

PARTICLE VIEW OPERATION MANUAL



Met One Instruments, Inc.

1600 NW Washington Blvd.

Grants Pass, OR 97526

Telephone: (541) 471-7111

Facsimile: (541) 471-7116

www.metone.com

Particle View Operation Manual - © Copyright 2014 Met One Instruments, Inc. All Rights Reserved worldwide.
No part of this publication may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any other language in any form without the express written permission of Met One Instruments, Inc.

Technical Support

Technical Service representatives are available during normal business hours of 7:00 a.m. to 4:00 p.m. Pacific Time, Monday through Friday. In addition, technical information and service bulletins are available from our website. Please contact us at the phone number or email address below to obtain a Return Authorization (RA) number before sending any equipment back to the factory.

Phone: **(541) 471-7111**

Fax: (541) 471-7116

E-Mail: service@metone.com

Web: www.metone.com

Address: Technical Services Department
Met One Instruments, Inc.
1600 NW Washington Blvd.
Grants Pass, OR 97526

Table of Contents

Overview	5
System Requirements.....	5
1 Installation	6
1.1 Getting Started	6
1.2 SQL Server 2008 Express Installation	6
1.3 Particle View Installation	7
1.4 Configuring Particle View for Multiple Windows Users	9
1.4.1 Granting SQL Access Using a Known Domain Login	9
1.4.2 Granting SQL Access Using a List of Domain Users	10
1.4.3 Revoking SQL Database Access	11
2 Logging In.....	12
2.1 The Login Interface	12
2.2 Profiles	13
2.2.1 The Administrator Profile	13
2.2.2 Other User Profiles.....	13
2.2.3 Profile Management	13
2.2.3.1 Editing the Company Profile.....	14
2.2.3.2 Managing User Profiles.....	15
2.2.3.3 Managing Windows Login Profiles on the SQL Database Tab	16
3 Adding and Removing Devices.....	17
3.1 Automatically Adding a Device	17
3.2 Manually Adding a Device	19
3.3 Removing a Device	21
4 Data Retrieval	22
5 Viewing Data.....	23
5.1 Selecting the Data Set Date Range	23
5.2 Filtering and Sorting the Data Set	24
5.2.1 The Right Click Menu	25
5.3 Outliers.....	26
5.3.1 Marking and Unmarking Outliers	26
5.3.2 Outlier Options	27
5.4 Adding Notes.....	27
5.5 Changing Units.....	27
6 Printing and Exporting Reports	28

7	Viewing and Printing Charts	29
8	Setting and Viewing Alarms	30
8.1	Creating a New Alarm	30
8.2	Deleting an Alarm.....	31
8.3	Editing the Alarm Default Settings.....	31
8.4	Viewing Alarms	31
Appendix A	Terminal Tab.....	32
Appendix B	Sample Report.....	33
Appendix C	Sample Report with Outlier Indication	34

Overview

Particle View software includes all of the functions required for the downloading, viewing of data, and production of both tabular and graphic reports needed by most users of an air quality or other environmental monitoring system. It is designed for use with the Met One Instruments, Inc. line of hand held and bench mounted particulate counting products and is compatible with the following models: GT-521, GT-526, GT-526S, 804, BT-637, and BT-637S.

The software provides an easy to use interface for downloading data from each of the various products. It then allows you to archive that data, generate and print reports and charts, and even set independent alarm conditions.

Archived data can be reviewed in a dynamic tabular format, or as typical line charts displaying either a single or multiple parameters. Users can even export data in standard comma separated (*.csv) format.

Just follow the simple onscreen installation instructions and you will be ready to download your collected data in just a few minutes!

System Requirements

Disk Space:	60MB for Particle View 1GB for SQL Server Express 2008
Operating Systems:	Windows XP Service Pack 3 Windows Vista (32-bit and 64-bit systems) Windows 7 (32-bit and 64-bit systems) Windows 10 (32-bit and 64-bit systems)

Minimum System Requirements:

Processor Speed:	1GHz or faster (1.4GHz or faster for 64-bit systems)
Memory:	512MB minimum

Recommended System Requirements:

Processor Speed:	2GHz or faster for 32-bit and 64-bit systems
Memory:	1GB or more

1 Installation

The necessary installation files are supplied on a USB flash drive.

ATTENTION:

USB drivers are necessary to communicate with all Met One Instruments, Inc. devices via the USB port of your computer.

Visit this link to download the USB drivers: <https://metone.com/software/>.

These drivers must be installed *before* connecting the device to the USB port on your computer. If the USB drivers are not installed first, Windows may install generic drivers that are not compatible with the instrument. If you already have them installed on your computer, you do not need to install them again.

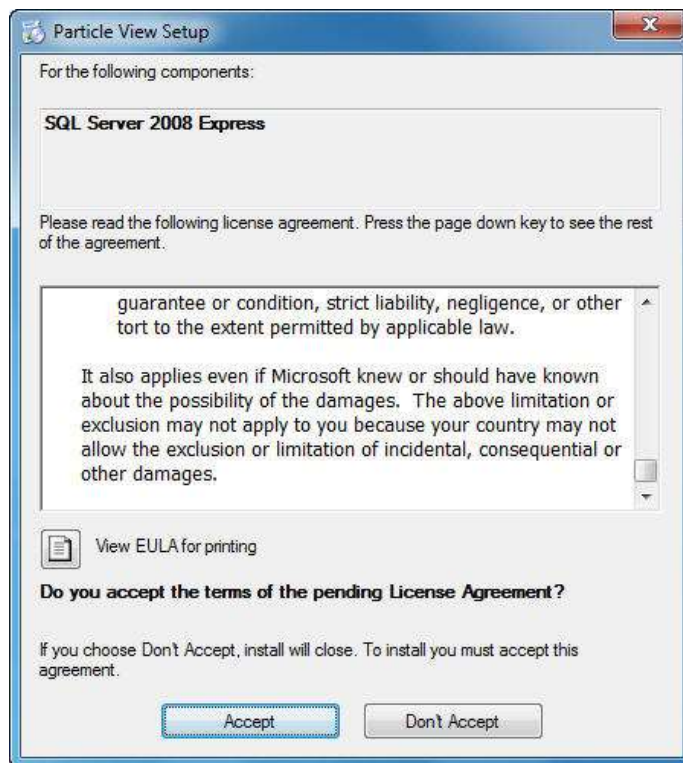
These drivers may be installed either before or after the installation of Air Plus.

1.1 Getting Started

Insert the USB flash drive into your computer. Open the “Software” folder, launch the file labeled “setup.exe”, and follow the onscreen prompts.

1.2 SQL Server 2008 Express Installation

Particle View uses SQL Server 2008 Express to store all data downloaded from the particle counters. The installation process will search your computer to verify you have it loaded. If not, the Particle View installer will install it before installing Particle View.

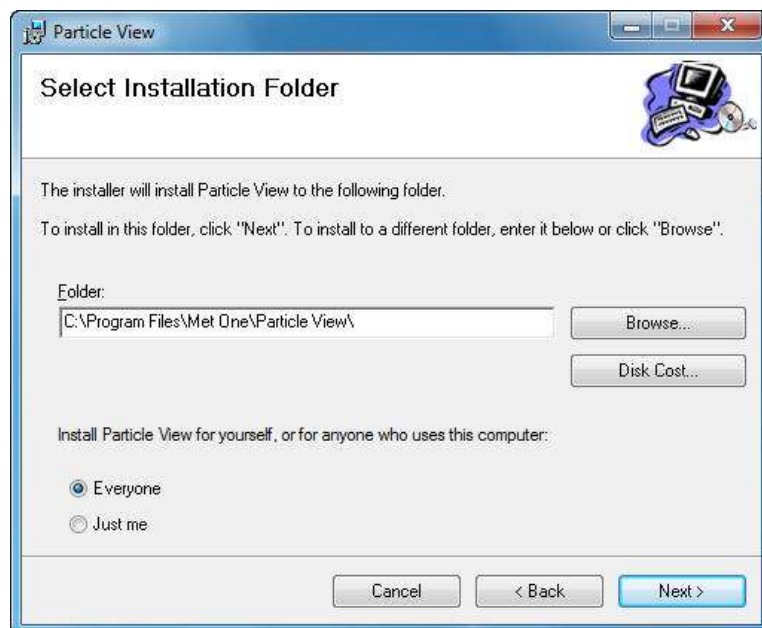


It will take a few minutes for SQL Server 2008 Express to install. Once completed, the installation process of Particle View will continue.

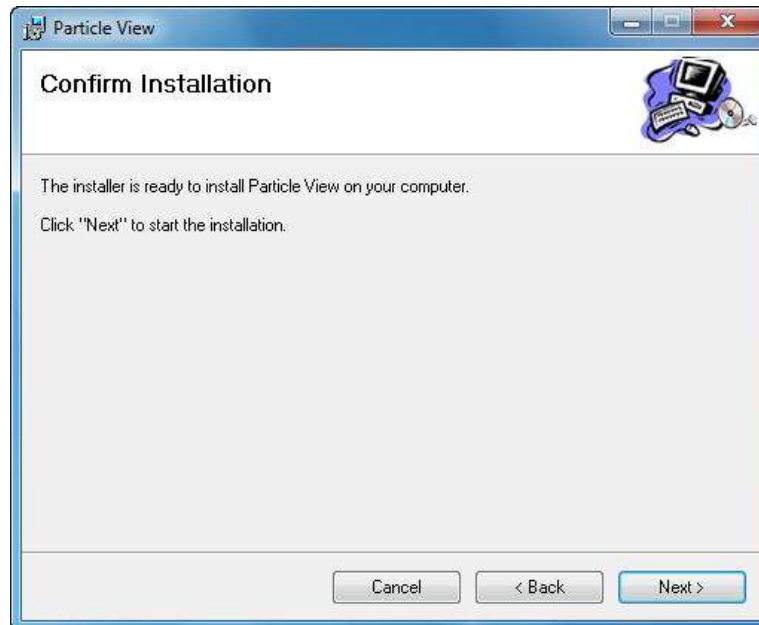
1.3 Particle View Installation



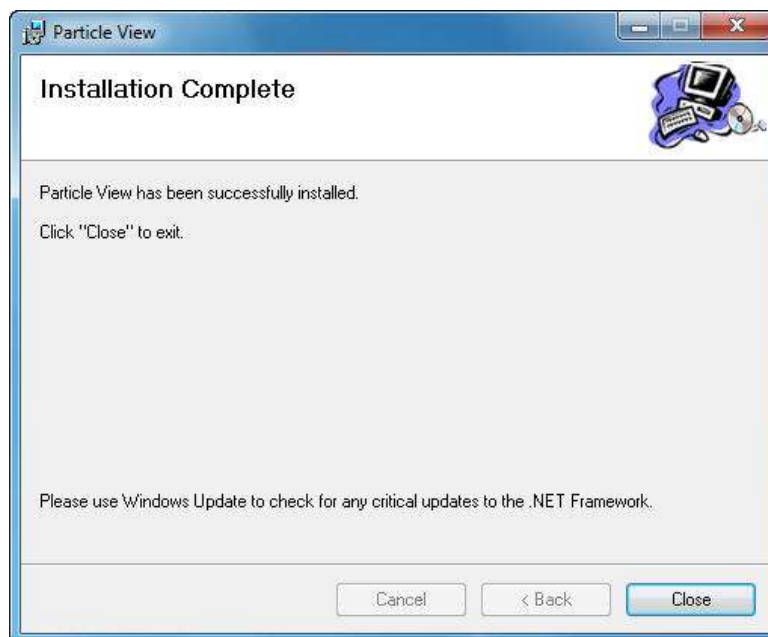
Determine where the program files will be loaded and decide whether all users will have access to Particle View or just the current computer user.



You will then need to confirm that you wish to install Particle View.



Once confirmed, Particle View will be installed on your computer with the options you have chosen. After the installation has finished, the installation wizard will confirm the process was successful.



Particle View is now installed. If needed, be sure to install the USB drivers at this time.

IMPORTANT: When installation is complete, it is important to run Windows Update and download all critical updates.

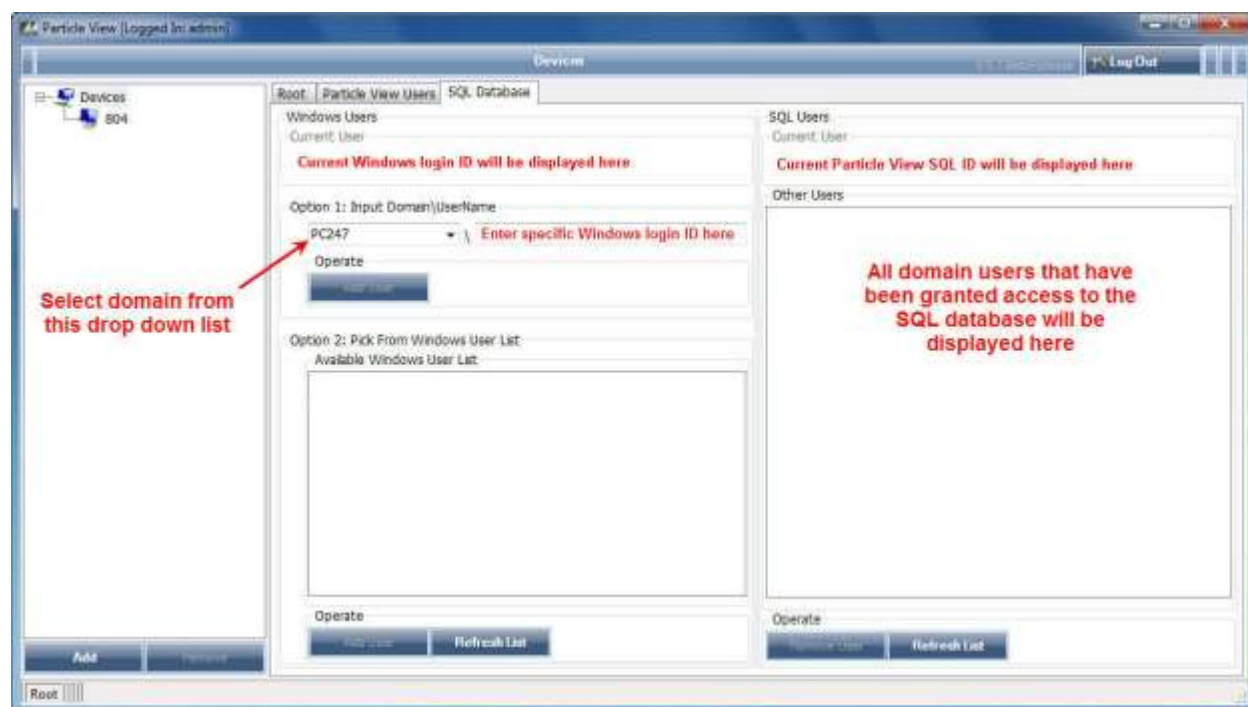
1.4 Configuring Particle View for Multiple Windows Users

If you are installing and using Particle View only on a single Windows User Login, the installation is now complete. Please proceed to Section 2.

However, if one or more Windows users in addition to the user that has installed Particle View will be using the software, each Windows Login ID will need to be granted access to the SQL Server database individually. SQL database access privileges can only be granted and removed using the administrator profile (see Section 2 for details on the administrator profile). The default administrator profile password is *admin*.

To configure Windows user SQL database access, log in to Particle View as administrator, click on Devices in the far left window, and then select the SQL Database tab. On the left hand side of the tab you will be able to see and add Windows domain users. On the right hand side of the tab, you will be able to see and remove Windows users that have been given access to the SQL database.

1.4.1 Granting SQL Access Using a Known Domain Login

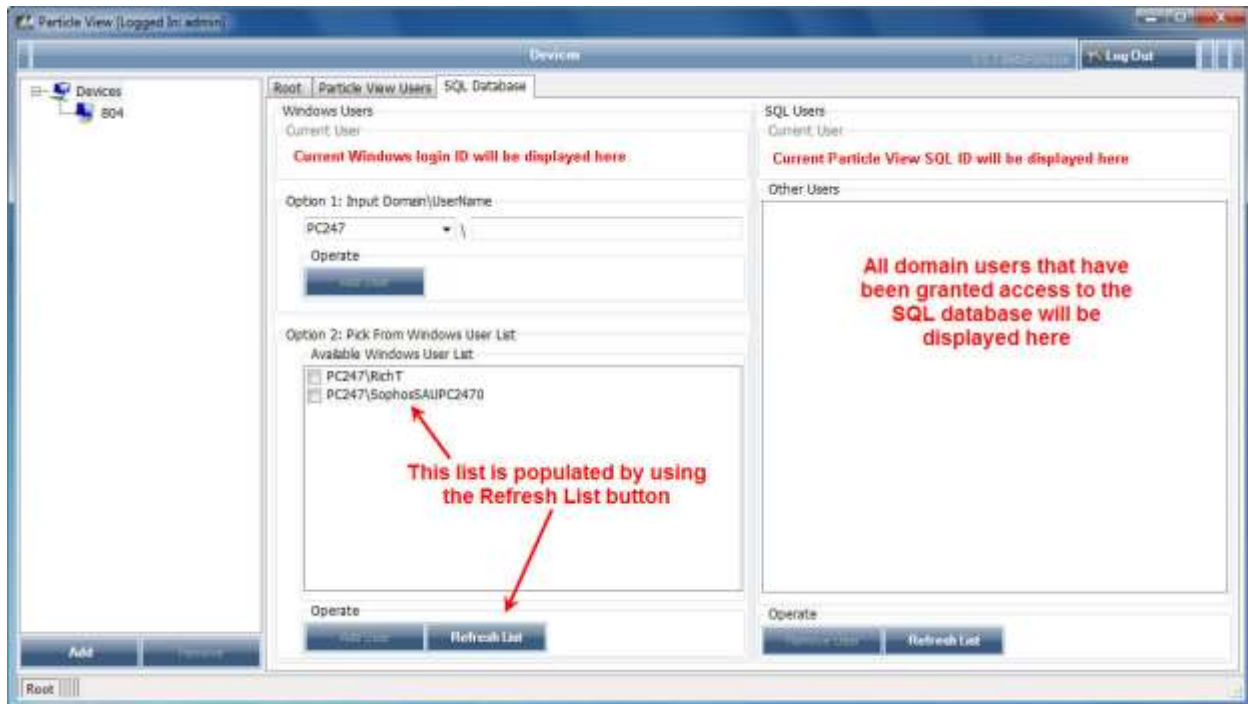


To add specific users, in the Option 1 section select the domain that the Windows login will use and then enter the login name in the space to the right. The login name must be entered exactly as it appears in the domain list.

Press the **Add User** button and Particle View will locate that user ID and add it to the access list on the far right. If the name does not match exactly what is in the domain list, Particle View will not find it and it will not be added.

The user name must exist in order to add it to the list. You cannot add a Windows user in Particle View if it has not already been added to the domain.

1.4.2 Granting SQL Access Using a List of Domain Users

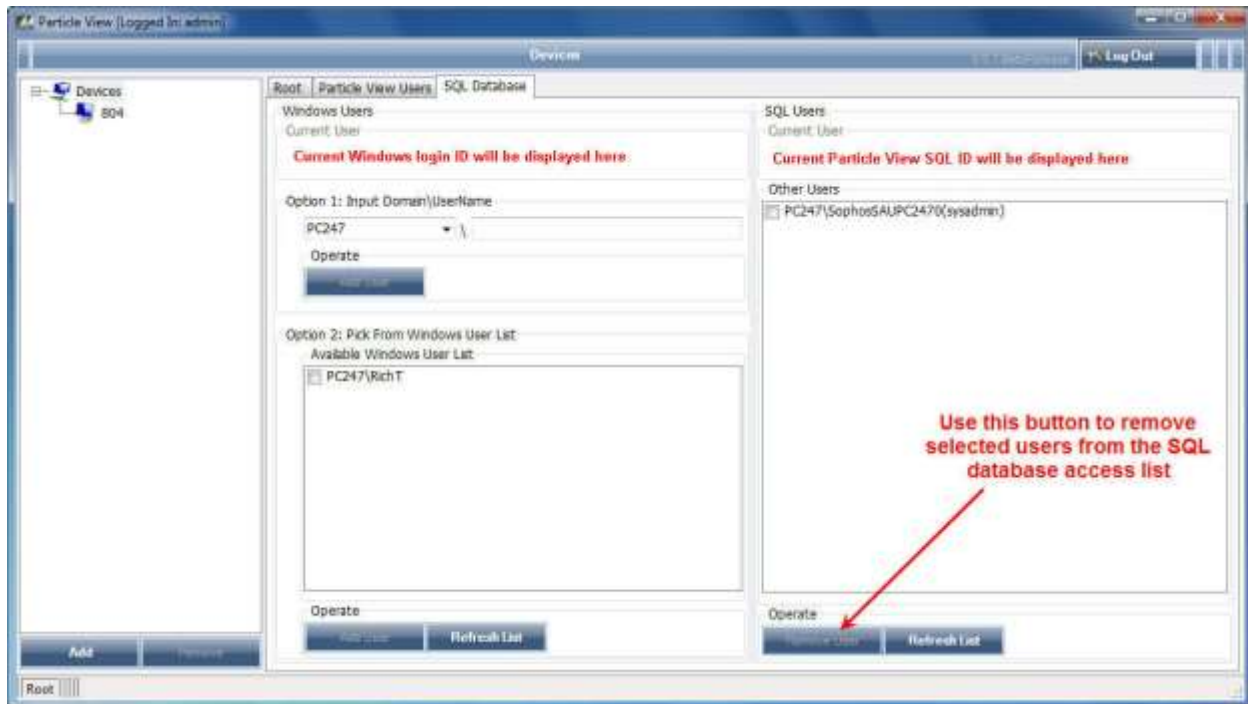


To see all domain users, press the **Refresh List** button. You will see all domains to which the computer belongs and all domain users. If you have a large network, this list may take a few minutes to populate.

Using the checkboxes, select all users that will be using Particle View and press the **Add User** button. Particle View will add all of them to the access list on the far right.

1.4.3 Revoking SQL Database Access

Sometimes a Windows user will need to be removed from the SQL database access list. You will use the SQL Database tab for this operation.




If the “Other Users” list on the far right is not populated, just press the **Refresh List** button located beneath it. Using the checkboxes, select all users that need to be removed and then press the **Remove Users** button. Particle View will delete them from the access list.

2 Logging In

2.1 The Login Interface

When starting the Particle View software, the login menu will automatically pop up. The default administrator profile password is *admin*.



If you later log out (to change users, for example), press the  button in the upper right corner to access the login menu.



Select the appropriate profile from the dropdown list, enter the associated password, and press OK. If you need to see the password, check the “Show Password” checkbox and instead of the dots you see above, you will see the actual letters displayed in the field as you type them.

2.2 Profiles

Particle View provides the ability to have multiple login profiles. This allows users to have a single master administration profile and as many user logins as necessary. This eliminates the need for password sharing as each login can be provided with a unique password. If Particle View has been properly configured, all users will have access to the same database, regardless of whether they use the same Windows Login. See section 1.5 for multiple user configuration details.

2.2.1 The Administrator Profile

Upon installation, there will be only one profile to select, the administrator. This profile is unique in that it is the only one that has access to all of the features of the software package. In addition to the standard features accessible by all users, the administrator can also add and remove additional Windows Login Users and Particle View login profiles, edit all user profiles (including changing passwords), configure alarm reporting formats, and access the terminal screen.

The default administrator profile password is *admin*. It is recommended that this password be changed to prevent unauthorized access. Careful consideration should be given to those users granted access to the administrator profile.


2.2.2 Other User Profiles

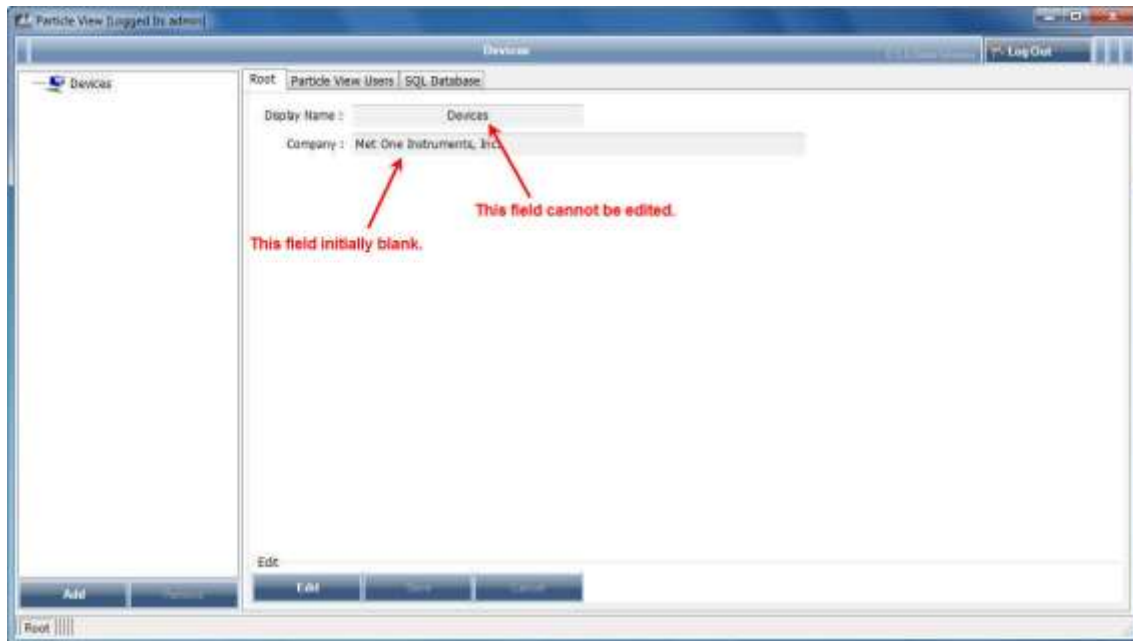
All additional profiles created for users by the administrator will have the ability to add devices, retrieve data, sort data, generate reports and graphs, add and edit alarm conditions, and edit their personal login description and password.

2.2.3 Profile Management

By selecting the “Devices” on the tree to the left, you will be able to edit the company name, manage the user profiles, and manage Windows Login users. Note that only the administrator profile can add, remove, or edit all profiles and Windows Login users. Individual users may edit their own Particle View profile only.

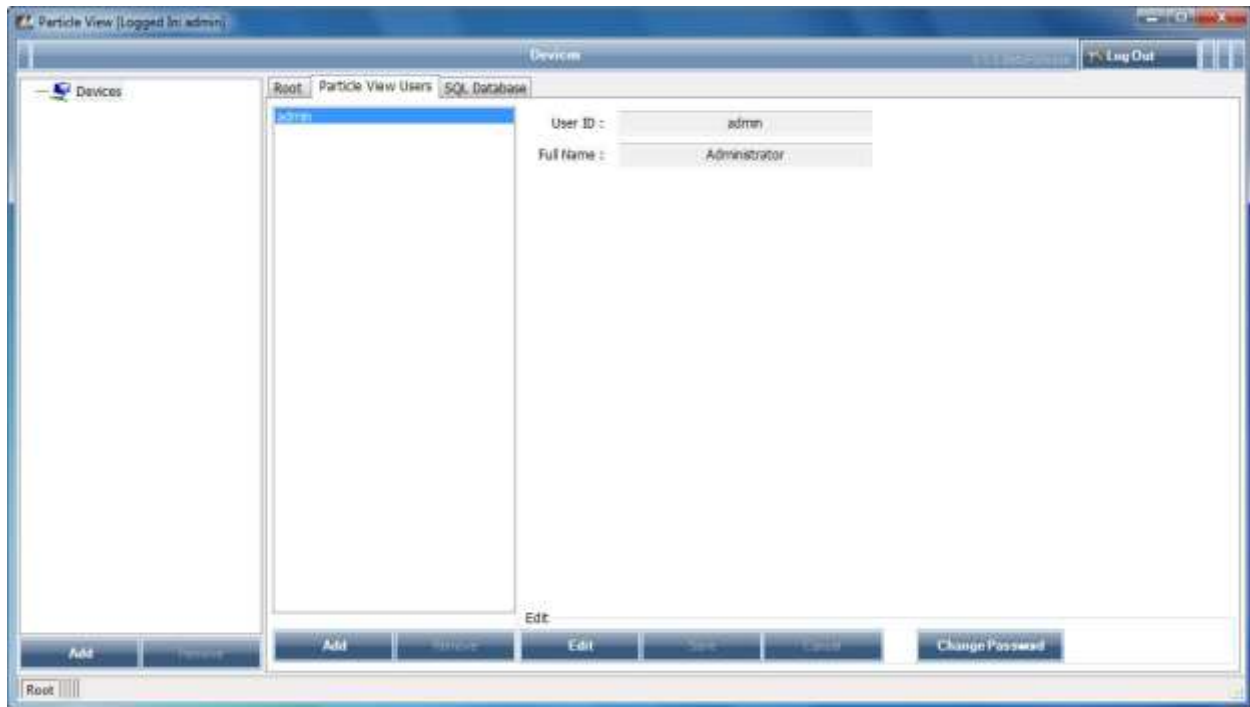
2.2.3.1 Editing the Company Profile


The Root tab will allow you to edit the company name. The name entered here will appear at the top of all reports and graphs that are generated. Press the  button near the bottom of the window and you can change (or enter new) details on the “Company” line. The “Display Name” line cannot be changed.



2.2.3.2 Managing User Profiles

Selecting the “Particle View Users” tab will give access to the interface for adding and editing user profiles. Note that only the administrator profile can add, remove, or edit all profiles. Individual users may edit their own Particle View profile only.



To add additional users, press the  button near the bottom of the window and the following Create New Account interface will appear.

A 'Create New Account' dialog box with a title bar and a close button. It contains three text input fields: 'User ID :', 'Password :', and 'Retype Password :'. The 'User ID' field contains 'User101'. The 'Password' and 'Retype Password' fields contain masked characters (dots). A 'Show Password' checkbox is located below the password fields. To the right of the 'Retype Password' field, the word 'Matched' is displayed in blue. At the bottom right, there are 'OK' and 'Cancel' buttons.

The User ID is the profile name that will appear on the login list. Once entered, you may edit the “Full Name” field if you would like to add more information. If you would like to see the passwords, check the “Show Password” checkbox and instead of the dots you see above, you will see the actual letters displayed in the fields as you type them.


2.2.3.3 Managing Windows Login Profiles on the SQL Database Tab

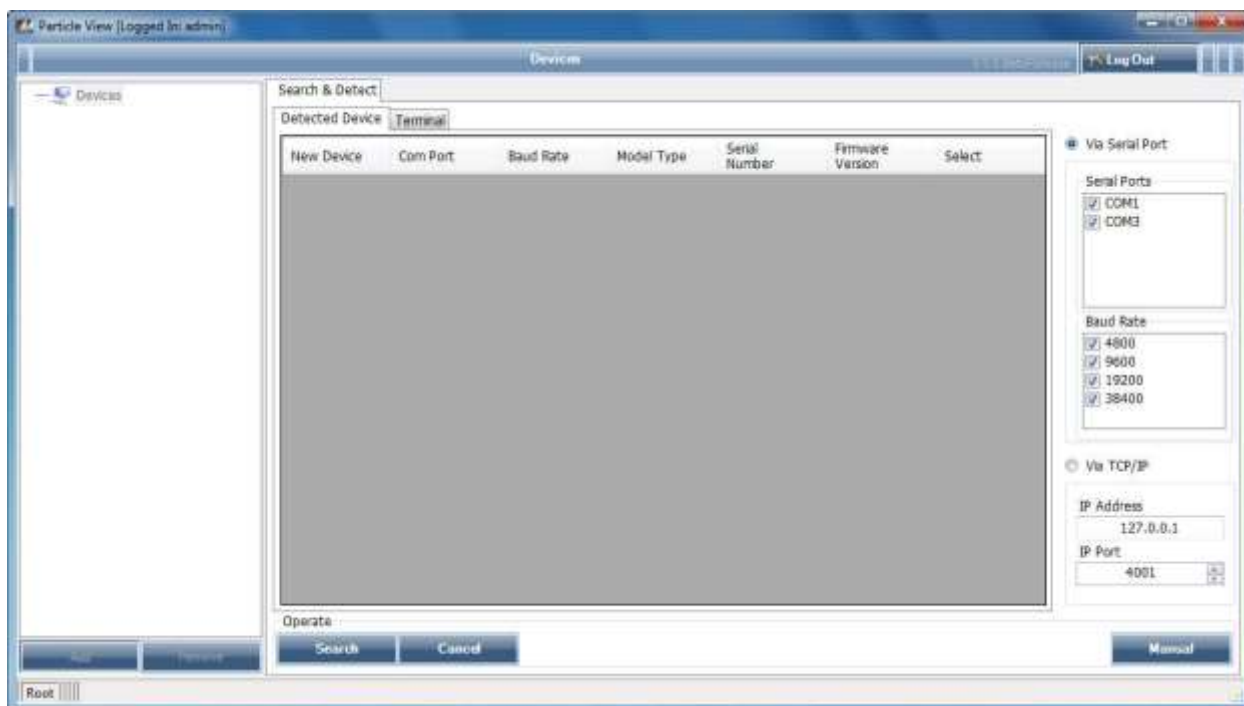
See section 1.5 *Configuring Particle View for Multiple Windows Users* for details.

3 Adding and Removing Devices





To retrieve and store data from our particle counters, they must first be added to the Device Tree. This can be done either automatically or manually. The preferred, and easiest, method is to use the automatic search method.

3.1 Automatically Adding a Device

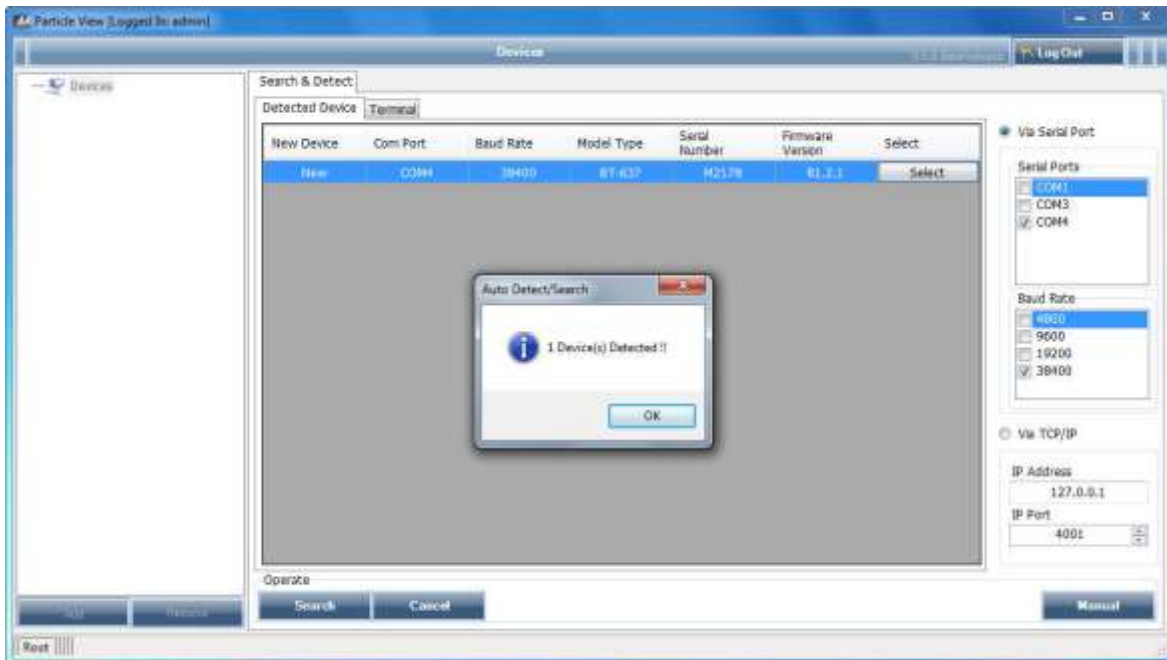
Select Devices at the top of the Device Tree on the left side of the software window. This will allow you to press the  button located at the bottom of the Device Tree window which provides access to the Search & Detect interface.



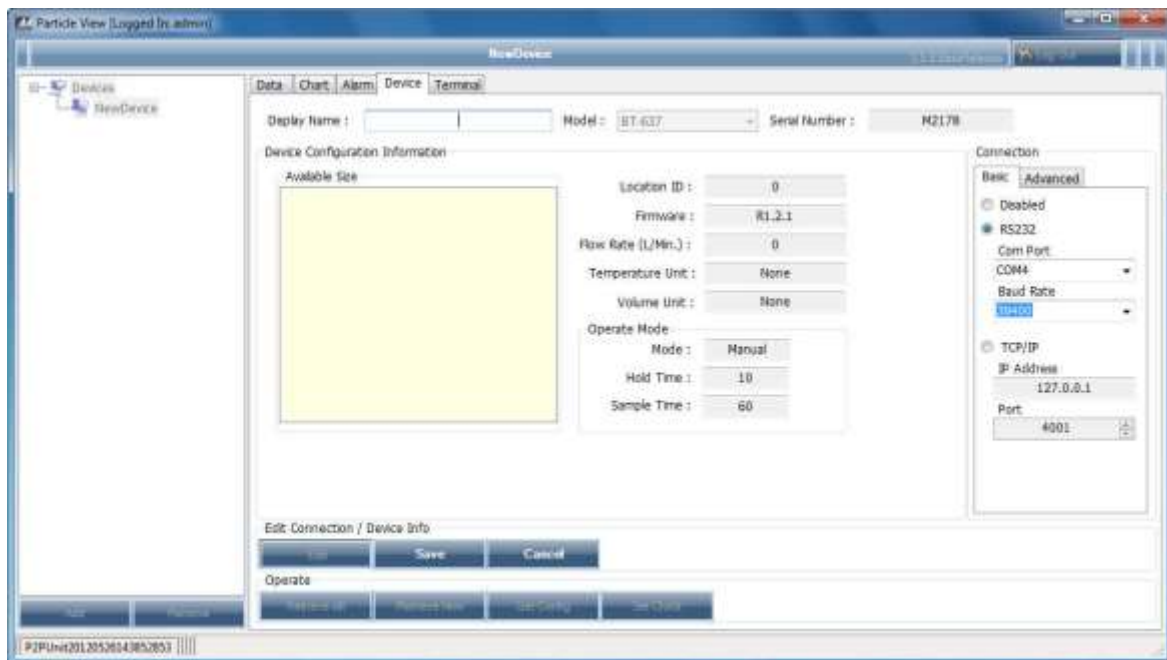
If you know which COM port and/or baud rate your device is using, you may narrow down the search by unchecking the items you know will not be needed on the right hand side. If you are unsure, just leave all items checked and the software will search each one attempting to locate a Met One Instruments, Inc. particle counter.

Press the  button to begin searching for devices. Particle View will now begin attempting to communicate on every Serial Port selected at each Baud Rate selected. Once initiated, you may stop searching at any time by pressing the  button. The  button replaces the  button and is only available while the software is searching for a device.

If you wish to exit the Search & Detect interface completely, press the  button.



Once the search is complete, the list of all devices found will be shown. Select the device you wish to add by pressing the “Select” button at the far right hand side and you will enter the New Device interface.




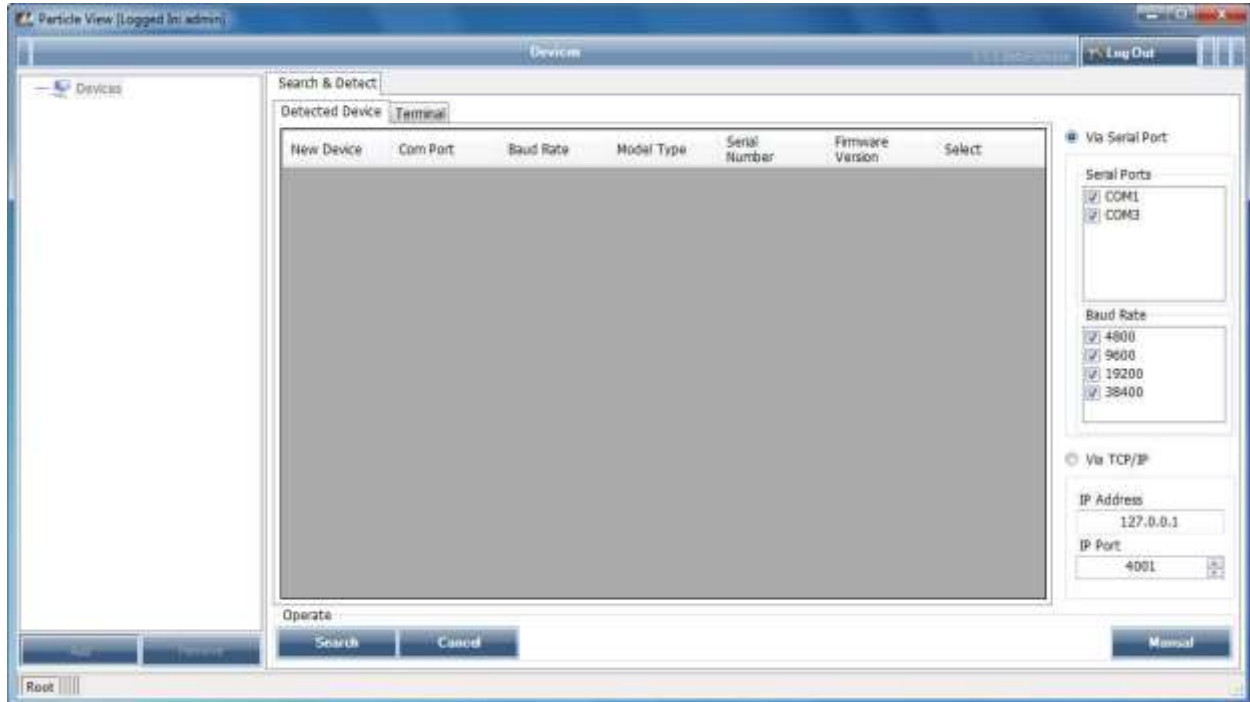
Enter a Display Name (this will be how the device is identified in the Device Tree) and, if you are using a GT-526 or GT-521, you may also add the Serial Number at this time. All other devices will automatically add the serial number for you.


The model and connection parameters will already be set for you. There should be no need to edit them at this time.

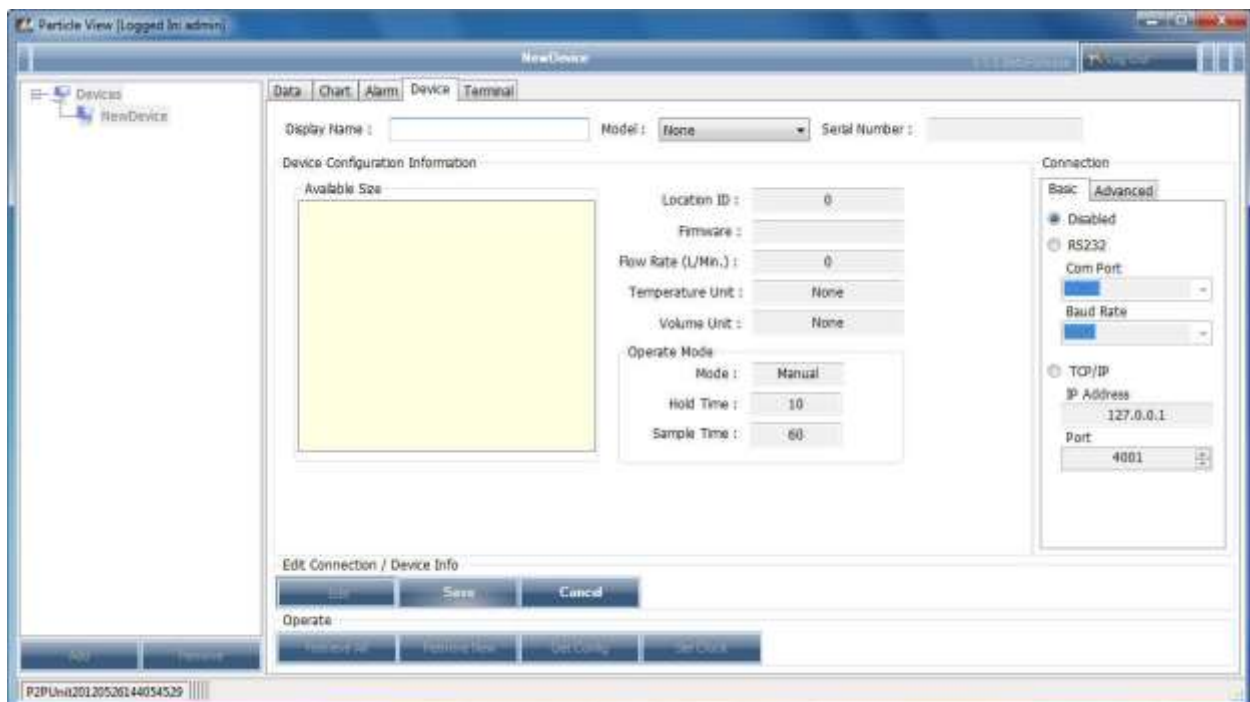
Press the  button to save the details of your newly added particle counter.

3.2 Manually Adding a Device

Select Devices at the top of the Device Tree on the left side of the software window. This will allow you to press the  button located at the bottom of the Device Tree window which provides access to the Search & Detect interface.




Pressing the  button in the lower right hand corner will bring you to the New Device interface.



Notice that this is the same New Device interface used when adding a counter with the automatic search function, but this time there are no details already filled in. You will need to enter the following information:

- Display Name (this will be how the device is identified in the Device Tree)
- Model
- Serial Number if adding a GT-521 or GT526 (all other models update the serial number automatically upon the first connection)
- Connection details (typically RS-232)
 - Com Port to be used (or IP Address if using TCP/IP)
 - Baud Rate (or Port if using TCP/IP)

Press the  button to save the details of your newly added particle counter. All other information on this page will populate when you connect to the counter.

3.3 Removing a Device

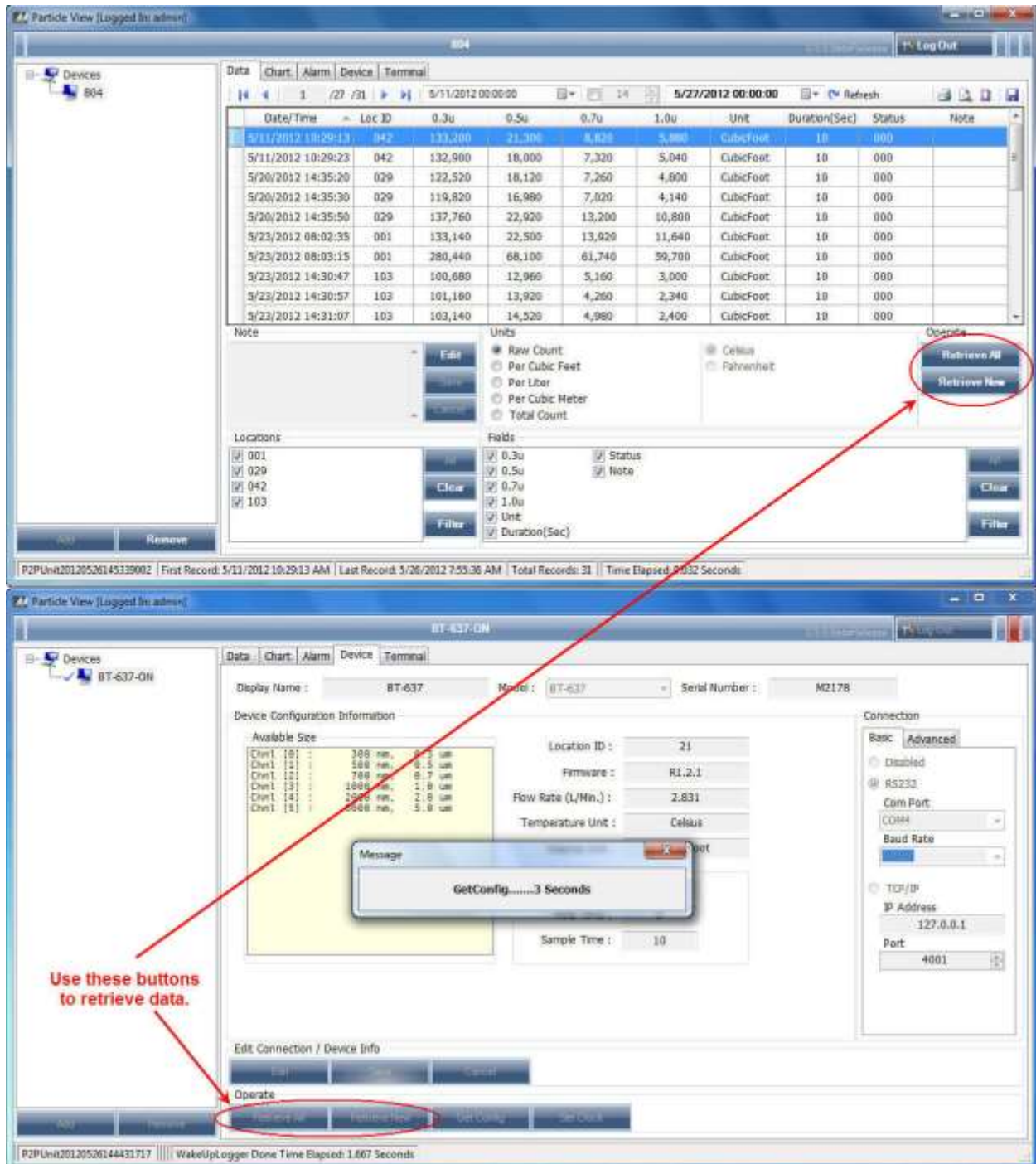
Select device you wish to remove from the Device Tree on the left side of the software window. This will allow you to press the **Remove** button located at the bottom of the Device Tree window. Particle View will ask you to confirm that you wish to remove the device.



IMPORTANT – Removing a device will permanently delete all of its parameters and all collected data associated with it!

4 Data Retrieval

Once a counter has been added and configured, data retrieval may begin. Data is collected by selecting the counter from the Devices Tree on the left.



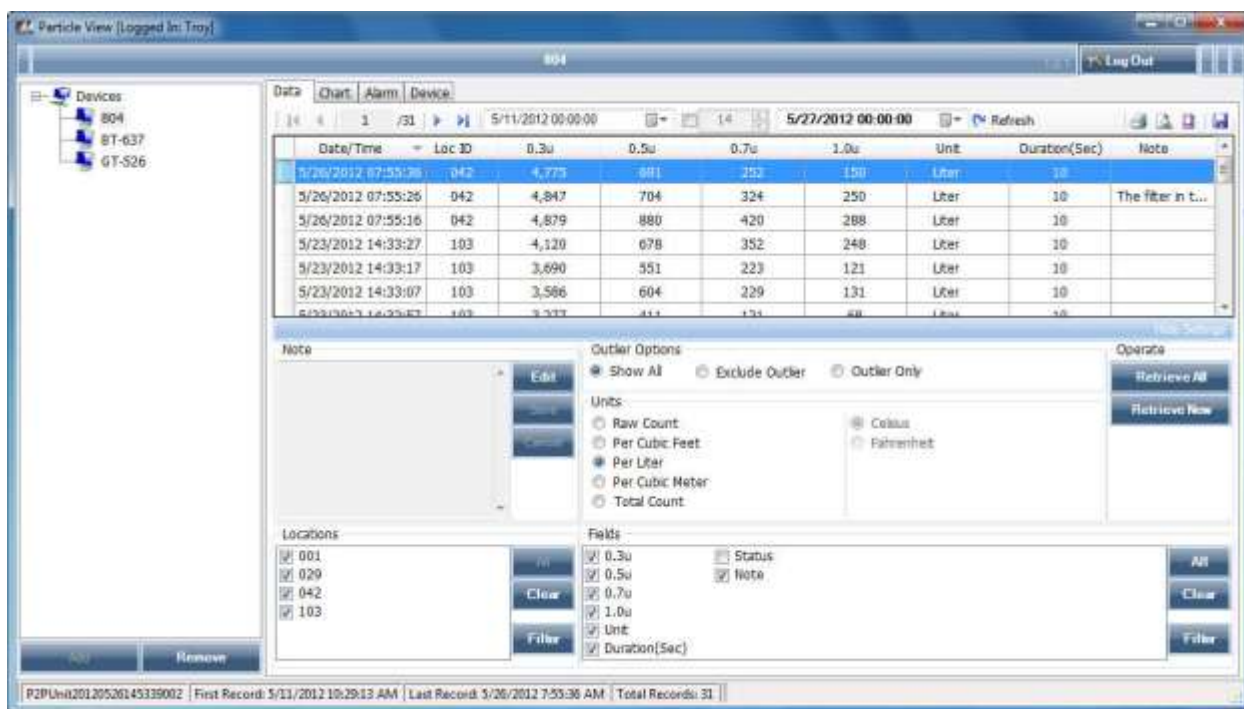
From here, press either the **Retrieve All** or **Retrieve New** buttons on either the Data or Device tabs. The software will connect to the counter, retrieve the configuration details, download the appropriate data set based on your button selection, and then disconnect from the counter.

5 Viewing Data

Once data has been collected from a particle counter, it is now possible to view it in a few different ways. You may view all of the data or a smaller subset based on a date range and any of a number of filters. You may also create charts of the collected information, print reports, or export your selection of data to a *.csv (comma separated value) file type for use in other programs, such as Microsoft Excel. Reports, charts, and data exports are discussed in detail in later sections of this manual.

5.1 Selecting the Data Set Date Range

Click on the device containing the data set you wish to view from the Device Tree on the left side of the software window.



Directly above the data table is the date range selection. The left hand date entry field is the starting date for the data you wish to display. By selecting the drop down arrow, a calendar box (shown right) will open allowing you to pick the year, month and day of your choice. You may browse through the months using the left and right arrows in the top of the dialog box or click on the name of the month and the year fields to manually choose these values.


Enter the number of days you wish to view in the box between the two date fields and check the check box next to it. This will automatically fill in the ending date in the right hand date box that many days after the start date. For example, checking the box and entering 365 in the center field will set the date range to display one year from the starting date.



This same method also works to specify a start date with a known ending date. Simply enter the end date in the right hand box and the center number box will now set the starting date that many days before the end date.

You may choose to leave the center check box unchecked and manually enter the starting and ending dates by simply typing the values in their respective entry fields.

The starting and ending dates can also be selected by using the Right Click menu. See below for more details.

Once your date ranges are set, click the  Refresh button on the far right of the date fields to narrow the data being displayed to only that contained inside of your date ranges.

The default date values contain the entire data set upon initial download. Custom ranges are remembered from one session to the next. If you download new data, the ranges adjust to accompany just the newly retrieved data set.

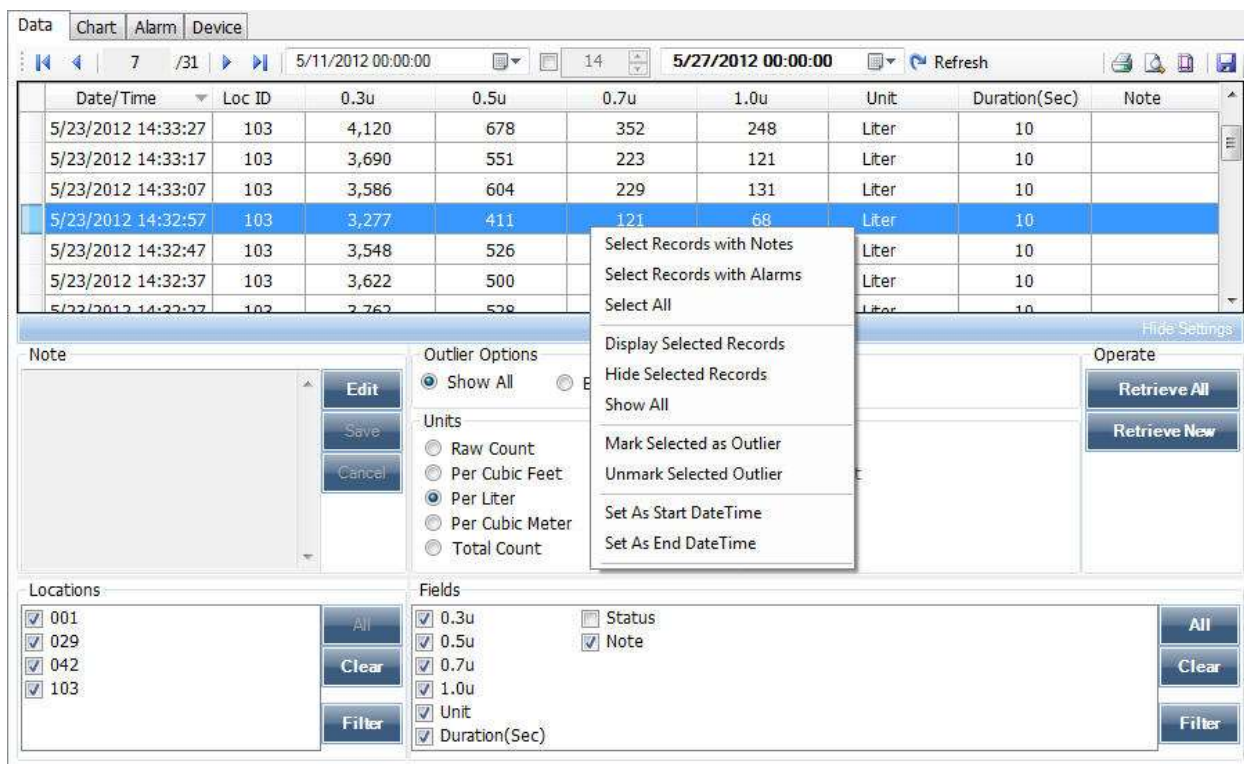
5.2 Filtering and Sorting the Data Set

The data set may be further filtered by using the Right Click menu and/or choosing specific locations and parameters using the Locations and Fields check boxes near the bottom of the Data tab.

Clicking on any of the column headers above the data set will sort the data in ascending or descending order based on the values in that column. Clicking the column again will reverse the current sorting order. The default sort is by Date/Time in chronological order with the most recent entries at the top of the list.

5.2.1 The Right Click Menu

The Right Click menu provides some very useful filtering tools. Hover your mouse over the data table and click the right mouse button to access it.



This menu provides a means to automatically select all records in the displayed date range that contain additional notes or that meet alarm conditions you have set on the Alarms tab. Simply by choosing “Select Records with Notes” or “Select Records with Alarms” the data will be filtered to show only those meeting those criteria.

Right clicking a specific data entry and choosing either “Set As Start Date Time” or “Set As End Date Time” will provide you with a quick means of setting your date/time ranges. This is also convenient to use if you know exactly which record(s) you wish to be first or last in the data set.

You may hide any single record by clicking on it and choosing “Hide Selected Records”. If you select multiple records using standard CTL+Click or SHIFT+Click Microsoft Windows commands, “Hide Selected Records” allows you to hide them all at one time. Alternatively, if you want to hide all of the records *not* selected, you may choose the “Display Selected Records” option and leave only those records currently selected visible.

You may also mark and unmark data points as Outliers. See the “Outliers” section of this manual for more details.

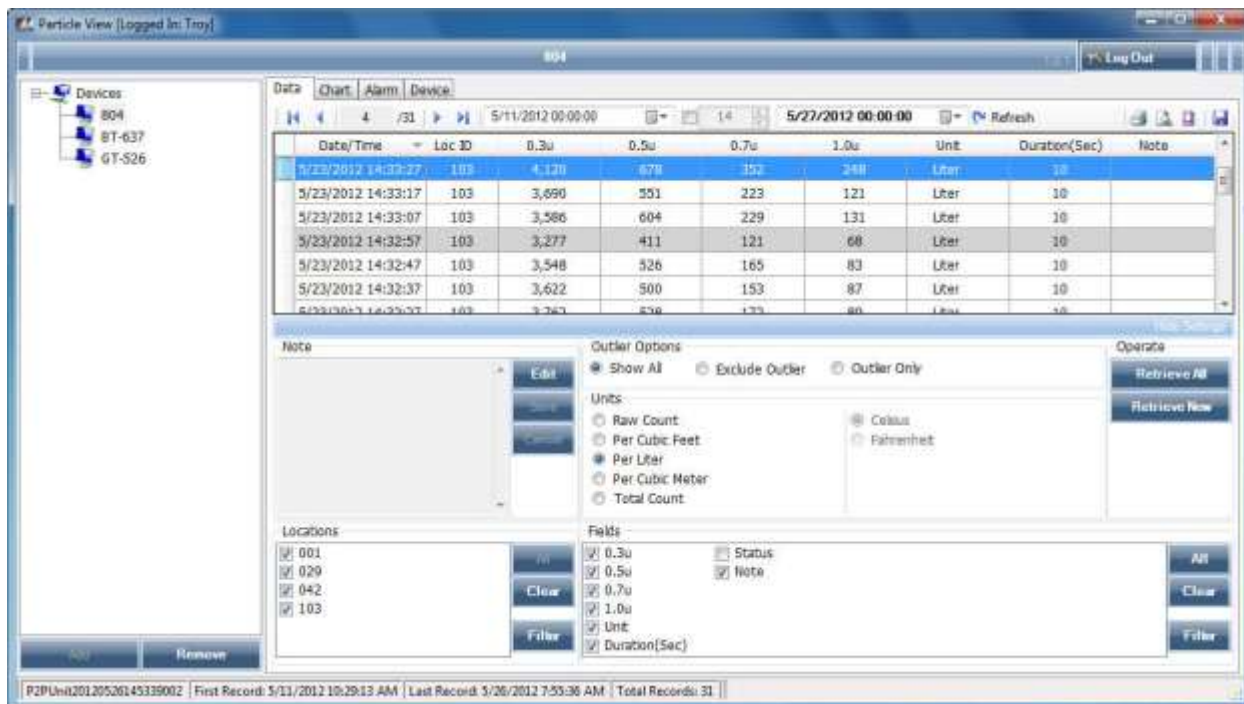
The “Show All” option removes all current filters and displays all records contained in current selected date range.

5.3 Outliers

Some records that are stored may be invalid for a variety of reasons such as the sample being taken in the wrong location or at the wrong time. In such a case, you may wish to mark these data points as Outliers to be ignored when evaluating data. Particle View provides you with the option to do that.

5.3.1 Marking and Unmarking Outliers

To indicate entries as Outliers, simply highlight the record (or records) you wish to mark, open the right click menu, and select the “Mark Selected as Outlier” option. This will highlight the selected records in a light grey color (see screen shot below).



When an outlier record is marked, you will be reminded to make a note explaining the conditions. See the “Adding Notes” section of this manual for more details on how to do this.

To remove the outlier indication on any given record, select the record (or records), open the right click menu, and select the “Unmark Selected Outlier” option.

5.3.2 Outlier Options


Directly below the data table are the Outlier Options. These three choices determine the manner in which data you have marked as Outliers is displayed or hidden. The table below indicates which data types are shown for the various display formats based on the Outlier Option selected.


Outlier Option	Data Table	Printed Reports	Line Charts	Saved .csv Reports
Show All	B*	B*	B	B
Exclude Outlier	N	N	N	N
Outlier Only	O*	O*	O	O
O = Outlier Data N = Non-Outlier Data B = Both Data Types * = Outlier Data Highlighted				

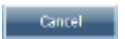
Outlier data in printed reports is highlighted in a light grey color like the data table. You can see an example of this in the sample report located in the appendices at the end of this manual.\

5.4 Adding Notes

Notes may be included with any data entry to indicate special circumstances that may be important to the interpretation of the data. This is an ideal place to annotate such things as unusual operating conditions in the sample area.

To add a note, highlight the desired record and then click the  button to the right of the Notes field on the bottom half of the Data tab. You may now type a note in the Notes field.

Once you have entered all applicable notes, press the  button to lock your changes and add them to the data record.

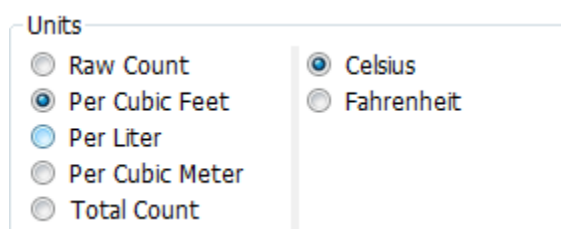
Pressing the  button at any time during the entry of a note will exit the operation and no notation will be saved.

Only one record may have notes added to it at a time. If you have multiple records that require notations, each record needs to be amended individually.

5.5 Changing Units

The downloaded data may be displayed in any of a few different types of units, including both English and Metric scales. The conversion box (shown right) is found on the lower half of the Data tab.

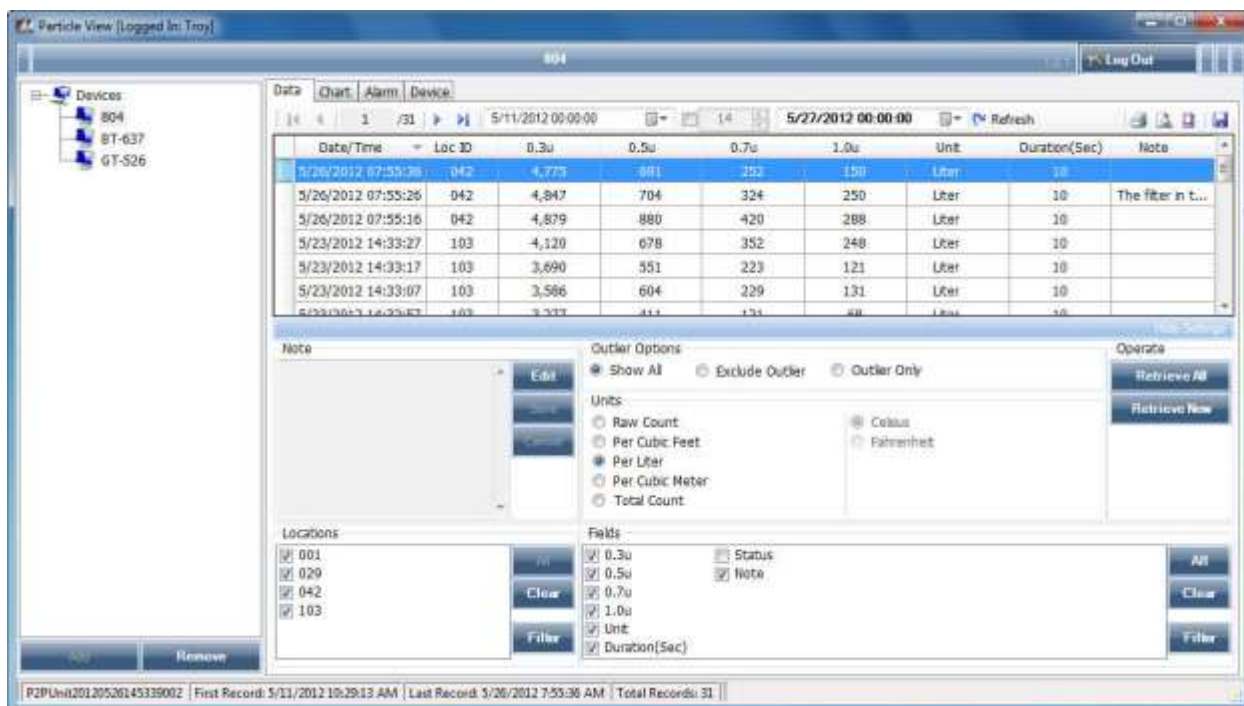
The Raw Count option will display the data in the format it was downloaded. To convert to any of the other units shown, simply click on the desired format and the data will automatically be converted for you.



The image shows a 'Units' selection box with two columns of radio button options. The first column contains: 'Raw Count', 'Per Cubic Feet' (selected), 'Per Liter', 'Per Cubic Meter', and 'Total Count'. The second column contains: 'Celsius' (selected) and 'Fahrenheit'.

6 Printing and Exporting Reports

The Particle View software has the ability to print a customizable range of data. The reports may be created to display any of the desired fields of data in any date range that data exists.



On the Data tab, select the data wish to print using the sorting and filtering methods described in the Viewing Data section of this manual. Once your data set is established, it may be printed using the print features located to the right of the Date/Time range fields.

Print Setup provides standard options for orientation, paper size and selection, and margin settings.

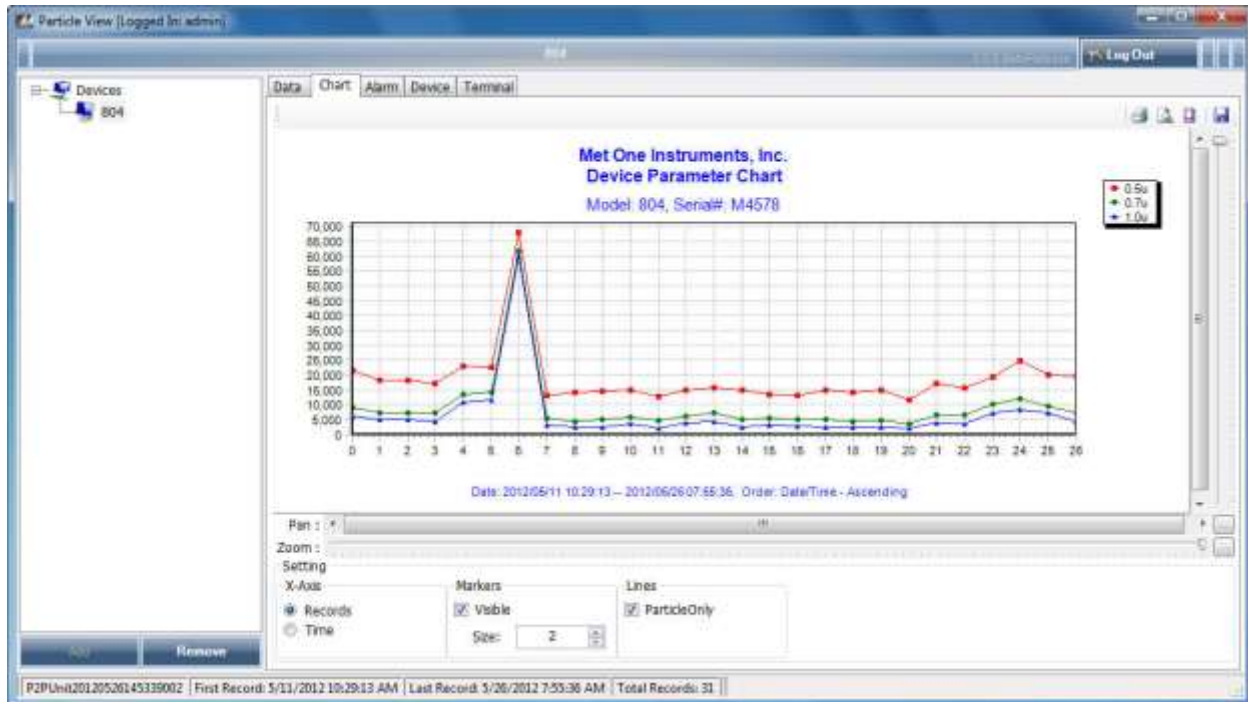
Print preview allows viewing of the report on your screen prior to actually printing it out. The print button prints the report to the printer device of your choice.



If you would like to save the data set as a *.csv file, simply use the "CSV Export" button located to the right of the printing options.

7 Viewing and Printing Charts

Particle View provides charting capabilities to represent your data sets visually. Selecting the Chart tab will display the data set that has been established and displayed on the Data tab in a multi-line (if multiple parameters are chosen) chart.



You can set the X-Axis to either be spaced according to the number of records or time stamps. When comparing data from multiple different time periods, it is often more meaningful to see the data evenly spaced out instead of bunched up around sampling times. When using the Records option, the points will be displayed in the same sequence as they are sorted on the Data tab.

If you would like to see the specific points and not just the shape of the graph, toggle on markers using the Visible checkbox (shown above). Use the up and down arrows next to the size box to adjust the displayed size of the sample point markers.

If you are displaying non-particulate data on the Data tab, such as Ambient Temperature, checking the Particulate Only checkbox will hide all other types of data and only display your particulate parameters.

You can also print and save your charts (as .jpg format) using the options located in the top right corner of the Chart tab.

Print Setup provides standard options for orientation, paper size and selection, and margin settings.

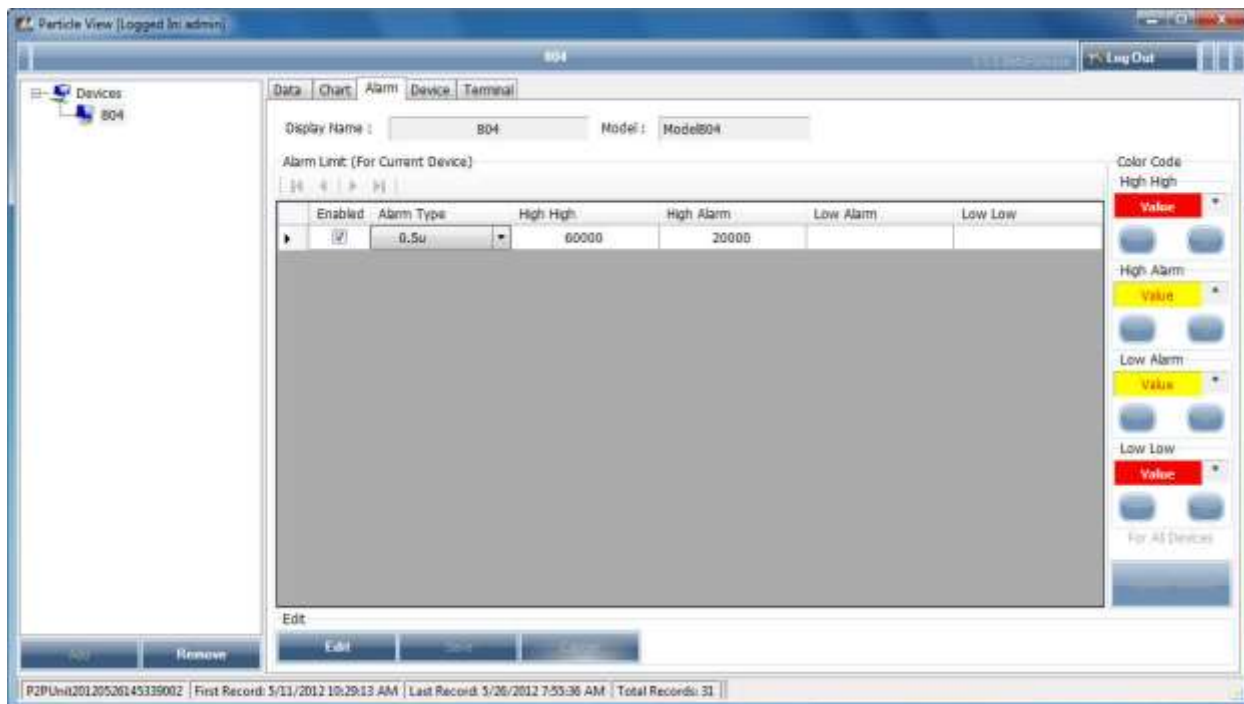
Print preview allows viewing of the report on your screen prior to actually printing it out. The print button prints the report to the printer device of your choice.




If you would like to save the chart as a *.jpg file, simply use the "Save Chart to File" button located to the right of the printing options.

8 Setting and Viewing Alarms

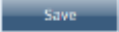
Particle View provides a versatile alarm indication interface. It has four alarm types that can be programmed to each parameter. These are High High, High, Low, and Low Low. You can program as many alarms as you need for each parameter, change their indication colors, and even decide whether or not to have the alarms enabled. This allows you to set multiple alarm conditions for a single parameter based on differing criteria and only enable them as needed. Note that only the administrator profile may edit the alarm colors and indicator character (see section 8.3 for more details).




8.1 Creating a New Alarm


Pressing the  button on the bottom of the Alarm tab allows you to add, remove, edit, and enable alarms. To add a new alarm, enter the editing mode and press the “Add New” button located above the main body of the alarm table.

- The “Enabled” checkbox is checked by default. If you don’t want this alarm condition to be displayed right now on the Data tab, uncheck this box.
- Select the Alarm Type by choosing which parameter you wish to monitor for an alarming condition from the drop down box.
- Set the values for High High, High, Low, and Low Low based on your criteria. If you do not need to monitor a given field, simply leave it blank.
 - Alarming conditions are determined independent of units. This means your alarms may change if you convert from “per cubic feet” to “per liter” or “per cubic meter”. The same entry may alarm when set to one unit type but clear when converted to another. Keep your scaling in mind when defining the alarm set point values.
- Press the “Add New” button to add any additional alarms.

- Press the  button to save your new alarm(s) or changes and exit the alarm editing mode.

If you decide to cancel creation of the alarm, you may press the  button at any time to exit the editing mode.

8.2 Deleting an Alarm

Press the  button on the bottom of the Alarm tab to enter the editing mode. A “Delete” button will appear above the top right corner of the main body of the alarm table. Select the alarm you wish to remove and then press the “Delete” button.

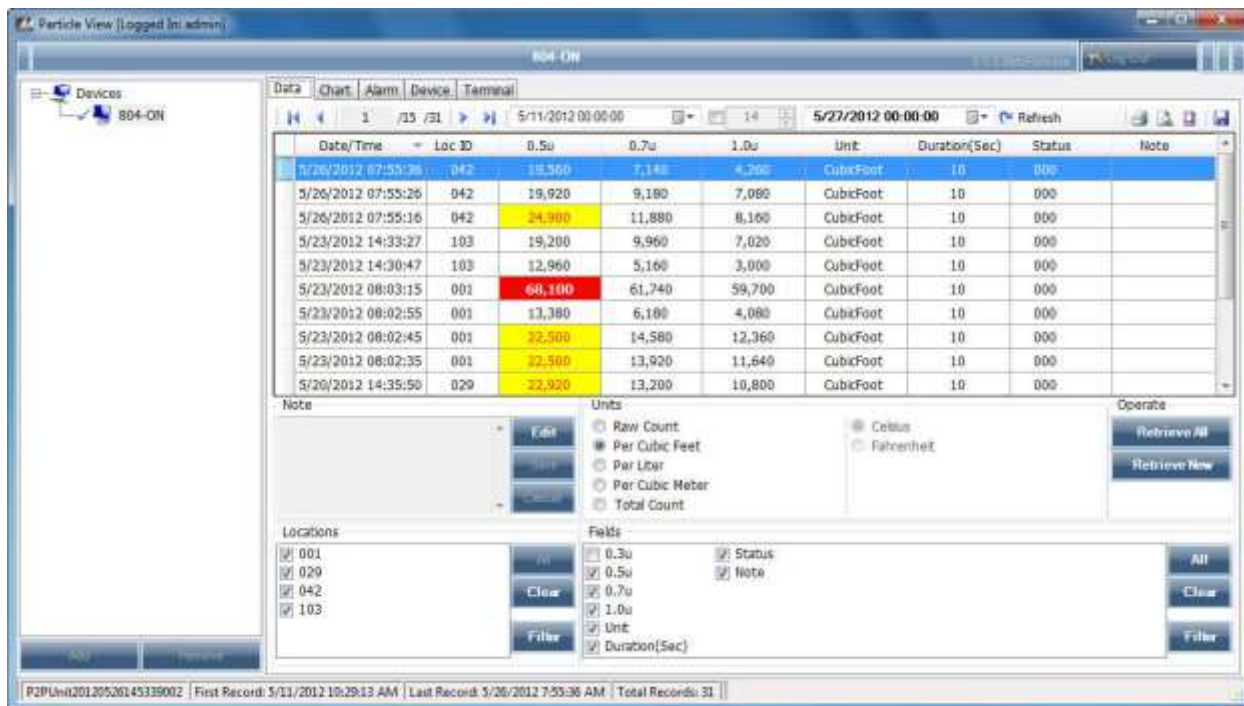
8.3 Editing the Alarm Default Settings

The alarm indication color code and indicator default settings can be edited to conform to local preferences or standards. Only the Administrator account has access to change these settings. The Administrator may press the T button to change the text color and the B button to change the background color for each of the four alarm types, individually.

The Administrator is also able to edit the single character notification of an alarm condition. This character will be displayed next to any entry that exceeds the alarm set point on a printed report. Each alarm indicator may be individually set. The default setting is “*” for all conditions.

8.4 Viewing Alarms

Once alarms are defined and enabled, they will appear in the Data tab on any entry that exceeds the alarm set points.

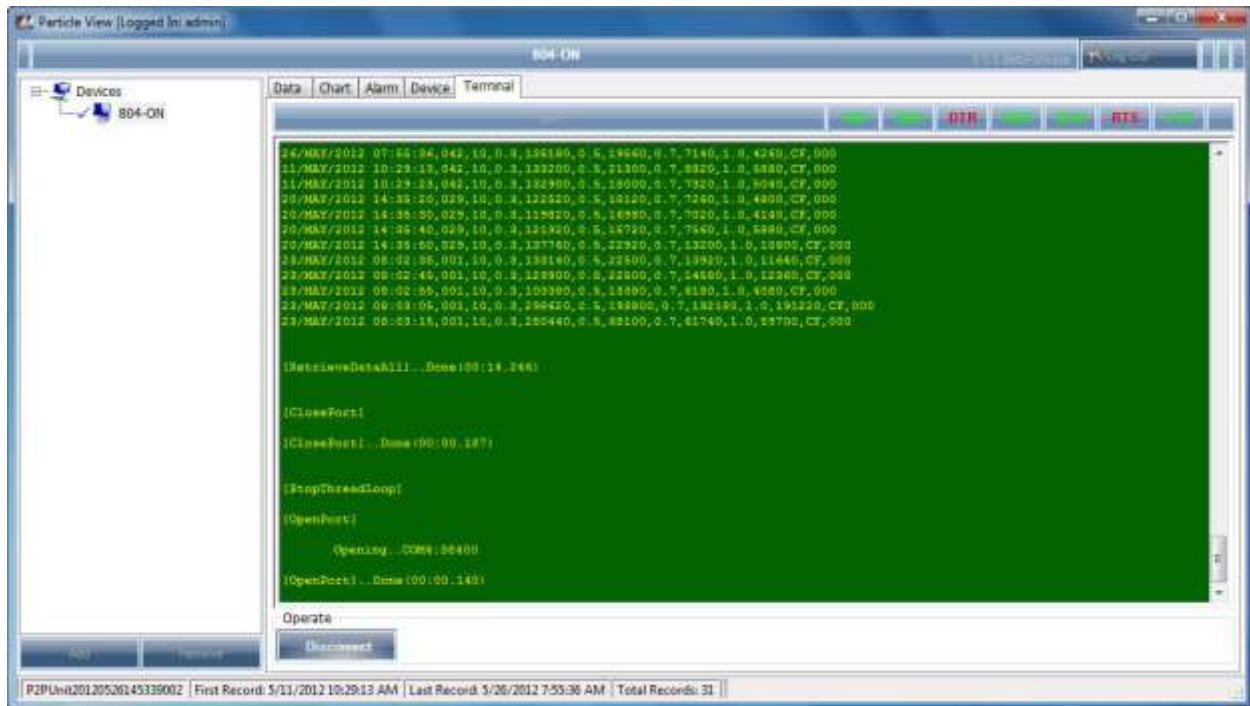


The screenshot displays the ParticleView software interface. The main window is titled "Particle View (Logged In: admin)". The "Data" tab is selected, showing a table of alarm events. The table has columns for Date/Time, Loc ID, 0.5u, 0.7u, 1.0u, Unit, Duration(Sec), Status, and Note. The data rows show various alarm events with different statuses (000, 001, 002, 003, 004, 005, 006, 007, 008, 009, 010, 011, 012, 013, 014, 015, 016, 017, 018, 019, 020, 021, 022, 023, 024, 025, 026, 027, 028, 029, 030, 031, 032, 033, 034, 035, 036, 037, 038, 039, 040, 041, 042, 043, 044, 045, 046, 047, 048, 049, 050, 051, 052, 053, 054, 055, 056, 057, 058, 059, 060, 061, 062, 063, 064, 065, 066, 067, 068, 069, 070, 071, 072, 073, 074, 075, 076, 077, 078, 079, 080, 081, 082, 083, 084, 085, 086, 087, 088, 089, 090, 091, 092, 093, 094, 095, 096, 097, 098, 099, 100, 101, 102, 103, 104, 105, 106, 107, 108, 109, 110, 111, 112, 113, 114, 115, 116, 117, 118, 119, 120, 121, 122, 123, 124, 125, 126, 127, 128, 129, 130, 131, 132, 133, 134, 135, 136, 137, 138, 139, 140, 141, 142, 143, 144, 145, 146, 147, 148, 149, 150, 151, 152, 153, 154, 155, 156, 157, 158, 159, 160, 161, 162, 163, 164, 165, 166, 167, 168, 169, 170, 171, 172, 173, 174, 175, 176, 177, 178, 179, 180, 181, 182, 183, 184, 185, 186, 187, 188, 189, 190, 191, 192, 193, 194, 195, 196, 197, 198, 199, 200, 201, 202, 203, 204, 205, 206, 207, 208, 209, 210, 211, 212, 213, 214, 215, 216, 217, 218, 219, 220, 221, 222, 223, 224, 225, 226, 227, 228, 229, 230, 231, 232, 233, 234, 235, 236, 237, 238, 239, 240, 241, 242, 243, 244, 245, 246, 247, 248, 249, 250, 251, 252, 253, 254, 255, 256, 257, 258, 259, 260, 261, 262, 263, 264, 265, 266, 267, 268, 269, 270, 271, 272, 273, 274, 275, 276, 277, 278, 279, 280, 281, 282, 283, 284, 285, 286, 287, 288, 289, 290, 291, 292, 293, 294, 295, 296, 297, 298, 299, 300, 301, 302, 303, 304, 305, 306, 307, 308, 309, 310, 311, 312, 313, 314, 315, 316, 317, 318, 319, 320, 321, 322, 323, 324, 325, 326, 327, 328, 329, 330, 331, 332, 333, 334, 335, 336, 337, 338, 339, 340, 341, 342, 343, 344, 345, 346, 347, 348, 349, 350, 351, 352, 353, 354, 355, 356, 357, 358, 359, 360, 361, 362, 363, 364, 365, 366, 367, 368, 369, 370, 371, 372, 373, 374, 375, 376, 377, 378, 379, 380, 381, 382, 383, 384, 385, 386, 387, 388, 389, 390, 391, 392, 393, 394, 395, 396, 397, 398, 399, 400, 401, 402, 403, 404, 405, 406, 407, 408, 409, 410, 411, 412, 413, 414, 415, 416, 417, 418, 419, 420, 421, 422, 423, 424, 425, 426, 427, 428, 429, 430, 431, 432, 433, 434, 435, 436, 437, 438, 439, 440, 441, 442, 443, 444, 445, 446, 447, 448, 449, 450, 451, 452, 453, 454, 455, 456, 457, 458, 459, 460, 461, 462, 463, 464, 465, 466, 467, 468, 469, 470, 471, 472, 473, 474, 475, 476, 477, 478, 479, 480, 481, 482, 483, 484, 485, 486, 487, 488, 489, 490, 491, 492, 493, 494, 495, 496, 497, 498, 499, 500, 501, 502, 503, 504, 505, 506, 507, 508, 509, 510, 511, 512, 513, 514, 515, 516, 517, 518, 519, 520, 521, 522, 523, 524, 525, 526, 527, 528, 529, 530, 531, 532, 533, 534, 535, 536, 537, 538, 539, 540, 541, 542, 543, 544, 545, 546, 547, 548, 549, 550, 551, 552, 553, 554, 555, 556, 557, 558, 559, 560, 561, 562, 563, 564, 565, 566, 567, 568, 569, 570, 571, 572, 573, 574, 575, 576, 577, 578, 579, 580, 581, 582, 583, 584, 585, 586, 587, 588, 589, 590, 591, 592, 593, 594, 595, 596, 597, 598, 599, 600, 601, 602, 603, 604, 605, 606, 607, 608, 609, 610, 611, 612, 613, 614, 615, 616, 617, 618, 619, 620, 621, 622, 623, 624, 625, 626, 627, 628, 629, 630, 631, 632, 633, 634, 635, 636, 637, 638, 639, 640, 641, 642, 643, 644, 645, 646, 647, 648, 649, 650, 651, 652, 653, 654, 655, 656, 657, 658, 659, 660, 661, 662, 663, 664, 665, 666, 667, 668, 669, 670, 671, 672, 673, 674, 675, 676, 677, 678, 679, 680, 681, 682, 683, 684, 685, 686, 687, 688, 689, 690, 691, 692, 693, 694, 695, 696, 697, 698, 699, 700, 701, 702, 703, 704, 705, 706, 707, 708, 709, 710, 711, 712, 713, 714, 715, 716, 717, 718, 719, 720, 721, 722, 723, 724, 725, 726, 727, 728, 729, 730, 731, 732, 733, 734, 735, 736, 737, 738, 739, 740, 741, 742, 743, 744, 745, 746, 747, 748, 749, 750, 751, 752, 753, 754, 755, 756, 757, 758, 759, 760, 761, 762, 763, 764, 765, 766, 767, 768, 769, 770, 771, 772, 773, 774, 775, 776, 777, 778, 779, 780, 781, 782, 783, 784, 785, 786, 787, 788, 789, 790, 791, 792, 793, 794, 795, 796, 797, 798, 799, 800, 801, 802, 803, 804, 805, 806, 807, 808, 809, 810, 811, 812, 813, 814, 815, 816, 817, 818, 819, 820, 821, 822, 823, 824, 825, 826, 827, 828, 829, 830, 831, 832, 833, 834, 835, 836, 837, 838, 839, 840, 841, 842, 843, 844, 845, 846, 847, 848, 849, 850, 851, 852, 853, 854, 855, 856, 857, 858, 859, 860, 861, 862, 863, 864, 865, 866, 867, 868, 869, 870, 871, 872, 873, 874, 875, 876, 877, 878, 879, 880, 881, 882, 883, 884, 885, 886, 887, 888, 889, 890, 891, 892, 893, 894, 895, 896, 897, 898, 899, 900, 901, 902, 903, 904, 905, 906, 907, 908, 909, 910, 911, 912, 913, 914, 915, 916, 917, 918, 919, 920, 921, 922, 923, 924, 925, 926, 927, 928, 929, 930, 931, 932, 933, 934, 935, 936, 937, 938, 939, 940, 941, 942, 943, 944, 945, 946, 947, 948, 949, 950, 951, 952, 953, 954, 955, 956, 957, 958, 959, 960, 961, 962, 963, 964, 965, 966, 967, 968, 969, 970, 971, 972, 973, 974, 975, 976, 977, 978, 979, 980, 981, 982, 983, 984, 985, 986, 987, 988, 989, 990, 991, 992, 993, 994, 995, 996, 997, 998, 999, 1000).

Appendix A Terminal Tab

The Administrator also has access to a special tab that is not available to other users. It is called the Terminal tab and can be a helpful troubleshooting tool. Typically, there should be no need to access it, but it may be necessary should you seek factory support for any reason.

This is a fully functional terminal interface that will display all traffic and also enable the use of serial commands being sent to a particle counter.



Appendix B Sample Report

Below is a sample report using data collected with the 804 particle counter. This report shows an alarm condition at time 07:55:26 on 5/26/2012. A sample note was added as a possible reason explaining the alarm. This report was created in reverse chronological order, displaying the most recent data at the top of the report and the oldest on the bottom.

Met One Instruments, Inc.

Device Parameter Report

Model : Model804
 From : 2012/05/23 14:30:57
 To : 2012/05/26 07:55:26
 Order : Date/Time - Descending

Serial# : M4578
 Print : 2012/05/29 17:02:39
 Page : 1

Date/Time	Loc ID	0.3u	0.5u	0.7u	1.0u	Unit	Duration Sec
2012/05/26 07:55:26	042	4,847*	704	324	250	/L	10
Note: The filter in this room was not installed.							
2012/05/23 14:33:27	103	4,178	678	352	248	/L	10
2012/05/23 14:33:17	103	3,690	551	223	121	/L	10
2012/05/23 14:33:07	103	3,586	604	229	131	/L	10
2012/05/23 14:32:57	103	3,277	411	121	68	/L	10
2012/05/23 14:32:47	103	3,548	526	165	83	/L	10
2012/05/23 14:32:37	103	3,622	500	153	87	/L	10
2012/05/23 14:32:27	103	3,762	528	172	89	/L	10
2012/05/23 14:32:17	103	3,442	464	100	97	/L	10
2012/05/23 14:32:07	103	3,520	473	107	100	/L	10
2012/05/23 14:31:57	103	3,573	519	172	87	/L	10
2012/05/23 14:31:47	103	3,730	553	250	150	/L	10
2012/05/23 14:31:37	103	3,906	526	216	136	/L	10
2012/05/23 14:31:27	103	3,658	441	161	74	/L	10
2012/05/23 14:31:17	103	3,838	530	199	117	/L	10
2012/05/23 14:31:07	103	3,643	513	176	85	/L	10
2012/05/23 14:30:57	103	3,573	492	150	83	/L	10

The single character alarm indication will appear next to the entry that meets the alarm condition.

Notes added to the Notes field (see "Adding Notes") appear directly beneath the associated data point.

Appendix C Sample Report with Outlier Indication

Below is a sample report using data collected with the 804 particle counter. This report shows a record marked as an outlier at time 14:32:57 on 5/23/2012. A sample note has been added explaining why this record should be ignored. This report was created in reverse chronological order, displaying the most recent data at the top of the report and the oldest on the bottom.

Met One Instruments, Inc.

Device Parameter Report

Model : Model804
 From : 2012/05/11 10:29:13
 To : 2012/05/26 07:55:36
 Order : Date/Time - Descending

Serial# : M4578
 Print : 2013/03/16 09:09:50
 Page : 1

Date/Time	Loc ID	0.3u	0.5u	0.7u	1.0u	Unit	Duration Sec
2012/05/26 07:55:36	042	4,775	691	252	150	/L	10
2012/05/26 07:55:26	042	4,847	704	324	250	/L	10
2012/05/26 07:55:16	042	4,879	880	420	288	/L	10
2012/05/23 14:33:27	103	4,120	678	352	248	/L	10
2012/05/23 14:33:17	103	3,690	551	223	121	/L	10
2012/05/23 14:33:07	103	3,586	604	229	131	/L	10
2012/05/23 14:32:57	103	3,277	411	121	68	/L	10

Note: Sample was actually taken at location 104 instead of 103.

2012/05/23 14:32:47	103	3,548	526	165	83	/L	10
2012/05/23 14:32:37	103	3,622	500	153	87	/L	10
2012/05/23 14:32:27	103	3,762	528	172	89	/L	10
2012/05/23 14:32:17	103	3,442	464	180	97	/L	10
2012/05/23 14:32:07	103	3,520	473	187	100	/L	10
2012/05/23 14:31:57	10	Record marked as an Outlier	519	172	87	/L	10
2012/05/23 14:31:47	10		553	250	150	/L	10
2012/05/23 14:31:37	103	3,300	526	216	136	/L	10
2012/05/23 14:31:27	103	3,658	441	161	74	/L	10
2012/05/23 14:31:17	103	3,830	530	199	117	/L	10
2012/05/23 14:31:07	103	3,643	513	176	85	/L	10
2012/05/23 14:30:57	103	3,573	492	150	83	/L	10
2012/05/23 14:30:47	103	3,556	458	182	106	/L	10
2012/05/23 08:03:15	001	9,906	2,406	2,181	2,109	/L	10
2012/05/23 08:03:05	001	10,548	6,846	6,788	6,755	/L	10
2012/05/23 08:02:55	001	10,050	4,777	2,181	1,841	/L	10