



Updated up to Aurora version 1.3.0.2

Contact information

eMeeuw Engineering
Gerben van Manenstraat 110
9204LP Drachten
The Netherlands

Email : [info@ eMeeuw.nl](mailto:info@eMeeuw.nl)
Phone : +31 (0)6 273 62 522



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Introduction

The Aurora software allows the management of large collections of formulations used in dispensing paint, ink and other substances. It supports both the paint specific use of Cans prefilled with base paints and the ink specific return-ink management.

Aurora communicates to most retail and industrial dispensers using the industry standard UDCP protocol and allows importing newly created formulations from several photo spectrometers. Customer specific protocols can be added upon request.

An extension to Aurora, called **AuroraMIX**, supports computer aided manual dispensing on a fast weighing scale instead of needing an automatic dispenser. Most functionality is shared between Aurora and AuroraMIX, but all references to dispensing machines in this manual can be ignored for AuroraMIX. See the AuroraMIX chapter for specific details and differences.

Aurora has been developed by eMeeuw and is continuously extended in close cooperation with Füll Engineering. Aurora seamlessly integrates with Füll's 'Dispenser Manager' to get the best out of Füll's VX and HX dispensers, providing the following functionality:

- Very user-friendly operator interface
- Selection and dispensing of large formula collections
- Create new own formulas manually or by importing from a photo spectrometer
- Print labels manually or automatically during dispense
- Weigh-in and reuse return-ink
- Seamless integration with the Dispenser Manager for dispenser-maintenance, -service and -configuration

Notations used in this manual

«Label» : A label referring to a configurable name of a directory, file, etc
<Key> : A key on the keyboard, like <Shift>, <Ctrl>, etc.
[Button] : A button in the software, like [OK], [Cancel], etc.
Can : To better differentiate between a 'Can' to dispense in and the verb 'can', a Can to dispense in is capitalized.

User interface tips


- Lists are only shown when applicable. When no list-items are available, the list is hidden by an image. This allows for customization and focuses the user on the remaining selection fields.
- The fastest way to select a formula is by using the keyboard:
 - When typing the first few letters of a formula field, Aurora highlights the first valid entry in the list.
 - Press <Arrow-Up>/<Arrow-Down> to highlight the previous/next item in the list WITHOUT having to click on the list first!
 - Press <Enter> or double-click a highlighted item to select it. Aurora automatically selects the next field.
 - Fields with only one possible item are automatically selected, moving on to the next field.
- Use <Esc> to close a window and return to the previous window.



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- Buttons can be clicked or activated by the keyboard-key(s) displayed in the corner(s) of the button. The currently active button and/or the button under the mouse-cursor is highlighted in green. Inactive buttons are greyed and cannot be selected.



- The sorting order of most lists can be changed by clicking on the column title. Clicking again on the same title reverses the sorting order.
- Some lists support the selection of multiple items by holding <Ctrl> or <Shift> while clicking an item.
-  Buttons attached to a numeric input field decrease/increase the value of the field with an appropriate amount (typically ± 1).
Keep <Ctrl> pressed when clicking the button for fine adjustments (typically ± 0.1).
Keep <Shift> pressed when clicking the button to take 5x larger steps (typically ± 5).
- When editing colorant amounts (See Edit Formula and Manual Dispense), you can move to the next colorant with either <Enter> or <Arrow-Down>. Move to the previous colorant with either <Shift><Enter> or <Arrow-Up>.



Installation and File locations

Installation

Aurora is mainly installed by simply copying the complete file structure to hard disk. After this only the database engine needs to be installed as described below. The location of the UDCP dispenser driver is automatically detected when registered (see the Dispenser Manager software manual for details).

Below «Root» refers to the Root directory in which all Dispenser Manager related files are stored. As a standard this is **C:\Dispenser**, but it can be any directory where all users have full read and write access.

IMPORTANT: The «Program Files» directory on Windows Vista and above has NO write access for all users and is therefore **not** allowed.

File Locations

All directories within the «Root» follow the naming scheme as specified below. Directories with configuration specific names are specified as «Label». Further below the standard name for each «Label» is specified.

Directory structure

- «Root»
 - Aurora
 - Data
 - Images
 - Labels
 - Languages
 - «Spectro-InterfaceDir»
 - «Dispenser-DriverDir»
 - «Dispenser-InterfaceDir»

Standard label names

«Root»	: C:\Dispenser
«Dispenser-DriverDir»	: DM
«Dispenser-InterfaceDir»	: UDCP
«Spectro-InterfaceDir»	: Gretag

Main programs and locations



Aurora.exe : Aurora program.
Located in the Aurora directory



Firebird-2.5.xxx.exe : Database engine installer v2.5.2. or higher
Needs to be started only once during installation.
See 'Installing the database engine' below.



DM.exe : Dispenser Manager. The dispenser driver for the Füll VX and HX dispensers. Like any UDCP compliant driver the default behaviour of Aurora is to automatically start this each time Aurora is started.
Located in «Dispenser-DriverDir».



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«Dispenser-InterfaceDir» : Specify the same directory both in Aurora and the dispenser driver software for storing interfacing files, like dispense commands. UDCP compliant drivers automatically link to the correct directory.

Installing the database engine

Aurora uses Firebird as the SQL database engine. Typically, Firebird is already installed on the dispenser PC when supplied by Füll. When installing Aurora on a new PC follow the procedure below.

Locate the Firebird installer for your operating system and start it. Typically, this is the file 'Firebird-2.5.2.26539_0_x64.exe' for 64bit Windows or 'Firebird-2.5.2.26539_0_Win32.exe' for 32bit Windows, located in the Aurora directory. The digits in the filename specify the version. Do not install a version lower than the version specified above. When in doubt if your PC uses 32 or 64bit Windows right-click on your computer icon and choose properties or ask your IT department.

Follow the directions on screen, select your preferred language, agree with the licence agreement and further keep all default choices. See 'Database installation details' at the end of this manual for a complete overview of all dialogs that will be shown during the installation process.

NOTE: Windows typically shows two warnings about the dangers to install new software on your PC. Make sure you have sufficient privileges and allow the software to be installed.



Quick-Start guide

This chapter assumes you've read the chapters 'Introduction' and 'Installation and File locations', installed the database engine and copied your start-up configuration to C:\Dispenser.

Configure Aurora for your formulas

- Start Aurora by double-clicking C:\Dispenser\Aurora\Aurora.exe.
If any errors occur make sure you've installed the correct database engine for your Windows (32 or 64 bit).
- Click on the current user level in the left bottom corner of the main window
- Change the level to 'Admin' (password: admin)
- Now click on the Settings button
- In the Settings window, change the language if needed, apply and restart Aurora.
- After login in as Admin again and pressing Setting, go to tab sheet Formulas and define all your colorants.
See Settings / Formulas / Colorants for details
- Decide how you want to organize your formulas.
See Settings / Layout / Field names for details
- When using a scale (needed for Return-ink and AuroraMIX), specify one now.
See Settings / Dispenser / Scale for details
- In Setting / General / Users edit the Admin password (and remember it!)
Always keep one user without a password and grant him/her only limited rights.
This is the user that is automatically logged in when starting Aurora.
- Create a few test formulas and find them back again to see if your group structure works well for you. After this delete them or modify them to represent usable formulas. See Formula Editing for details.
- Install your label printer and make it the default printer in Windows.
Now select a formula, dispense it and inspect the printed label.
See Settings / Layout / Labels and Defining custom labels for details

AuroraMIX specific setup

- Place your scale on a stable table for ergonomic
- Place your monitor behind the scale in a way that you easily see BOTH the screen AND the flow you are pouring
- Place the keyboard so that especially the right side of it is easily accessible.
AuroraMIX dispensing is optimized for using only the numeric keypad and cursor keys for maximum efficiency.

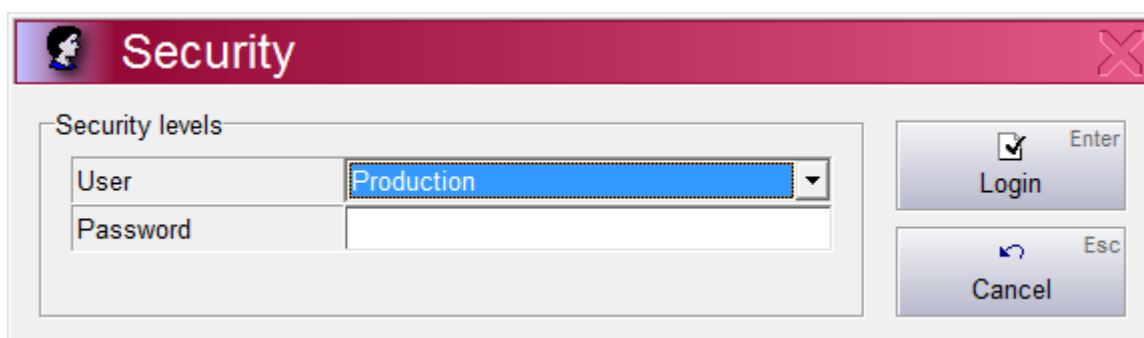


Main Window

After starting Aurora the main window shown below appears, providing access to all available functionality.



Depending on the user that is logged in buttons can be active, disabled (visible, but deactivated) or hidden. To change the user, click on the current user shown in the left bottom of the main window. Then specify the user and password in the window shown below.



The users can be created and edited in the settings window. There must always be one user defined without a password. This is the default user that is automatically logged in upon program start. Make sure this user does not have too many rights.

Depending on the configuration it is possible to select a certain formula immediately from the main window by scanning a barcode. See 'Defining custom labels' on how to configure this.



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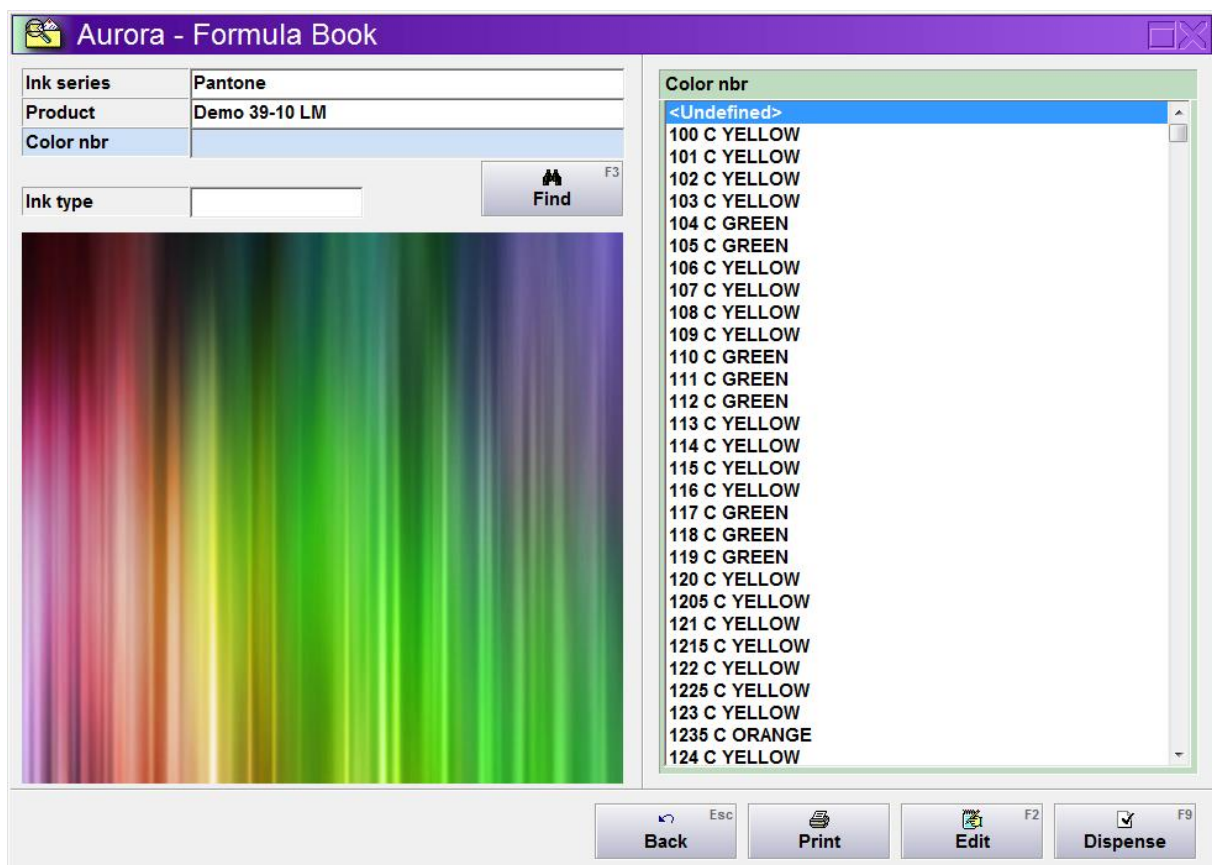
Note that in case the database engine has not yet been installed or one of the formulations databases is not found, the error 'Database could not be started' is shown. Follow the directions on screen and when necessary ask the network administrator for assistance.



Formula Book

The Formula Book contains the typically large quantity of standard formulas usually provided by the colorant supplier. The formulas in the Formula Book database can be changed by the user, but will then be saved in the Own Formulas database. Therefore, the Formula Book database can be easily updated to the latest version, without losing customer specific modifications.

Note: In some markets all formulas are created and maintained exclusively in Aurora and no large quantity of standard formulas need to be imported regularly. In this case, there is no need for separation between standard and own formulas, so the formula book is hidden.



Select a formula as described in the 'user interface tips' section of the introduction. Formulas are grouped in Collections, so Collection is presented as the first field of selection. When only one Collection exists, this is selected automatically and the next (Product) field is activated or also automatically selected when only one exists, etc.

Note that the field captions can be changed in the settings screen to any text you desire. Collection, Product, Name and Base are merely the defaults.

The list covering the right part of the window is dynamically linked to the active field, showing all selectable items. On top of the Windows standard behaviour, Aurora supports scrolling/selecting in this list WITHOUT leaving the active selection field. This means that while typing in the selection field or moving the cursor there with <Arrow-Left>/<Arrow-Right>, you can highlight another item in the list with <Arrow-Down>/<Arrow-Up>/<Page-Down>/<Page-Up> and select the highlighted item with <Enter>.



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Typically, you select an item by typing the first 2 or 3 characters. Aurora automatically scrolls the first item starting with these characters into view and highlights it. You then move a short distance down to find the item of choice and press <Enter> to select it, automatically moving to the next field. This allows for very fast selection of formulas.

To find an item based on text in the middle of the item, type the text and click [Find]. When you click [Find] WITHOUT any text in the active field, the 'Find by color' window is opened (see Chapter Finding formulas by color)

To clear the previously selected fields and restart from the first field, click [Clear].

As soon as a formula has been selected the formula details are shown in the left bottom of the window. The colorant amounts are shown as percentages while the amount is unknown and in volume or weight after the amount has been specified. It can also be configured to hide the exact colorant amounts for certain users, to keep the formulas secret.

Ink series	Pantone
Product	Demo 39-10 LM
Color nbr	1235 C ORANGE
Ink type	UV

Amount: 200 g Cans: 1

Colorant	Amount
Yellow	96.66 g
Varnish	83.24 g
Warm red	19.68 g
Reflex blue	0.42 g

Preferred color

Back Print Edit Dispense

After all details are specified, [Dispense] is highlighted, so just press <Enter> again to dispense the selected formula. To make small custom modifications to a formula, click [Edit]. The modified standard formula can then be dispensed and/or saved as an own formula. See Edit Formula and Dispensing for further details.

It can be configured to automatically print a label during dispense. With [Print] you can manually print additional labels for the formula.

[Back] first clears the screen to select another formula. Click it again to return to the main window.

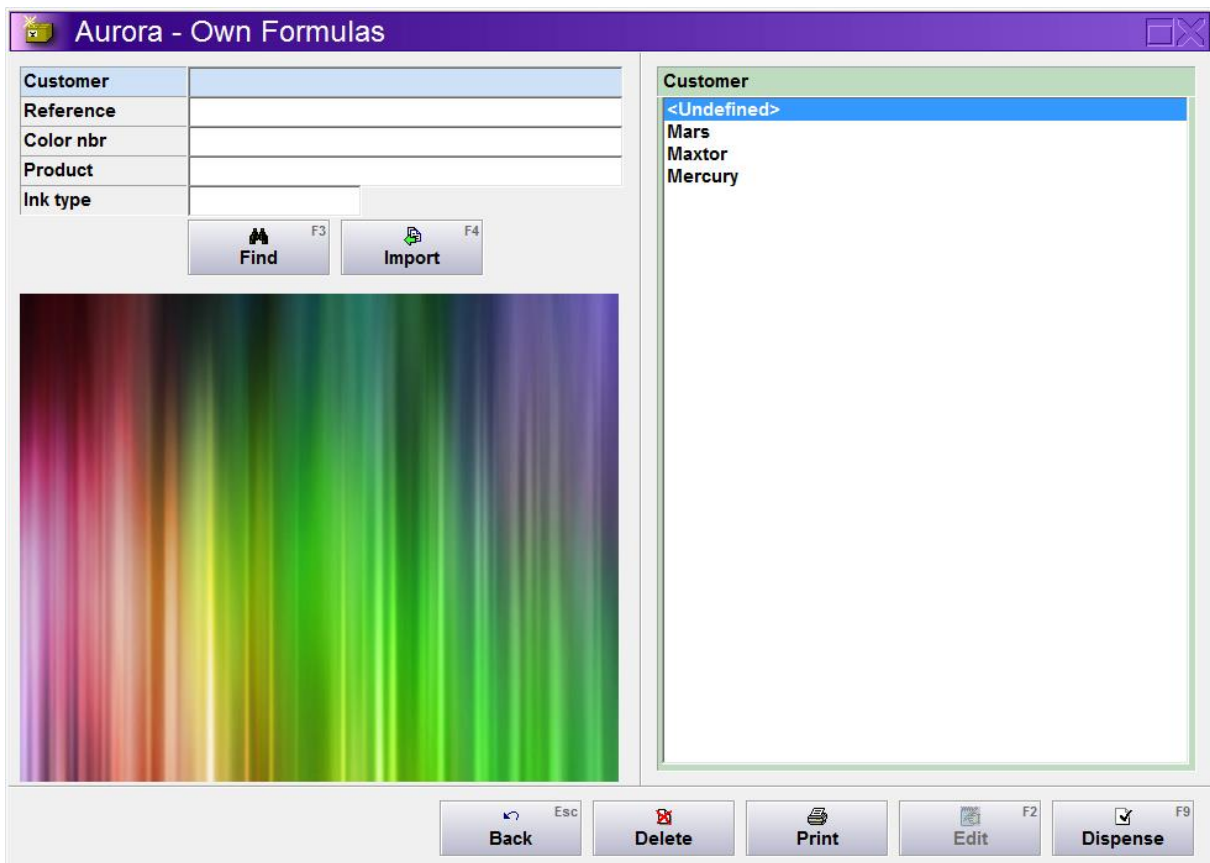


Own Formulas

The Own Formulas database contains all custom made formulas. When updating the standard formulas database, the own formulas remain unchanged.

Own formulas can be created by:

- Changing a standard formula
- Saving a manual dispense formula
- Importing a new formula from a photo spectrometer



Selecting an own formula is similar to selecting a standard formula (see there for more details). Only the grouping is not based on a single collection field, but up to 4 group fields are provided. The names of these fields are configurable and one or more can be deactivated and hidden. In the example above only the first 2 groups are enabled and called Customer and Reference.

Next to the buttons already explained in the standard formulas, two extra buttons are available:

- [Import] looks for the presence of a photo spectrometer formula export file. When found this formula is loaded into the Edit Formula window for further editing and/or saving into the own formula database.
- [Delete] allows deleting the currently selected formula from the own formulas database.



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When a formula has been selected, it's details are shown in the window below and it can be dispensed, edited, etc. just like a standard formula. See Edit Formula and Dispensing for further details.

Aurora - Own Formulas

Customer	Mars
Reference	Mars label 2015
Color nbr	Pantone - Red 032 C RED
Product	Demo 39-10 LM
Ink type	UV

F3 F4

Amount: 250 g ☒ Cans: 1

Color	Colorant	Amount
	Red 032	153.90 g
	Orange	48.55 g
	Varnish	46.90 g
	Black	0.65 g

Extra glossy

Esc F2 Enter F9

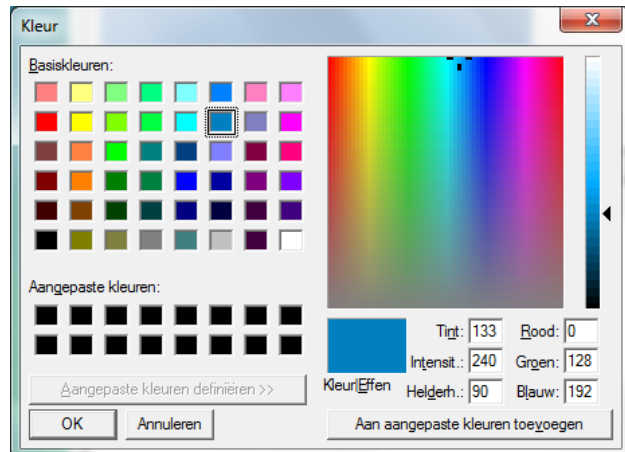


Finding formulas by color

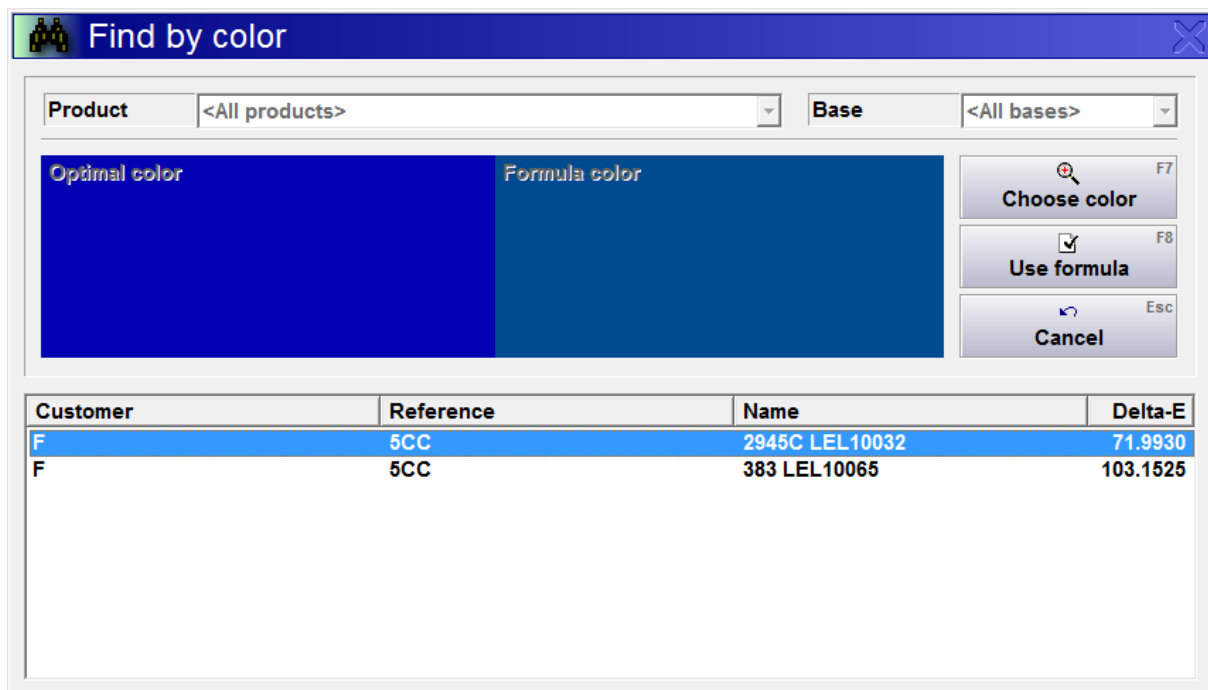
When your formulas contain color information, typically encoded as L*ab data, Aurora supports finding formulas by just choosing the color you are looking for.

You can open the Find by color window from both the Formula book and Own formulas window. Just click [Find] WITHOUT entering any search text in the current selection field. Note that nothing will happen if the database doesn't contain color information.

In the Find by color window below click on the optimal color panel or on [Choose color] to specify the color you're looking for. As a standard Aurora searches for any formula regardless of the formula's product or base. Optionally you can specify to find only formulas having a specific product and/or base. In configurations not using products and bases, as is common in the printing industry, the product and base fields can be reconfigured to e.g. substrate material and substrate finish. This allows to find the correct formulas even for semi-transparent inks where the the substrate significantly influences the appearance.



The found colors are listed and sorted by the color-matching accuracy Delta-E. Scroll through the list to see the formula colors in the Formula color panel for comparison with the optimal color you're looking for. Double-click a line or click [Use formula] to return to the formula selection window with the selected formula.





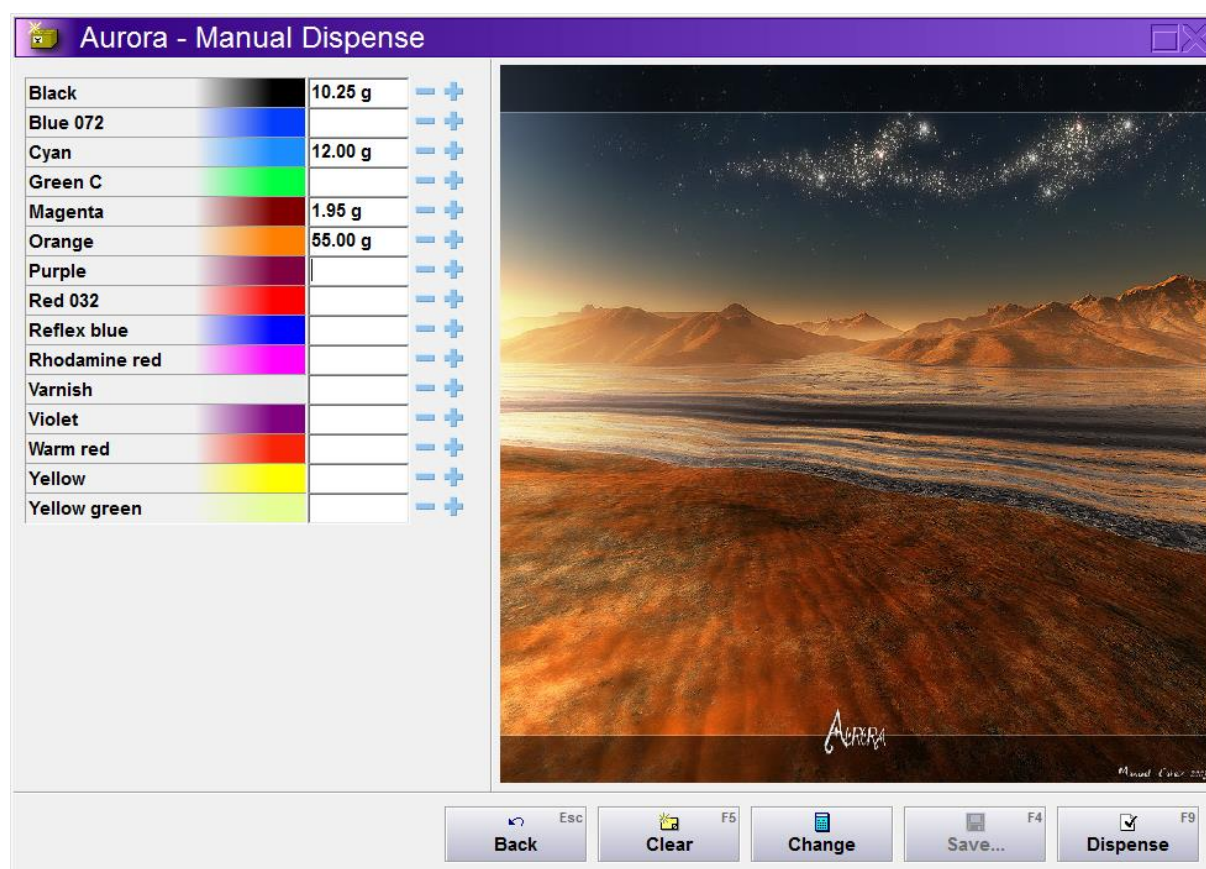
Manual Dispense

Here 'Manual' refers to the manual selection of all the colorants to dispense. It can be used both on an automatic dispenser and using computer aided manual dispensing on a scale. See AuroraMIX for more details.

To dispense some additional colorants or a new formula not in any database yet, Manual Dispense can be used. Here you just enter the exact amount of each ingredient. After that you can immediately dispense it or save it as an own formula for later selection and dispense. See Edit Formula and Dispensing for further details.

[Clear] clears all amounts, allowing you to define a new formula.

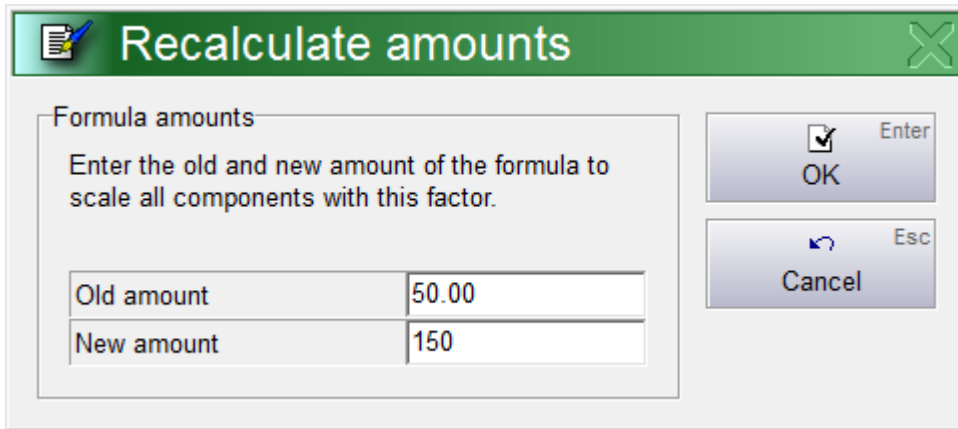
[Back] returns to the main window.





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[Change] allows to increase or decrease all amounts keeping the relative composition unchanged, using the dialog below. Here we increase the amount by a factor of 3.



The dialog box is titled "Recalculate amounts" with a green header bar. It contains a section titled "Formula amounts" with the instruction: "Enter the old and new amount of the formula to scale all components with this factor." Below this instruction is a table with two rows: "Old amount" and "New amount". The "Old amount" row has a value of "50.00" in the adjacent input field, and the "New amount" row has a value of "150". To the right of the table are two buttons: "OK" (with a checkmark icon and "Enter" text) and "Cancel" (with a curved arrow icon and "Esc" text).

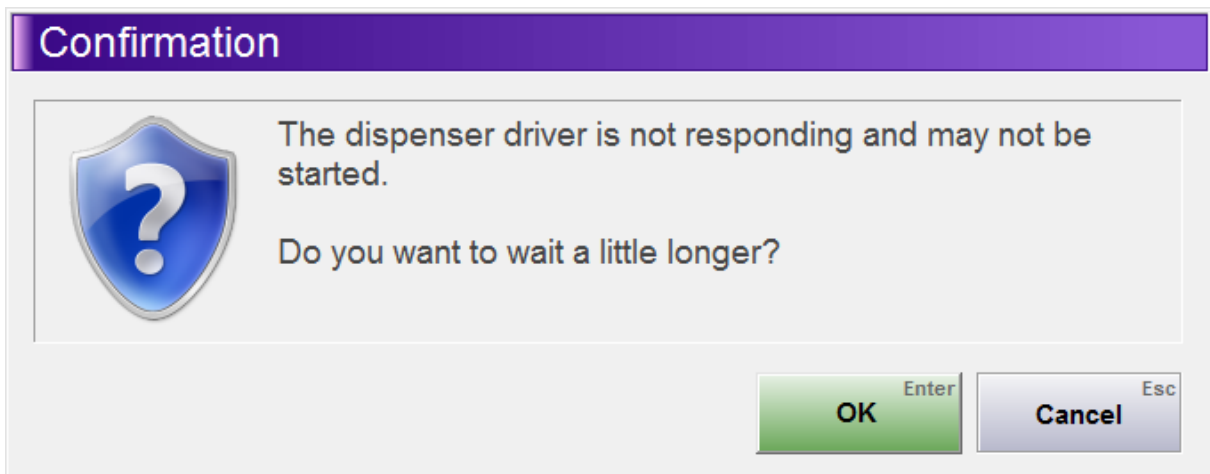
Old amount	50.00
New amount	150



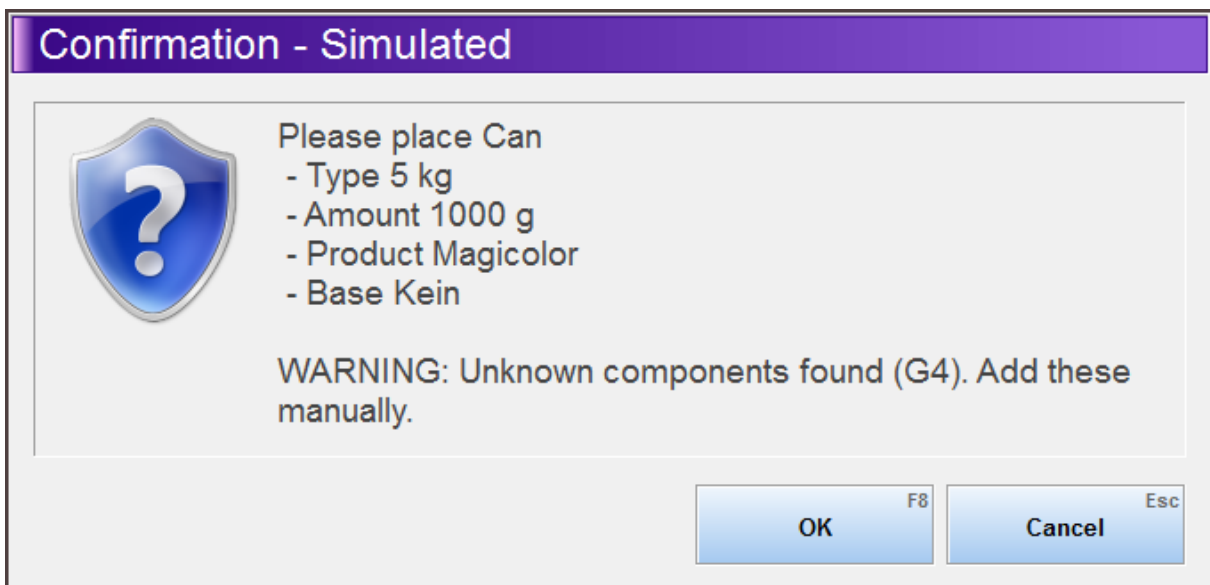
Dispensing

The actual dispensing process differs between Aurora and AuroraMIX, so all machine related details in this chapter do not apply to AuroraMIX. All other details do.

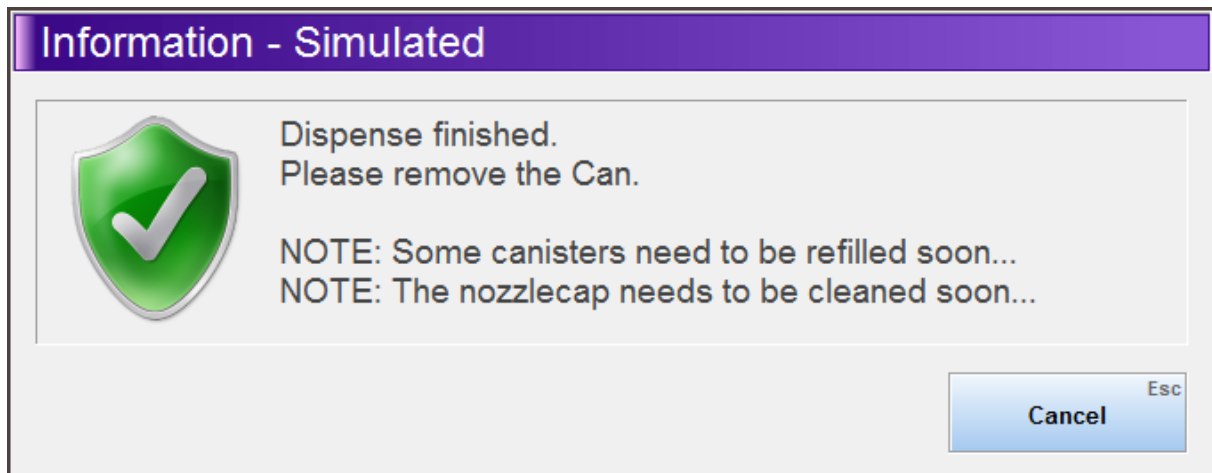
When pressing [Dispense] Aurora sends the necessary dispense commands to the dispenser driver. It also monitors if the dispenser driver is responding. When there is no response detected, the dispenser driver is most likely not (fully) started yet and the message below is shown.



When the driver detects the dispense request, it can start the dispense automatically or show a message to prompt for operator action.



After the dispense has finished the driver typically notifies the operator about this, prompting him to remove the finished Can from the dispenser, etc..



Usage of Return-ink

In case Return-ink management is used, Aurora automatically checks before every dispense if there is usable returned ink in stock. Two types of use are possible:

1. Exact formula match
2. Add missing colorants to an existing return ink Can

Use 1: Exact formula match

Return ink Cans are found that 'exactly' match the formula to dispense. Note that Aurora compares this on actual ingredients to allow formula name changes and allows for small, configurable differences to support dispensing tolerances. The sorting order of the list is so that the best matching Cans are at the top of the list. The sorting order of the list is so that the oldest Cans are at the top of the list.

The operator selects the Can he'd like to use and clicks on [Use] below to use all or some of this ink instead of dispensing new ink. Return ink Cans used in this way are marked as reserved until they are weighed in again or deleted in the return ink management window. While a return ink Can is reserved, it is not suggested for use in new dispenses. Using the History window you can find out which return ink Cans are still reserved.

Click [Ignore] to ignore the suggested use of return ink and dispense new ink.

Click [Abort] to cancel the dispense without reserving any return ink Can.



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Use 2: Add missing colorants to an existing return ink Can

Return ink Cans are found that contain some of the needed colorants, but never more than needed in a Can that is big enough for the entire dispense. This means that after adding the missing colorant amounts, such a Can can be used instead of dispensing the entire formula anew. The sorting order of the list is so that the best matching Cans are at the top of the list.

If the operator wants to use one of the Cans with returned ink as the starting point for the new dispense, he should get the Can from the specified location, select it in the list and click [Use]. Aurora will then subtract the ingredients already in the selected return-ink Can from the current dispense, so only the missing colorants/amounts will be added.

Return ink Cans used in this way receive a new label with new description and ID. The original Can is marked as being used for this new dispense and are removed from stock.

Click [Ignore] to ignore the suggested use of return ink and dispense new ink.

Click [Abort] to cancel the dispense without reserving any return ink Can.

See 'Return-ink Management' for further details.



AuroraMIX Dispensing

After selecting a formula and pressing [Dispense] AuroraMIX starts the computer aided manual dispense process using the window below. All actions here can be triggered by keyboard, mainly using the numeric keypad and cursor keys.

General window sections

- The colorants to dispense are shown in the left top, color-marked to show their progress.
- Below them is the total formula amount and the buttons to scale this.
- In the right top, the process status is shown with indications to place a Can, which colorant is currently busy, tips to continue or stop pouring, etc.
- The lower half of the window is the progress graph helping you to easily dispense quick and accurate.



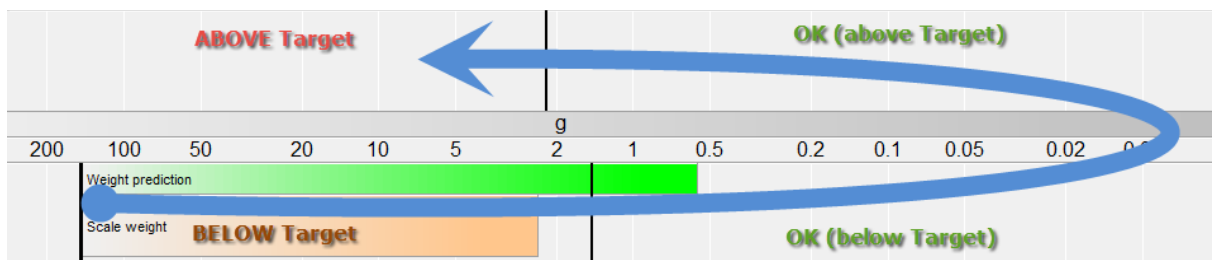


The progress graph

The progress graph shows the **remaining** amount to be dispensed for the current colorant. It has a varying scale where the distance between 200 and 100g is just as large as that between 20 and 10g and between 2 and 1g. This allows us to present the last few grams, that determine the accuracy, in great detail. For people used to conventional bar graphs it will take some getting used to, because when pouring in a steady flow the graph will move faster and faster in the end. Please do use the graph as your main focus point during pouring, because after 5 to 15 attempts you will match your old speed again and after that it will be a significantly faster method than just looking at the scale itself. Make sure you can see both the monitor and your flow in one glance, so you can gradually reduce the flow when you near the end of the dispense.

The most important thing is to decide when to stop pouring. To help you in this AuroraMIX does not only show the remaining amount based on the current weight (this is the wide bar in the figures below), but also a narrower bar that predicts the total weight that would be dispensed when we stop pouring now. This is the weight prediction bar which includes the calculated weight currently in the air and the amount still added while you (gently) stop pouring.

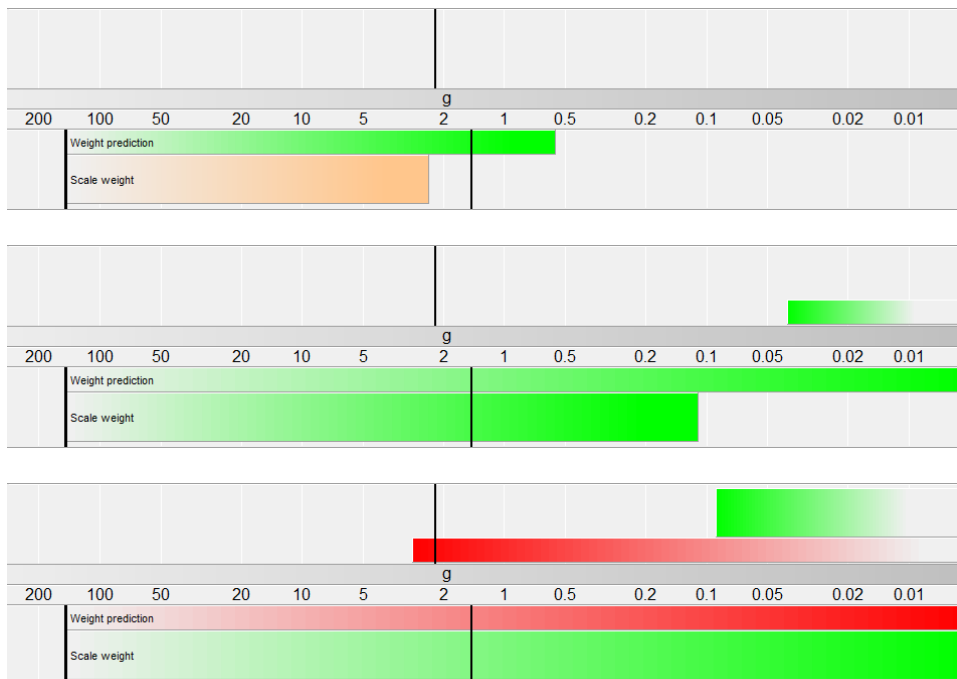
The bar graphs move from left to right in the bottom half while below target and in the top half from right to left when above target. The vertical bars show the starting point (left-bottom), the under-tolerance (mid-bottom) and over-tolerance (mid-top).





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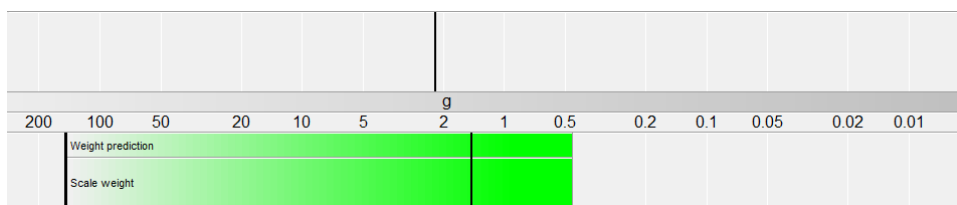
When you would keep pouring you would see the figures below progressively. Notice that the colors change when below, in and above tolerance.



Actually all that you have to do now when pouring is:

- Pour with a steady flow. Optimally you start with a fast flow and slowly reduce the flowrate when the weight prediction nears the under-tolerance.
- When pouring at a steady minimal flowrate wait until the weight prediction passes the under-tolerance (it then changes color from orange to green).
- Then stop pouring immediately, but stop gently with a repeatable motion. So better to always take nearly a second to stop, than to sometimes stop fast and sometimes stop much faster.

After you stop, ideally the wide scale weight bar catches up with the narrow weight prediction bar, showing the stable end weight. Below is the graph that would be shown when stopping after seeing the first of the three graphs above.



If this is not the case, don't worry. First do about 10 test dispenses of 30 grams each. Note that you can use the same colorant in a clean Can and put it back in your storage after testing. Focus on a steady slow flow, a repeatable stopping motion and stop as soon as the weight prediction becomes green. If you now get about the same over or under dispense each time, then you can easily compensate for this by changing the weight prediction time setting. See Settings / Dispenser / AuroraMIX Settings.



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Try to avoid stopping much too soon and starting again for the last few grams, because then you lose much of the weight prediction advantage and the total dispense will take significantly longer.

Placing a Can

The screenshot shows the 'Weighed dispensing' window. It features a table of colorants, a status section, and a total formula amount display.

Colorant	Target	Dispensed	Deviation	Status
Yellow	145.86g	0.00g		Place Can Product Demo 39-10 LM Base UV Can type 3,5 kg Bucket Can number 16061 Formula 124 C <input type="button" value="OK"/> Enter <input type="button" value="Abort"/> Esc
Black	3.06g	0.00g		
Warm red	20.58g	0.00g		
Varnish	30.50g	0.00g		

Total formula amount [rescaled] 200g [0%]

When starting a dispense you are first prompted to place a Can. It doesn't matter if the Can was already placed or that you place it now. Just place it and confirm with [Enter]. Never manually tare the scale after this (in general never do this at all).



Computer aided weighed dispensing

Colorant	Target	Dispensed	Deviation	Status
Yellow	145.86g	118.15g	-19.0% [27.7g]	Remaining
Black	3.06g	0.00g		27.71g Tip Continue...
Warm red	20.58g	0.00g		
Varnish	30.50g	0.00g		

Total formula amount [rescaled] 200g [0%]

g

200 100 50 20 10 5 2 1 0.5 0.2 0.1 0.05 0.02 0.01

Weight prediction

Scale weight

Next Enter Abort Esc

The default dispensing order is to start with the largest amount first, so the small amounts do not stick to the bottom of the Can. After this we dispense from small to large amounts, because the smallest amounts are hardest to dispense accurately. When an error is made on one of the first colorants, the formula can be scaled a bit or in the worst case discarded with as little waste as possible.

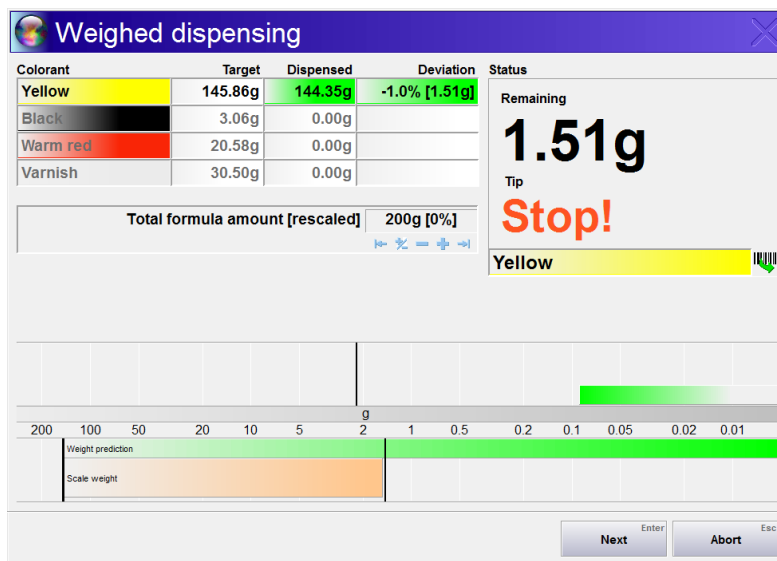
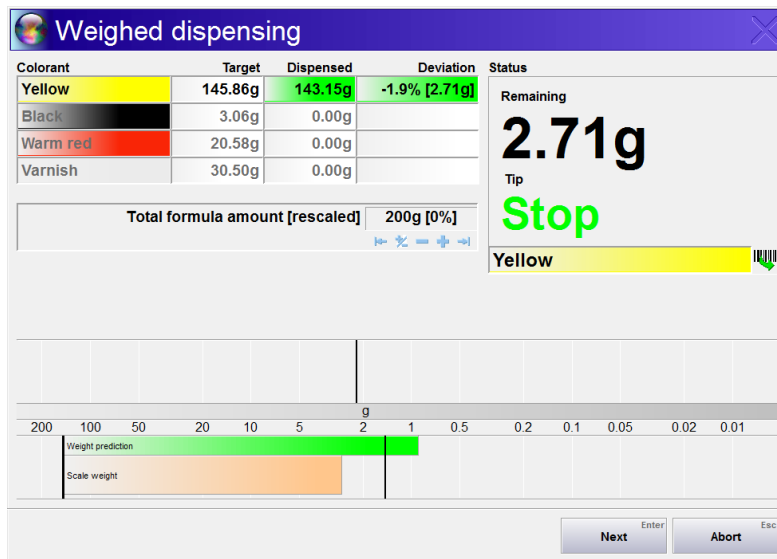
To optimize this further, you could very fast and inaccurately pour in about half of the largest colorant and then switch to the next colorant (smallest one). When finished with all smaller colors AuroraMIX automatically lets you dispense the remainder of this first large colorant (and any other that you may need to dispense more for).

To move to the next colorant just press [Enter], AuroraMIX handles stabilizing the scale between colorants. When the next colorant is already finished it is automatically skipped and when all are done you complete the dispense with this. To immediately move to a specific colorant press [1]..[9] (best on the numeric keypad) to select line 1..9 from the list. Alternatively you can click a line with the mouse to move to this colorant.



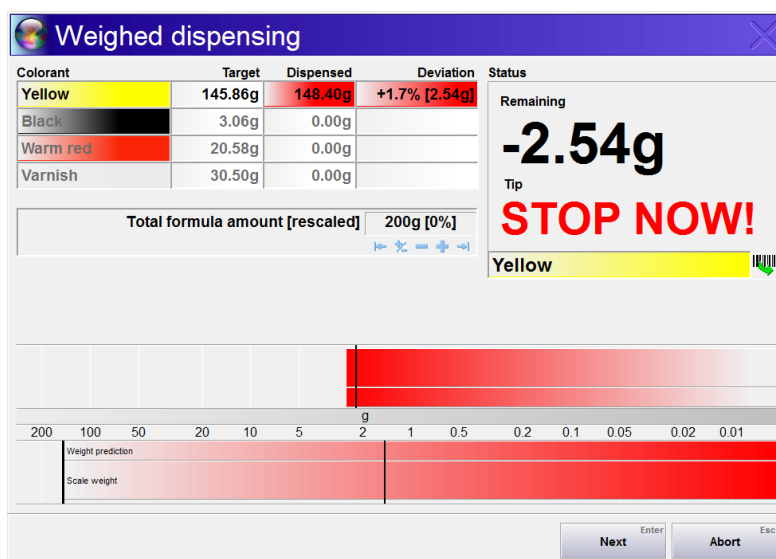
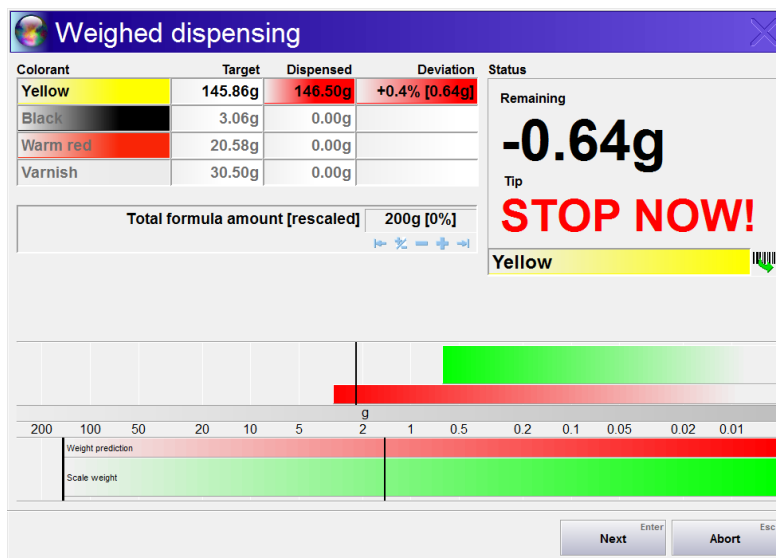
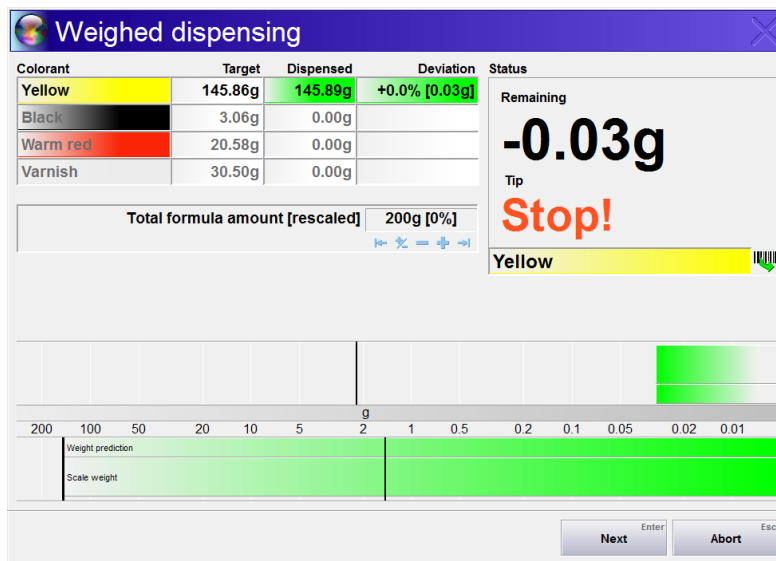
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Below is a slideshow of windows showing you what to expect when dispensing, both when stopping in time and when stopping too late.





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Dispensing some colorants automatically

When you have an automatic dispenser to dispense your most-used colorants and you dispense all other colorants manually then you can still use AuroraMIX. It automatically recognizes which colorants can be dispensed by the dispenser. You can configure if you want to dispense these colorants before or after the manual colorants.

In the example window below G4 and G5 can be dispensed automatically and were configured to be dispensed first. The automatic components are marked as a group by the blue vertical bar on the right of the colorant lines. When one of these lines is selected the entire group is prepared for automatic dispense as is shown by the status window on the right with a blinking 'Automatic dispense' header.

By pressing [Start] the remaining amounts of all automatic colorants are sent to the dispenser. During dispense the [Start] button changes to [Abort]. After the dispense has finished the dispense amounts are updated using the results are received from the dispenser and the (manual) colorant to be dispensed is selected.

When the dispenser dispensed below target or when you later scaled-up the formula (see below), AuroraMIX can easily dispense the remaining amounts on the dispenser later, just like is possible for manual components. Note that when selecting any colorant line from the group of automatic colorants, all remaining amounts of the entire group is selected for automatic dispense.

Colorant	Target	Dispensed	Deviation	Status
G4	4.00g	0.00g		Automatic dispense Colorants to dispense: G4 [4.00g] G5 [20.00g] Start Enter
G5	20.00g	0.00g		
G1	1.00g	0.00g		
G2	2.00g	0.00g		
G3	3.00g	0.00g		
G6	30.00g	0.00g		
G7	40.00g	0.00g		

Total formula amount [rescaled] 100g [0%]

Note: To use AuroraMIX efficiently and ergonomically it's highly recommended to use it in combination with e.g. a VX5 dispenser with the options 'Sliding-table' and 'Ohaus High-Speed scale'. The sliding table allows the scale to be pushed under the dispenser's dispense head or to be pulled out for ergonomic manual dispensing. The twin-serial/USB connection of the Ohaus scale allows both dispenser and AuroraMIX to access the scale at high speed, needed for fast and accurate dispensing.



Formula scaling

When dispensing a bit above tolerance with a critical colorant and when the total amount needed is just an estimate (or can be reused as return-ink), it is often a good choice to increase the total formula amount. In this way the critical colorant can fit within the acceptable tolerance range again.

Scaling is done using the controls below the colorant list. In the example below a 200g formula has been scaled up by 3%, making the new total 206g.

Total formula amount [rescaled]	206g [+3%]

The following scaling options are possible, each with their own keyboard shortcut on the numeric keypad.

- | | |
|--|---|
| | [0] No scaling. Return tot he original amount. |
| | [/] Scale to optimum |
| | [-] Scale down 1% |
| | [+] Scale up 1% |
| | [.] Scale to maximum, so no colorant is over-dispensed. |

Note that the minimum/maximum scaling limits are configurable.
See Settings / Dispenser / AuroraMIX

Colorant batch numbers



When traceability of colorant batches is important, Aurora support extensive batch tracing

features. Typically, the dispensed batch numbers are supplied by the dispenser, but AuroraMIX does not use any dispenser. Therefore, when starting with a new batch of colorant you can enter its batch number in AuroraMIX using the [*] key or by clicking on the barcode icon shown above. Do this when the colorant name is active and its name is displayed left of the barcode icon. It is no problem to first dispense half of the colorant using an old batch and finishing it with a new one. Just enter the new batch code when you start using it and AuroraMIX will keep track of it. Scanning it with a barcode scanner to enter it is supported.

The dialog box titled "Scan new batch code" contains the following fields and controls:

- Starting with a new batch for: Yellow
- Batch code used up to now: (empty field)
- Enter the NEW batch code to use from now on: (empty field)
- Buttons: OK (F9), Cancel (Esc)



Formula Editing

When editing and saving any formula it is always saved as an Own Formula. Therefore, the selection fields that can be specified are of the Own Formula type, using up to 4 groups with customizable names like 'Customer' and 'Reference'.

Just select, specify or modify all fields and colorants as desired. Here too the selection list at the right top is hidden by a configurable image when not needed.

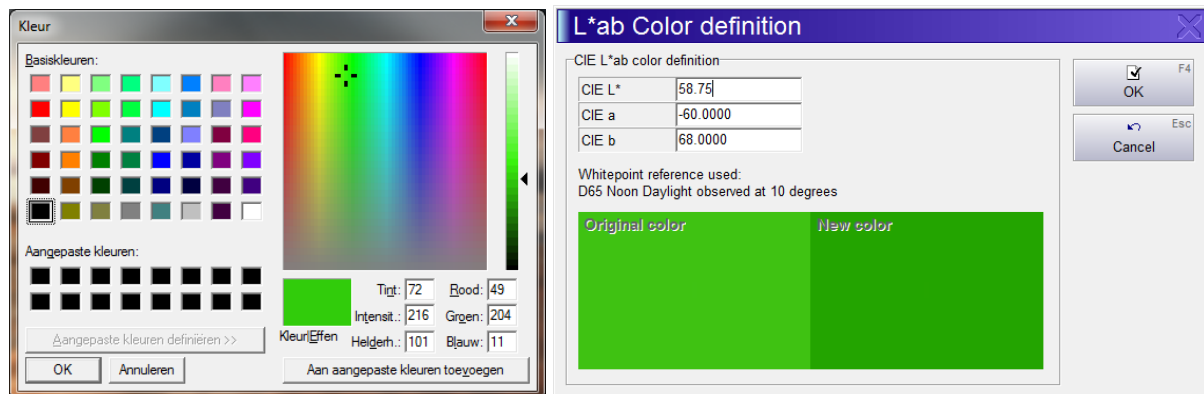
When specifying the total formula amount and confirming it with <Enter>, three different events can occur depending on the database configuration:

- Colorant quantities remain the same.
This means that when the total formula amount is e.g. doubled, and the total amount of colorant stays the same, the percentage of colorant in the formula is halved. This is used in the paint-configuration, where the total amount of colorants in the formula represents typically only around 10% of the total formula amount. The rest is prefilled base paint.
- Colorant quantities are scaled.
In this case the amounts of all colorants is automatically multiplied with the same factor, so that the total colorant quantity becomes the same as the total formula amount. This is used in the ink-configuration, where all ingredients of the formula are dispensed, without the use of prefilled Cans.
- The user is prompted to choose between the options above.



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Color



To allow finding formulas by color later, the user can enter the formula color by first selecting the color checkbox and then click the color panel or [CIE L*ab] button. The color can then be selected from a color-box (left window above) or by entering the exact L*ab values (right window above). For best color matching performance, calibrate your monitor at least once a year.

Released

Aurora can be configured to allow certain users (i.e. the lab) to define, dispense and test new formulas, while other users (i.e. production) can't see or select these formulas. Only after the [Released] checkbox of a formula has been checked, the formula is available for all users. Note that in most configurations all users see all formulas, so [Released] does not need to be set for each formula.

Corrections

When editing a formula here, you modify just the formula. Sometimes, especially when dispensing large quantities, you want to change a Can that you previously dispensed and update the formula to represent the original Can plus the added corrections. This can be done using the [Correct] button in the History window. See History for more details.

Importing old return Ink

With the [Return ink] button you can import old return ink from your stock (that was not yet dispensed using Aurora) into Aurora. See Return Ink Management for all details.



Return Ink Management

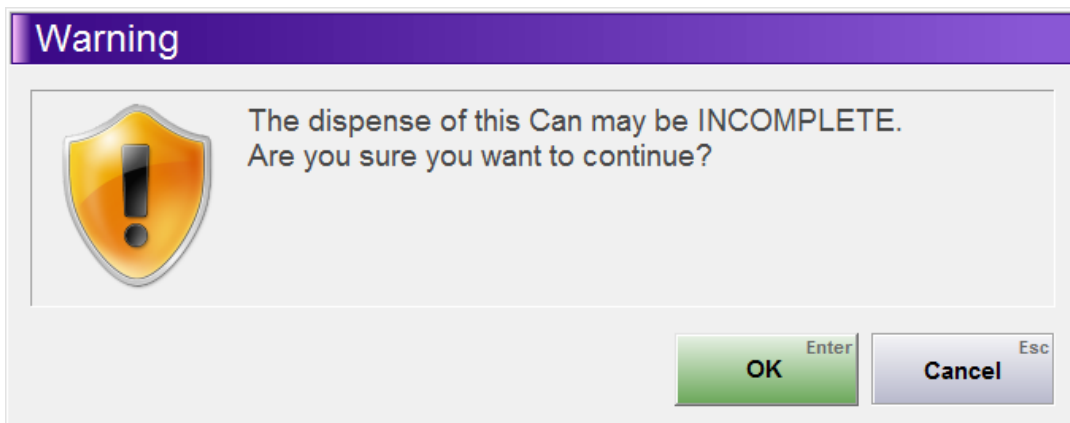
Before a Can of return-ink can be selected as the starting point for a new dispense (See Dispensing), it needs to be weighed and stored. This is done by the Return Ink management window.

Importing new return Ink

New return ink is ink that was previously dispensed using Aurora. It should be marked with a label printed by Aurora when it was last dispensed, containing its unique ID as barcode and/or text. When this Can with left-over ink is returned from the presses and you want to make this available for re-use, click [Return Ink] in the main window. In the window below enter the ID of the returned Can, which is printed on the Can's label and press <Enter> or alternatively scan the ID barcode with your barcode scanner.

Aurora automatically tares the scale just before showing the window below, so sure you place the Can on the scale AFTER clicking [Return Ink] in the main window.


When the specified Can had encountered an error during its previous dispense, the operator is warned that the formula in it may not be completely dispensed and may choose to accept the Can or not.



Before explaining how to proceed from here, we will first introduce the possible methods of how to import old return ink.

Importing old return Ink

Old return ink is ink that was dispensed and stored for reuse (long) before Aurora was used. Therefore, these Cans can't just be identified by an ID known to Aurora, but we must specify the exact contents of the Can. To do this the following methods are available:

- Select the formula from Own Formulas or your Formula Book that defines the content of the Can and click [Edit]
- Define the content of the Can using Manual Dispense and click [Save]
- Measure the old return ink with a photo spectrometer in InkFormulation and export it for dispense. Then click [Return Ink] in the main window to open the Return Ink window below and click  located right of the Can ID field.
You can also use this method to first mix many small quantities of similar color return ink in one larger Can and then import it as new return ink.

After a Can containing either old or new return ink has been selected as described above, Aurora displays the Can's details. The amount shown is the originally dispensed amount.

The Can should NOW be placed on the scale, which is monitored continuously by Aurora (note that the Can's weight can also be entered manually).

The operator can now:

- Enter the location at which the Can will be stored
NOTE: When you specified a storage range for this Can type (See Settings / Formulas / Can types) Aurora finds the first unused location and suggests this for use.
- Check if the Can type is correct and update it when needed
- Specify if the lid of the Can is already on the Can or not (which influences the weight calculated for the content)



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Property	Value
Can type	5.0 kg
Can weight	0.309 kg
Lid weight	0.114 kg
Formula	2945C LEL10032
Product	Mirage
Base	DiamondBases
Content	1.500 kg
- Base	0.000 kg
- Black	15.00 g
- Cyan	675.00 g
- Diamond F Medium	540.00 g
- F PI Additive	180.00 g
- Violet	90.00 g

Based on the information provided and the scale readings, Aurora calculates the remaining content of the originally dispensed formula and updates the display accordingly. When the operator clicks [OK] and confirms the double-check dialog below, the Can is ready for use as Return Ink in future dispenses. The operator should now store the Can at the location just entered.

Please verify that:

- Can type is '5 kg'
- The lid IS present on the Can.

Changing the details of previously stored return ink is done similarly to creating a new one, by entering the ID of the Can as specified on its label. In the window below you see that here you can also delete the Can from stock by clearing the location or weight. To only change the location or Can type without having to re-weigh the Can, use the checkbox below the storage place field.



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Aurora - Return Ink

Return details

Can ID: 11509

Can type: 5.0 kg

Storage place: RI2

☐ Change location or Can type only

Total weight: 3.510 kg

Content: 3.087 kg

☒ Lid is present on the Can

Note: Clear location and/or weight to delete this can

Property	Value
Can type	5.0 kg
Can weight	0.309 kg
Lid weight	0.114 kg
Formula	363 GREEN MQF38681
Product	Mirage
Base	DiamondBases
Content	3.876 kg
- Base	0.000 kg
- Black	82.17 g
- Cyan	379.46 g
- Diamond Medium	1083.73 g
- PI Additive	447.68 g
- Yellow	1882.96 g

Cancel OK

Just before dispense Aurora automatically checks if there is usable returned ink in stock. See chapter 'Dispensing' for further details on how to re-use the returned ink. See chapter 'History' for further details on how to obtain an overview and specific details of the returned ink stock.



History

In the history window you can find all Cans that have been selected for dispense. Typically, these Cans are already dispensed, but in case the dispenser supports buffering multiple dispense requests to dispense later, some Cans may only be scheduled for dispense.

	ID	Date	Customer	Reference	Color nbr	Location	Kg
	16064	03-06-2016 16:48	Maxtor	X1030	124 C		0.20
<input checked="" type="checkbox"/>	16060	19-05-2015 10:21	Pantone		100 C YELLOW		1.00
<input checked="" type="checkbox"/>	16059	19-05-2015 10:15	Pantone		100 C YELLOW		1.00
<input checked="" type="checkbox"/>	16058	18-05-2015 13:31	Pantone		104 C GREEN		0.01
<input checked="" type="checkbox"/>	16057	16-05-2015 11:33	UV Flex 39-10 LM		100 C YELLOW		0.00
<input checked="" type="checkbox"/>	16056	15-05-2015 17:41	UV Flex 39-10 LM		4695 C BROWN		0.00
<input checked="" type="checkbox"/>	16053	15-05-2015 16:49	UV Flex 39-10 LM		4695 C BROWN		0.00
<input checked="" type="checkbox"/>	16052	15-05-2015 16:32	UV Flex 39-10 LM		4695 C BROWN		0.01
<input checked="" type="checkbox"/>	16051	15-05-2015 15:45			124 C	1	0.66
<input checked="" type="checkbox"/>	16050	15-05-2015 15:43	UV Flex 39-10 LM		123 C YELLOW	1	0.34
<input checked="" type="checkbox"/>	16049	15-05-2015 15:40	UV Flex 39-10 LM		4695 C BROWN	1	0.99
<input checked="" type="checkbox"/>	16048	15-05-2015 15:30	UV Flex 39-10 LM		362 C GREEN	1	0.58
<input checked="" type="checkbox"/>	16047	15-05-2015 15:29	UV Flex 39-10 LM		498 C BROWN	1	1.98
<input checked="" type="checkbox"/>	16046	15-05-2015 15:26	UV Flex 39-10 LM		376 C GREEN	1	0.60

14 formulas found [total amount 7.37 kg]

Buttons: Back (Esc), Details (F2), Correct (F3), Export (F4)

To find anything in this large data collection, several filters are supported.

ID: Each dispensed Can receives a unique ID that can be printed on the label. This is used for return ink management, tracing back dispensed materials, etc. You can search on a range of ID's or on a single ID (e.g. by scanning it's barcode)

Date: To find e.g. the Cans dispensed last week, etc. set the start and end-date. Set the date using the pull-down calendar, or click on a day, month or year and increase/decrease it using <Arrow-Up>/<Arrow-Down> or select other part of the date using <Arrow-Left>/<Arrow-Right>.

Location: Storage location of the dispensed Can. Typically used for return ink management.

Batch: Enter (part of) a batch code of any colorant here to find all formulas dispensed using this batch code. Used for specific batch tracing.

Ref...: Most of the formula selection fields, like, Customer, Reference, Name can be searched on. Note that the names appear here as you have renamed them throughout Aurora. Here Name has been renamed to Color nbr.

Scheduled: Include Cans that are scheduled for dispense, but have not yet been dispensed.

Ready: Include Cans that have been successfully dispensed without any errors.

Failed: Include Cans that had errors during dispense



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Return ink only: ONLY show Cans from the return ink storage. These Cans all have a storage location assigned. Cans that are currently reserved to be used for a job instead of dispensing a new Can, are marked as 'Res.' In the Location column.

Click [Find] or press <Enter> to find all filtered Cans. The number of found Cans and their combined content is shown below the list. The maximum number of Cans can be configured to avoid incomprehensibly long lists. If the list is limited in this way, it is noted below the list.

To reset all filters to their defaults, click [Clear].

Details, including batch tracing information

Click [Details] or double-click on a line in the history window to see all details of the Can as shown below. The formula amounts are the actually dispensed amounts if the Can has been already dispensed and if this is supported by the dispenser. If batch codes were stored by the dispenser or AuroraMIX, each colorant the batch code(s) used are shown. Note that Aurora supports tracking multiple batch codes per dispensed colorant with an accuracy of 0.1%.

Use [Print] if you need a new or extra label for the Can.

The screenshot shows a window titled "History details" with a purple header bar. Inside, there is a list of attributes for a specific can, followed by a table of colorants and their amounts. At the bottom, there are "Back" and "Print" buttons.

ID	16060
Color nbr	100 C YELLOW
Customer	Pantone
Product	Ink
Base	UV
Can type	1,0 kg Can
Remark	
Created	2015-05-19 10:21:45
State	Ready
Amount	999 g

Colorant	Amount
Yellow	234.17 g
6300029576	23.4 %
Reflex blue	3.20 g
6300029581	0.3 %
Varnish	761.64 g
6300029657	50.0 %
6300029700	26.2 %

Back Esc Print



Corrections

When creating formulas from scratch it is often useful to first dispense a close matching formula, then measure it using a photo spectrometer and then correct it by adding extra colorant. To correct a previously dispensed Can find it in the history (the last dispensed Can is always shown at the top of the list), select it and click [Correct].

Aurora then shows the content of the Can allowing it to be edited. Obviously you can only add and not subtract colorant here. To subtract a colorant just dispense more of all other colorants, so the percentage of the non-dispensed colorant is reduced. As an example we correct a previously dispensed 200g Can below.

Showing total amounts before correcting

We will add some colorants with a total of 10g. To keep track of our corrections, we can either show: The total amounts, the corrections only or the original amounts only. Note that the amount field is also updated depending on what is shown and that colorant amounts can't be edited when only the original amounts are shown.



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Aurora - Formula Correction

Customer	Maxtor
Reference	X1030
Color nbr	124 C

☐ Released

Amount: 10 g Cans: 1

Remark:

☒ Color

Black	1.00 g	Red 032		Yellow green	
Blue 072	4.00 g	Reflex blue			
Cyan		Rhodamine red			
Green C		Varnish			
Magenta		Violet			
Orange		Warm red	5.00 g		
Purple		Yellow			

☐ Show total amounts
☒ Show corrections only
☐ Show original amounts only

Back Print Save Return-ink... Dispense...

Showing corrections only while correcting (10g added)

Aurora - Formula Correction

Customer	Maxtor
Reference	X1030
Color nbr	124 C

☐ Released

Amount: 210 g Cans: 1

Remark:

☒ Color

Black	4.06 g	Red 032		Yellow green	
Blue 072	4.00 g	Reflex blue			
Cyan		Rhodamine red			
Green C		Varnish	30.50 g		
Magenta		Violet			
Orange		Warm red	25.58 g		
Purple		Yellow	145.86 g		

☒ Show total amounts
☐ Show corrections only
☐ Show original amounts only

Back Print Save Return-ink... Dispense...

Showing total amounts while correcting (210g in total)



Aurora Dispensing Software – User Manual

Showing original amounts while correcting (200g and editing is not possible)

After specifying what colorant to add, place the previously dispensed Can on the dispenser and click [Dispense]. ONLY the additions will be dispensed into the Can, but a label with the complete corrected formula will be printed and saved to the history. If you need only one Can with such a corrected formula, you are now finished. If you want to save this as a new formula, or overwrite the existing formula, then optionally change the name, group, etc. and click [Save].

Automatically import photo spectrometer corrections

You can always enter your corrections manually, but when using InkFormulation, you can import them automatically. Just scan your sample and create a correction similarly to creating a new formula for dispense from InkFormulation. Then find the existing Can in the history and click [Correct]. Aurora automatically recognises the created correction from InkFormulation and adds this as the new corrections to the Can. You now only have to [Dispense] and/or [Save] and you're done!



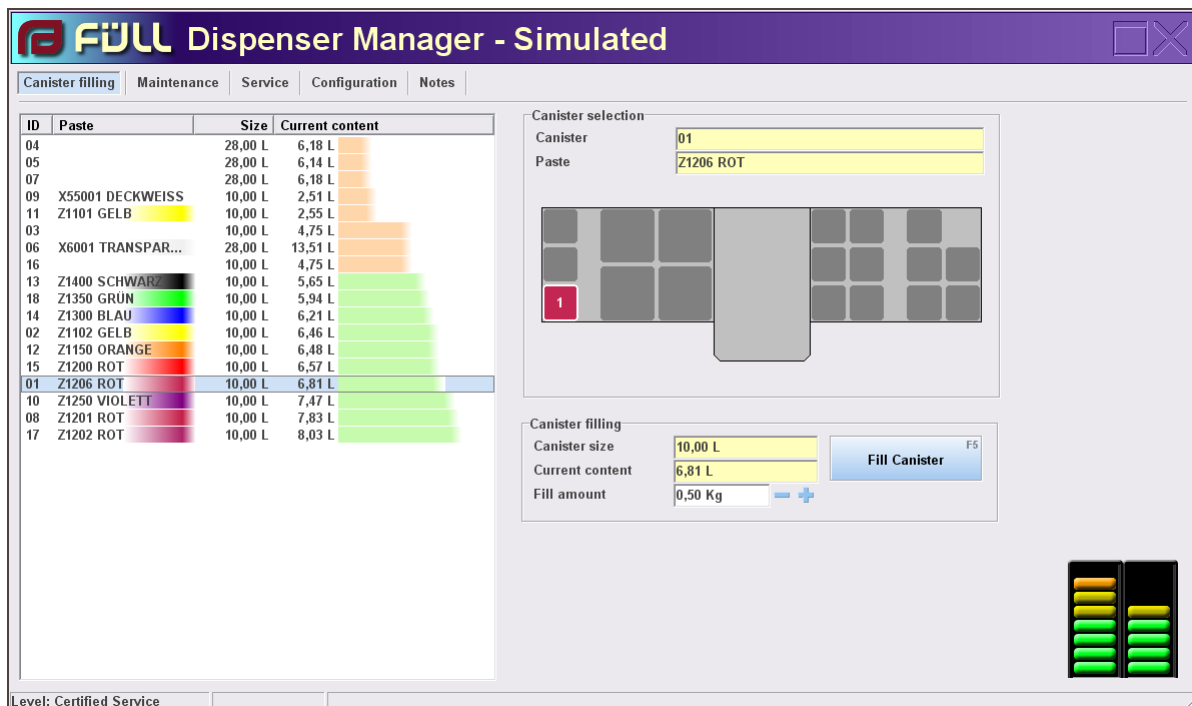
Maintenance

Maintenance only applies to Aurora connected to a dispensing machine, not to AuroraMIX. By clicking [Maintenance] in the main window, Aurora opens the dispenser driver's Service Window. This allows the operator to perform all dispenser maintenance, service and configuration tasks supported by the dispenser driver. Typical tasks are:

- Canister filling
- Purging
- Nozzlecap cleaning
- Dispenser reset
- Etc.

Close the dispenser driver's Service Window to return to Aurora. Note that some drivers do not respond to dispense requests when their Service Window is opened.

As an example the Service Window of Füll's Dispenser Manager is shown below.





Settings

By clicking [Settings] in the main window, the main Aurora configuration parameters can be viewed and set, depending on the security level of the current user. See 'Main Window' on how to change the current user.

General

Aurora - Settings

General | Dispenser | Layout | Formulas

General

Language	English
Program name	Aurora
Save confirmation	Display for 0.50 s
Dispense confirmation	Display for 0.50 s

Units

Colorants unit	Gram
Colorants decimals	2
Large volumes unit	Milliliter
Large weights unit	Gram
Large amounts decimals	0

Options

Default Can count: 1

☐ Generate order information for each dispense

☐ Show Own-Formula ID

☐ Back returns to main window immediately

Users

Admin	New Edit Delete
Production	

Apply (F4) Close (Esc)

General

Here you can select the language, program name (special branding) and confirmation feedback.

Units

Select the units and the number of decimal places to be used by Aurora.

- Colorant unit:
Used for the colorants in a formula.
NOTE: The selected unit type (volume or weight) must match the way the formulas are stored in the database. Ink formulas are typically stored by weight, paint formulas by volume.
- Large volumes unit:
Used for total formula amounts, Can sizes, etc. when specified by volume.
- Large weights unit:
Used for total formula amounts, Can sizes, etc. when specified by weight.



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Users

Create new, edit and delete users here. Aurora checks that at least one user exists without a password, which is used as the default upon program start. Aurora also checks that at least one user exists with user editing rights.

To make the setting of the many detailed access rights easier, two general levels are used:

- The Service level specifies access to features having to do with the dispenser. The higher the knowledge of people regarding the dispenser's service and configuration, the higher their Service level should be.
This level is automatically used when opening the dispenser's Service Window
- The Administration level specifies access to all dispenser-independent settings, such as formula management, price calculation, label printing, program layout, etc.

Both Administration and Service level can be set to one of the settings below:

- Simplified use:
Virtually no setting can be changed and only the most important features and settings are shown. Use this for users that are easily confused by too much information.
- Normal use:
Virtually no setting can be changed, but most features and settings can be viewed. This allows the user to see e.g. if a label should be printed before dispense, etc.
- Advanced use:
Virtually no setting can be changed, but virtually all features and settings can be viewed.



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- **Foreman:**
Basic settings that are easily understandable after a short introduction can be changed and all settings can be viewed.
- **Trained service:**
All settings that are explained during a typical service training can be changed and all settings can be viewed.
- **Certified service:**
Virtually all settings can be changed and viewed. Used exclusively for very experienced administrators/servicemen
- **Full Control:**
Virtually identical to Certified service with some additional testing features for the development team.

Each of the main function buttons and some other detail function buttons can be enabled or disabled for each user. To disable a button, it can be completely hidden or shown in a disabled state.

'Show detailed paste amounts in formula' can be unchecked to hide the exact colorant amounts of the formulas to keep these secret for unauthorised people. Make sure to disable editing formulas for these users also.

'Hide formulas not yet released for production' can be checked, so that these users can only select/dispense formulas that have been tested, optimised and then released by the lab.

Options

Default Can count:	When left blank, the number of Cans to dispense must be specified before each dispense. Set this to 1 or more to skip this during most dispenses. Only when another number of Cans is needed you can override this during dispense.
Generate order info:	Use ONLY when the dispenser supports buffering multiple dispense requests before starting to dispense. Typically used for dispensers with automatic conveyers.
Show Own-Formula ID:	Show the unique ID and check-digit of each Own-Formula. Typically used in combination with auto-selecting formulas by scanning a barcode from an order form.
Back to main window:	When set, [Back] always returns to the main window immediately instead of to the previous window. Typically used in combination with auto-selecting formulas by scanning a barcode from the main window.



Dispenser

UDCP

Note: In AuroraMIX this is replaced by parameters for computer aided manual dispensing. This shows the specification of the files used for interfacing to the dispenser driver. Read-only for most users. Here you can also select if the dispenser driver should be started automatically by Aurora at start-up. Typically check this, except when the driver is already automatically started by Windows.

Scale

Select the scale used by Aurora here. This scale is mostly used for Return Ink weighing. The Dispenser Manager and most other dispenser drivers use their own scale for calibration or dispense checking. Make sure that when multiple scales are used, all scales use a **DIFFERENT** comport! At start up Aurora automatically re-connects using the scale specifications saved here.

Type : Select the type of scale to use from the list of supported scales
This setting is saved and activated when [Connect] is clicked
For AuroraMIX make sure you connect a fast scale like the 'Ohaus HighSpeed' for optimal results. For less demanding tasks, like weighing in return ink, you can use the scale attached to a UDCP compliant dispenser by selecting the 'UDCP Scale' or select 'Manual Scale' to type in the weight read from any conventional scale.
Level 'Trained Service' or higher is needed to change this setting



Aurora Dispensing Software – User Manual

- Connection : Select the physical comport to use for any serially connected scale or set to 0 (cleared) to simulate this scale
This setting is saved and activated when [Connect] is clicked
Level 'Foreman' or higher is needed to change this setting
- Status : Shows the result of the last Connect, Tare or Weight action
- Weight : Shows the last read weight on the scale
- [Connect] : Saves the Type and Connection settings and tries to connect to this scale.
Note that the scale settings therefor do not need [Apply] to be saved.
- [Tare] : Tare (set to zero) the current weight displayed by the scale.
- [Weigh] : Read the current weight displayed by the scale. To verify that you are connected to the correct scale, place a small weight on the scale and verify the reading using [Weigh].

AuroraMIX settings

Aurora - Settings

General | Dispenser | Layout | Formulas

Manual dispensing by weight

Relative upper tolerance	1.5%	[-] [+]	Upscaling limit	110%	[-] [+]
Relative lower tolerance	1.0%	[-] [+]	Downscaling limit	90%	[-] [+]
Absolute upper tolerance	0.20 g	[-] [+]	Weight prediction time	1.2 s	[-] [+]
Absolute lower tolerance	0.10 g	[-] [+]			

Scale

Type: Ohaus HighSpeed

Connection: 4

Status: Unknown scale

Weight:

Connect (F5) | Tare (F6)

Weigh (F7)

Apply (F4) | Close (Esc)

The section Manual dispensing by weight is only visible in AuroraMIX (instead of the UDCP section).

Tolerances

You can specify the accuracy tolerances for any amount using the combination of a relative and absolute range. A dispense is considered accurate when it falls **at least in one** of these ranges.

First specify the relative range as is needed for your formulas. Typically, a deviation of up to 1% has no visible effect on a color. This means that if we stop dispensing at 1% below the



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target we would be accurate enough, making this a good Relative lower tolerance. We could also set this as the Relative upper tolerance, but if we stopped just too late and dispensed slightly more than this 1% we probably wouldn't discard the dispense. Therefore, to avoid premature warnings we should set the Relative upper tolerance a little higher.

For very small amounts, like 5 grams it is virtually impossible to dispense within the relative range (1% of 5g would be 0.05g, where the scale resolution typically is 0.1g). Therefore, we can also define an absolute range to allow for the physical capabilities of scale and operator. A minimal value here for a good high-speed scale and experienced operator would be about 0.1 or 0.2g, also allowing a bit larger upper than lower absolute tolerance.

Scaling limits

To optimally compensate for inaccuracies during dispense, AuroraMIX supports easy rescaling of the entire recipe. In case you always exactly need the exact requested amount set both the Up- and Downscaling limit to 100%, blocking recipe scaling. If e.g. 20% deviation is allowed specify 80/120%. See AuroraMIX dispensing for details on how to scale the recipe during dispense.

Weight prediction time

AuroraMIX continuously calculates the final amount that would end up in the Can when stopping now. It does this by calculating the current and previous flow rates, taking into account the current weight, scale delay, filter delay, time needed to gently stop pouring, etc. All these calculation parameters are combined in a single setting called the Weight prediction time.

A typical value for a fast scale and experienced operator is about 1.2s, so this is a good starting value. After this you just start dispensing some test amounts following the AuroraMIX dispense guiding. See AuroraMIX dispensing for details.

When you notice that you often stop too early, then decrease the weight prediction time.

When too late, then increase it.

Note: Try to stop in the same manner each time. You do NOT have to stop especially fast, because AuroraMIX includes your average stopping time in the weight prediction calculation.



Layout

Images

Customize your version of Aurora by selecting e.g. your company logo or advertisements as the images hiding the lists when not in use.

Labels

Select one of the predefined labels to be used when dispensing standard or own formulas and when weighing in Return-Ink. The quantity behind the label specifies how many labels are automatically printed during each dispense. Note that [Print] in the dispense windows always prints 1 label of the specified type when clicked, regardless of the number specified here.

Choose to print before or after the dispense. Before dispense the amounts printed are always the requested amounts. When dispensing gravimetrically the exact dispensed amounts can be printed when printing after dispense.

See 'Defining Custom Labels' for information on how to create your own labels.

Field names

All formula field captions can be customised. Name, Product and Base are used for both Standard and Own formulas. The other fields are exclusive to Own or Standard formulas. When not overridden the default captions are used, e.g. 'Customer' and 'Reference' for Own formulas.

You can hide all fields that you don't need. When trying to hide fields that already contain data Aurora will warn you about this and not allow it until you delete the formulas containing



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the data. Therefore, best decide as soon as possible after installation how many fields you need. Note that the Product and Base field serve special purposes and are more complex, so hide these to reserve them for future extensions if you do not absolutely need them. Create just a few test formulas that you can later delete to check out how many fields work best for your application.

Two configurations are most common:

1. Hide Product, Base, Subgroup and Detailgroup.
This leaves you 2 Group fields (default names Customer and Reference) and the formula Name. When selecting an Own formula you specify the customer first, then the reference (a project, job or formula-group of that customer) and then the name of one of the available formulas in this customer's project.
2. Hide Product, Base, Reference, Subgroup and Detailgroup.
This leaves you field Customer and Name. However you can rename these fields as you like, so you could rename Customer to Pantone and Name to Job. For each Pantone formula you define or import you would normally specify 'Original' as the Job field. When you are using this formula for a specific job where you need to fine tune it, you would edit the original Pantone formula and save the optimized version with another job name. Now when later selecting this Pantone color again, you would see that an Original and a Job-specific version are available and you select the one you need.

Window size

Set the window sizes to be used by Aurora depending on your monitor resolution and personal preferences.

The number of colorant rows are used to optimize the layout of the edit formula window when you have very many colorants. Typically, you don't need to change the default. Only If you have more than 50 start increasing this to 10 or more and edit a formula to see if you chose an optimal value.



Formulas

Name	Code	Density
Black	Black MQF4234	1.260 kg/l
Cyan	Cyan MQF4234	1.110 kg/l
Diamond F Medium	Diamond F Mediu...	1.110 kg/l
Diamond Medium	Diamond Medium ...	1.080 kg/l
F PI Additive	F PI Additive MQF33	1.110 kg/l
Fast Warm Red	Fast Warm Red M...	1.040 kg/l
Green	Green MQF4234	1.090 kg/l
Orange	Orange MQF4234	1.130 kg/l
PI Additive	PI Additive MQF33	1.110 kg/l
Primrose	Primrose MQF4233	1.120 kg/l
Rhodamine	Rhodamine MQF4...	1.130 kg/l
Rubine	Rubine MQF4234	1.150 kg/l

Name	Size	Weight	Lid weight
15KG	15000 g	321 g	82 g
2.0 kg	2500 g	74 g	33 g
2.5 kg	3100 g	90 g	30 g
30.0kg	30000 g	656 g	100 g
5.0 kg	6500 g	309 g	114 g

When Standard formulas (a Recipe book) is used, all formula details are typically imported from a customer database. In this case it is not needed/allowed to make any changes in the Settings – Formulas Window, because otherwise the synchronisation with the customer database would be lost. Therefore typically many formula details are hidden when a Recipe book is used.

Above all editable formula settings are shown. Colorants, Products, Bases and Cantypes can all be created, edited and deleted. When an item is still used in the database it can't be deleted, so the formula database can't be accidentally corrupted.

Colorants

- Make sure the Code is EXACTLY the same as in the dispenser driver. If not the dispenser driver will typically report an 'Unknown colorant' when dispensing a formula containing this colorant.
- The Name is what is displayed in all formula windows.
- [Import] allows to import all colorants from the Füll Dispenser Manager. This

Name	Warm red
Code	81-801011-8
Density	1.165 kg/l
Dispense priority	1
Visible	<input checked="" type="checkbox"/>



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deletes all existing formulas and history, so only do this once during installation. For all but the highest user-level this button is hidden.

- Dispense priority can be set to force the dispenser to dispense higher priority colorants before lower. The order in which colorants with the same priority are dispensed is determined by the dispenser.
- To hide a colorant in Aurora on the current computer uncheck [Visible]. This is used when multiple Aurora computers are connected, controlling multiple dispensers but still working with shared formula data.

A typical situation for this is when additional ink series or rare colorants are used which are not available on the dispenser. You could setup an AuroraMIX station to dispense the formulas containing these special colorants. Because the formula data can be shared between these installations all ERP-Interfaces, return-ink (locations), history, etc. can be combined. On each Aurora you then only show the colorants that can be dispensed there.

- To edit the color of the colorant, just click on the color rectangle and choose a color.

Cantypes

- The Weight and Lid weight are important when weighing in Return ink. This is automatically subtracted from the weight on the scale to calculate the exact content.
- The Size is used to check if a dispense would fit in the specified Can. Also especially important when using Return ink. Note that the size is often quite a bit higher than the name suggests. This is because colorants with a high density use relatively little volume, so the Can can hold more weight. If you get warnings that the Can is too small for a dispense even though you know it should fit, then increase the Can's size.
- When you leave the storage range blank, then you always have to specify the location for a new return-ink Can yourself. If you have a numbered storage area for return-ink and specify the lowest and highest location number here, then Aurora suggest the lowest free location when creating a new return-ink Can. Typically you use the same range for all Can types, but you could define different ranges to make sure that

large drums can be stored in large accessible locations and small Cans higher in your storage racks.

Ranges are also allowed to overlap between Can types.

- One Can can be specified to be the preferred Can for production. This is then used by default, so that when weighing in new return-ink you virtually never have to change the Can type.



Defining Custom Labels

All labels are stored in the Labels directory. A label definition file has extension '.lbl'. The internal format is similar to a Windows ini-file and can be edited with Notepad or any other text editor. Best use the existing labels as examples and starting point for the definition of your own custom labels.

The latest and most detailed information of the Aurora Label Format is always described (in English) in the file: 'Label Definition specifications and example.txt' in the Labels directory. Also other information about specific printer settings can be found in this directory.

For your convenience the current version of 'Label Definition specifications and example.txt' is added below:

```
-----
; Aurora Label definition specifications and example
; Lines starting with ';' are comment only and ignored by Aurora
;
; WARNING: Since Aurora v1.2.2.8 The first character of the label file specifies it's use.
; This is to make the selection of correct predefined labels easier for the user
; S = Standard formulas / Recipe book formulas (imported from an external DB)
; O = Own formulas (formulas created and edited in Aurora)
; R = Return ink (label created when storing leftover returned ink)
;
; Last updated: 2016-05-29 (for Aurora v1.3.0.2+)
;
-----

[MultiLabel]
; new v1.2.9.6 to support printing multiple different labels instead of only one label
; When this section is present, the rest of the file is ignored, so use a separate file for the
; MultiLabel section. This section is ignored when (accidentally) present in the referenced labelfiles
; ATTENTION: For some (Dymo) printers when using MultiLabel you MUST set the printer with the LARGEST label
; as the Windows DEFAULT printer and use ExtraLineSpacel in the [Text] section to shift your first
; line on the smallest label into view. This is because the Dymo driver has a problem that it reads
; it's label size from the default-printer settings instead from it's own settings!
<Number>=<Label>
; Where <Number> is: 1..99 Allowing max 99 different labelfiles to be printed per printjob.
; Aurora stops reading as soon as a number is not used, so do not skip numbers.
; <Label> is: Label filename to print including extension, excluding path
; Note: Because the extension is specified you could use another extension
; than '.lbl' when you do not want to see these single labels in Aurora when
; selecting a label in the settings window.
; E.g.: 1=OwnFormula-101x55 Small for Top.lbl
; 2=OwnFormula-101x55 Large for Side.lbl

[Printer]
; specify which printer to use for labels (leave empty to use the default printer)
; ATTENTION: For some (Dymo) printers you MUST set the label-type in the printerdriver:
; Windows-Start\Printers\Right-click printer\Default settings\Advanced
; Set: Paper-size, PrintQuality(highest, graphics)
; ATTENTION: For some (Dymo) printers you MUST set the printer as the DEFAULT printer to correctly
; use the defined label-type
; NOTE: Sauer uses 99014 labels (54 x 101mm), 99015 (54 x 70mm) is too short
Name=DYMO LabelWriter 450
; landscape 'L' or portrait 'P' (default) mode
Orientation=L

[Defaults]
; used unless specified otherwise in the text section below
; default values: 'Times New Roman', 10pts, spacing 50 [1/10mm]
FontName=Arial
; Combination of B, U, I and S to switch on Bold, Underline, Italic and StrikeOut
; Note that StrikeOut may not be supported by all printers (e.g. BI is Bold+Italic)
FontStyle=
FontSize=10
Linespacing=84

[Layout]
; Label size in 1/10mm
LabelWidth=700
LabelHeight=540
; Margins in 1/10mm used for text
```



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MarginLeft=50

MarginTop=0

; Postions in 1/10mm from left-margin of label. TabStops 0..9 are supported

TabStop1=280

TabStop2=400

TabStop3=500

[Image]

; Image file (located in images directory). When empty no image is displayed

File=Logo-only.bmp

; Offset in 1/10mm of Left/Top image corner from left/top of label (regardless of margins)

Left=0

Top=80

; image is scaled with this percentage when printed

ScalePct=100

[Text]

ExtraLineSpace1=-40

Line1=<FIELD=F_NAME_LABEL>|<TAB=1>|: |<STYLE=B>|<FIELD=F_NAME>|<ASCII=153>

Line2=<STYLE=UI>|Collection|<STYLE=>|<TAB=1>|: |<FIELD=F_COLLECTION>

Line3=<FIELD=F_PRODUCT_LABEL>|<TAB=1>|: |<STYLE=B>|<FIELD=F_PRODUCT>

Line4=<FIELD=F_BASE_LABEL>|<TAB=1>|: |<STYLE=BUI>|<FIELD=F_BASE>

ExtraLineSpace5=-240

Line5=<TAB=3>|<FONTNAME=I2OF5TXT>|<FONTSIZE=36>|<FIELD=F_HISTORYCAN_BARCODE_ITF>

ExtraLineSpace6=168

Line6=Created|<TAB=1>|: |<FONTNAME=COURIER>|<DATE=d-mmm-yyyy>

Line7=<FIELD=F_PCD1>|<TAB=1>|<FIELD=F_PQU1>

Line8=<FIELD=F_PCD2>|<TAB=1>|<FIELD=F_PQU2>

Line9=<FIELD=F_PCD3>|<TAB=1>|<FIELD=F_PQU3>

Line10=<FIELD=F_PCD4>|<TAB=1>|<FIELD=F_PQU4>

Line11=<FIELD=F_PCD5>|<TAB=1>|<FIELD=F_PQU5>

Line12=<FIELD=F_PCD6>|<TAB=1>|<FIELD=F_PQU6>

Line13=<FIELD=F_PCD7>|<TAB=1>|<FIELD=F_PQU7>

; ----- possible fields in Line text -----

; | = Separates the lines in ordered segments. In each segment the fields are NOT ordered
; To make sure one field is printed before the other, place it in different segments.
; Each segment can contain only ONE field OR printable text. The text or all of the
; fields except one would NOT be printed.
; To print the pipe symbol itself, create an empty segment "|" (Note: "||" prints "|")
; <TAB=n> = Tab to position of tabstop n (n in range [1..9])
; <CAPS=n> = Capslock state for text following on current line.
; n is 1 for All Capital letters, 0 for for all Small letters, empty (or anything else)
; for unchanged letters
; <STYLE=xxx> = Text style for text following on current line.
; xxx is any combination of B, U, I and S for Bold, Underline, Italic and StrikeOut
; <REPL1=xyyy> = Replaces the first character (x) with the following characters (yyy) case insensitive
; for text following on current line.
; <FONTSIZE=pts> = Font size in points. Each line starts with default font size
; <FONTNAME=xxx> = Font name. Each line starts with default font name
; <ASCII=xxx> = print any (Extended) ASCII symbol. xxx must be in the range [0..255].
; xxx examples 169=@, 153=™, 128=€ Note: Values may depend on font
; <DATE=xxx> = Print date+time formatted as specified by the xxx format string e.g. d-mmm-yyyy hh:"nn":"ss
; When xxx is omitted the date is formatted to Windows ShortDate format (no time displayed)
; <FIELD=xxx> = Aurora specific (database) fields (exclude the '')
; xxx Values: 'F_COLLECTION' = Formula details for Std formulas only
; 'F_NAME' = Formula name
; 'F_RGB' = Integer number specifying the formula color or empty when
; no color defined
; 'F_PRODUCT'
; 'F_BASE'
; 'F_CANNAME'
; 'F_AMOUNT' = Total formula amount in ml or gram without unit
; (depends on grav/vol. unit-type used in the Aurora config.)
; 'F_AMOUNT_KG0' = Idem in L or kg without decimals
; 'F_AMOUNT_KG1' = Idem in L or kg with 1 decimal
; 'F_AMOUNT_KG2' = Idem in L or kg with 2 decimals
; 'F_AMOUNT_KG3' = Idem in L or kg with 3 decimals
; 'F_HISTORY_GRP1' = Main-group for history formula for Return-Ink Labels only
; 'F_HISTORY_GRP2' = group for history formula for Return-Ink Labels only
; 'F_HISTORY_GRP3' = Sub-group for history formula for Return-Ink Labels only
; 'F_HISTORY_GRP4' = Detail-group for history formula for Return-Ink Labels only
; 'F_HISTORY_LOC' = Return-Ink location for Return-Ink Labels only
; 'F_HISTORY_LOC_EX' = F_HISTORY_LOC with additional info like [Used for 123]
; 'F_HISTORY_CREATED' = Date+Time (dd-mm-yyyy hh:nn) when this can from the history
; was dispensed
; 'F_HISTORY_STATE' = State of this can from the history: Todo, Ready or Failed
; 'F_CUSTOMER' = Formula details for Own formulas only
; 'F_ZIPCODE' = Formula details for Own formulas only
; 'F_OWNGRP3' = Formula details for Own formulas and history only
; 'F_OWNGRP4' = Formula details for Own formulas and history only
; 'F_REMARK' = Formula remark



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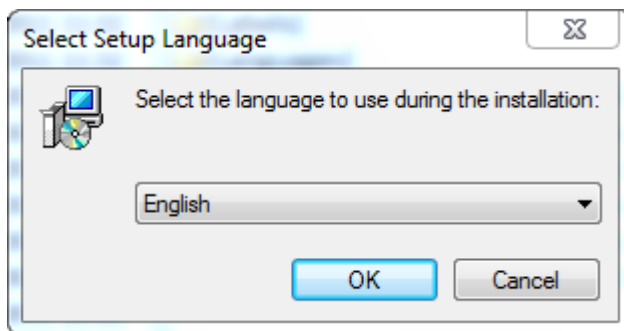
```
;
;
;      'F_FORMULA_ID'          = ID of the current Std or Own formula
;      'F_FORMULA_ID_CHK'     = Idem incl. EAN/ITF type checkdigit
;      'F_HISTORYCAN_ID'      = Formula details for Std and Own formulas
;      'F_HISTORYCAN_BARCODE_ITF'
;      Note: Field 'F_HISTORYCAN_BARCODE_ITF' is only of use when used in combination with
;      <FONTNAME=I2OF5TXT>
;      'F_PNM1'..'F_PNM9'     = Name of 1st ..9th paste in the formula
;      'F_PCD1'..'F_PCD9'     = Code of 1st ..9th paste in the formula
;      'F_PQU1'..'F_PQU9'     = Quantity+Unit of 1st ..9th paste in the formula
;                               (Right aligned to fit largest amount)
;      'F_PQ3P1'..'F_PQ3P9'   = Quantity in percentage with 3 decimals of 1st ..9th paste
;                               in the formula (Right aligned to fit largest amount)
;      'F_NAME_LABEL'         = Caption for field F_NAME as defined in the setting.
;                               Default 'Name', often 'Formula', 'Recipe', etc.
;      'F_CUSTOMER_LABEL'     = Idem for F_CUSTOMER (Own formulas only)
;      'F_ZIPCODE_LABEL'      = Idem for F_ZIPCODE (Own formulas only)
;      'F_OWNGRP3_LABEL'      = Idem for F_OWNGRP3 (Own formulas only)
;      'F_OWNGRP4_LABEL'      = Idem for F_OWNGRP4 (Own formulas only)
;      'F_COLLECTION_LABEL'    = Idem for F_COLLECTION (Std formulas only)
;      'F_PRODUCT_LABEL'      = Idem for F_PRODUCT
;      'F_BASE_LABEL'         = Idem for F_BASE
;      'F_REMARK_LABEL'       = Idem for F_REMARK
;
; PRINTING ANY TEXT AS A BARCODE
; Use either:
;      <FONTNAME=AdvC39b>      and install 'ADVC39B_.TTF' in the fonts directory (low)
;      <FONTNAME=AdvC39c>      and install 'ADVC39C_.TTF' in the fonts directory (medium)
;      <FONTNAME=AdvC39d>      and install 'ADVC39D_.TTF' in the fonts directory (high)
;      <FONTNAME=3 of 9 Barcode> and install '3OF9.TTF' in the fonts directory
; Add a '*' before and after the text to signal the start/end of a valid barcode
; Example: Line1=<FONTSIZE=18>|<FONTNAME=AdvC39c>|*|<FIELD=F_COLLECTION>| - |<FIELD=F_NAME>|*
```




Database installation details

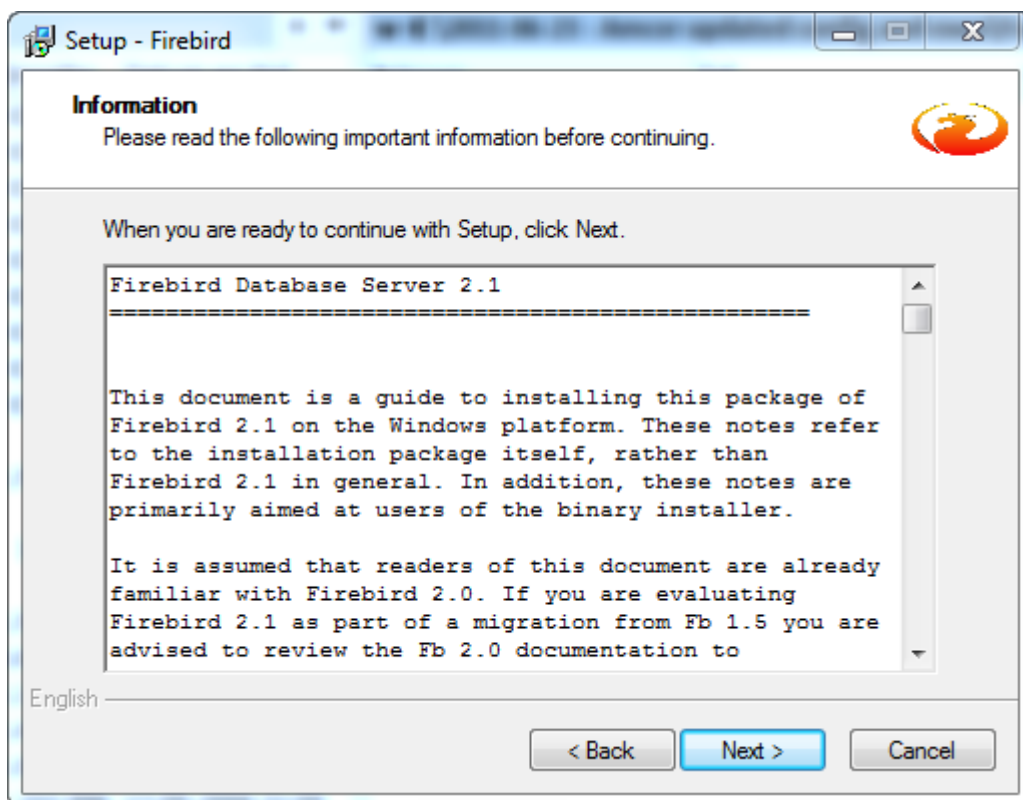
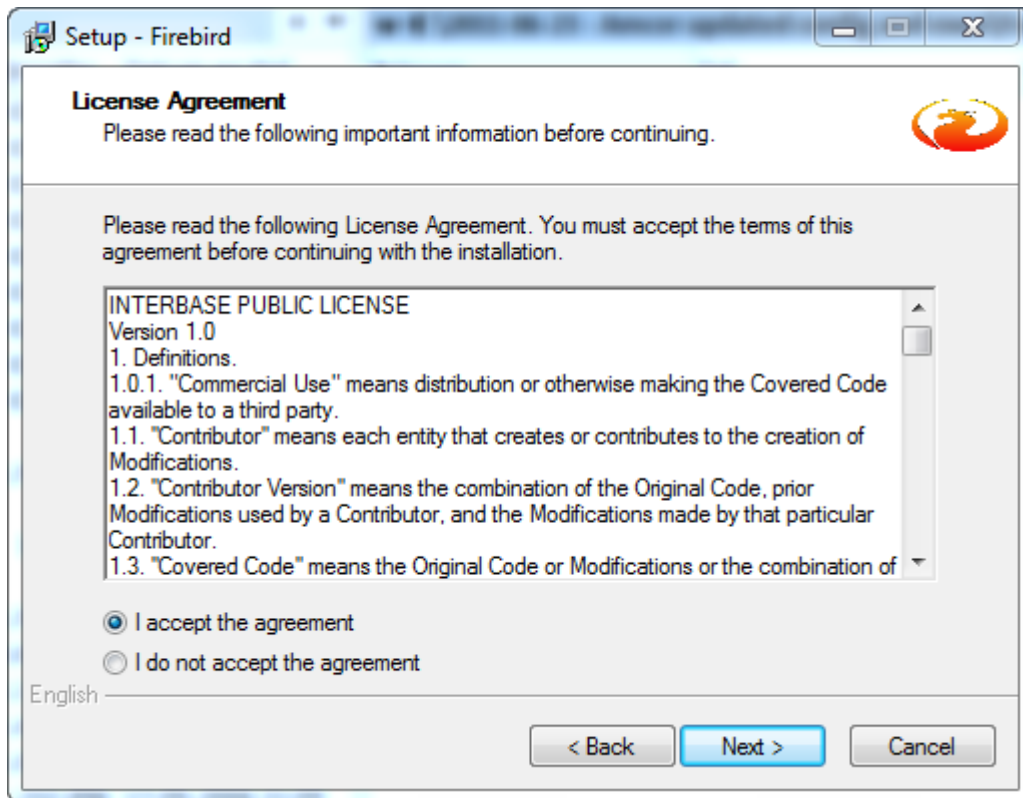
When installing the database engine as explained in 'Installation and file locations', just follow the directions on screen, select your preferred language, agree with the licence agreement and further keep all default choices. For completeness all dialogs that will be shown during the installation process are listed below.

NOTE: Windows typically shows two warnings about the dangers to install new software on your PC. Make sure you have sufficient privileges and allow the software to be installed.



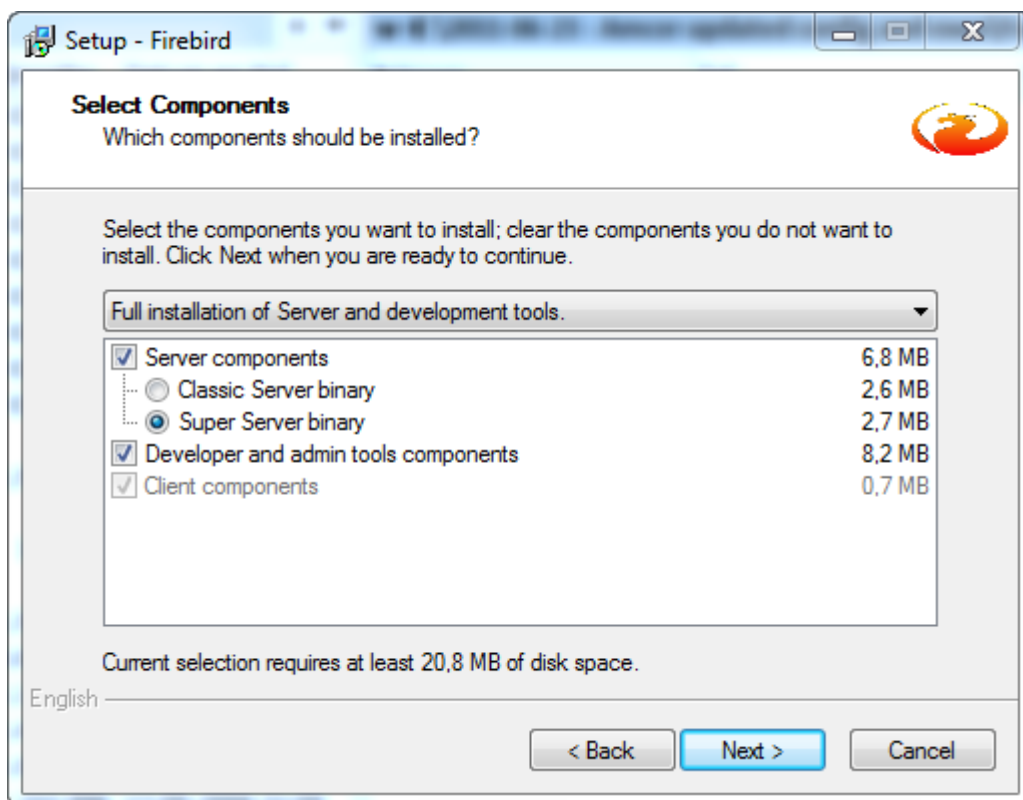
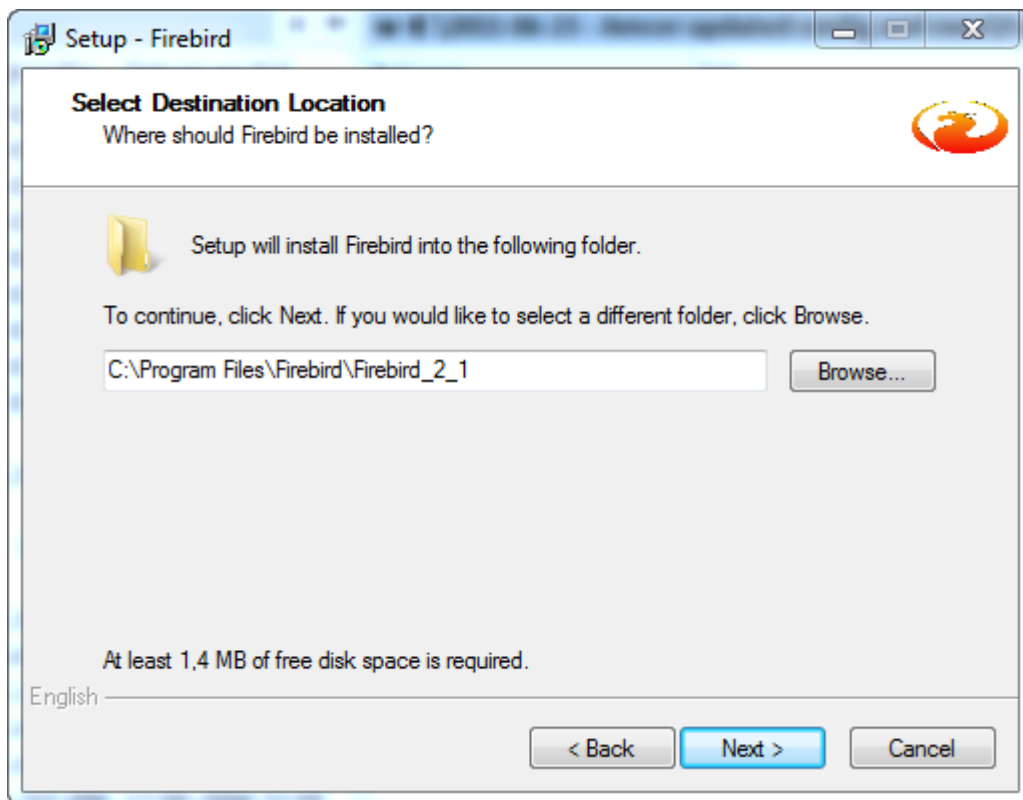


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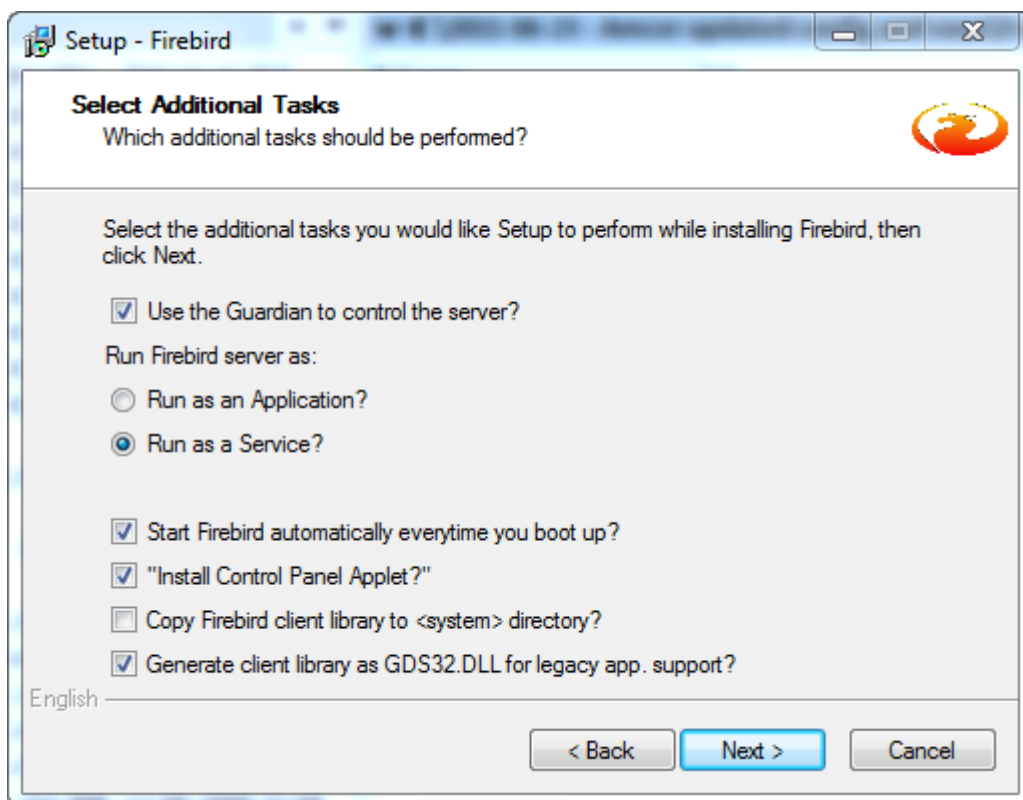
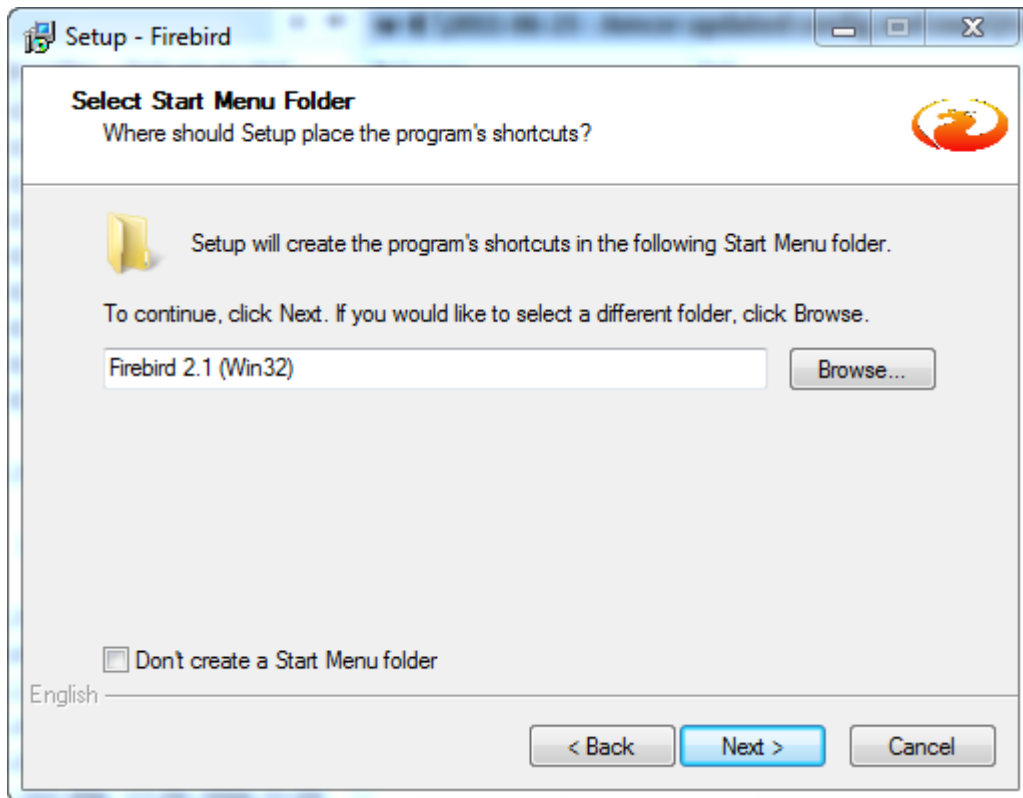


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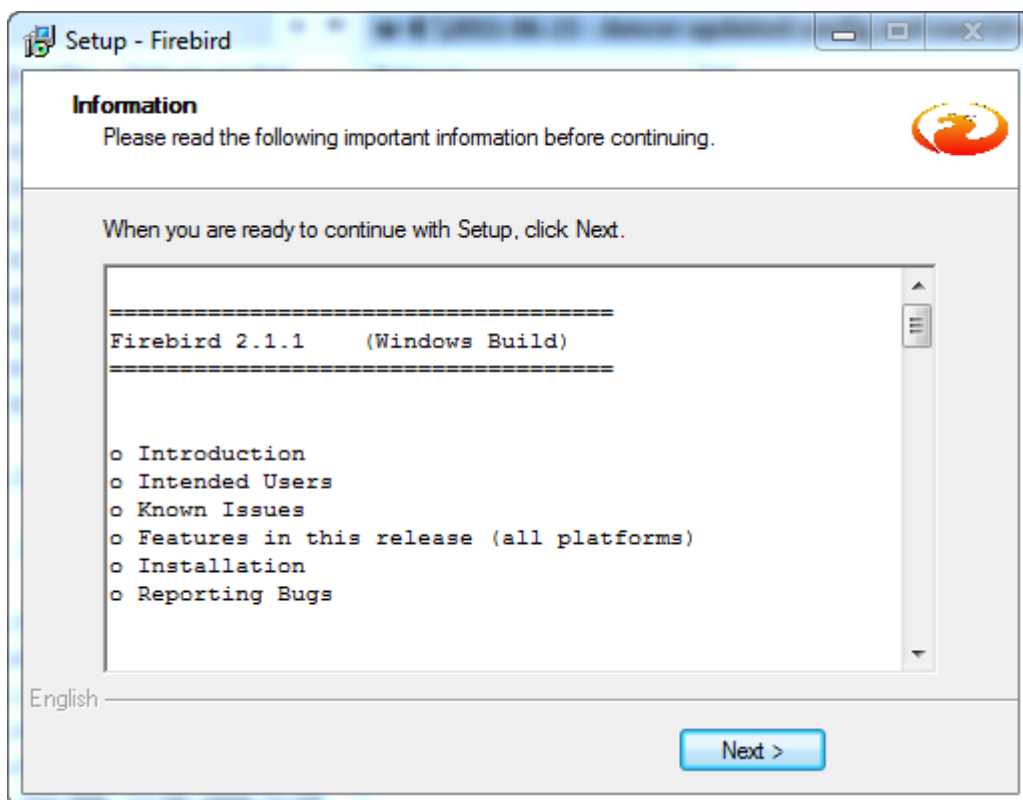
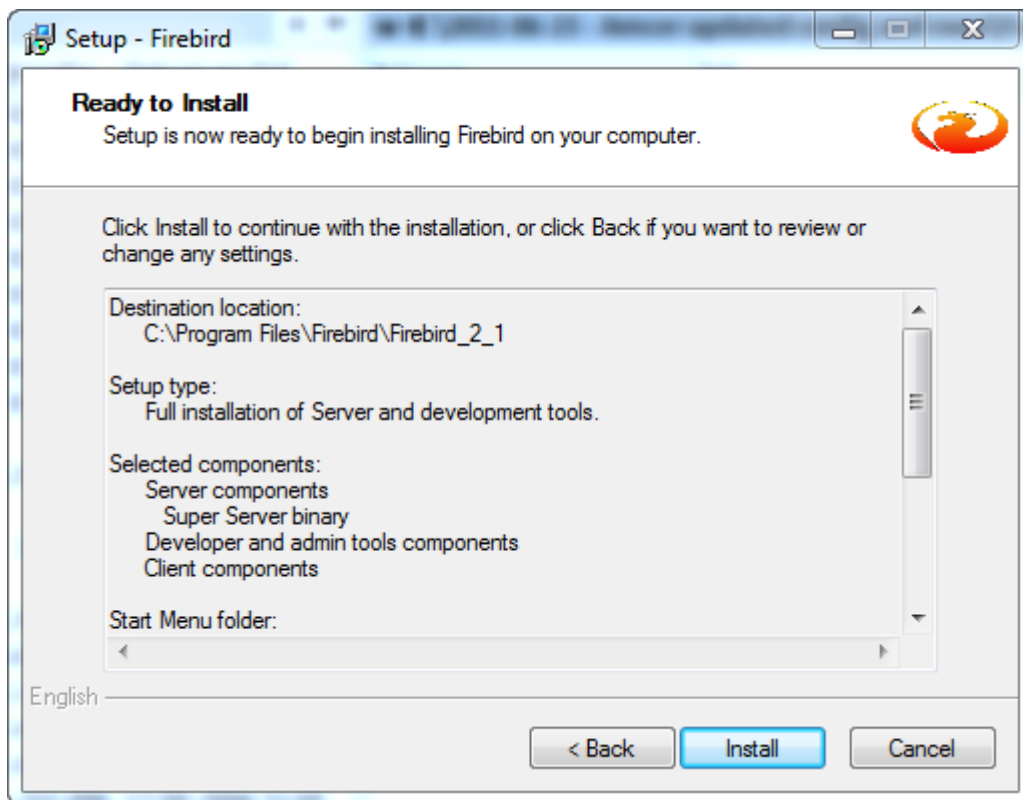


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Note: you can safely uncheck 'After installation – What's Next?'. If you don't then a text file is shown with uninteresting details about Firebird which you close anyway.