HP Latex R-Series printers

TECHNICAL NEWSLETTERS FROM CUSTOMER ASSURANCE

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Ink efficiency on HP Latex R-Series printers

This document provides guidelines to help customers to optimize ink efficiency for a certain image.

For calculating ink efficiency, use the Print Beat application that can be found on **PrintOS**. It is recommended to read the **Print Beat – Job history explanation** newsletter to fully understand this application.

IMPORTANT: The information reported on Print Beat has been qualified with FW (SKAAR_16_18_43.26) and IPS (v2019.6.70.7) versions. Previous versions can show inconsistency in the reported values.

Things to know about reported information in Print Beat

| Result	Substrate Usage	Ink Usage	Print Mode
Completed	11.54 Sqm	138.93 ml	Passes:4 - InkDensity:80 -

- The **Ink Usage** reported in Print Beat for a certain job is the amount of ink used to print it. This includes the "ink on media" and printhead cleaning routines needed to maintain the printheads in good state:
  - **Ink on media:** The amount of ink that is going to be used for printing a certain job will depend on the image itself, the number of passes and ink density used for printing (print mode), and whether the job uses white ink or not.
  - **PH cleaning routines**: Automatic PH cleaning is triggered when printing a job: these are events with variable ink consumption, depending mainly on the time the printer has been unused.

NOTE: Manually triggered calibrations and printhead cleaning events (Check & Clean, alignment, etc.) are not accounted for in the ink usage per job by Print Beat.

- **Substrate usage:** the amount of sqm/sqft reported by Print Beat is a product of length and width of the loaded media "declared" at the loading process, **not the printed area**.
  To get the **printed area**, use the width and length of the image reported on the printer.
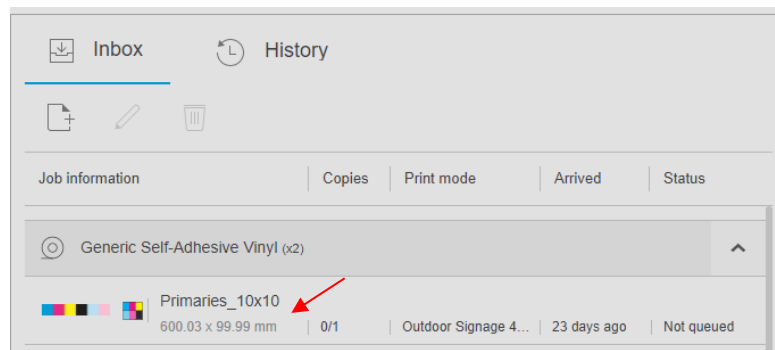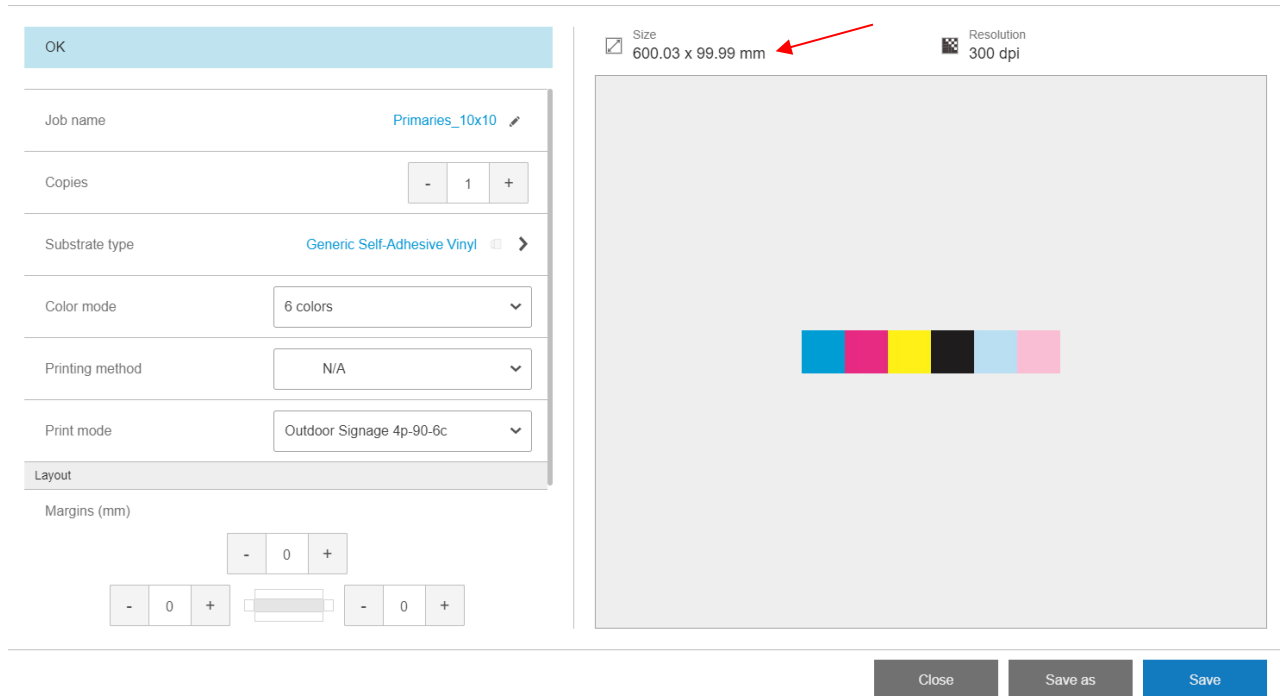
NOTE: Even if the auto-measure option is enabled during the loading process, the length of the sheet must be introduced manually. If the auto-measure option is not enabled during the loading process, the width must also be introduced manually.

How HP calculates ink efficiency

To emulate an average production environment, the following test was performed by HP for the ink efficiency model:

- Printing 12 sqm, using full-width media for flexible, and combining boards with multi-sheet and hot loading for rigid.
- Less than 1h waiting time from previous printing actions.
- Use of a standard image in the industry:

Consider that any variation from the above conditions can lead to better or worse ink efficiency (ml / sqm).

Since the ink reported includes PH cleaning, it is distributed among all the copies. The larger your queue is, the more distributed PH cleaning routines will be.

If you still want to print only one job to calculate ink efficiency that is relatively small (less than 2-3 sqm), we suggest performing a Clean & Check before printing to minimize the PH cleaning triggered by printing.

Tips & tricks to improve ink efficiency

Run a Check & Clean before starting the production. This way, the time needed for servicing before printing is reduced and less ink will be associated with the first printed job. Longer durations between Check & Clean and printing means that more ink is used in the servicing to ensure PH reliability.

The following points summarize some ways to improve ink efficiency:

- Group jobs with the same printmode and material, or create long jobs with hot loading to minimize PH cleaning events. This way servicing is distributed across more jobs, and the ink usage reported by Print Beat is much closer to the actual ink used on the media.
- Use as much as possible the full width of the printer. Using multi-sheet for narrow sheets is also useful.
- Minimize the time between jobs. The ink used for servicing depends on how long a period the printer has gone without printing.
- Do not apply overcoat or reduce the amount used when the job will be laminated.
- Use the lowest ink density that fits your color needs.
- Use 4 color printmodes for long viewing distances, or in applications where grain level can be slightly traded off.
- Reduce optimizer if the material allows it (in terms of bleed and coalescence control). This typically works with papers and cardboards but is very coating dependent.
- Use the printmode with the minimum number of passes that satisfies your image quality requirements for better ink efficiency.
- Keep maintenance tasks up-to-date. This can affect how much ink is wasted on servicing and prevents defects of image quality.
- When using white ink:
  o Store white printheads on the rotating chamber if white ink is not required to avoid white ink waste, sspecially when the printmode selected doesn't use white, but also when the printer is going to be stopped.
  o Group jobs by only colors and colors + white, as this minimizes the swaps between the white printheads and dummy printheads. This way white ink use is reduced, since every time white PHs are installed on the printer a cleaning is done.