

User's Guide

DylosLogger Software Version 3.00

The DylosLogger software allows users of Dylos Air Quality Monitors equipped with PC interface to easily record, download, and graph data. The COM port is optional on the DC1100 and standard on the DC1700 battery operated Air Quality Monitor. Dylos monitors which are equipped with the COM Port interface have a standard 9-pin serial connector. The software is provided on CD with every PC Interface unit or can be downloaded from the Dylos website. The software provides two basic capabilities – to download the internal history or to log data live as it is being sampled.

Installing the software:

Run DylosLogger3.0.msi (Windows Installer program) from the provided CD.

Or,

Download the DylosLogger software from the website to a folder on your PC and then run DylosLogger3.0.msi from that folder (unzip if necessary).

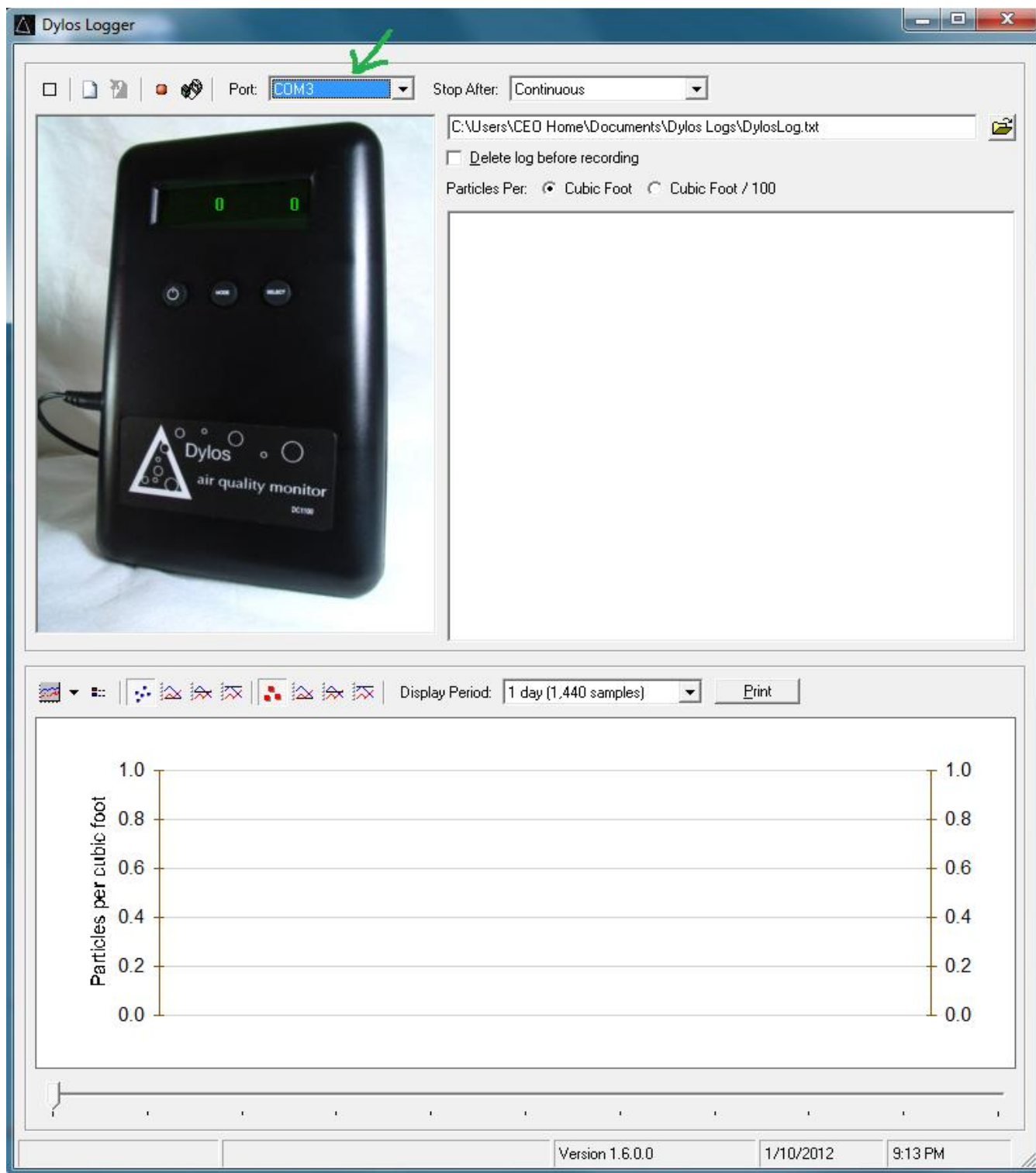
Connecting the DC1100 or DC1700:

If you have an older PC which is equipped with a COM port then you can connect the DC1100 directly to the PC using a 9 pin serial extension cable. **Customers must supply their own cable.**

If your PC does not have a COM port then you must connect using a USB to COM port adapter cable. **Customers must supply their own cable. You must install the drivers that came with your cable.** This driver will either be on the CD which came with the cable or must be downloaded off the cable manufacturer's web site (in many cases drivers can be downloaded from the Prolific website which is the major manufacturer of COM port to USB interface chips). If the downloaded driver is in a zip file then extract those files to a working folder before installing. **This driver will create a virtual COM port on your PC which is the COM Port you must select within the DylosLogger program.** After the driver for the cable has been installed on your PC then plug the cable into any available USB port and connect the other end to the DC1100 or DC1700.

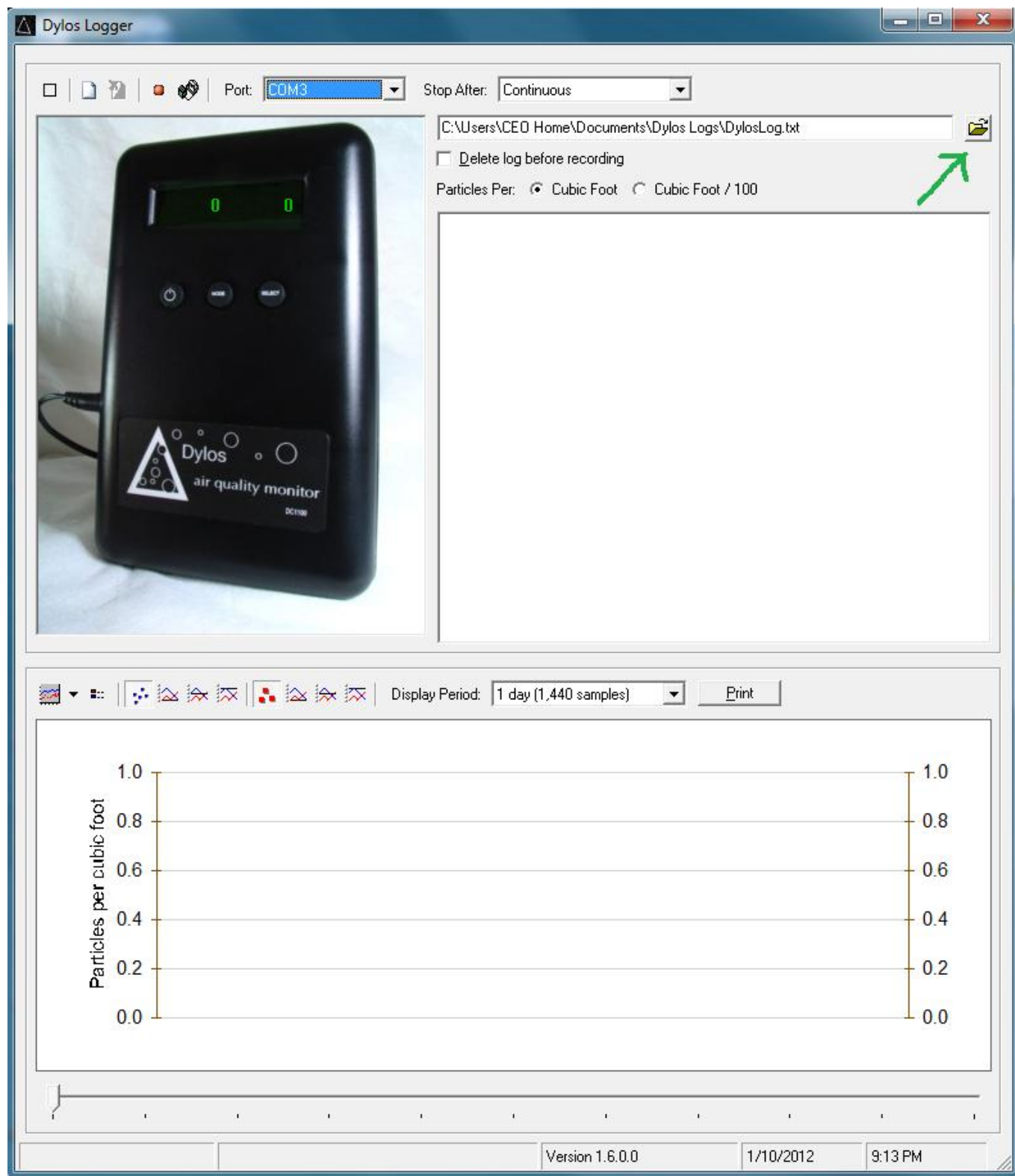
Starting the software:

Click on the DylosLogger icon (listed among the other program apps). **Note: If using a USB to COM Port adapter cable this cable must be plugged into the PC prior to starting DylosLogger.** If you don't do this then the COM port for the cable will not appear in the DylosLogger port selection drop down menu. Use the DylosLogger port selection drop down menu to select the COM Port which you are using to connect to the DC1100 or DC1700. You must select the proper COM port or no communication will be possible with the DC1100 or DC1700. The port selection drop down menu is shown in the screenshot below:

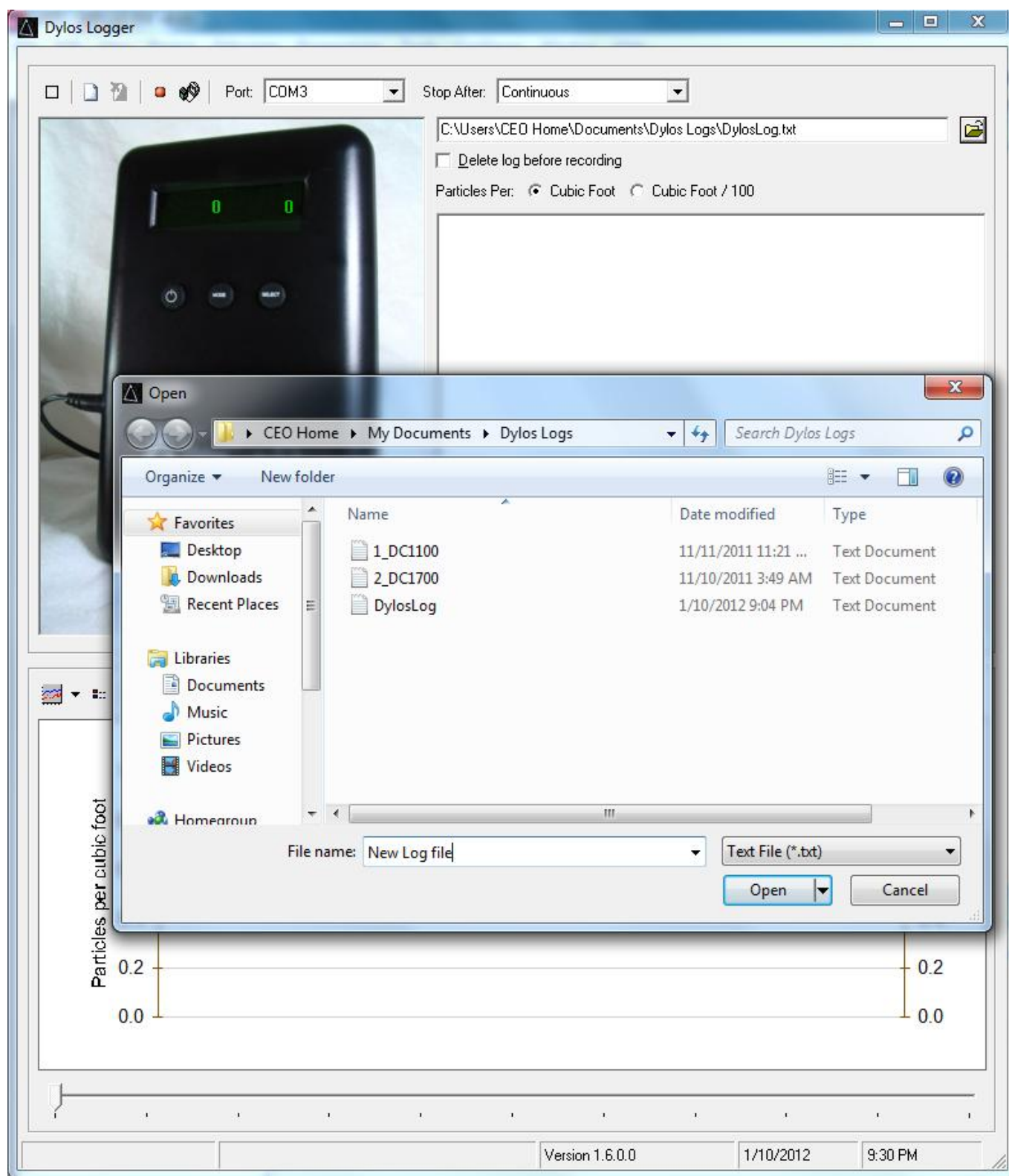


Selecting a Log File:

Data received from the DC1100 or DC1700, whether downloaded history data or logging data, can be stored into files for later access. DC1100 log files or DC1700 log or download files can be reloaded and graphed in DylosLogger. These files can also be loaded into spreadsheet programs such as Excel. In order to select a file click the file icon as illustrated in the following screenshot:



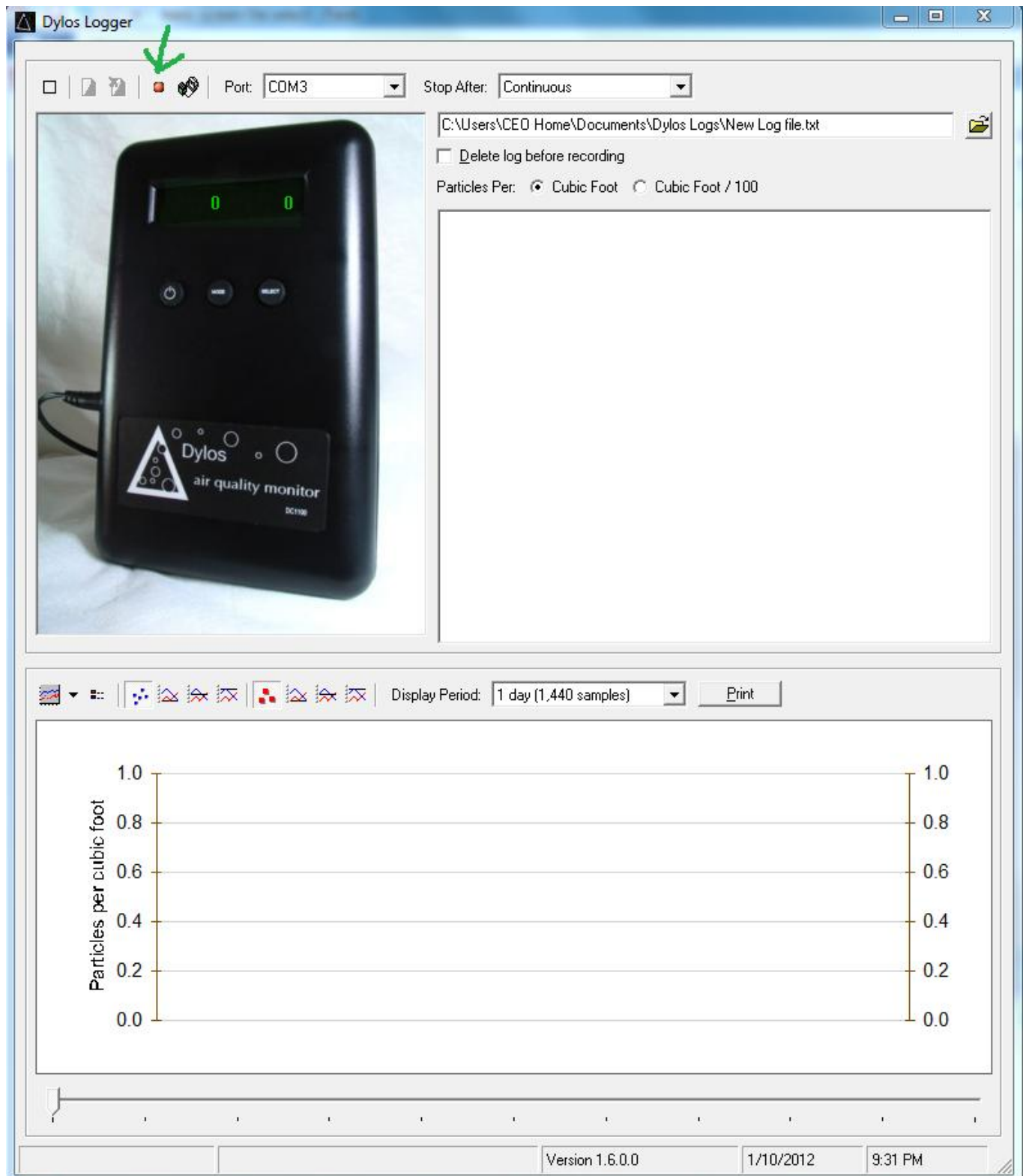
The following file open dialog window will open and then select a file or enter a new file name in the window:



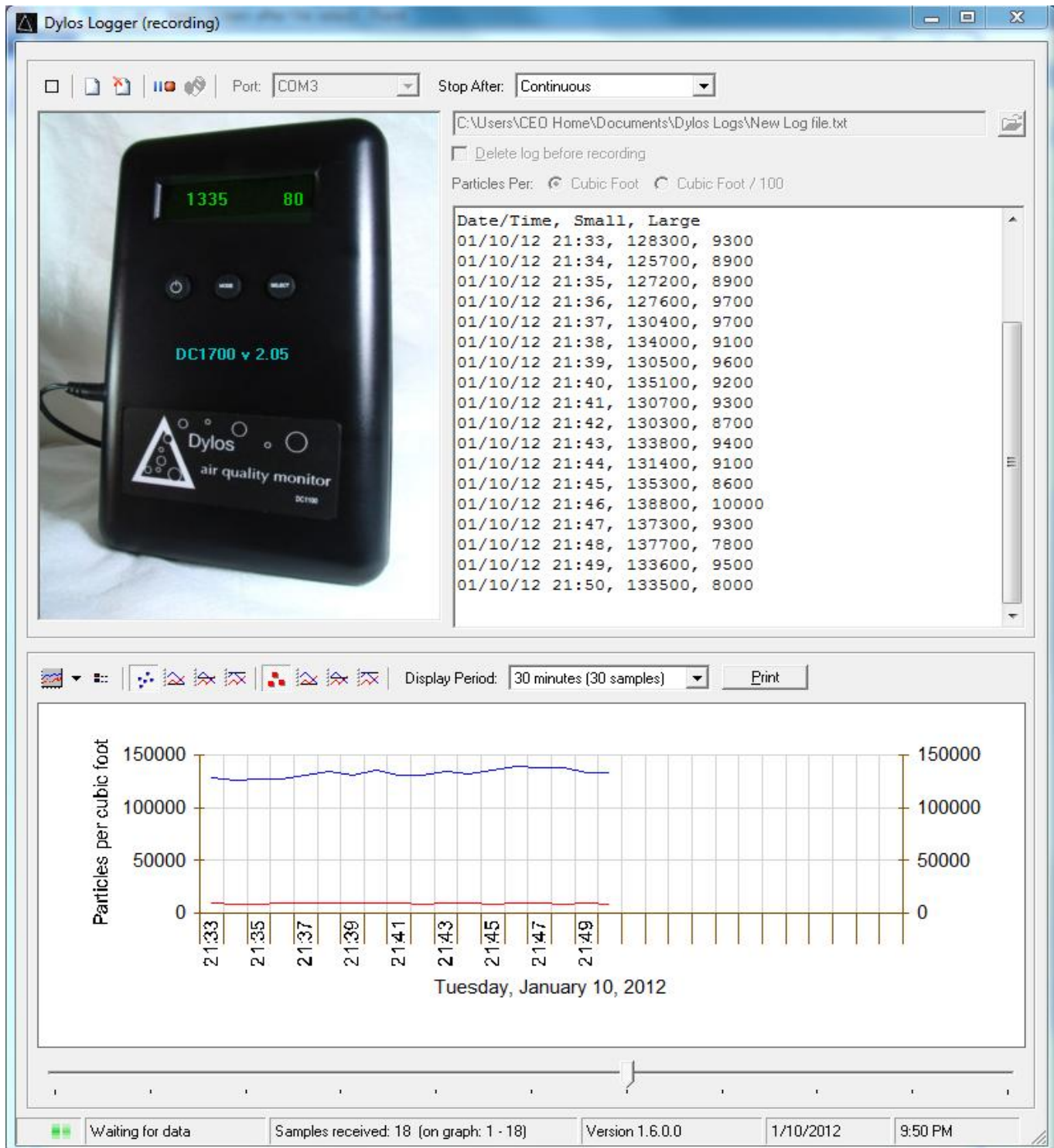
It is recommended that the customer selects a new file name for each history download or logging session in order to organize and access the data for later use. When live data is recorded in a logging session (not history data) it can be recalled later and graphed, but if more than one logging session is recorded to a single file only one session will graph – see next section.

Recording Data – Logging live data from the DC1100 or DC1700:

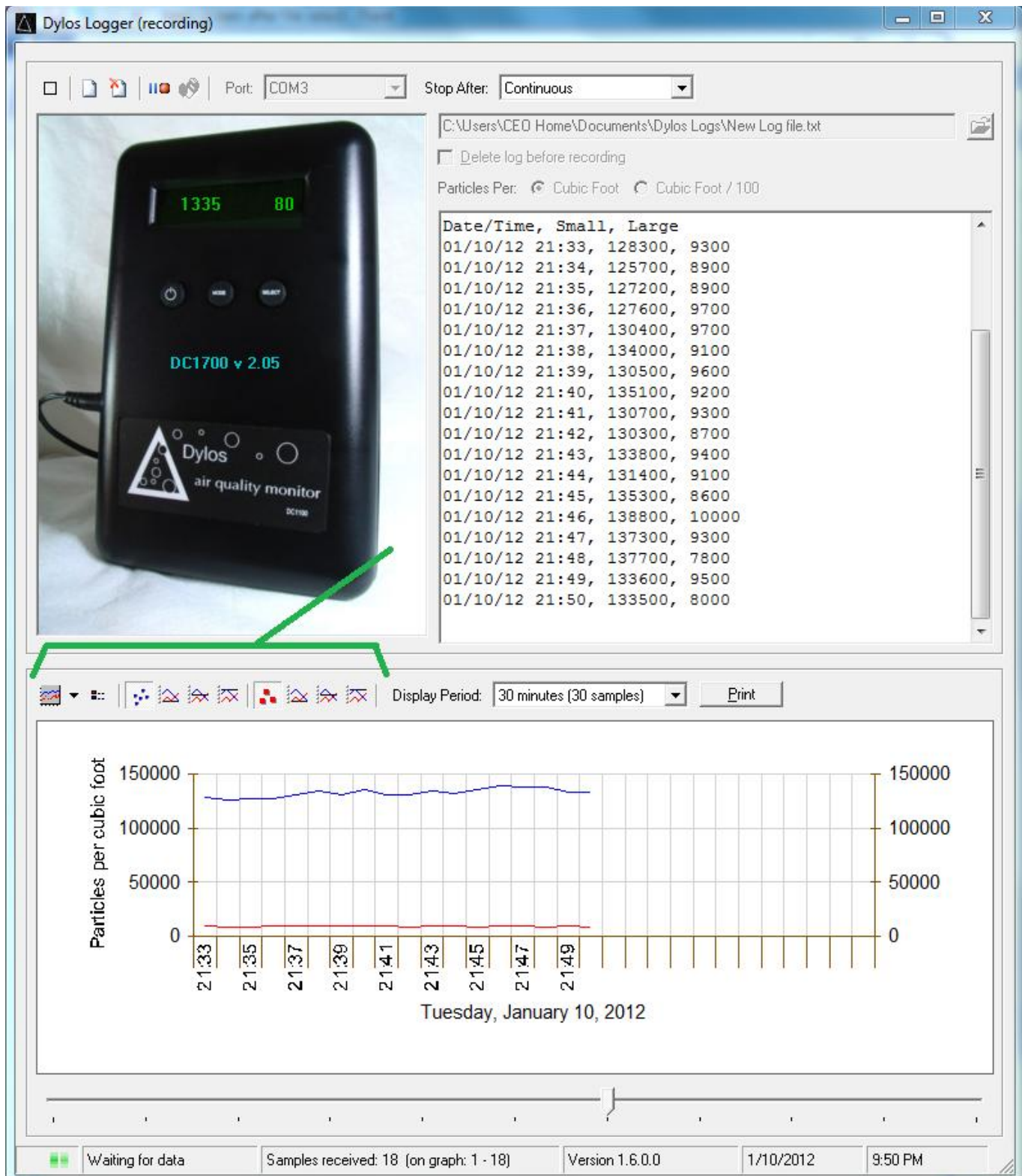
The most powerful feature of the DylosLogger software is its ability to log live data and graph it as it is coming in. Approximately a weeks worth of detailed particle data (with minute by minute readings) can be graphed in a single recording session. The logging feature is similar for both the DC1100 and DC1700. Start a recording session by clicking the red record button as illustrated below:



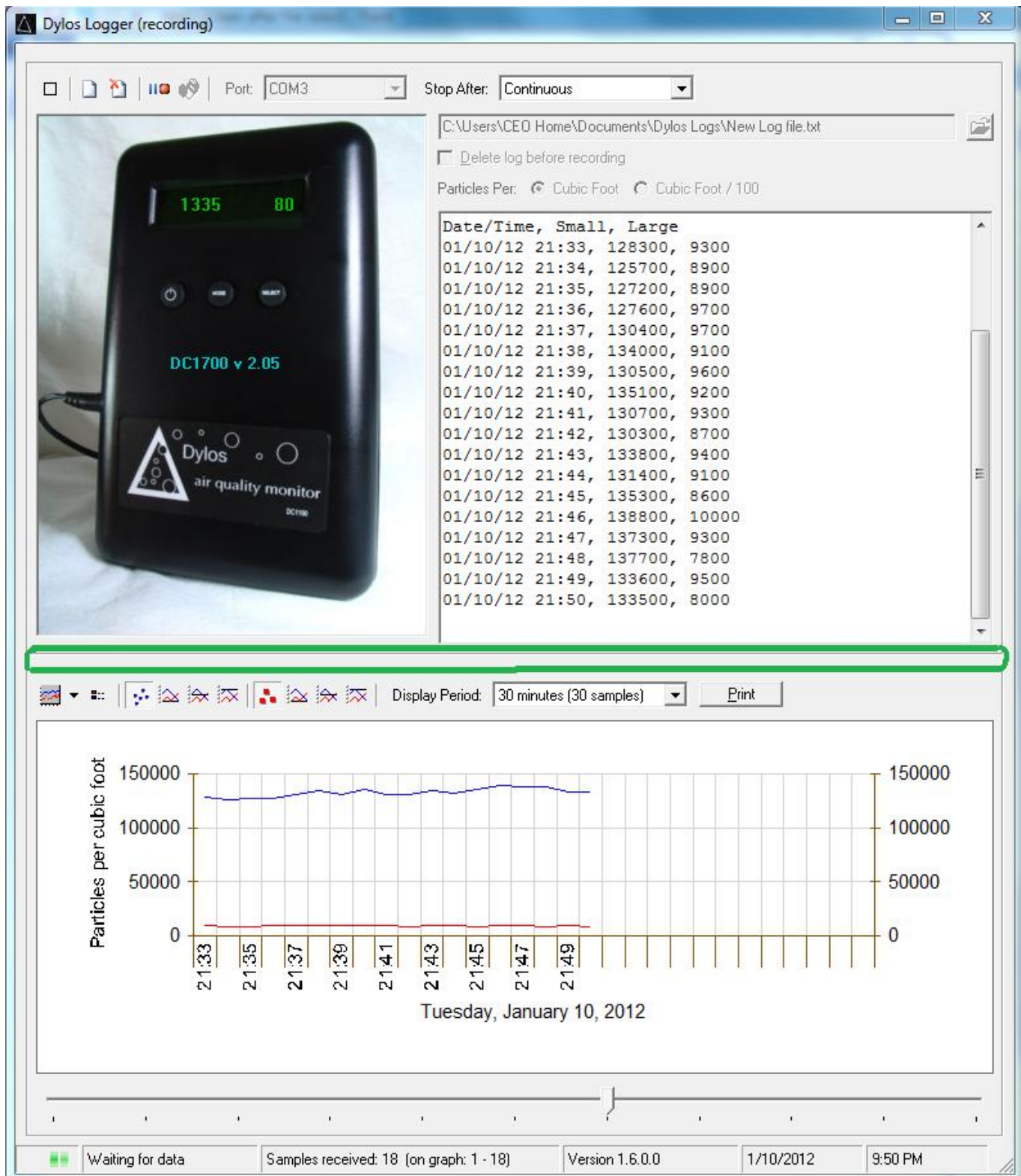
The DC1100 or DC1700 output a reading every minute which represents the average particle concentration over that minute. On the DC1700-PM and newer models the particle sizes and units will normally be automatically set whereas older models will default to read Small and Large. For the DC1700-PM, data will be logged in the current format setting of the unit – either particle concentration or particle mass. Logged data will be stored to the selected log file as well as being displayed in the data window and being graphed in the graph window. The screenshot below shows the DylosLogger after several minutes of data logging:



The customer can use the “Stop After:” drop down menu to select the length of time to record. The customer can also control the display of graph data by using a series of control buttons just above the graph – these are illustrated in the screenshot below. In addition, the customer can control the amount of data graphed in the window by using the “Display Period:” drop down menu.

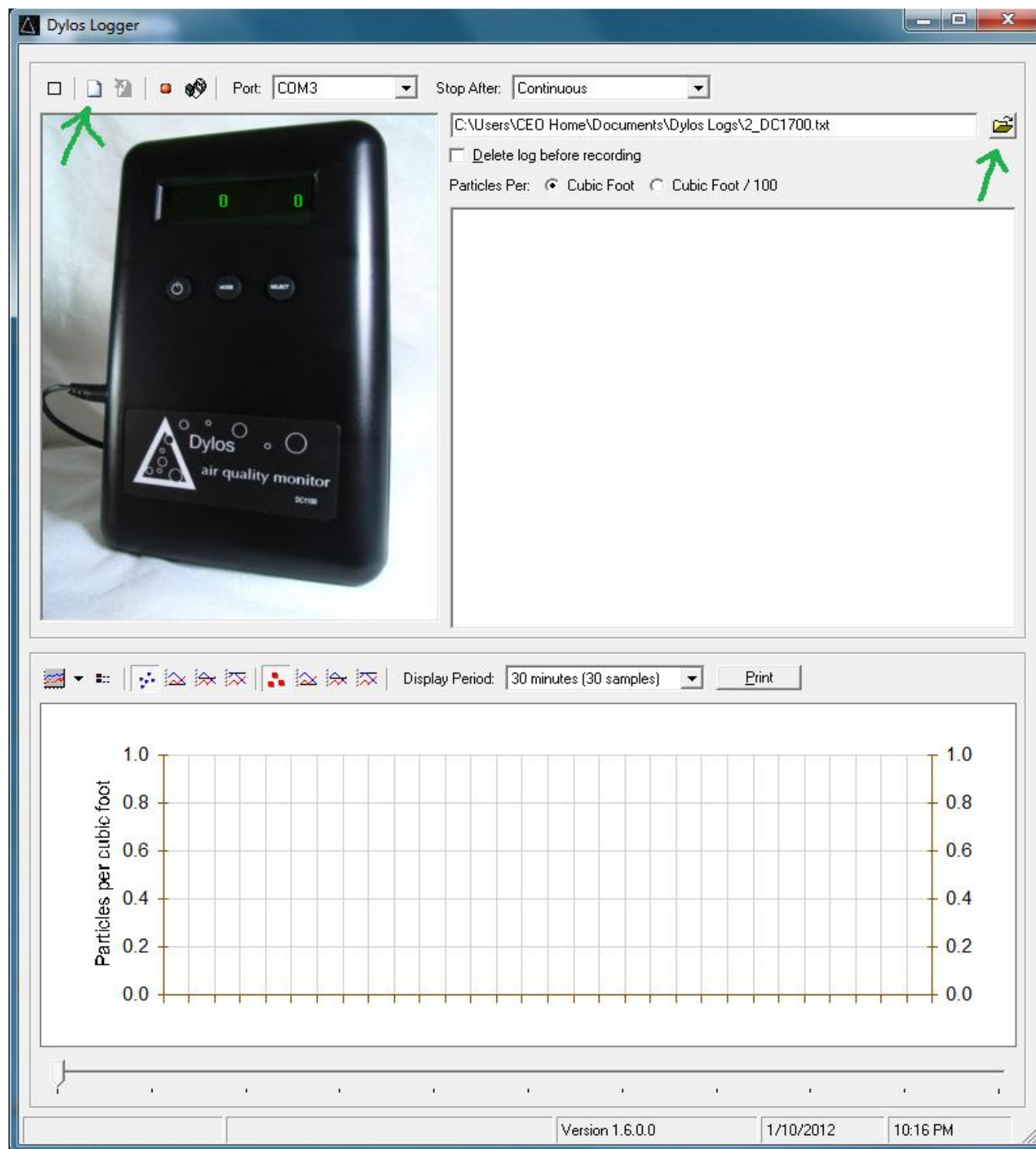


Another useful feature is the ability to resize the graph area. This can be accomplished by placing the mouse cursor over the border area above the graph (see marked area in following screenshot) and then dragging this border to change the size of the graph area. Note: the cursor will change when it is located in the right spot to drag.

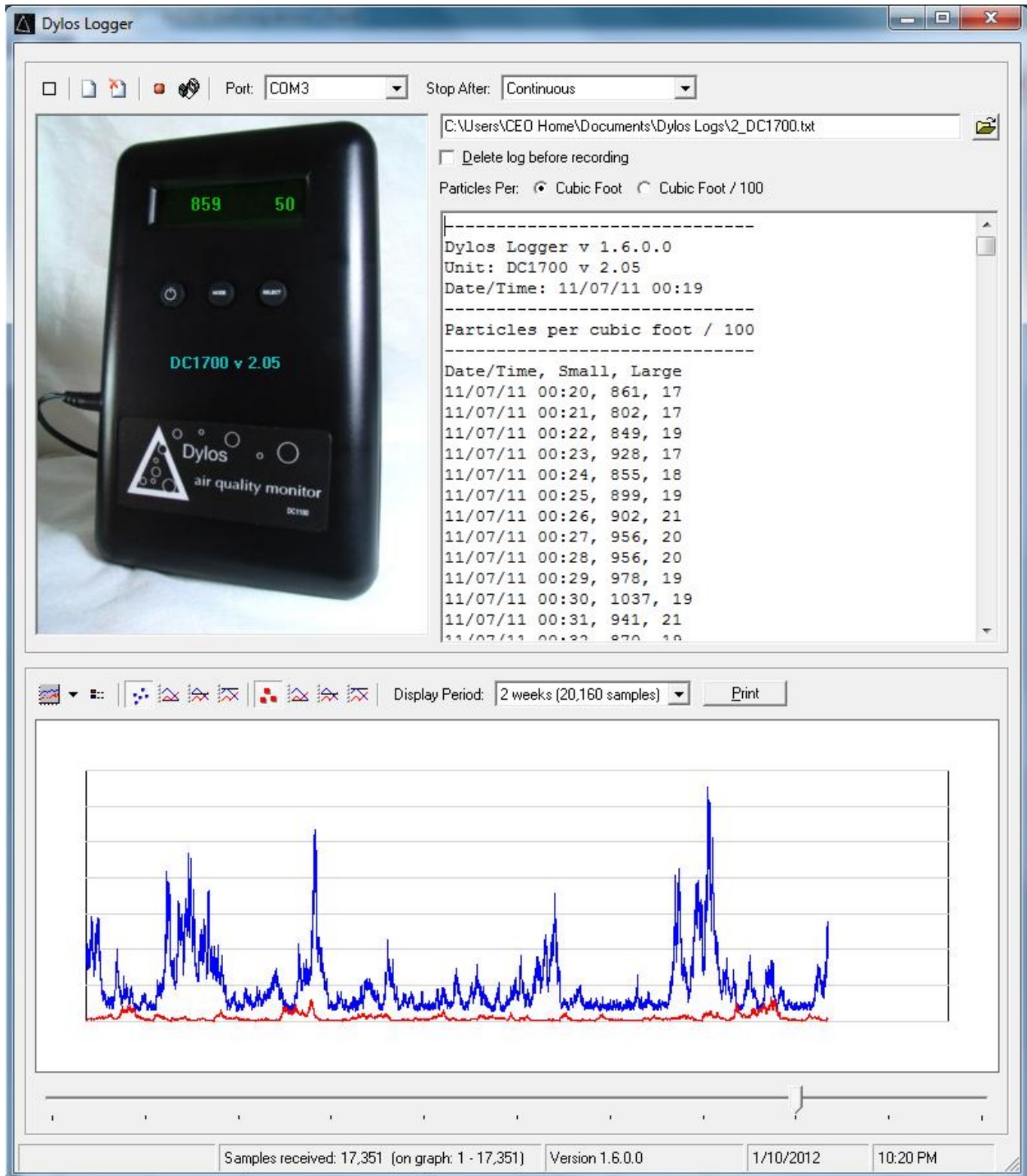


Displaying Saved Data from a Log File:

Log data (or DC1700 download data) which has been previously saved to a log file can be recalled and graphed using DylosLogger. **Note: DC1100 downloaded history data cannot be graphed.** Saved log files can be loaded by selecting desired file as described in the “Selecting a Log File” section. Also, if DylosLogger already has the desired log file selected at startup, then load the file by clicking the Load Log button.

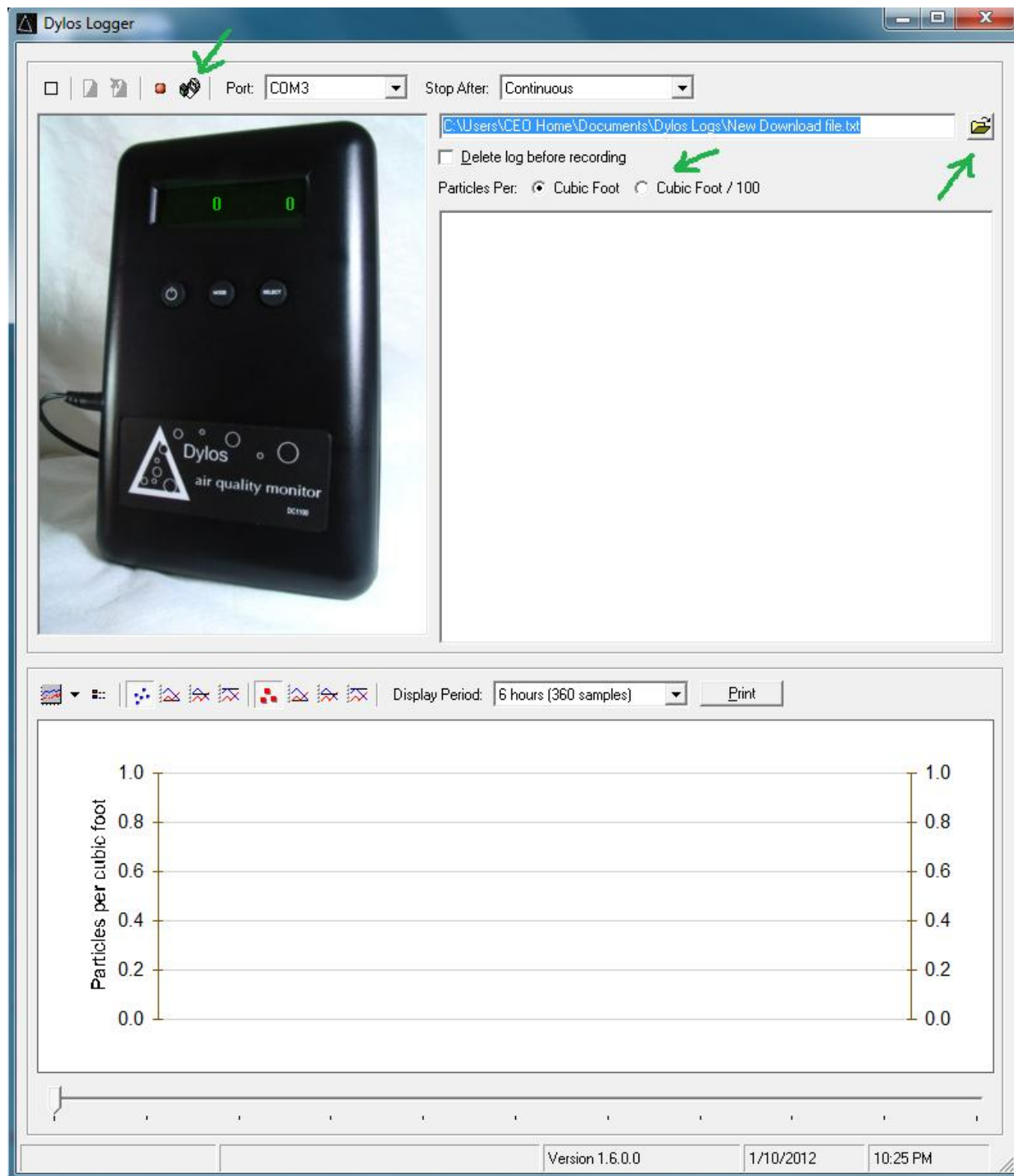


After the desired file has been selected, either by the file open menu or by clicking the Load Log button, a warning will be displayed and the customer will be prompted to confirm that they want to graph the data. After clicking “Yes” the log file data will be loaded and graphed. The following screenshot is of the included sample log file “2_DC1700.txt”.

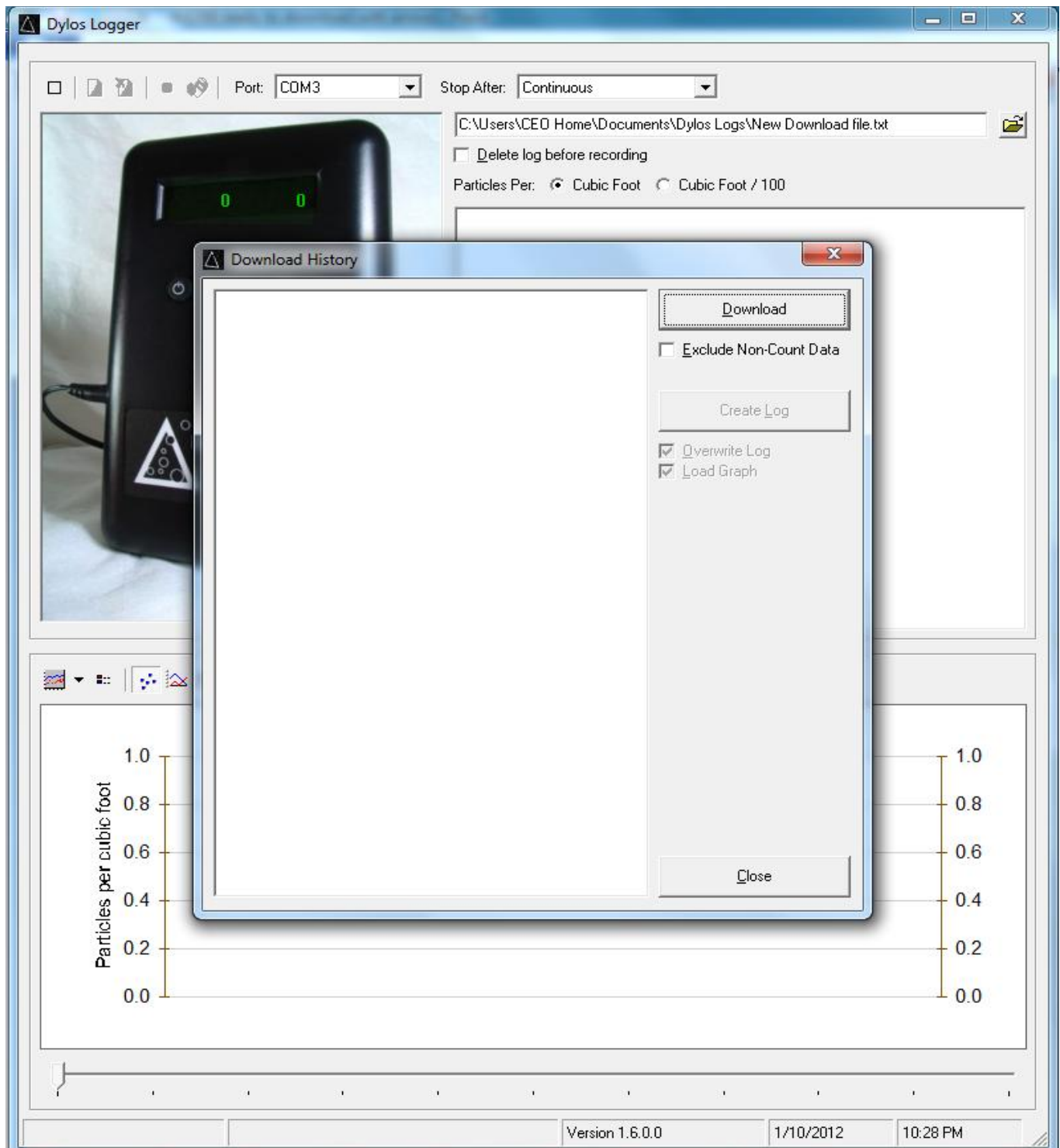


Downloading History:

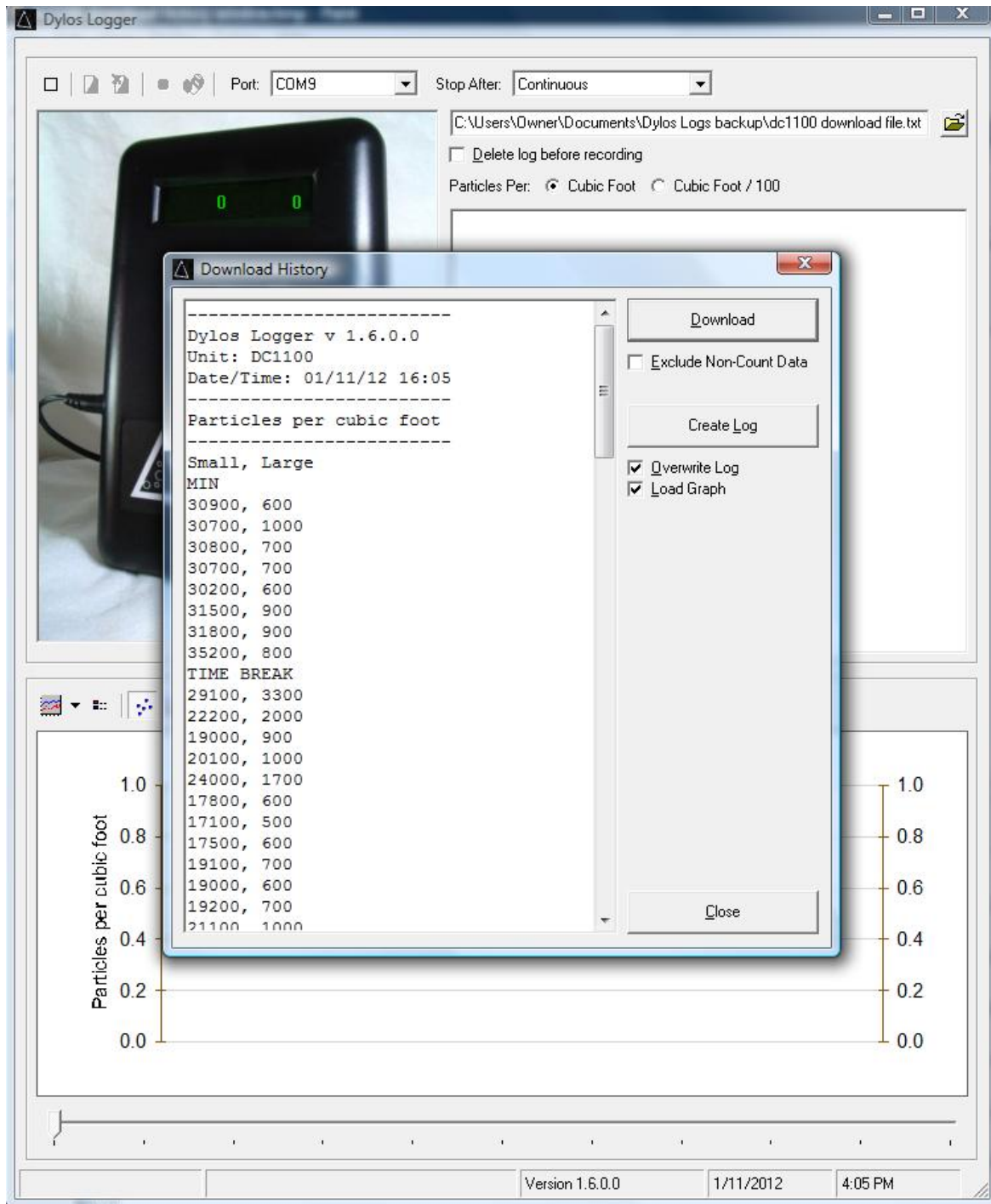
Once the correct COM port has been selected it is easy to download the internal history of the DC1100 or DC1700. First, make sure the desired file has been selected or created. Select the desired "Particles Per:" format. Then, click the Download History button. (**Note: On the DC1700-PM and most newer models the particle units and sizes are automatically loaded so the "Particles Per" buttons have no effect**) See highlights in the following screenshot.



After clicking the Download History button the download history window will open. This is the window which will temporarily hold the downloaded data. To initiate the download click the Download button in the Download History window. See screenshot below:



What happens next depends on whether you are downloading from a DC1100 or a DC1700. Remember that the DC1100 stores a limited amount of information and this data is not time stamped so that it cannot be graphed properly within DylosLogger. See screenshot below of a DC1100 download:



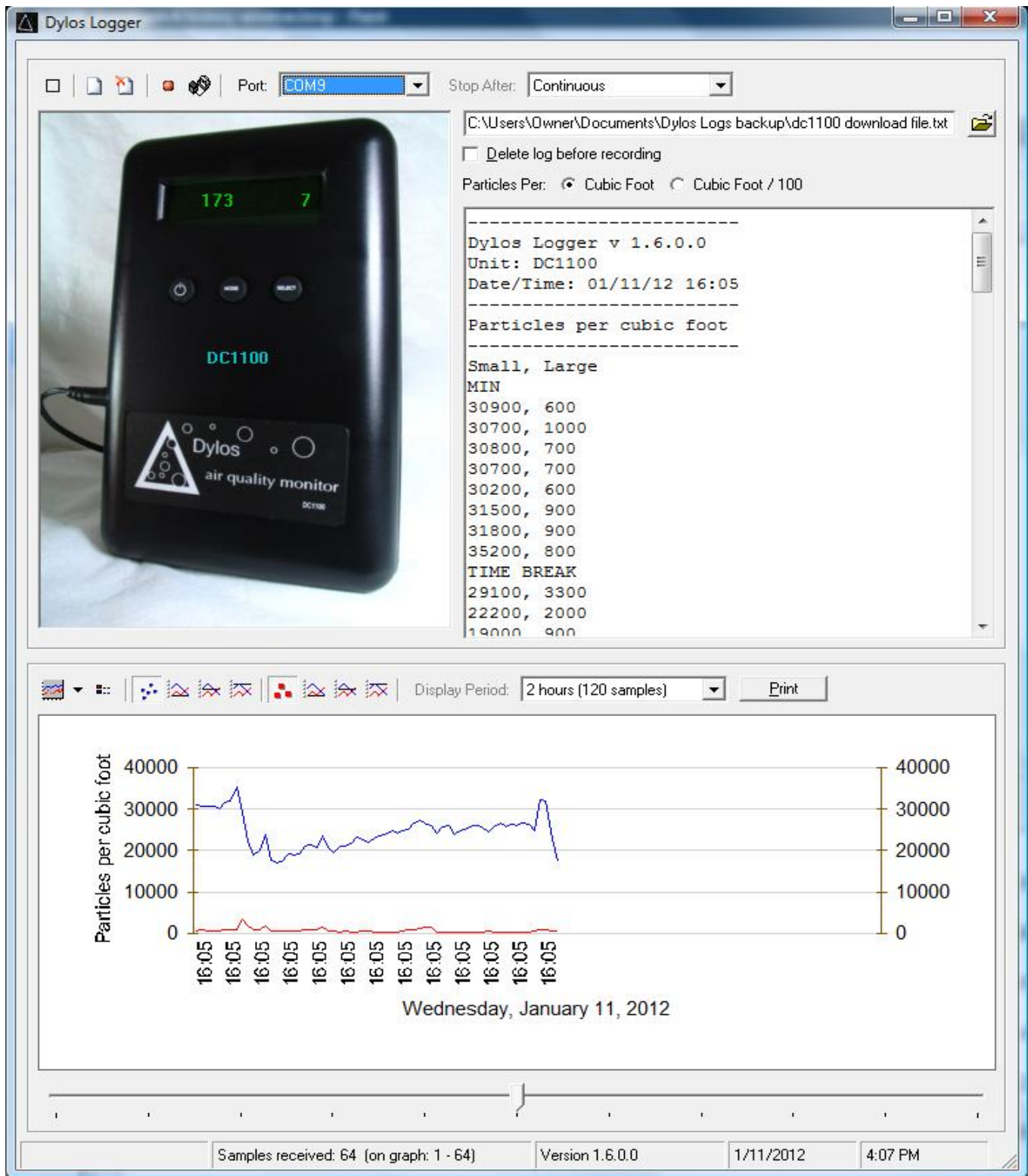
In this example, the Particles Per was set to “cubic foot” so that the data is displayed in particles per cubic foot format which is 100 times the numbers displayed on the LCD of the DC1100 itself. The software merely adds two additional zeroes to the end of the numbers received from the DC1100 in order to format the data into particles per cubic foot.

The data from the DC1100 is broken into three sections – minute history, hour history, and day history corresponding to the same data that can be accessed from the DC1100 front panel via the minute, hour, and day history modes respectively. The minute history is labeled MIN, the hour history HR, and the day history DAY. The following is an abbreviated example output:

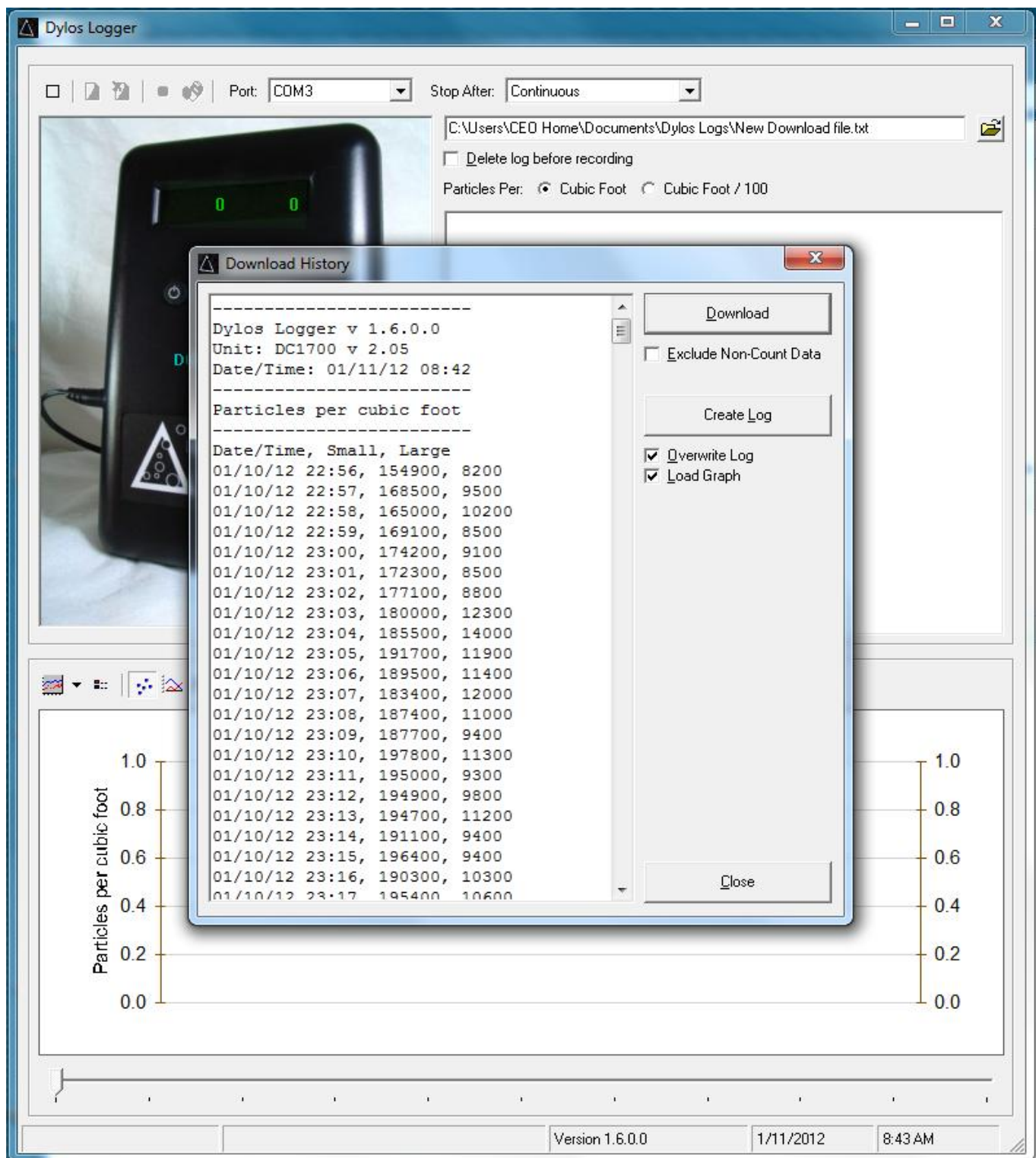
```
MIN
26500 2400
22200 1200
22700 1300
...
HR
20100 600
...
DAY
34400 1700
TIME BREAK
58800 6500
...
```

The most recent data is listed first so that 26500/2400 was the particle concentration one minute ago and 22200/1200 was the concentration two minutes ago, etc. Same is true for the other history sections. At some points in the history output the words “TIME BREAK” will likely occur. **A TIME BREAK is inserted into the history whenever the continuity of time is broken in the data history.** The DC1100 internal time clock only runs when the unit is plugged in to AC power. Thus, when the unit is unplugged and then plugged in again it loses track of the time relationship between any new data stored and old data. For example, in the above example the DAY history of 34400/1700 is known to be the sample stored for the previous day, however, the 58800/6500 data could have been two days ago or 2 months ago depending on how long the unit was unplugged.

You now have the option to view the history within the window or store it to the Log file. You also have the options to overwrite the existing data in the log file and to graph the data in the graph window. As stated before, the data lacks the proper time stamping and format to graph properly, but nevertheless, some users might find graphing useful. The following screenshot shows how the download in the example will graph:

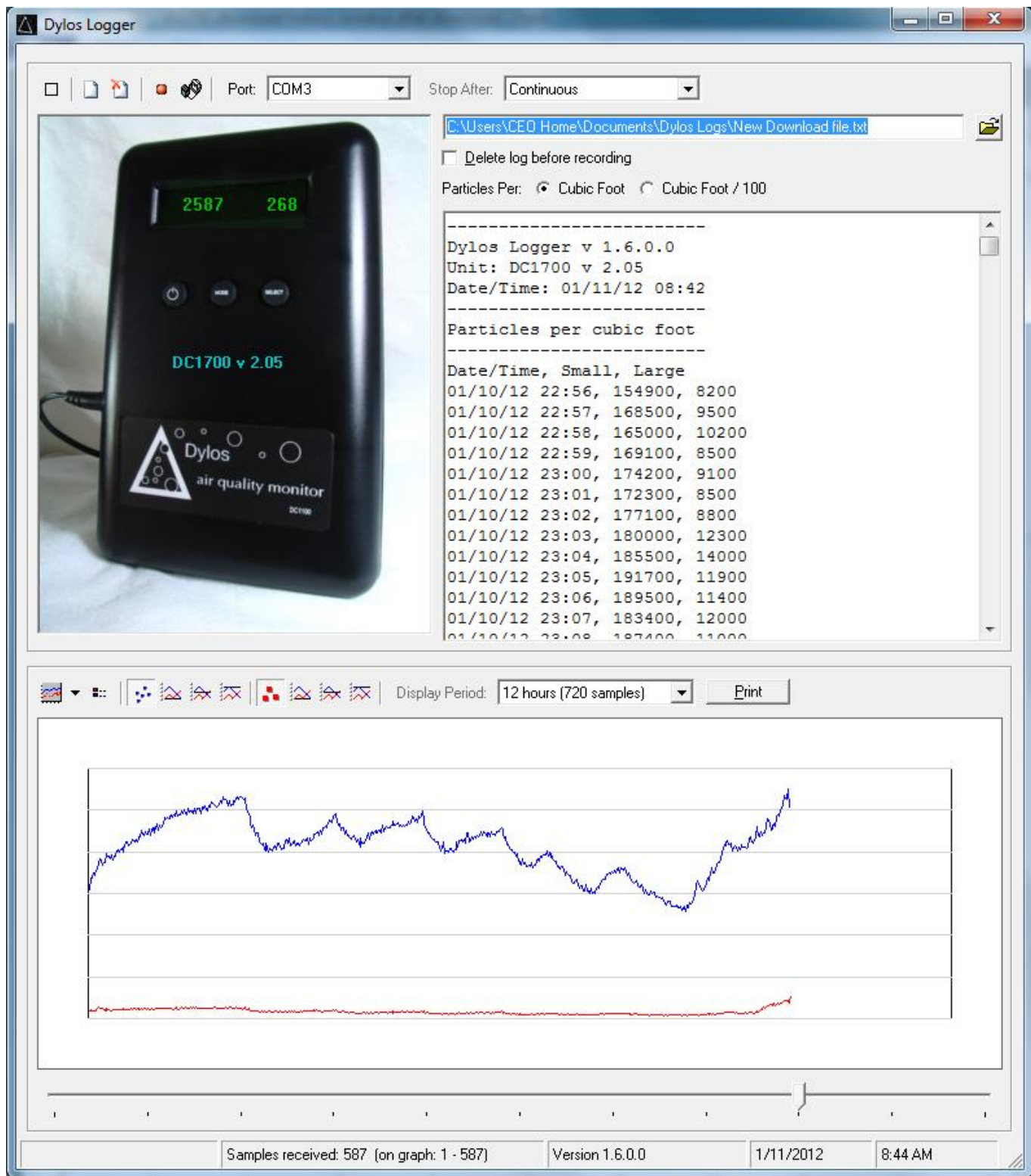


If the user is downloading history from the DC1700 then much more information will appear. The DC1700 can hold more than a week of time stamped minute by minute data. A download can take several minutes to complete due to the amount of data. When saved to a log file this file can be loaded into Excel, or other spreadsheet programs, for analysis. **Note: For the DC1700-PM the data can be downloaded in either mass concentration (PM2.5/PM10 ug/m3) or particle concentration (>0.5um,>2.5um) depending the state of the DC1700-PM.** The Download History window will appear as follows after a DC1700 download:

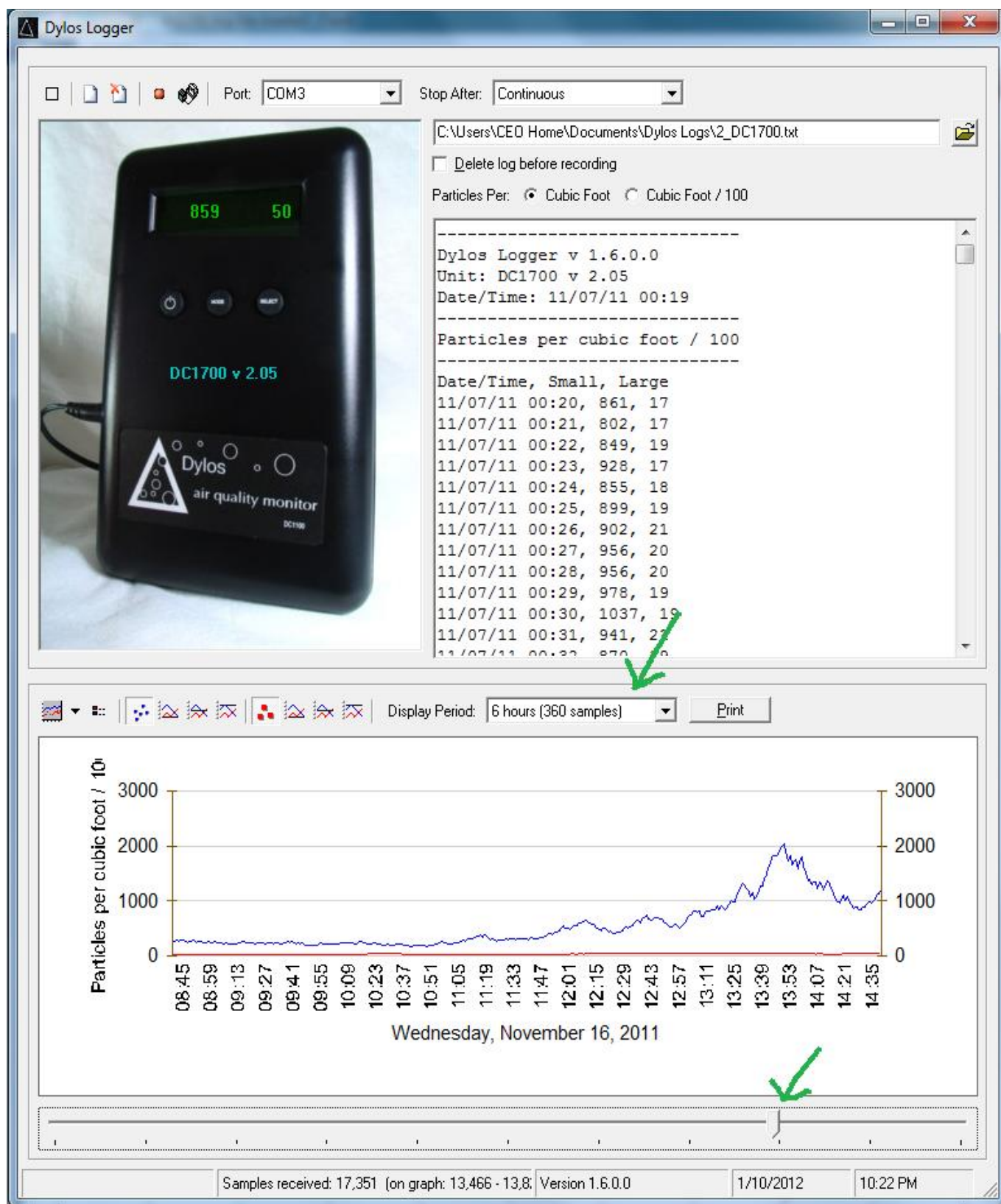


Note: On some newer units, such as the DC1700-PM, the particle units and sizes will be automatically set so the “Particles Per” buttons have no effect. In addition, the particle sizes will not read “Small” or “Large,” but will be set to the actual calibrated sizes for the unit..

Then, after Create Log has been clicked the data will appear in the graph window and be saved to the log file. See the screenshot on the following page:

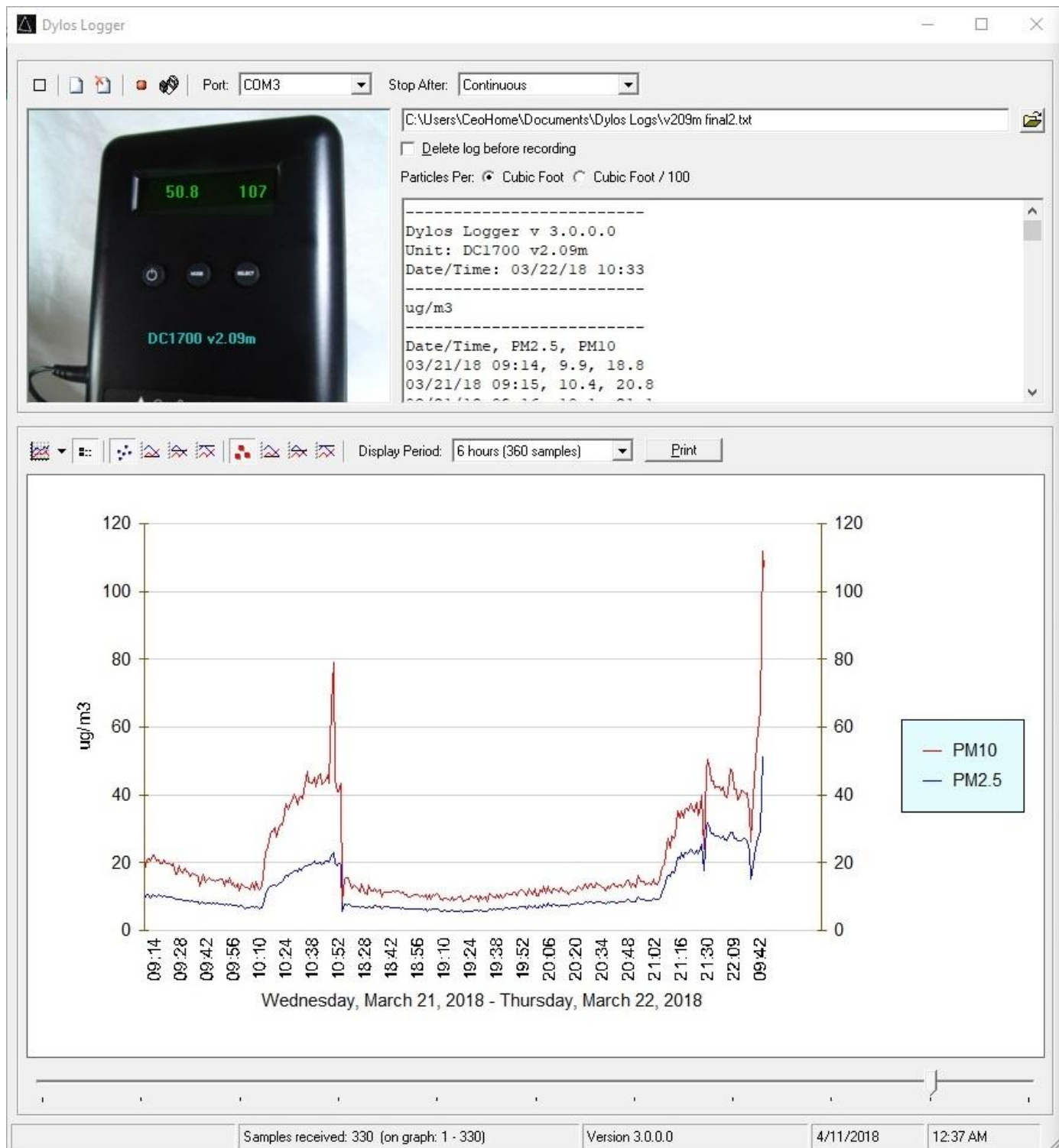


Changing the graph window size and format will help create the best display. Also, maximizing the DylosLogger program window will allow the DylosLogger to create the best appearing graph. It will also be useful, especially when there is much data downloaded, to scroll through the data and change the Display Period size. See the arrows in the following screenshot for these controls and the resulting display obtainable:

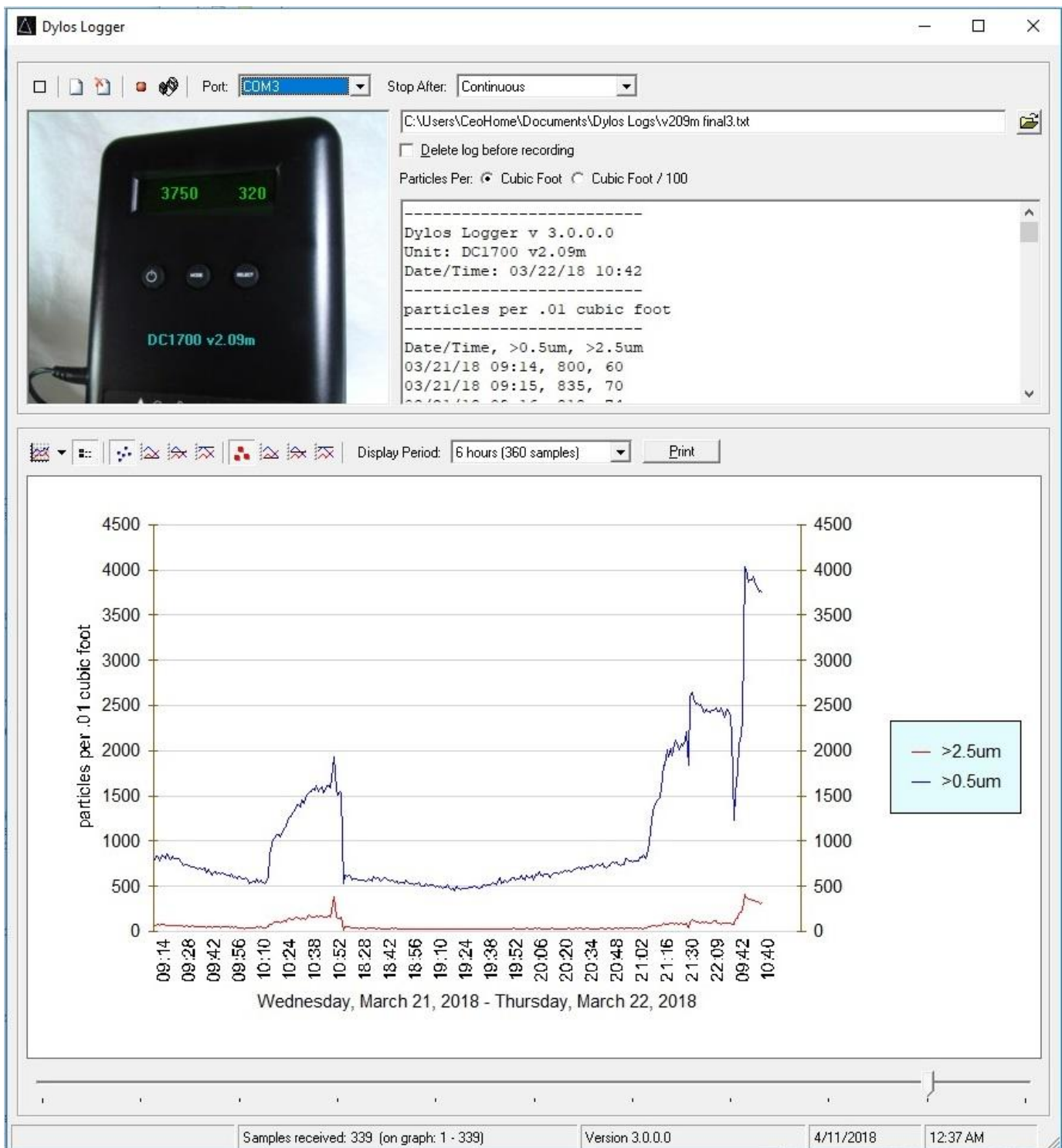


Using the Display Period and scroll controls will allow the user to look in detail at any period of time. **Note: if the DC1700 contains multiple time blocks of samples, the DylosLogger will attempt to graph them, but the best results are obtained when the DC1700 internal memory has been cleared prior to a sample run so that all data is in one continuous time block.**

For users of the DC1700-PM it might be interesting for them to view the stored data in both particle concentration and particle mass format for comparison. To do this, they simply need to configure the DC1700-PM into the desired mode using the SELECT button on the front panel and then download the data. In the first screenshot the data is downloaded while the DC1700-PM is in particle mass mode:



The very same DC1700-PM data is now downloaded with the DC1700-PM switched to concentration mode. Notice how very small changes in the $>2.5\mu\text{m}$ concentration can correspond to large changes in the PM10 (see time 10:52). This is because the $>2.5\mu\text{m}$ particles are so much heavier than the smaller $>0.5\mu\text{m}$ particles and so will have a larger impact on the total mass (PM10). See below:



Printing Graphs:

The DylosLogger (ver 1.6+) supports direct printing of the data displayed in the graph window. Since the printout will reflect what the user actually sees displayed in the graph window, the best looking graphs will be obtained if the DylosLogger window is maximized in size and the graph area is also maximized using the mouse cursor as described previously. Once the screen appears as desired click the Print button. The usual Windows printer window will appear and the user can select and print the data. See the Print button highlighted in the following screenshot:

