

Resin Forecasting

V01.00
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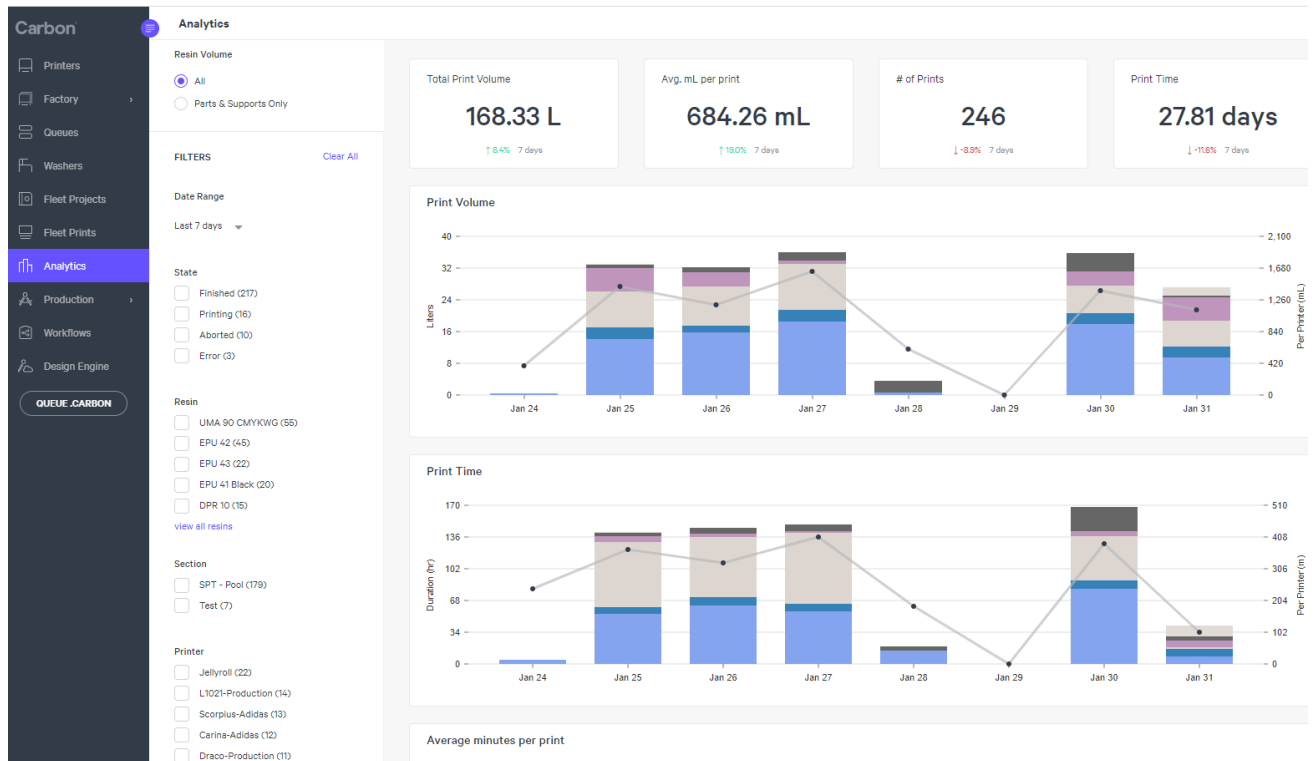
Overview

This document describes the information displayed in the Analytics tool located in the Carbon Printer Dashboard, and provides instructions on how to use this tool to forecast resin usage for your printer fleet.

1. Accessing the Analytics Tool
2. Understanding the Analytics Tool
3. How to Forecast Resin Usage

1 Accessing the Analytics Tool

1. Log in to the Printer Dashboard at <http://print.carbon3d.com>
2. From the navigation bar, select **Analytics** to open the Analytics tool.



Analytics tool showing all resin usage for an entire fleet of printers during the previous seven days (24 January to 31 January).

2 Understanding the Analytics Tool

The Analytics tool (shown above) has sorting and filtering options on the left that allow you to define the information you want to see, and on the right displays the results of the options selected. These options allow you to see a clear picture of how much resin you are using on specific printers over a specified period of time.

The Analytics page is described below.

Sorting and Filtering Options

Resin Volume – There are two options: **All** and **Parts & Supports Only**.

- Select **Parts & Supports Only** to see only the amount of resin used in printing the parts and their supports. This measurement omits additional resin (beyond part and support volume) that must be present in the cassette for a successful print. When using the Analytics tool for resin forecasting, this selection is most appropriate for analyzing your consumption of **One-Part Resins**, such as DPR 10, UMA 90, and PR 25 (and all third-party dental resins), assuming that you generally re-use resin left over at the end of a print for another print.
- Select **All** to see the total amount of resin that has been used in the cassettes. This number is calculated from the total **required resin volume** for the print, which includes both the volume of parts and their supports, as well as extra resin that must be present in the cassette to ensure a successful print. In the context of using the Analytics tool for resin forecasting, this option is useful for analyzing your consumption of **Two-Part Resins** due to their pot life. Any resin remaining in the cassette at the end of

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the pot life is typically discarded. However, if you are doing multiple prints (3 or more) within the resin's pot life (by topping off the resin in the cassette at the end of each print), you can use **Parts & Supports Only** to forecast your resin usage.

Date Range – Specifies the period of time for which you want to view data. Choices are: Last 24 hours, Last 7 days, Last month, Last 3 months, Last 6 months, Last year, All time, and Custom (where you can specify any date range).

State – Specifies the state of the prints during the selected time period. There are four states (Finished, Printing, Aborted, or Error). You can select the specific states for which you want to view data.

Resin – Lists all the resins in use at your facility. Allows you to select the resins for which you want to view data.

Section – If your printers have been organized into sections (via the Factory Management dashboard), the sections appear in this list. Selecting a section automatically selects all the printers in that section, making it easier to view data for a specific group of printers. The Factory Management dashboard is an optional feature designed for facilities with large printer fleets; contact support@carbon3d.com if you are interested in exploring this feature.

Printer – Lists all the printers in your fleet. Allows you to select the printers for which you want to view data. Alternatively, you can use the **Section** option (see above) to select a group of printers.

Displayed Data

The results are displayed on the right side of the page. The results shown are based on the **Sorting and Filtering** options selected (see above). When the options are changed, the results are immediately calculated and updated.

Top Row:

Total Print Volume – Indicates the total amount of selected resin(s) (counted as either "All Resin" or "Part and Supports Only" according to your selection) used by all the selected printers during the specified time period. This is the most useful information for helping you determine the amount of resin you use. By comparing usage from month to month, you can determine the appropriate amount of resin to maintain on site.

Avg mL Per Print – Indicates the average amount of resin used per print. The number is calculated by dividing the **Total Print Volume** by the **# of Prints** on all selected printers.

of Prints – The total number of prints using the selected resin(s) on all selected printers during the specified time period.

Print Time – The accumulated print time of prints in the selected resin(s) on all selected printers during the specified time period. This number may help you understand your overall printer utilization.

Graphs:

Print Volume – Uses a stacked bar graph to show the amount of the selected resin(s) used throughout the specified time period. You can hover over each bar to see details about the resins used and their specific amounts. The top 5 resins used are assigned their own color. All other resins are added together and grouped under **Other**.

Print Time – Uses a stacked bar graph to show the amount of time spent printing with each selected resin throughout the specified period of time. You can hover over each bar to see details about the amount of time each resin was used. The top 5 resins used are assigned their own color. All other resins are added together and grouped under **Other**.

Avg Minutes Per Print – Shows the average time for each print in minutes. This number is calculated using the numbers in the **Prints** and **Print Time** graphs.

Prints – Uses a stacked bar graph to show the number of prints in the selected resin(s) throughout the specified time period. You can hover over each bar to see details about the number of prints made with each resin. The top 5 resins used are assigned their own color. All other resins are added together and grouped under **Other**.

Resin (mL) per Print – Shows the average amount of resin used for each print. This number is calculated using the numbers in the **Prints** and **Print Volume** graphs.

Parts – Uses a stacked bar graph to show the number of parts printed in the selected resin(s) throughout the specified period of time. You can hover over each bar to see details about the number of prints made in each resin.

Resin (mL) per Part – Shows the average amount of resin used for each part. This number is calculated using the numbers in the **Parts** and **Print Volume** graphs.

3 How to use the Analytics Tool to Forecast Resin Usage

Forecasting resin usage is important to ensure that you always have an appropriate amount of resin on hand. If you have a fleet of printers, it is best to determine how much resin is being used in your entire fleet instead of focusing on only certain printers and extrapolating.

To use the Analytics page for resin forecasting, follow the instructions below based on the type of resin you are using.

For a One-Part Resin –

1. Under **Resin Volume**, select **Parts & Supports Only**
2. Under **Date Range**, select the period of time for which you want to see usage results.
For resin usage forecasting, display resin usage on a monthly basis for the past three to six months to have sufficient data regarding your usage patterns. This will provide you a representative sample to help you decide on upcoming resin usage.
Note: When analyzing your results, take into account periods of lower-than-normal usage due to issues such as holidays or other facility shutdowns.
3. Under **State**, you can choose to include in your analytics only prints that have been logged in specific states (Finished, Printing, Aborted, or Error). For example, you might choose to omit "printing" as a state if you only want to view data associated with completed prints.
4. Under **Resin**, select the resin(s) for which you want to forecast usage. If you do not select a resin, then all resins are included in your results.
5. Under **Section**, if your printers have been organized into sections via the Factory Management dashboard, and you want to forecast resin usage for all the printers in one or more sections, you can select the sections, which automatically selects the printers.
6. Under **Printer**, select all the printers for which you want to see historical data. If all of the printers you want to select are included in sections that you have selected in the **Section** option, you do not need to select any printers here. If no sections or printers are selected, then all printers will be included in your results.

For a Two-Part Resin –

1. Under **Resin Volume**, select **All**
2. Under **Date Range**, select the period of time for which you want to see usage results.
For resin usage forecasting, display resin usage on a monthly basis for the past three to six months to have sufficient data regarding your usage patterns. This will provide you a representative sample to help you decide on upcoming resin usage.
Note: When analyzing your results, take into account periods of lower-than-normal usage due to issues such as holidays, or other facility shut downs.
3. Under **State**, you can choose to include in your analytics only prints that have been logged in specific states (Finished, Printing, Aborted, or Error). For example, you might choose to omit "printing" as a state if you only want to view data associated with completed prints.
4. Under **Resin**, select the resin(s) for which you want to forecast usage. If you do not select a resin, then all resins are included in your results.
5. Under **Section**, if your printers have been organized into sections via the Factory Management dashboard, and you want to forecast resin usage for all the printers in one or more sections, you can select the sections, which automatically selects the printers.
6. Under **Printer**, select all the printers for which you want to see historical data. If all of the printers you want to select are included in sections that you have selected in the **Section** option, you do not need to select any printers here. If no sections or printers are selected, then all printers will be included in your results.