since starting capture
2. **Start Capture button**: Clicking this button will start diameter value logging and the data will update on the diameter graphs.
3. **Stop Capture button**: Clicking this button will stop capture and save the logged diameter data to a CSV file in the *spooldata* folder (*C:\Program Files (x86)\Filalogger\spooldata*).

4. **RealTime Diameter graph**: This is a constantly scrolling graph of the live filament diameter to provide a visual of short-term consistency and diameter changes during extrusion.
5. **Historical Diameter graph**: This graph updates continuously and displays all the diameter data collected after capture is started. This graph provides a visual of long-term consistency changes during extrusion. This graph resets when capture is stopped and started again.
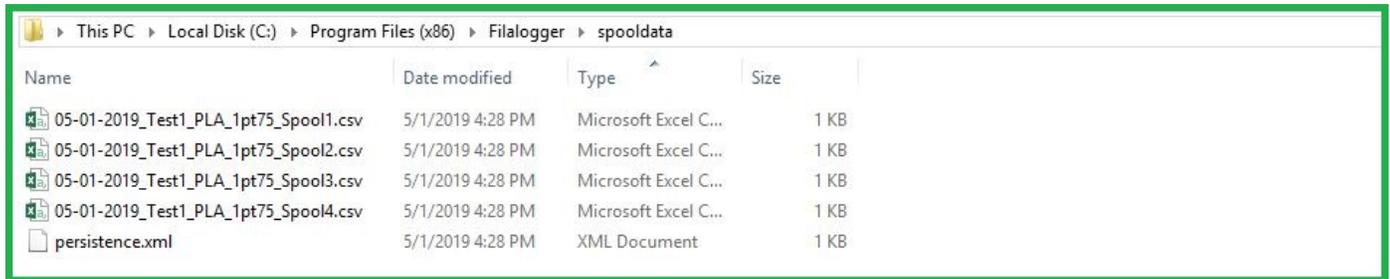6. **Settings tab button**: This button opens the settings tab.

Program Settings Tab
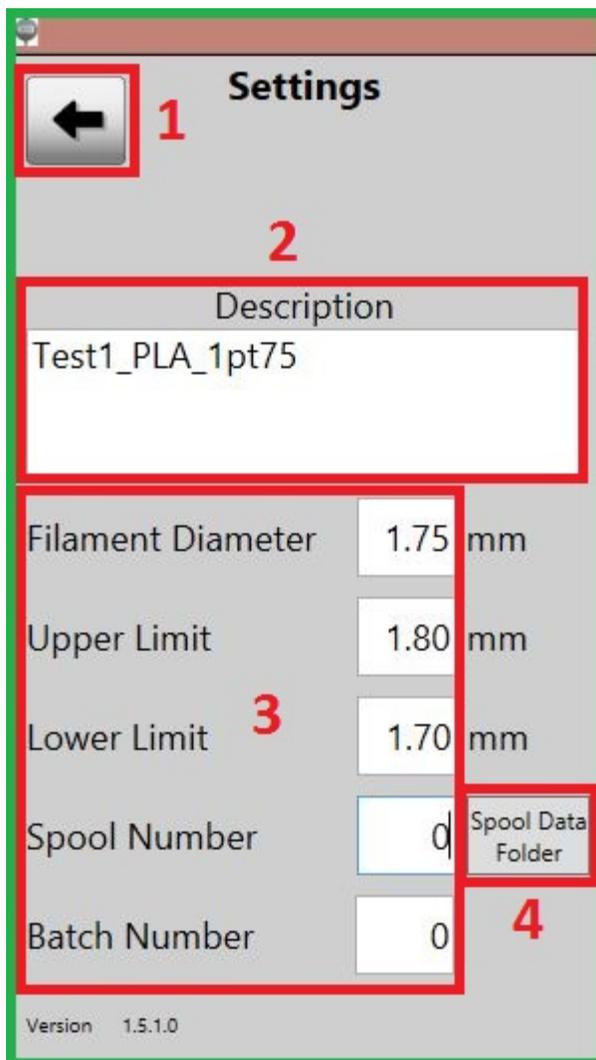
1. **Back button**: Clicking this button will collapse the settings tab.
2. **Description**: Along with the date, this description will be included in the filenames of the CSV diameter data log files. The characters :
$$\backslash \, / : * \, ? \, " < > \, | \, .$$
cannot be used in the description.
3. **Graph Reference Lines and Spool #**:
   - **Filament Diameter**: This input places a green line on the diameter graph at the specified value to represent the desired diameter.
   - **Upper Limit**: This input places a red line on the diameter graph at the specified value to represent the maximum allowable diameter.
   - **Lower Limit**: This input places a red line on the diameter graph at the specified value to represent the minimum allowable diameter.
   - **Spool Number**: Set the value of the starting spool number (if this value is 0 the first spool number will be 1).
   - **Batch Number**: Set the batch number.
   - **Spool Data Folder button**: Clicking this button opens the spool data folder where the CSV files of the logged diameter data are saved.
4. **Spool Data Folder button**: Clicking this button opens the spool data folder where the CSV files are saved.

Spool Data Folder

The diameter log CSV files are saved in the *spooldata* folder (*C:\Program Files (x86)\Filalogger\spooldata*). These files can be opened using a program that stores data in tables, such as Microsoft Excel or OpenOffice Calc. The file "*persistence.xml*" stores the program settings.

The CSV files have two columns of data, the diameter measurement and corrosponding time stamp.

The Filalogger software and firmware are open source.

Source code for the Filalogger software can be found here:
https://github.com/coolio986/Digital_Indicator

Source code for the Filalogger SPC Unit firmware can be found here:
https://github.com/coolio986/Digital_Indicator_Firmware

Special Thanks to the developers of this program and circuit design in collaboration with Filabot:

Anthony Kaul - Architect & Programmer - coolio986
Joshua Bergin - Visual Designer

Please consider donating to Arduino to support open source projects across the globe!