



Nanocom CSV Viewer Guide

Introduction

This program allows you to plot recorded Nanocom CSV data into meaningful graphs for easy observation. It also allows graphs to be compared to each other so that input behaviors can be correlated.

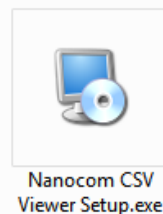
Nanocom CSV Viewer has been developed to be simple to use, provide fast, easy and detailed viewing of multiple input recordings from multiple files from within the same application.

We hope you enjoy using this program. Please read through the guide to familiarize yourself with its interface.

Install/Uninstall

Program Installation

The program is simple and easy to setup taking only a few clicks. A PC running Windows is required for the program to run. Nanocom CSV Viewer is compatible with Windows XP (Service Pack 3), Vista, 7, 8 and 10 and needs .NET Framework 4.0 or higher to run.

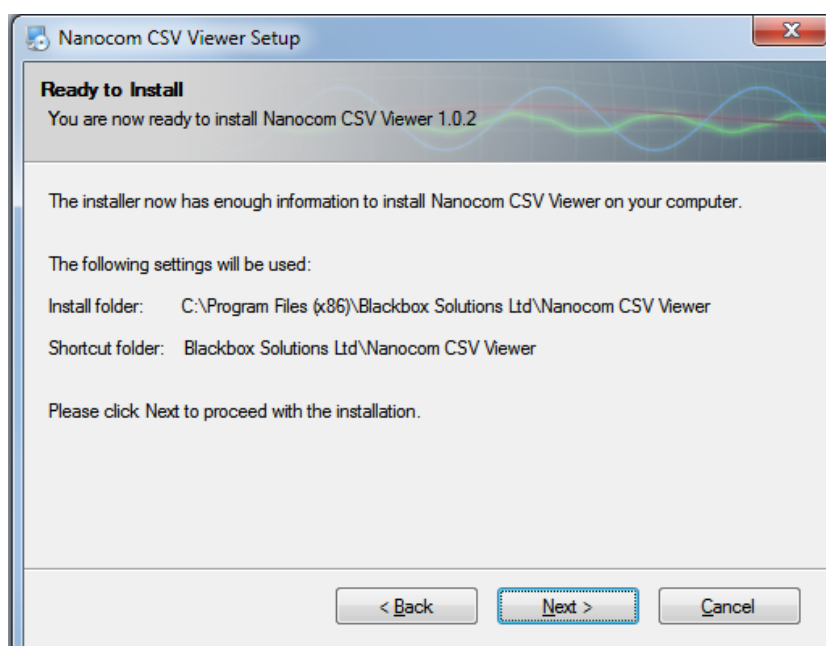
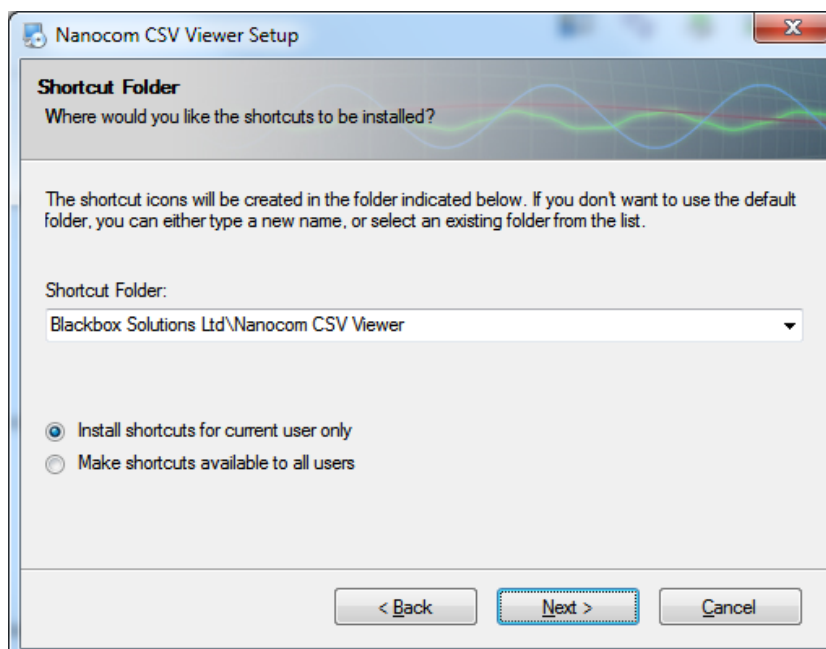
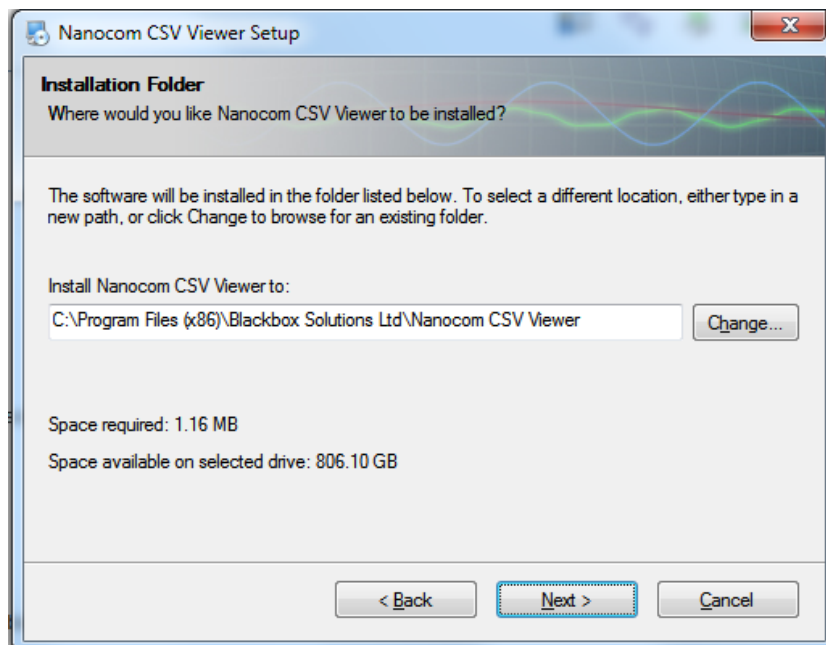


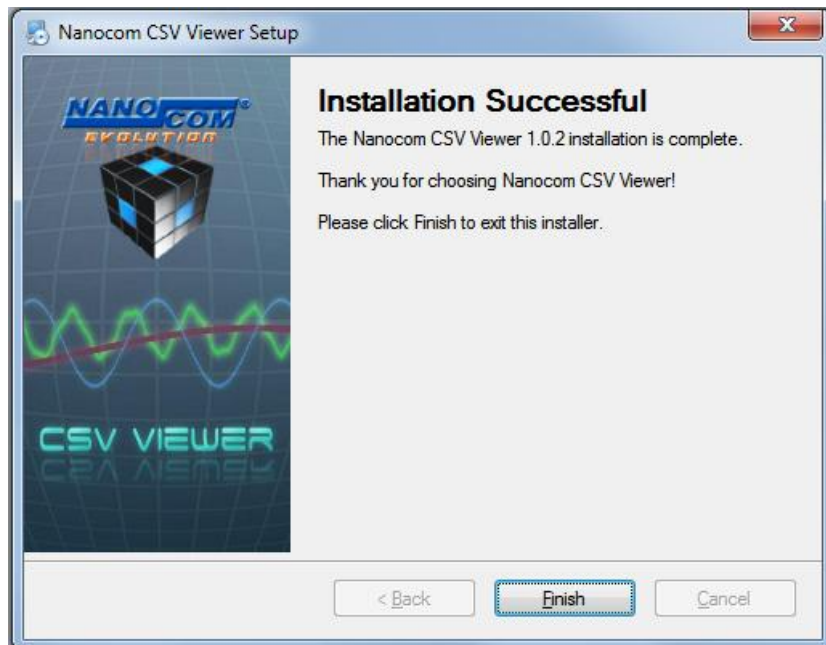
Once the setup file is downloaded, running it will start the program installation.



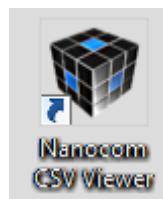
Click Next to proceed and make sure you approve the installation folder.

The default installation folder is C:\Program Files (x86)\Nanocom Solutions Ltd\Nanocom CSV Viewer.





When the installation finishes a shortcut is created on the Desktop and Start Menu folder.



Running the program

After the program has been installed, the Nanocom CSV Viewer can be run by double-clicking the shortcut on the Desktop or via the "Start Menu -> All programs -> Nanocom CSV Viewer" link. The program can also be run from its installed directory, by running the Nanocom CSV Viewer.exe file.

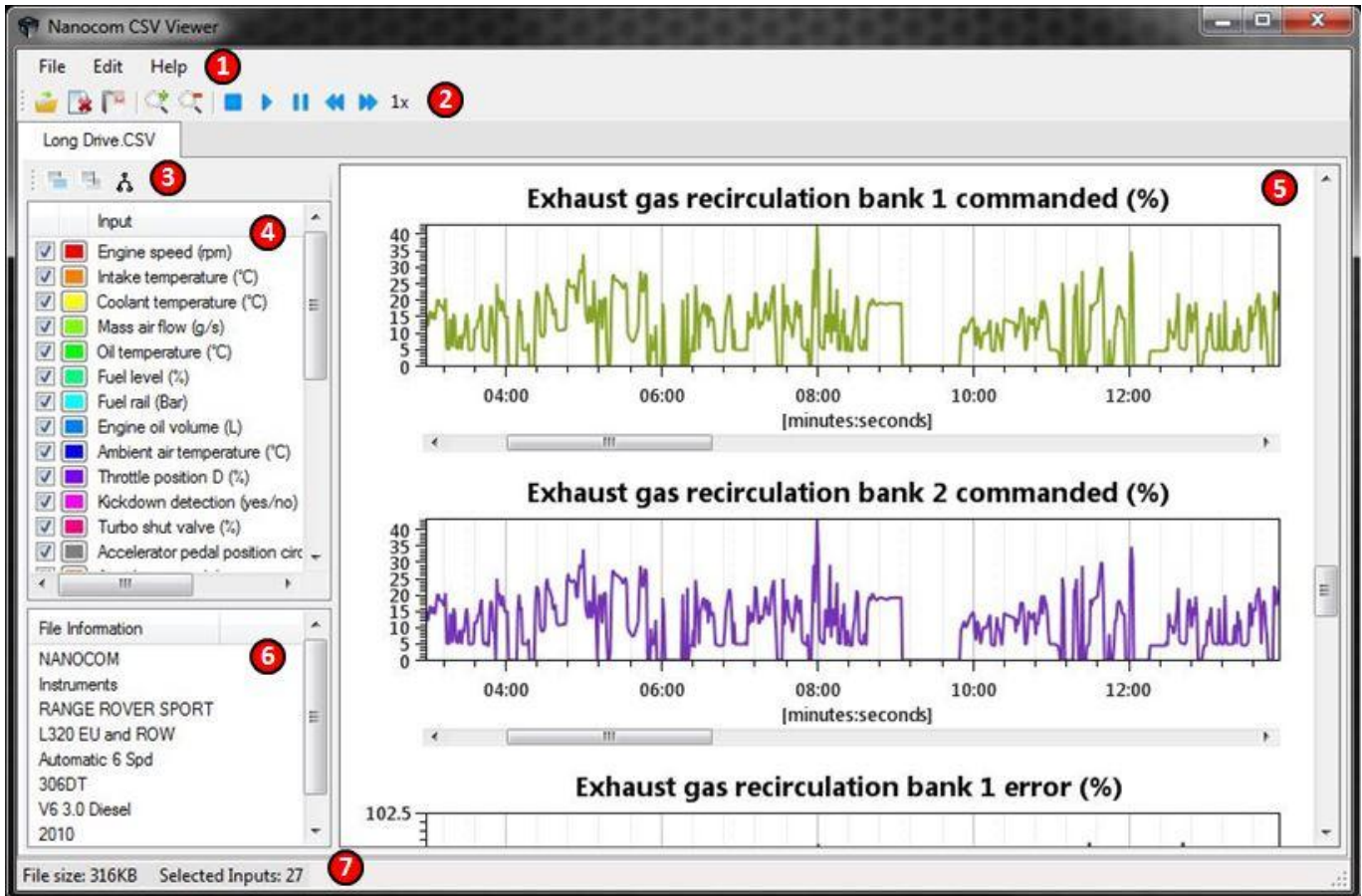
Uninstalling the program

To uninstall the program you can either go to the "Start Menu -> All Programs -> Blackbox Solutions Ltd -> Nanocom CSV Viewer Uninstall", or go to Control Panel under "Start Menu -> Control Panel -> Programs and Features", find Nanocom CSV Viewer from the list, right click on it and select Uninstall.

User Interface

Main Window details

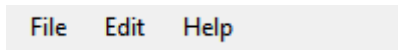
Below is a screenshot of the main Nanocom CSV Viewer window:



All important elements of the user interface are numbered and described below:

1. Main Menu

This is the programs main menu containing the most basic commands. The **"File"** item contains commands related to opening and closing of documents and exiting the application. The **"Edit"** item contains the graphs and playback manipulation commands. These commands can also be found in the **"Main Toolbar"**. The **"Help"** item contains the applications help documents and general information about the programs development.



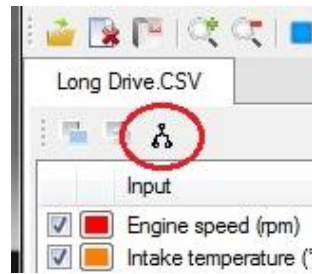
2. Main Toolbar

The Main Toolbar contains shortcuts for the Main Menus basic functions such as open and close documents and a pair of **"increase/decrease"** graph size buttons which help broaden the vertical view space of the graphs displayed on the Graph Panel (5). It also contains the **"playback"** buttons used to control the flow of data on the graph in order to simulate the data as being read directly from the vehicle.



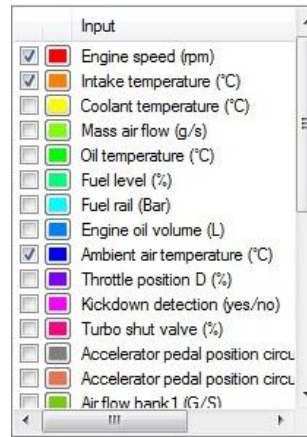
3. Document Toolbar

There are three buttons on the Document Toolbar. The "Select All/None" button will check/uncheck all the recorded inputs displayed in the Inputs List (4). The "Invert Selection" button toggles the checkboxes based on their previous state. The last button "Merge/Unmerge" toggles the view in the Graph Panel (5) to display the graphs as individual entries or as merged entries on the same graph plot.



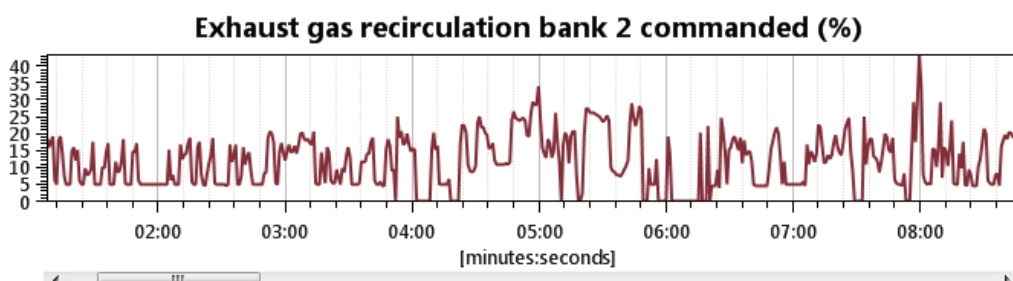
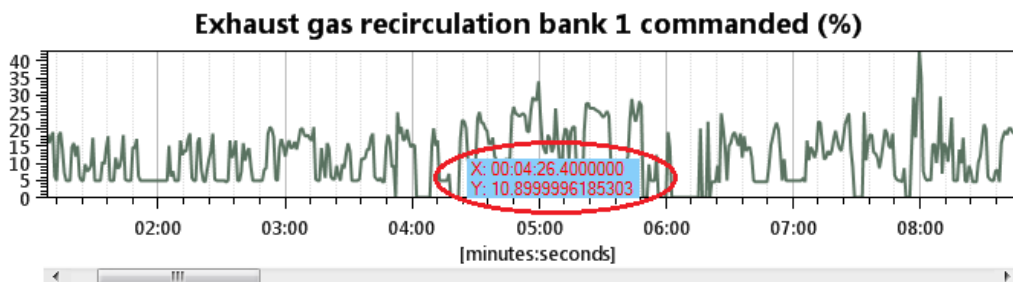
4. Inputs List

The Inputs List contains all the recorded inputs captured in the CSV file. The input name is accompanied by its measurement unit and every one of these inputs has a checkbox. Toggling this checkbox will allow or restrict the selected input from being plotted in the Graph Panel (5).



5. Graph Panel

The Graph Panel is the area where all the selected inputs get plotted. Every input that has its checkbox checked in Inputs List (4) will be shown as a graph. The horizontal axis represents the time on which the samples were captured for this input, measured in seconds. The vertical axis is numbered in accordance to the inputs measurement unit. When you click on a specific point on the graph, a small window will be displayed and will present the X and Y values. The X represents the point in time selected and the Y represents the input value specific to the X time selected.



6. File Information Panel

This panel provides information regarding the inputs file. The type of information varies depending on vehicle type and capturing application. On CAN bus vehicles there is detailed information about the car from which the inputs were captured from.

File Information	
NANOCOM	
TD5ENG.APP	
TD5 ENGINE input file	

7. Status Bar

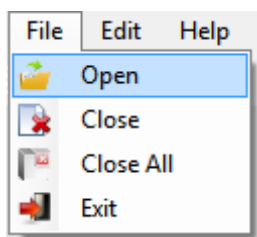
The last element of the user interface is the Status Bar. It contains the size of the currently selected inputs file and the total number of inputs checked in the Inputs List (4).

File size: 14KB Selected Items: 22

Importing Files

To get started with Nanocom CSV Viewer, Nanocom's captured data needs to be imported into the program. Please refer to the Nanocom Evolution manual to learn how to capture data for your vehicle, which is located on the Downloads section of our website: www.nanocom-diagnostics.com/downloads

A SD card is required in order for the recordings to be saved as ".csv" files. The files can be imported into the program by selecting File -> Open from the Main Menu.



Select the file on the dropdown menu, click "OK" and its data will be displayed as graphs in the Graph Panel. There is no limit to the maximum number of files that can be opened. A file can also be loaded multiple times.

The CSV File Format

CSV "coma-separated values" is a standard file format used to store tabular data, such as a spreadsheet or database. Files in the CSV format can be imported and exported from programs that store data in tables such as Microsoft Excel or OpenOffice Calc.

The Nanocom uses its own format of CSV that is best viewed with the Nanocom CSV Viewer, but the contents of a Nanocom CSV may also be viewed by the programs mentioned above.

Graph Interaction

Graph Information

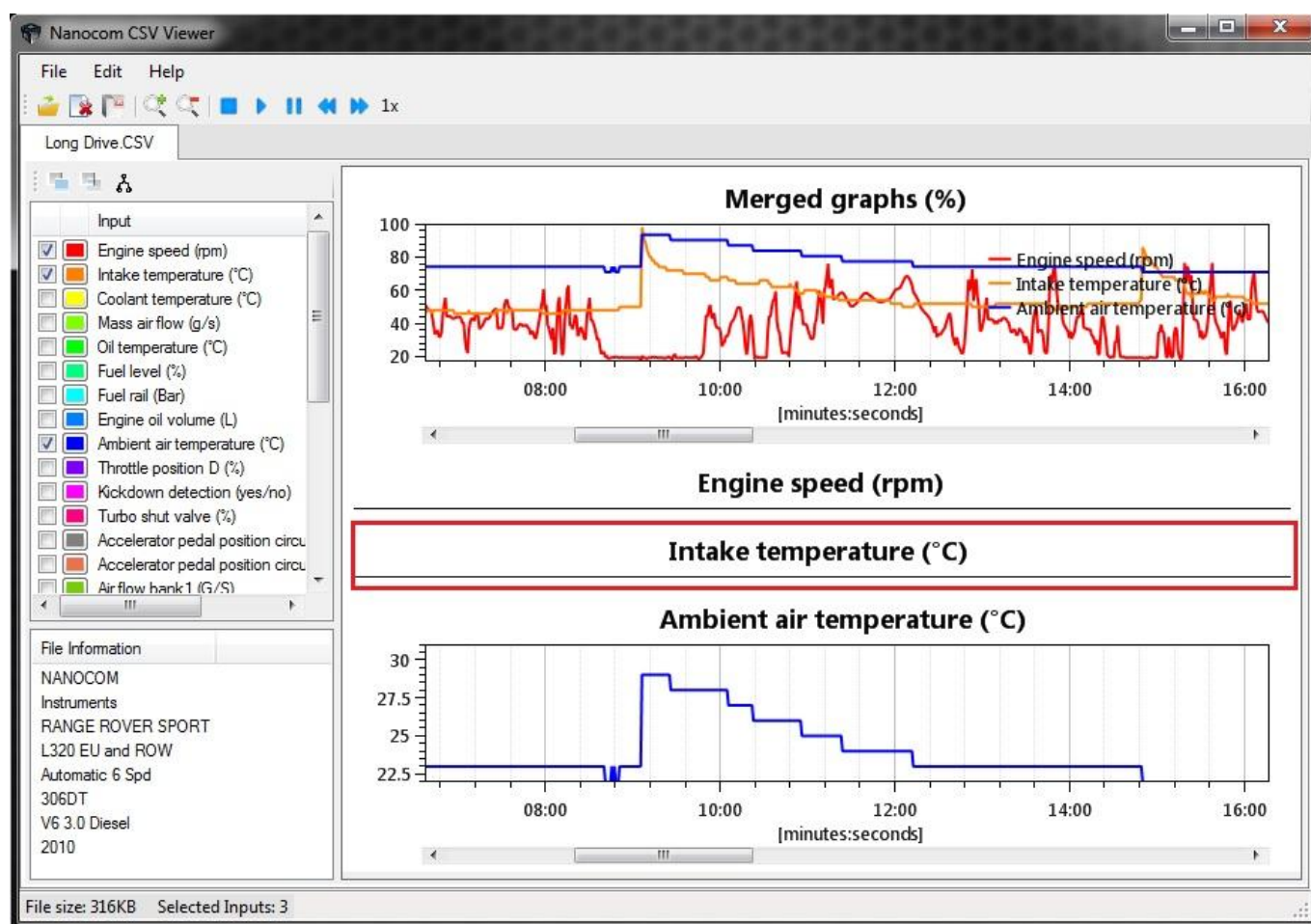
Every input captured by the Nanocom comes with its own set of data, title and measurement unit. The title and measurement unit are visible both in the Inputs List and Graph Panel areas of the program interface. It is important to note that the Y-axis (vertical) of the relevant graph is the axis that the certain measurement unit applies. The X-axis (horizontal) represents the time in seconds.

Merged/Unmerged Graphs

There are two ways to arrange the graphs on the Graph Panel. The merged and the unmerged setup. The button that handles this setup is the "Merge/Unmerge Graphs" in the Document Toolbar. Whichever the selection is, it only applies to the specific file it refers to. The default mode is unmerged.

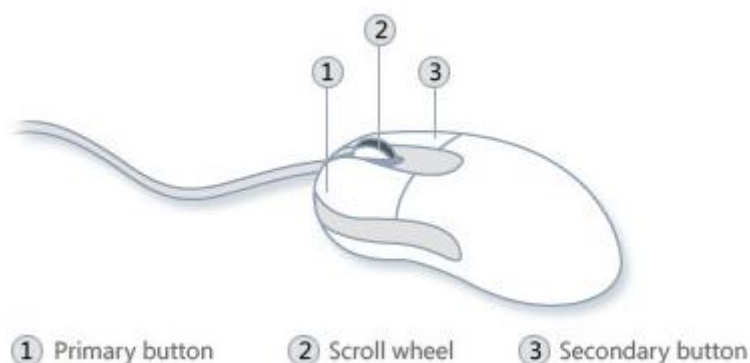
The Unmerged view displays all the graphs in the Graph Panel as individual entries that may be studied in detail. The Merged view displays all the graphs in a single panel so that they can be observed relative to each other. The list of all the inputs below the merged panel are individually minimized graphs that already appear in the merged group, left clicking on any of these, will expand them.

The title of the merged graphs panel is called "Merged Graphs (%)" and has a percentage symbol instead of a measurement unit. This is to allow graphs of different unit scales to be plotted on the same axis and have their values adjusted to fit the same plotting range. The original values of a certain input can be studied just below the Merged Graphs Plot.



Graph Interaction

Every input in a CSV file is mapped into a graph in the Graph Panel. With the use of the mouse the view can be zoomed in/out and panned left/right. By default the program plots all the graphs completely zoomed out so all the values are initially visible. Below is a detailed explanation for every interaction:



Scroll Wheel

There is double functionality tied to the mouse scroll wheel. First it scrolls the contents of the Graph Panel if the number of values is too large and won't fit the window space. Secondly it is used to zoom in/out of the graph on the horizontal axis once a particular graph is selected.

Middle (Scroll) Click + Drag

While the mouse pointer is over a graph area, holding the middle mouse button pressed and moving the mouse left/right creates a selection box. When the button is released, the graph area inside the selection box gets zoomed.

Right Click (Primary) + Drag

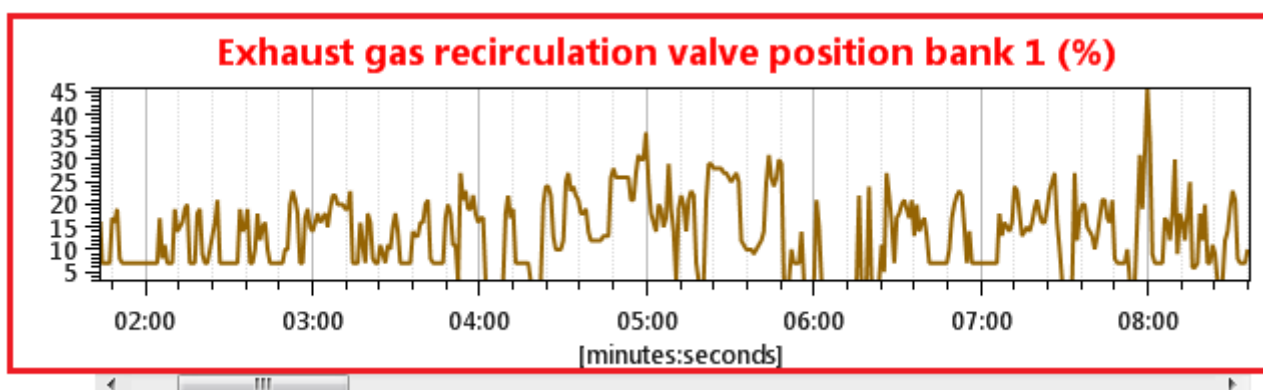
By keeping the right mouse button pressed and dragging the mouse within the graph area, the graph gets panned left and right. Panning is limited between the start and end points of the graph. A fully zoomed out graph cannot be panned.

Left Click (Secondary)

By left clicking a graph, it gets selected. If the left mouse button is held down the x/y values of the graph closest to the mouse pointer get displayed.

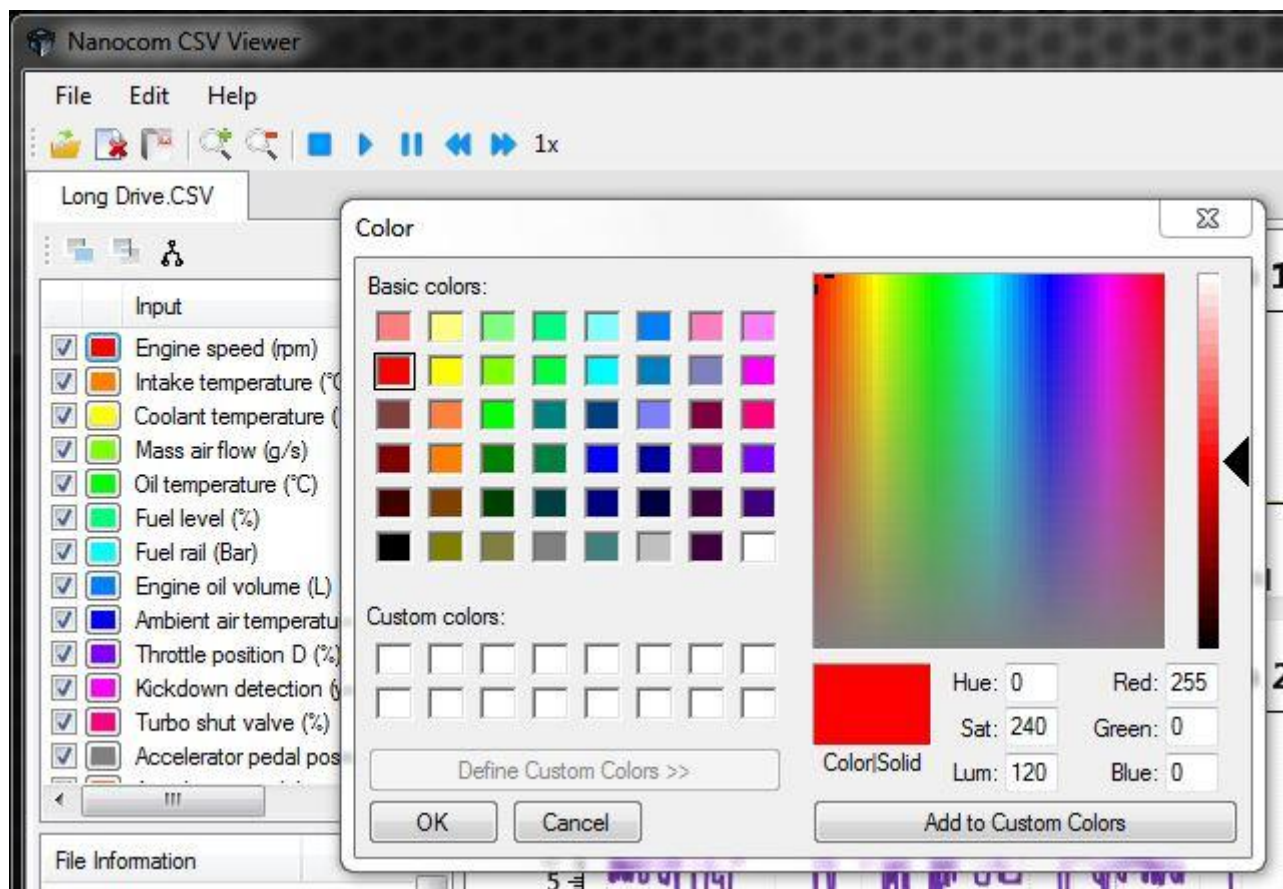
Selecting/Deselecting a Graph

In order to manipulate the view of a graph it first needs to be selected. To select a graph make sure the mouse pointer is within the graph area (including the title) and left click. When the graph becomes selected, its title will turn red. To deselect a graph move the mouse pointer outside the boundaries of the graph box.



Selecting Graphs Colors

A color picker has been implemented in order to aid the visualization of the graphs. For each input a different color can be selected and this color will be also displayed in the graphical representation. To change a predefined input color you need to click on the colored box associated with a particular input. This will display a new window which will contain the color selection. You can either select one of the basic colors or use the canvas to select your own preferred color out of more than 16 millions combinations.



Clicking on the canvas selects a color and the slider adjusts the intensity of the selected color. Custom colors can be introduced by altering the Hue, Saturation, Luminosity, Red, Green or Blue values. The preferred color can be added to Custom Colors for later reference. The colors are automatically saved by the CSV Viewer.

Additional support information and links:

At Blackbox Solutions, we strive to provide as much documentation about our products as possible, as well as member support forums and video demonstrations for all of our diagnostic equipment.

There is a documentation section available here: <http://nanocom-diagnostics.com/downloads>

This page hosts a vast number of support documents from individual ECU guides to Nanocom Firmware upgrade guides through to complete Nanocom user guides.

Also, we have the Nanocom Support Forum: <http://forum.nanocom-diagnostics.com/>

The forum contains a huge amount of accumulated knowledge, hints and tips. Aswell as the constant and powerful support offered by other Nanocom owners and of course, the full BBS support team. This is our most powerful support tool.

You can also find many useful Tutorial and Demonstration Videos on our YouTube Channel, found here:

<https://www.youtube.com/user/BBSP38/featured>