Alwan
Color Expertise

Alwan ColorHub© Manual

Version 9.6

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www.alwancolor.com

Alwan Color Expertise

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1. Introduction

1.1. What is Alwan ColorHub (ACH)?

1.1.1. Description

Alwan ColorHub is designed and developed to fit into future standards and working practices which rely on the exchange of Standard/Reference data between different parts of the workflow and on the adaptation/optimization of data on the reproduction site.

Alwan ColorHub enables you to improve your color match, print quality and productivity with a fully automated color server for all printing processes.

1.1.2. Benefits

1.1.2.1. Improve Quality

- Improved Communication with your customers

Alwan ColorHub recognizes your customer's expected printed colors and quality requirements (aims and tolerances). This information will be used and communicated to each step of the production workflow thanks to Alwan Job Color Ticket.

- Color and Printability enhancement

More than a color server, Alwan ColorHub Dynamic technology optimizes automatically images and PDF files with multiple pages, images and color spaces. The software supports any input and output color space (RGB, Gray, CMYK, Spot, Multichannel) for any printing application. By optimizing your files, ColorHub ensures your output is predictable and more stable, with unequaled color quality.

- High-Fidelity Color reproduction

HiFi by Alwan ensures Spot, wide gamut and multichannel color conversions for High quality printing applications with unmatched vibrant colors and accurate spot & brand colors.

- Standards conformance

Alwan ColorHub supports the latest industry color management Data Sets, ICC profiles and ISO standards, which ensure color standardization through the entire production.

1.1.2.2. Improve Efficiency and ROI

- Ink Saving

Alwan ColorHub removes unnecessary ink coverage from the separations hence using less ink, improving printability and increasing print quality. Ink optimization can reduce the amount of used ink or toner up to 30%.

- Cost Saving

Ink optimization also enables you to save money on consumables and raw material, eliminating waste. With HiFi printing (6 or 7 process inks), Alwan ColorHub can significantly reduce production costs of spot color printing.

- Time-Saving

Alwan ColorHub automatically analyzes, preflights and optimizes your incoming files and enables you to get more productive throughput of files and to achieve faster make-ready and drying times. Ink optimization enables the press to run faster without printability problems such as paper brake and jam, causing maintenance delays.

1.2. System requirements

1.2.1. Alwan ColorHub for macOS

MacOS 14 – 15 – 26

- Recommended Hardware: Quad-Core processor / 16 GB of RAM / 500 GB available hard disc space (SSD) / 1920x1080 screen resolution.

To run this application, you need a dongle or a time-limited license code. The demo mode will only be available during three months after the first launch of the application.

1.2.2. Alwan ColorHub for Windows

Windows 64-bit Operating System required (Windows 11 Professional, Windows Server 2019, Windows Server 2022, Windows Server 2025)

- Recommended Hardware: Quad-Core processor / 16 GB of RAM / 500 GB available hard disc space (SSD) / 1920x1080 screen resolution.

To run this application, you need a dongle or a time-limited license code. The demo mode will only be available during three months after the first launch of the application.

1.3. Supported Input File Formats

Alwan ColorHub supports the following input files formats: JPEG - TIFF* - PDF

By default, Output file format is always the same as the input file format.

*Some TIFF images clipping paths may not be supported. This is particularly true for proprietary technology such as Adobe Photoshop® clipping paths. However, alpha channels are supported.

1.4. Licensing and Editions

1.4.1. Licensing

Only Black dongles with a valid URTS (Update and Remote Technical Support Program) are supported.
In order to prepare an update of your dongle, please launch Alwan License Manager.
Click on the button Export Fingerprint…, save the file and mail it to your Alwan dealer. Alwan will send you back an Upgrade File. Load this file by clicking on the Import Upgrade File... button. This will upgrade your dongle.

1.4.2. Editions

Each Edition of Alwan ColorHub has increasing capabilities and is adapted to different needs of the graphic industry. Depending on the edition you have bought, your dongle will activate the corresponding options of Alwan ColorHub.

Detailed information about each edition options can be found below:

Alwan ColorHub Active Options	PrePress	Press	ECO	Platinum
Separation options				
TAC value	✓	✓	✓	✓
Use Output Profile Separation	✓	✓	✓	✓
Preserve Original Separations (K dot Gain Compensation)	✓	✓	✓	✓
General purpose GCR	✓	✓	✓	✓
GCR settings: no K, GCR light, GCR medium, GCR heavy, Maximum	✗	✓	✓	✓
Dynamic Maximum Black/Ink Saving	✗	✗	✓	✓
Minimum TAC and Ink Usage/Ink Saving Boost	✗	✗	✓	✓
Ink Consumption Statistics	✗	✗	✓	✓
Options				
Hydra Profiling®	★	★	★	★
Output HIFI ICC Profile	★	★	★	★
TIFF/PDF File Generation for Proofing Purposes	★	★	★	★
Multiple software license for multiple production sites	★	★	★	✓
Command-line Interface	★	★	★	✓
High Productivity Mode	★	★	★	★

Included option	✓
Non-Available option	✗
Additionnal chargeable option	★

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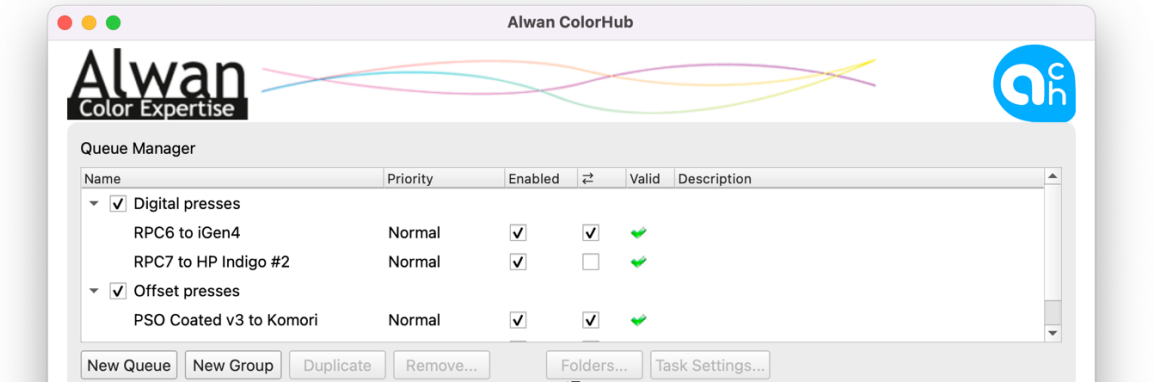
2. Alwan ColorHub Interface

2.1. Queue Manager Description



2.1.1. Name

This tab allows you to define the Queue Name, which must be unique. By doing so, you make your queue easily recognizable among others. You can edit the Queue Name whenever you want.

2.1.2. Priority

This tab allows you to set file processing priority to each queue.

2.1.3. Enabled

This tab allows you to Activate or not the processing of the selected queue.

2.1.4. Connectivity ⇄

Web Interface / Connectivity (in Preferences…) needs to be enabled for the ⇄ symbol and this column to appear. Connectivity ⇄ allows the ACH queue settings to be changed or used by other software such as Alwan ToolBox / HydraFix® Profile Updater.

2.1.5. Valid

This tab informs you about the validity of your queue. A valid queue must have working folders available as well as appropriated license. A tooltip is displayed on the icon in case of invalid settings.

2.1.6. Description

This tab allows you to add additional information about your queue. You can explain the goal of the queue or talk about ICC profiles in use for instance.

2.2. Queue Manager buttons

2.2.1. New Queue

New Queue button allows you to create a new queue that will have dedicated Task Settings and active Folders. For best performance, Queue Manager is limited to 100 queues maximum (please contact sales@alwancolor.com if this is not enough, however using more could lead to unwanted results).

2.2.2. New Group

The New Group button allows you to create a new group of queues to organize your workflow in an easy way. Gather queues based on the printing process, print sites, or color processing workflows (re-targeting, re-purposing, ink savings, Special Colors…).
Group check box activates or deactivates all queues inside a group.

2.2.3. Duplicate

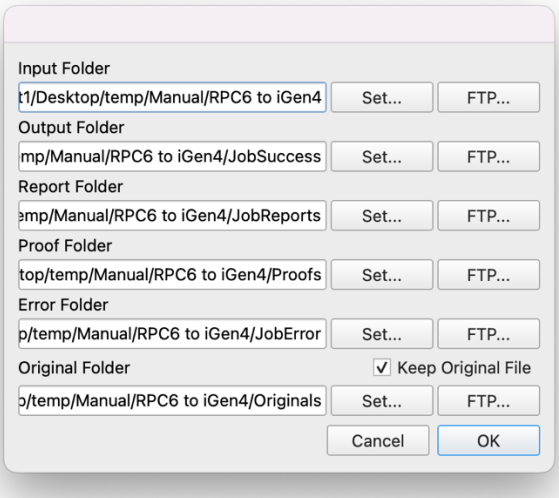
The Duplicate button allows you to duplicate a queue and related Task Settings. Assign Folders to the duplicated queue to make it operational.

2.2.4. Remove

The Remove… button allows you to delete the selected queue or group from the Queue Manager.

2.2.5. Folders

The Folders… button will open a window where you will be able to set all needed folders for your queue.



2.2.5.1. Input Folder

The Input Folder is the place where files can be dropped to be processed with the selected queue Task Settings. Alwan ColorHub must have read and write permission on Input Files to process files.

2.2.5.2. Output Folder

Processed files will be saved in the output folder.

Output folder default location is in the Input subfolder named JobSuccess. Alternative locations can be defined using the Set... button.

2.2.5.3. Report Folder

Alwan ColorHub can generate a Text and/or a PDF Report for each processing, depending on Output -> Reporting choice. These Report files will be saved in chosen Report Folder.

2.2.5.4. Proof Folder

Files that are proofed by Alwan ColorHub will be stored in the Proof Folder of the corresponding queue.

2.2.5.5. Error Folder

Files that fail during processing will be stored in the Error folder.

These files may be corrupted, unreadable or may contain a bitmap exceeding the maximum supported size for uncompressed individual images inside a document.

The default location is in the selected Input Folder, within a subfolder called JobError. Alternative locations can be chosen using the Set... button.

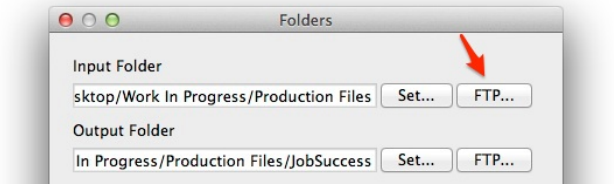
Note that if ACH Action is Check Only (Preflight), Error Folder will contain files that are not complaint (see Action part for further details on Preflight policy).

2.2.5.6. Original Folder

When checked, a copy of each original file is saved into Original Folder of the corresponding queue prior to its processing.

2.2.5.7. FTP/SFTP import

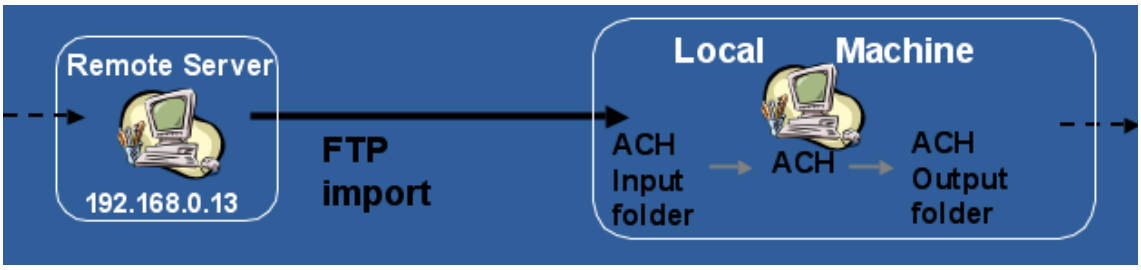
FTP/SFTP integration is sometimes the easiest way to integrate existing production workflows, as FTP/SFTP protocol is platform independent. To activate FTP/SFTP, click on Folders... then FTP... button:



You can select the type of transfer you want (FTP or SFTP) and type either a hostname or an IP address in the Host field.

Note that Distant Path depends on the path of the folder you have reached/used with an FTP/SFTP connection (you can try first with a terminal, a browser or any FTP/SFTP client).

After Import, Distant files can be remotely deleted if Erase Distant Files option is checked.



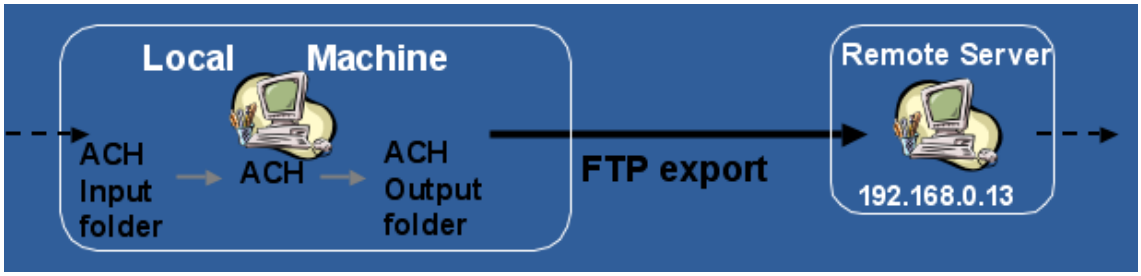
FTP/SFTP imports files once only.

You need to configure Alwan ColorHub's Input Folder locally on the computer where Alwan ColorHub is running in order to copy the files from the FTP/SFTP server. They will be deleted from the local folder when processed.

2.2.5.8. FTP/SFTP export

FTP/SFTP transfer is also possible from any Output Folder, Report Folder, Proof Folder, Error Folder or Original Folder. To do so, click on the FTP... button: FTP/SFTP Export settings are similar to FTP/SFTP Import settings

The FTP/SFTP Export process is the following:



You need to configure Alwan ColorHub output folder locally on the computer where Alwan ColorHub is running in order to save the output files before copying them via FTP/SFTP. They will be deleted from the local output folder after successful FTP/SFTP transfer.

File names containing special characters (/, \, ?, @, etc.) are not supported by FTP/SFTP connection and transfers.

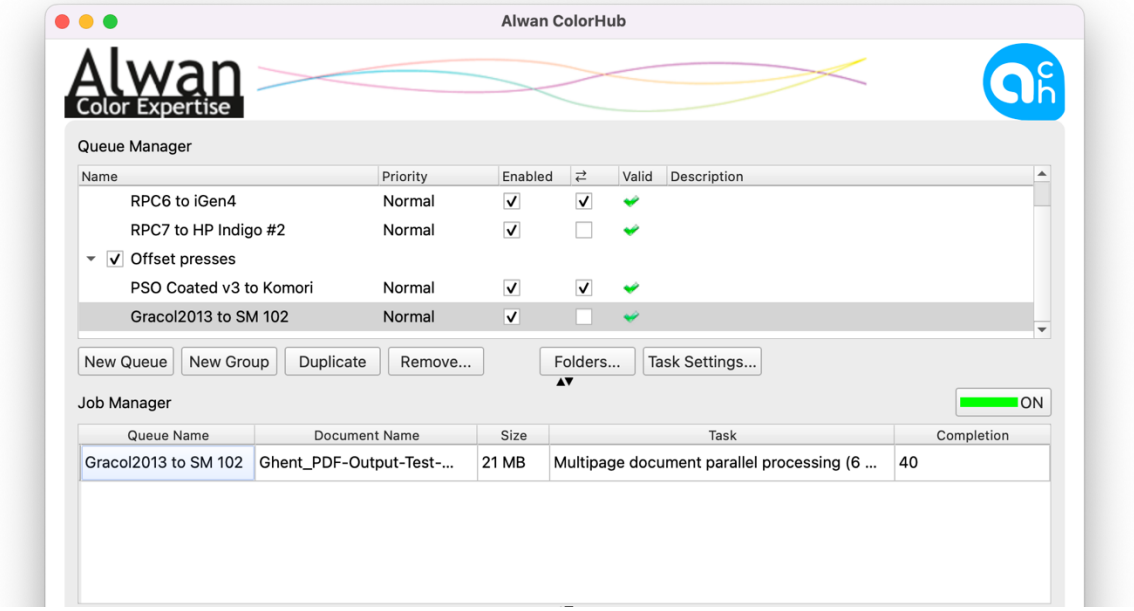
When FTP/SFTP transfer is active, a green light is displayed on the left of the FTP... button.

2.2.6. Task Settings

Click Task Settings... button to display Queue Task properties. The Task Settings allow you to define color conversion, separation enhancement, and ink savings options.

2.3. Job Manager

This window allows you to view all current and pending operations.



Job Manager displays for each file: Queue Name, Document Name, Size, Task in progress and Completion percentage of the Task in progress.

Multi-processing is done according to Alwan ColorHub preferences. Pending files are waiting in the input folder before being moved into the scratch folder for processing purpose.

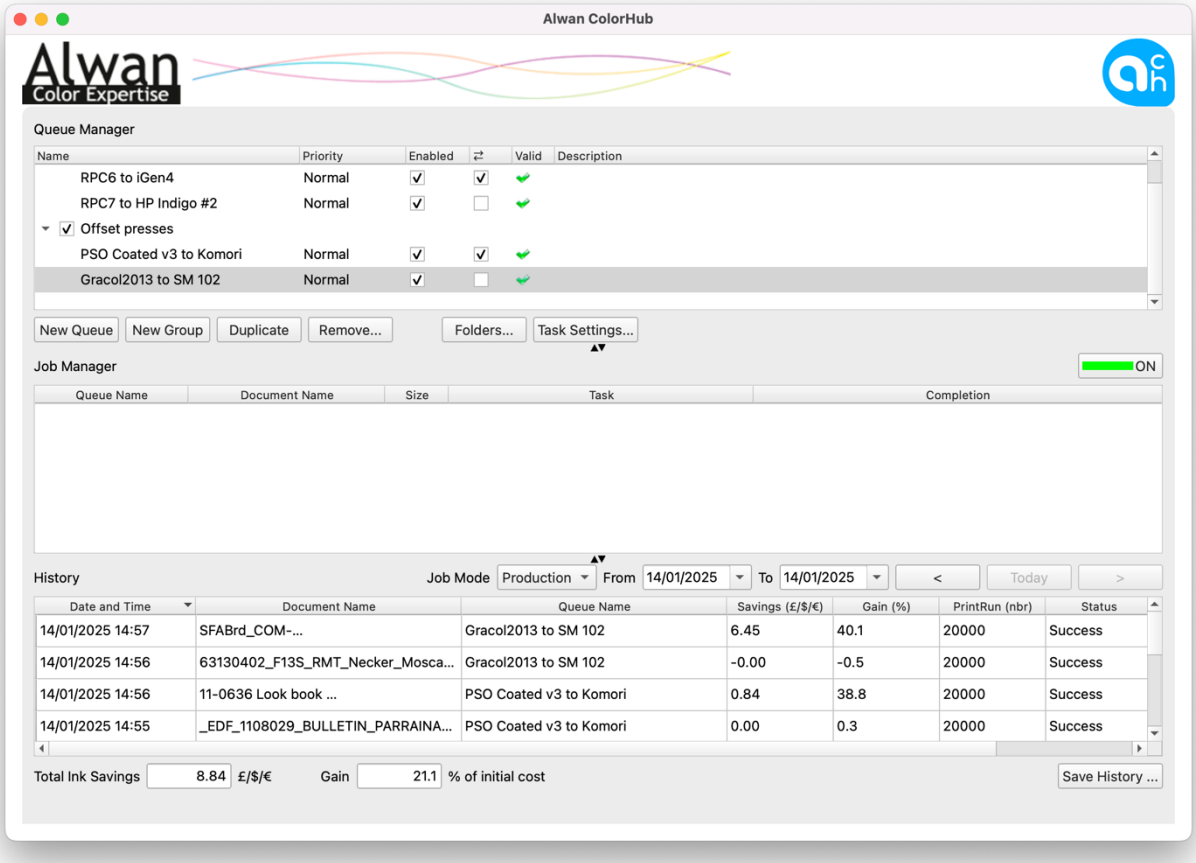
Files will be processed according to the First-In First-Out policy.

ON/OFF button allows you to start or stop the optimization of all (enabled & valid) queues.

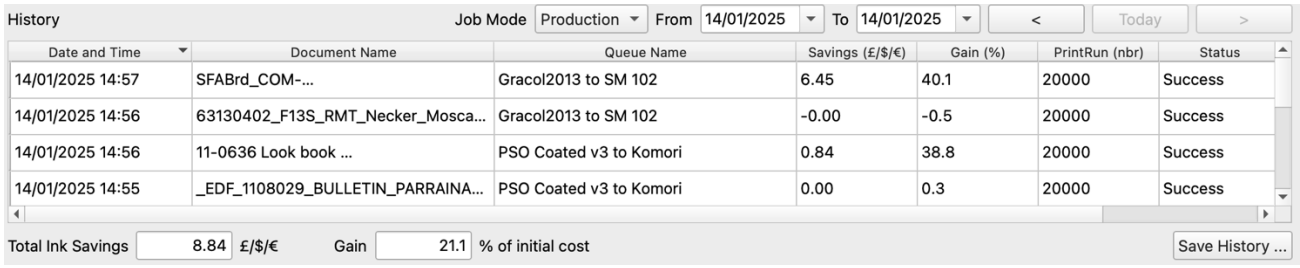
You can also abort any job processing with a right click on the job and selecting Abort. Aborted file will be placed in the Error Folder.

2.4. History

Alwan ColorHub's Statistics are available in History at the bottom of the Main window.



The History displays the last 100 files processed by Alwan ColorHub. You can display older files by setting a different Page number.



At the bottom right of the User Interface, a button Save History... allows users to save a statistics report for all jobs contained in the selected Job Mode and time frame.
The Report is a tabulated Text file which can also be opened in a spreadsheet for better readability. Statistics Report gives the amount of Ink saved per jobs and provide more insightful details about the ink percentage for every Primary ink before and after optimization, number of pages per job, and total of Ink saved during the selected period of time.

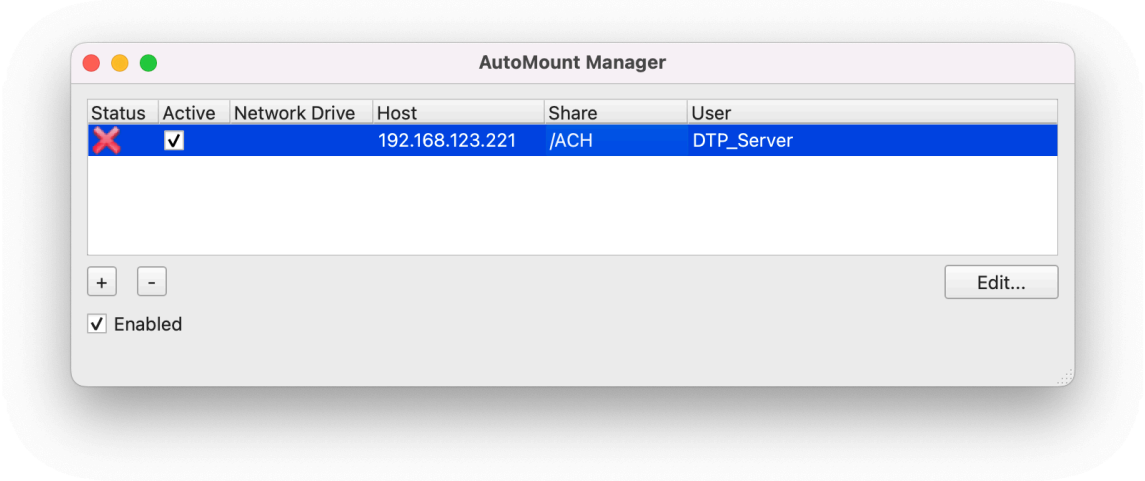
You can clear all history by clicking on Alwan ColorHub Preferences -> Advanced -> Clear All History...

Statistics figures are computed as follow:

Queue Name	Name of the queue
C, M, Y or K (%)	Cyan, Magenta, Yellow or Black plate ink coverage in % of total (original file)
Optimized C, M, Y or K (%)	Cyan, Magenta, Yellow or Black plate ink coverage in % of total (optimized file)
Delta C, M, Y or K (%)	C, M, Y or K (%) - Optimized C, M, Y or K (%)
Pages	Number of pages of corresponding document file
Area (m^2)	Total printed surface for all pages of the document
C, M, Y or K (Kg)	Cyan, Magenta, Yellow or Black ink consumption estimated weight (in Kg) = **Area (m2) x C, M, Y or K (%) x Ink Demand x Print Run**. Ink demand figure can be customized in Alwan ColorHub Preferences
Delta C, M, Y or K (Kg)	Cyan, Magenta, Yellow or Black ink gain estimated in Kg = Area (m2) x ΔC, ΔM, ΔY or ΔK (%) x Ink Demand x Print Run
PrintRun (nbr)	Number of printed copies. Default print run figure can be edited for each document by double clicking on the displayed number.
Delta C, M, Y or K ($)	ΔC, M, Y or K(kg) x C, M, Y or K inks cost (£/$/€ per kg) Ink cost/kg figure can be customized in Alwan ColorHub Preferences
Savings ($)	Sum of Delta C, M, Y and K in £, $ or €
Total Ink Savings	Sum of all individual document files ink savings
Gain … % of initial cost	Relative Gain between original ink cost and optimized ink cost: Gain = (Savings (£/$/€) / Original Cost(£/$/€)) x 100 where Original Cost(£/$/€) =Original C (Kg) x C (Inks Cost per Kg) + M (Kg) x M (Inks Cost per Kg) + Y (Kg) x Y (Inks Cost per Kg) + K (Kg) x K (Inks Cost per Kg)

2.5. Manager Menu

2.5.1. Automount Manager (DEPRECATED)



You can launch Automount Manager from the Manager menu. It allows you to automatically mount distant volumes on your computer using SMB or AFP protocols.

In case of network disconnections or computer reboot, Automount Manager will automatically mount again distant volumes.

2.5.1.1. Main Interface

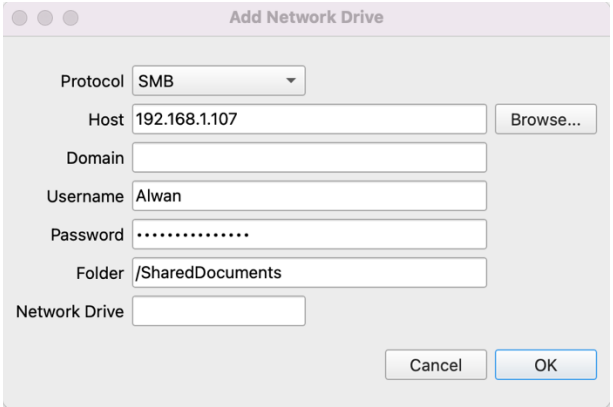
Activate or deactivate the Automount manager by clicking on Enabled checkbox.

You can also Activate/Deactivate each mount by clicking the Active checkbox on the left.

To create a new Network Drive click on the symbol "+"

2.5.1.2. Setup Interface

By clicking on Edit… button following window will be displayed for setting up the Automount:



Protocol: Choose AFP or SMB protocols.
If the shared Folder is on a Linux/Windows Computer, then select SMB. If it is a Mac to Mac sharing, AFP has to be selected.

Host (required): Type the name or IP address of the distant computer.

Domain (optional): Fill in the distant computer's workgroup. This option is useless if you try to access to a MAC.

Username (required): Fill in the Username used to access the distant computer. The folder you want to access to has to be shared with this user.

Password (required if exists): Type the Username associated password.

Folder (required): Type the name of the distant **shared** folder you want to access. The disk will only be mounted if the folder is shared with the User Named typed before

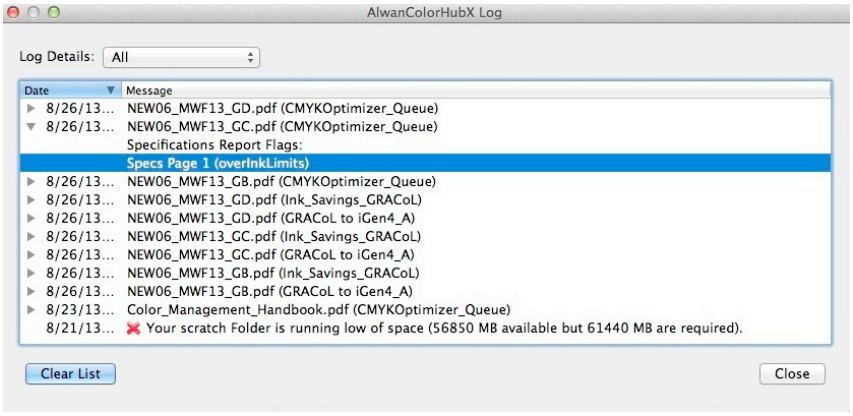
Mount Point (macOS version): Will be filled automatically once the OK button is clicked.

Drive (Windows version): Choose any letter of the list to name your mounted volume.

2.5.2. Log Manager

This Manager displays Alwan ColorHub logs, warning and error messages.

Go to menu Manager -> Log to display the following window:



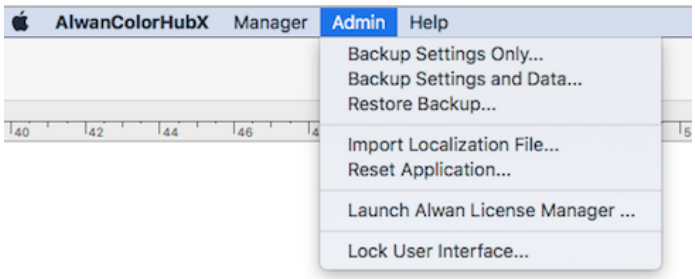
All displays preflight details, warnings and errors encountered when processing a job.

Warning displays non-critical issues encountered when processing a job.

Error displays critical issues encountered when processing a job (corrupted file, license issues etc.)

2.6. Admin Menu

Alwan ColorHub Admin Menu enables you to Backup, Restore, Reset, Localize or Lock the software.



2.6.1. Backup and Restore Configuration

These commands allow users to backup and restore all Alwan ColorHub components (including Queues, Preferences, and ICC profiles). When Backup is restored, ICC profiles are expected to be found from paths saved into the backup, otherwise, ICC profiles are restored in:

- macOS: ~/Library/Application Support/Alwan Color Expertise/AlwanColorHubX/Profiles

- Windows: User/UserName/AppData/Roaming/Alwan Color Expertise/AlwanColorHubX/Profiles

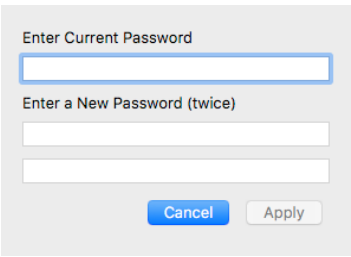
Note: Make sure before creating a Backup or restoring a Backup that ICC profiles embedded are royalty free and intended for public use.

2.6.2. Reset Application

This option allows you to completely reset the application and restart with a clean installation. All previous data and settings will be deleted.

2.6.3. Lock User Interface

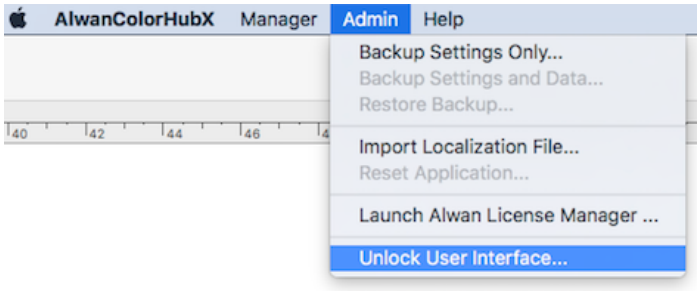
This functionality is useful if you want to prevent users from changing Task Settings. When Lock User Interface is active, access to Task Settings menu is no longer possible.



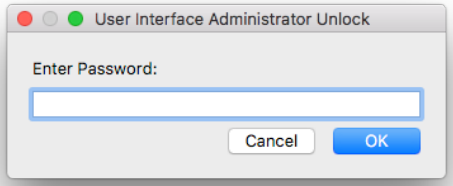
To Lock the interface you should first change the default password.
Default Password is "alwancolor" and it does not lock the interface.
Type Default Current Password ("alwancolor") and enter a new password twice.

Finally, Click on Apply button, which will change the password and lock the interface.

To unlock the interface, choose Alwan ColorHub -> Admin -> Unlock User Interface...



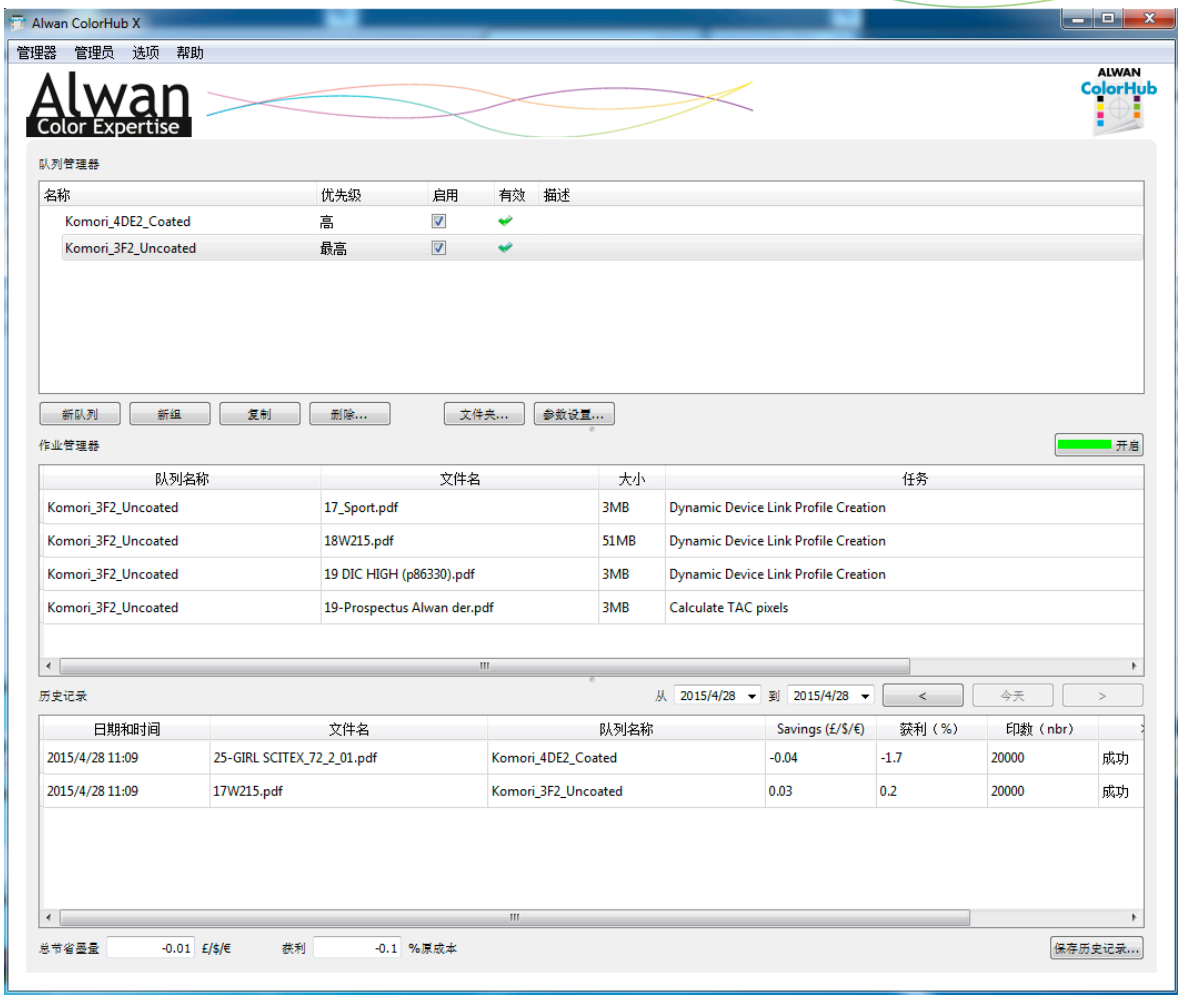
Then, enter your password in the following window:



Note that if your password is not set to "alwancolor", the application will start with a locked interface.

2.6.4. Localization

ACH can be localized using "Admin -> Import Localization File..." menu. Only .qm files can be imported. Please contact your Alwan dealer for more information about Localization file (*.qm) availability.

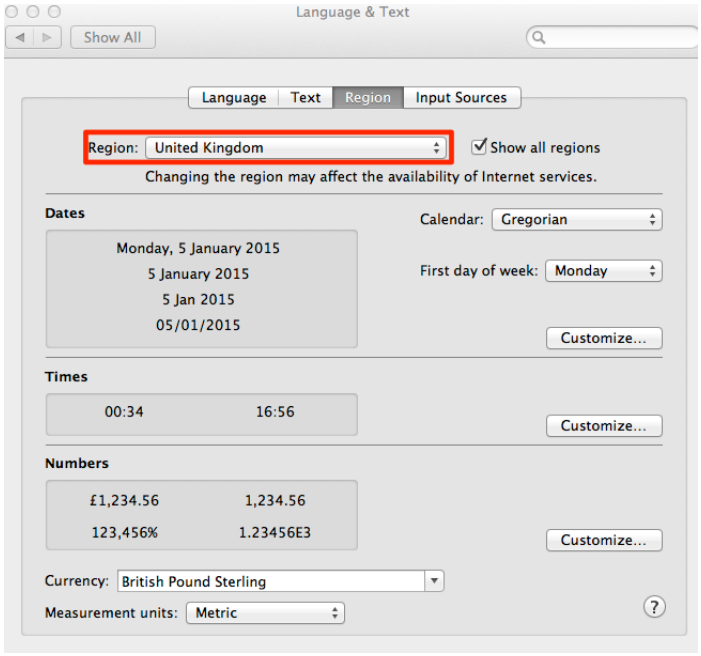


Important:

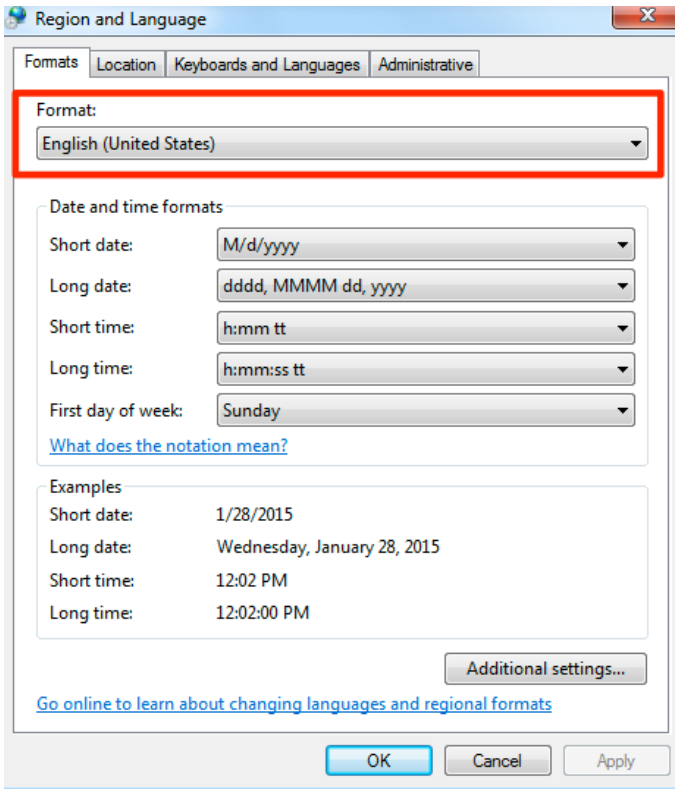
Language displayed in ACH depends on computer settings. If a translation file is available in the language of the computer, this language will be used by ACH. Otherwise, English language will be displayed.

This computer setting is editable:

- On macOS, in System Preferences -> Languages & Text -> Region -> Region:



- On Windows, in Control Panel -> Region and Language -> Formats -> Format:



2.7. AlwanColorHubX Preferences

General and non-queue specific parameters can be set from Alwan ColorHub Preferences window. To display Alwan ColorHub Preferences window click on AlwanColorHubX -> Preferences.

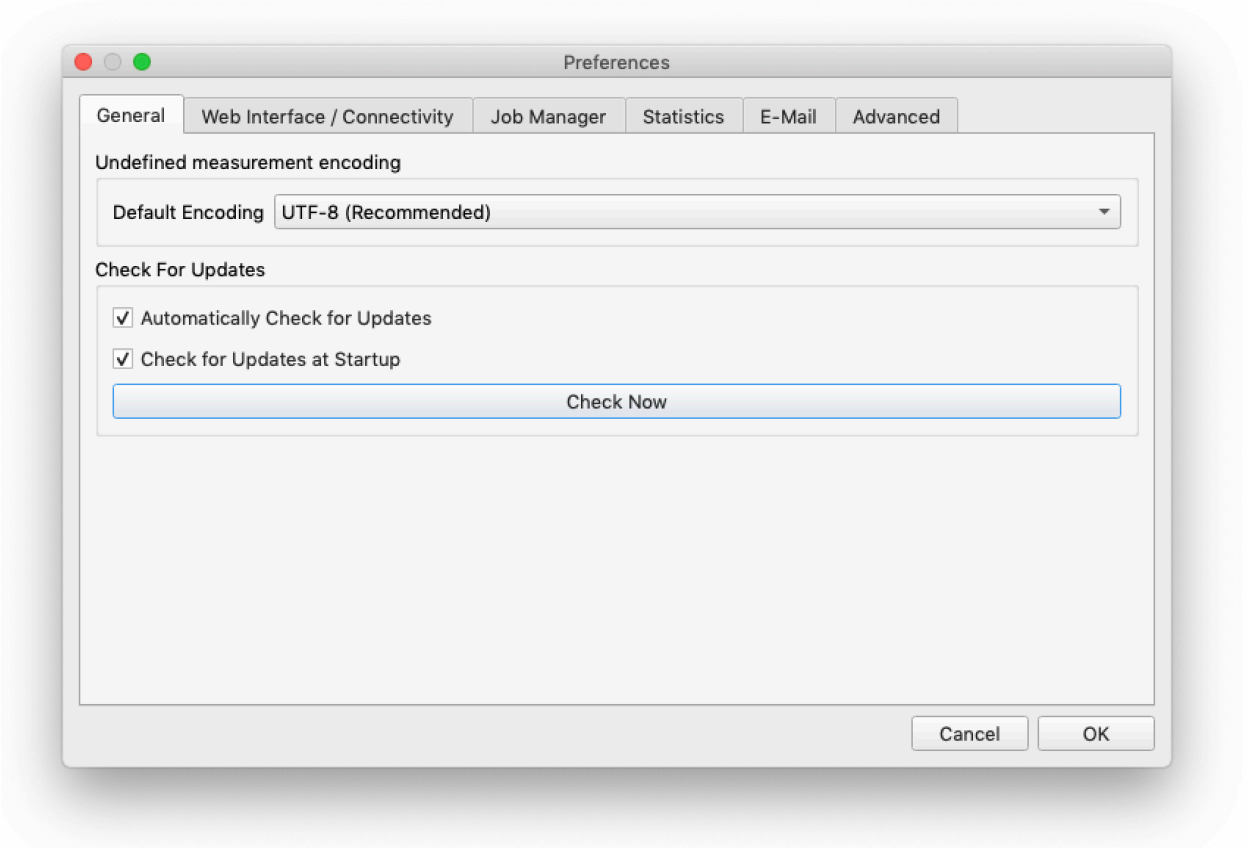
2.7.1. General

Check for Updates option enables Alwan ColorHub to request information about versions available from Alwan web server (www.alwancolor.com). An Internet connection is thus required to use this feature.

If an update is available, it will propose you to download and/or install the latest version you are entitled to download thanks to your current URTS expiration date, which is stored on your dongle license.

If your URTS subscription is expired, Check for Updates feature also informs you about the latest existing version, regardless of your dongle URTS.

Check for Updates settings are available in Preferences -> General -> Check for Updates:



- Automatically Check for Updates option will perform a Check for Updates every 7 days of running.

- Check for Updates at Startup option enables the software to launch the Check for Updates scan at each startup of the software.

- Check Now enables you to manually make a Check for Updates.

You can also directly check for updates through menu Help -> Check for Updates...

Privacy Policy:

- Technical data (date, IP address, Alwan software versions, Alwan Dongle ID) may be stored on Alwan Web Server during Software Update requests. No personal information is stored from your computer.

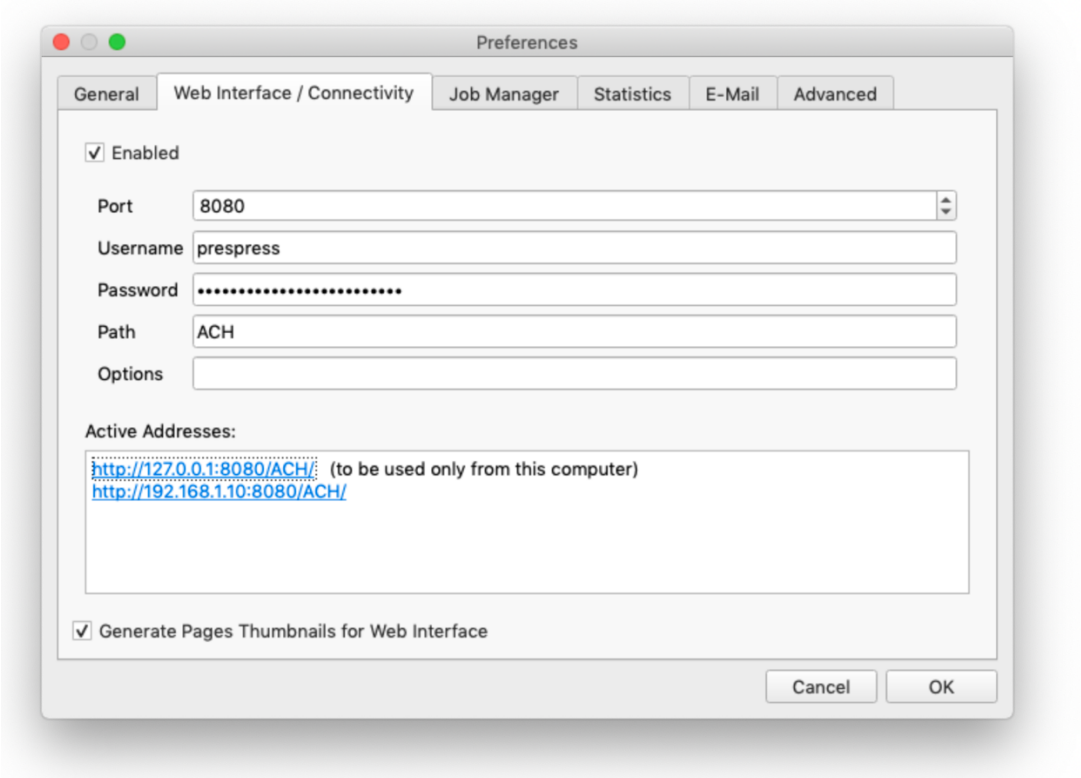
Such information is held by Alwan and is not for sale or trade, nor will it be disclosed to any third party except your Alwan Dealer which may help you during Update processes.

2.7.2. Web Interface / Connectivity

Alwan Web Interface is an easy-to-use web based service that allows operators, prepress and quality managers to monitor Alwan ColorHub and to process files remotely.

It allows you to access your software from any web browser (recommended browser is Google Chrome for best design results).

Note that it is recommended to ask permission to your network administrator before installing Alwan Web Interface.

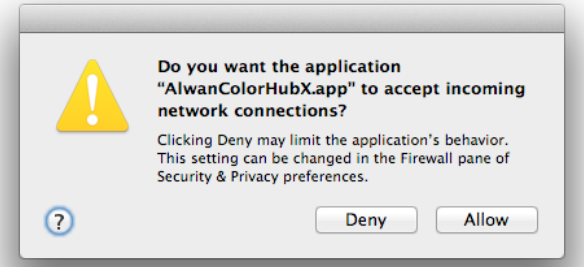


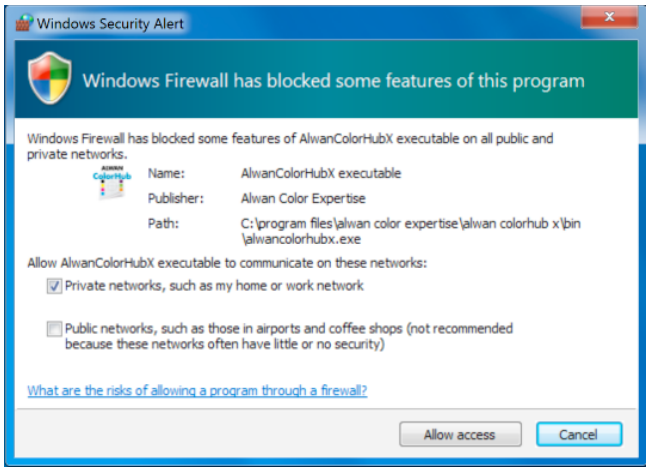
2.7.2.1. Enabled

To activate the Web Interface, you have to check Enabled checkbox.

It also allows other software to exchange with the ACH queues to process files remotely. It is needed to use ACH in interaction with Alwan ToolBox / HydraFix® Profile Updater.

Please make sure to allow firewall access when the dedicated pop-up window will appear:





If you dismissed it, you can activate it through your Firewall settings, through System settings:

Using Windows: go to Control Panel -> Windows Firewall

Using macOS: go to System Preferences -> Security & Privacy -> Firewall

2.7.2.2. Port

Default Port is 8751.

Port can be customized with another port number if desired. If you customize it, please avoid any port number that may be used by another application.

2.7.2.3. Username/Password

Define a Username and a Password if you want a restricted access to the Web Interface.

If you don't set any Username and Password, the Web Interface will be "public" on your network.

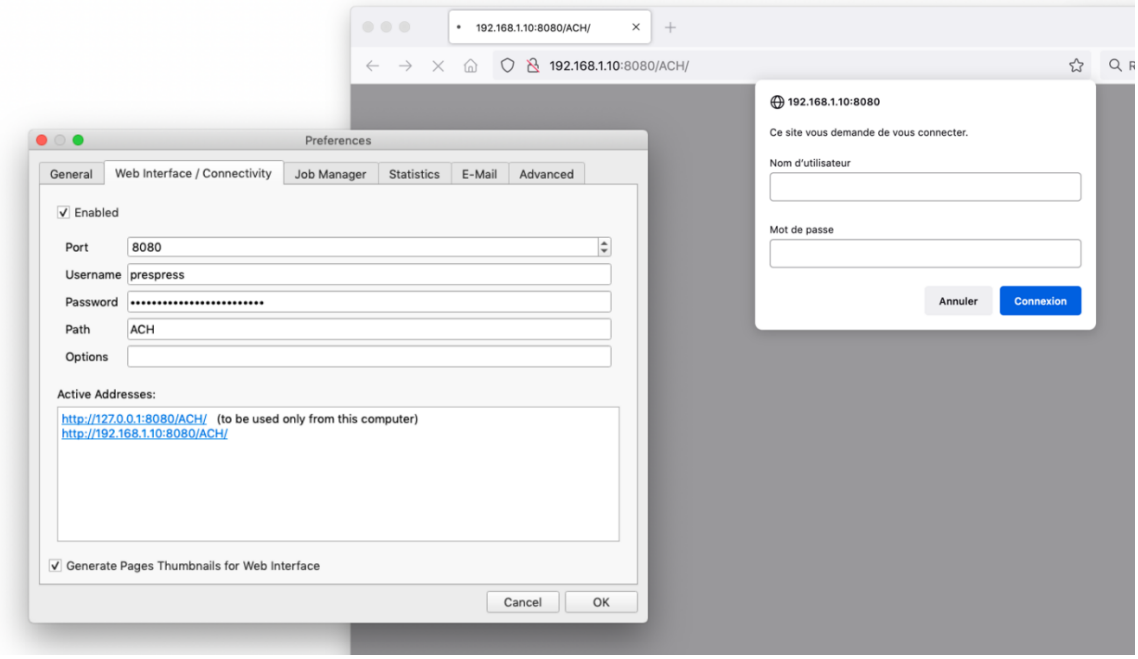
2.7.2.4. Path

This enables you to define a custom path for the Web Interface addresses.

2.7.2.5. Active Address

Displays the different addresses that allow you to access the Web Interface using an html browser.

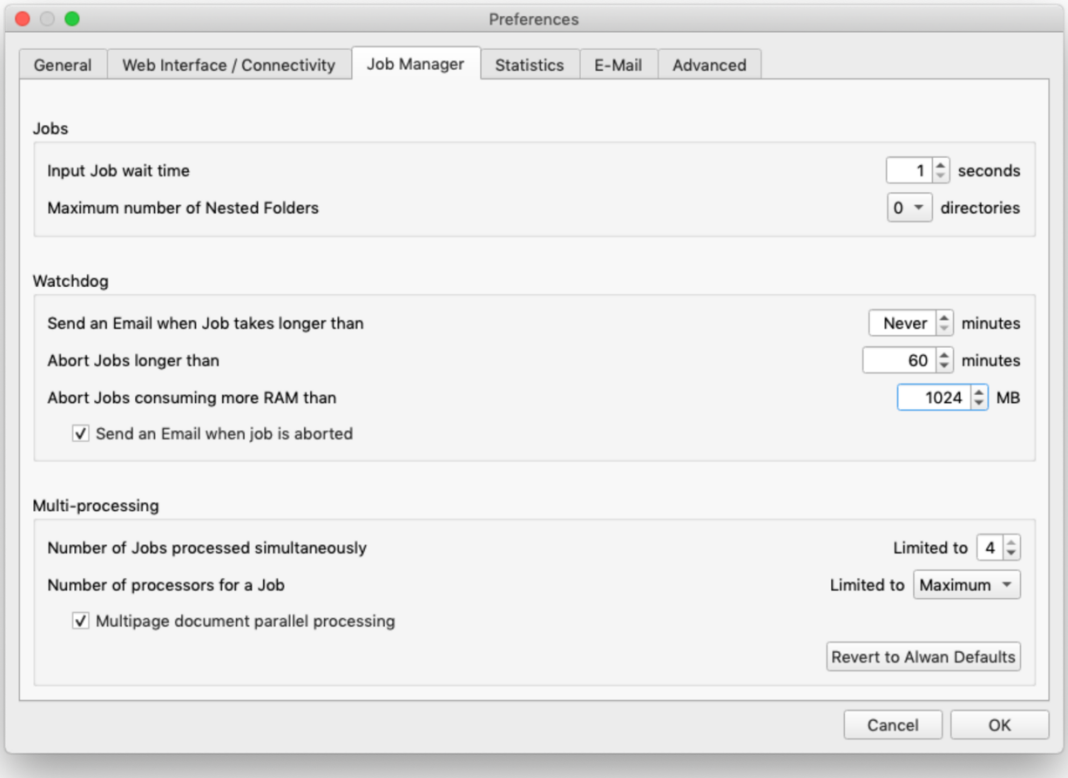
See below an example of browser settings:



2.7.2.6. Generate Pages Thumbnails for Web Interface

This option is needed if you want to display pages thumbnails in your browser.
With multi-pages files, ACH will produce thumbnails only for the 9 first pages for performance purpose. If needed this number can be customized by contacting Alwan support.

2.7.3. Job Manager



2.7.3.1. Input Job wait time

This value should be set between 1 and 240 seconds. This is the time Alwan ColorHub will wait before importing a stable file (same size and same modification date) from input folder into Job Manager. This could be useful in some networks where "stable" temporary files are generated into Alwan ColorHub input folder.

2.7.3.2. Maximum number of Nested Folders

This option enables Sub-folders management.
If set to "0" directories, only files placed in the input folder will be processed. No folder containing files will be optimized.
If set to "1" directories, all files contained in a sub-folder in ACH Input folder will be processed and transmitted. Sub-folders are created according to the original folder hierarchy in output folders: JobSuccess/JobError/JobReport/Proof/Original.
You can set the Maximum of Nested Folders up to 4 directories, to process files inside sub-sub-sub-sub-folders.

2.7.3.3. Send an Email when Job takes longer than

This value can be set at a minimum of 1 minute. It corresponds to the time a job can be processed before sending an Email (need to be set in the E-Mail part of Preferences).

2.7.3.4. Abort Jobs longer than

This value can be set at a minimum of 1 minute. It corresponds to the time a job can be processed before being aborted.

2.7.3.5. Abort Jobs consuming more RAM than

This value can be set at a minimum of 128 MB, however only the smallest of file can be processed with such a low amount. It is recommended to use this threshold to abort a job that would take a big amount of RAM.

2.7.3.6. Send an Email when job is aborted

Each time a file is aborted, an Email will be sent (need to be set in the E-Mail part of Preferences).

2.7.3.7. Number of Jobs processed simultaneously

This number enables multi-processing inside the Job Manager.
Default value depends on your computer CPUs and license.
This could be tuned depending on available RAM, PDF sizes, and PDF structures.

2.7.3.8. Number of processors for a Job

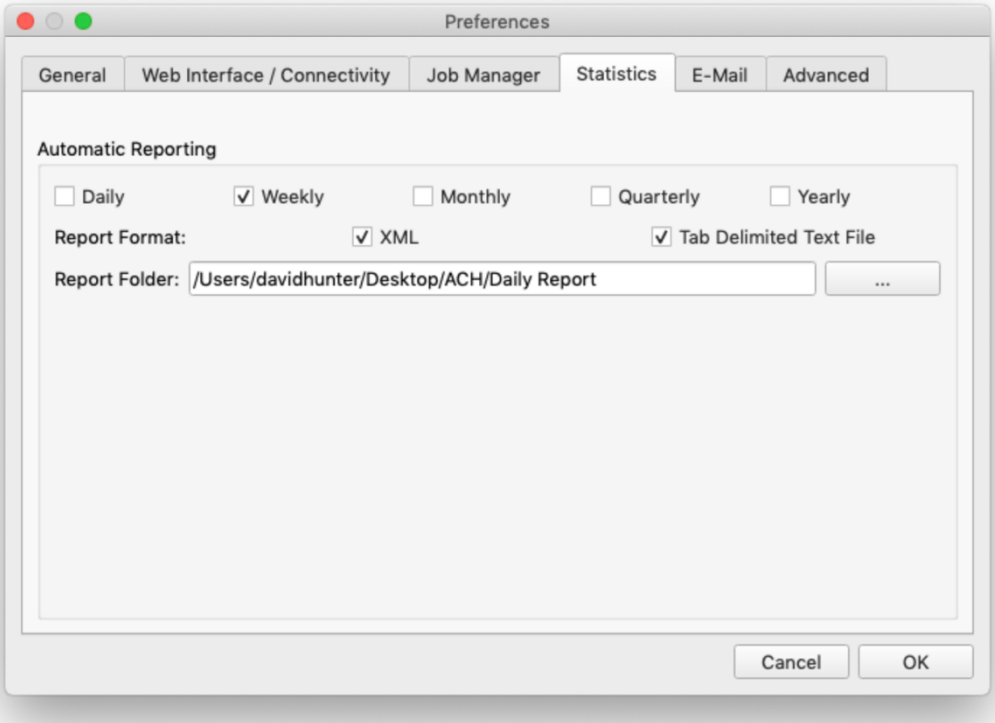
This number enables multi-processing for a given Job
Default value depends on your computer CPUs.

2.7.3.9. Multipage document parallel processing

This option improves processing speed of multipage PDFs.It is available for users with a valid URTS.

Note that Multipage Document processing is not possible when URTS is expired or when the task settings uses one of following settings:
Check & Optimize, High Productivity Mode (HPM), Preflight, Put PDF with Transparencies in Error Folder, Minimize number of channels, Preserve Overprints Sensitive (force Preserve Original Separation).

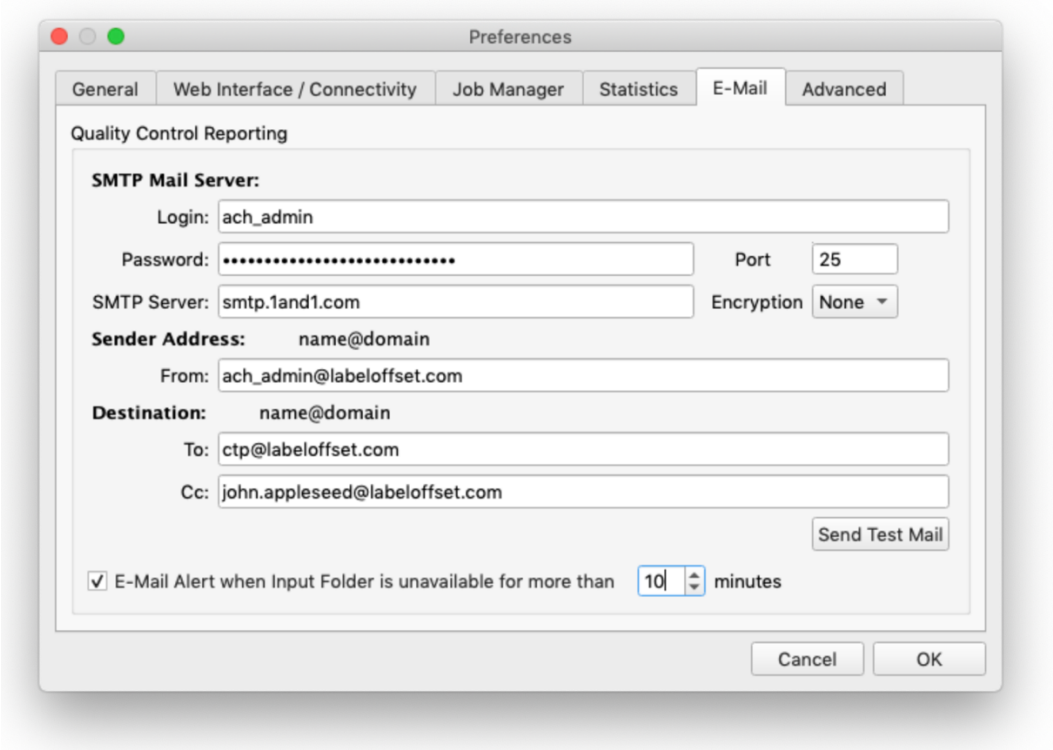
2.7.4. Statistics



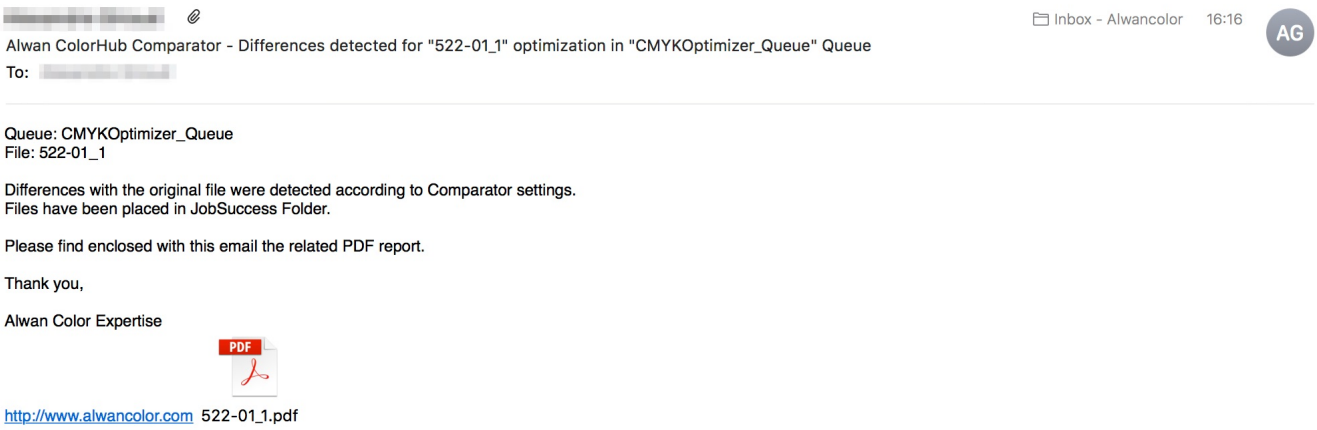
The Statistics menu allows you to generate automatically a Statistics report according to a chosen frequency. You can choose to get these reports in XML or Tab Delimited Text File formats and customize the path where it will be saved.
Statistics are computed only for jobs in Production mode.

2.7.5. E-Mail

E-Mail tab allows you to configure e-mail parameters for ACH. Recommended SMTP ports are: 25, 465, 587.

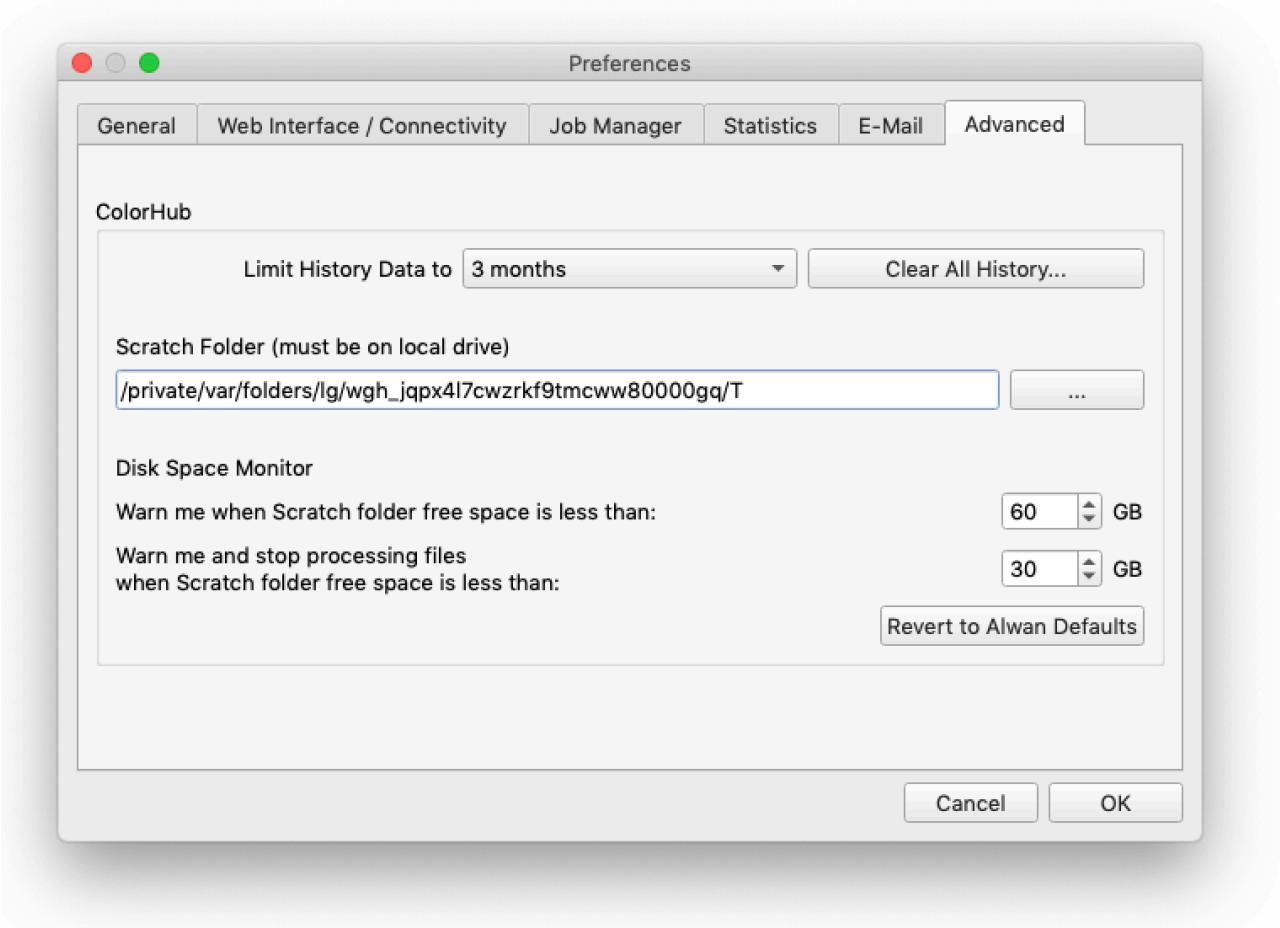


That information is used to send an email to chosen e-mail recipients when:
- Quality Control -> Comparator -> Send Reports of Files with Differences by Email is checked
- Input folder of a queue is not available after XX minutes is checked.



ACH will send an e-mail alert as soon as Input Folder is unavailable for more than x minutes. For instance, in case of network disconnection this notification could alert the manager to avoid any production delay because file optimization stopped.

2.7.6. Advanced



2.7.6.1. Limit History Data to

All history data and statistics older than the specified period will be automatically deleted from ACH and from the Web Interface.

2.7.6.2. Clear All History...

By clicking on this button, all history data and statistics will be deleted.

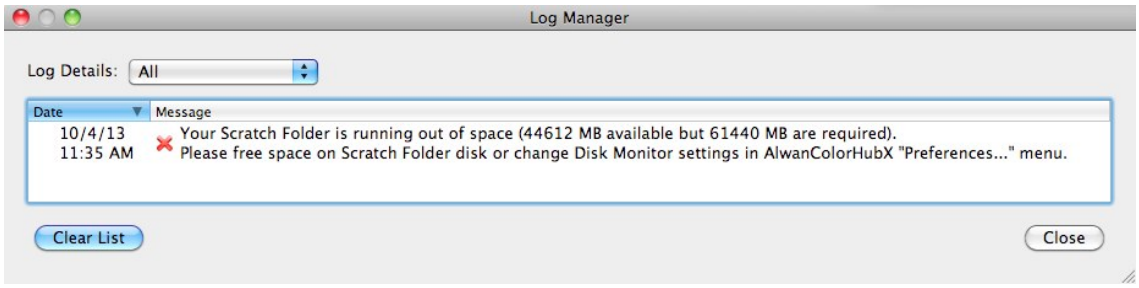
2.7.6.3. Scratch Folder

The ... button allows you to choose your Scratch Folder. The Scratch Folder is where all temporary items will be stored during files processing.

2.7.6.4. Disk Space Monitor

By default, Alwan ColorHub Disk Space Monitor gives 2 types of warnings:

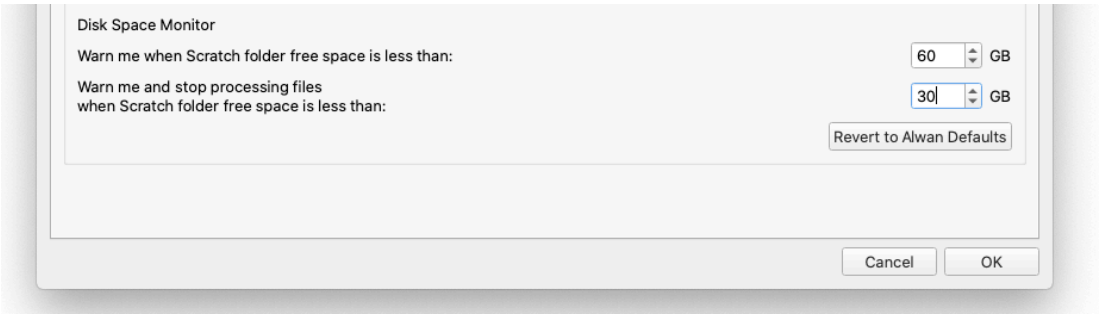
1/ When your available hard disk space containing the Scratch folder becomes less than 60 GB, the following warning window is displayed:



2/ When your available hard disk space containing the Scratch folder becomes less than 30 GB (default value), an Error message is displayed and ACH stops processing files.

When free disk space becomes sufficient again, the software restarts processing files automatically after a few minutes.

These 2 thresholds (Default Values: 60GB and 30GB) can be customized as follow:



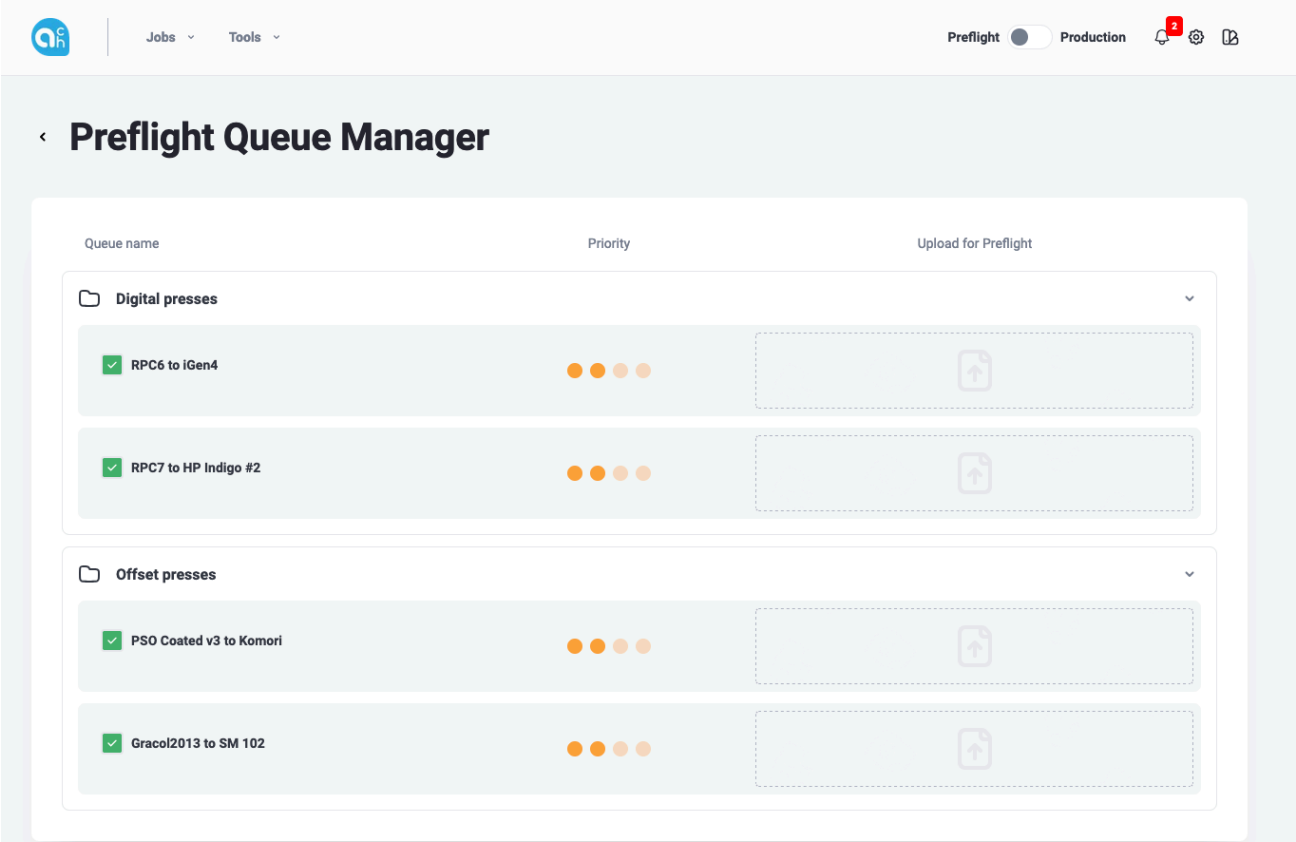
2.8. Alwan ColorHub Web Interface

Alwan Web Interface allows operators, prepress and quality managers to monitor Alwan ColorHub and process or preflight files remotely.

Alwan Web Interface can be activated from ACH Preferences… -> Web Interface / Connectivity settings.

2.8.1. Preflight or Production modes

Web Interface can be used in 2 modes: Production or Preflight. You can switch from one mode to the other by clicking on the top right part:



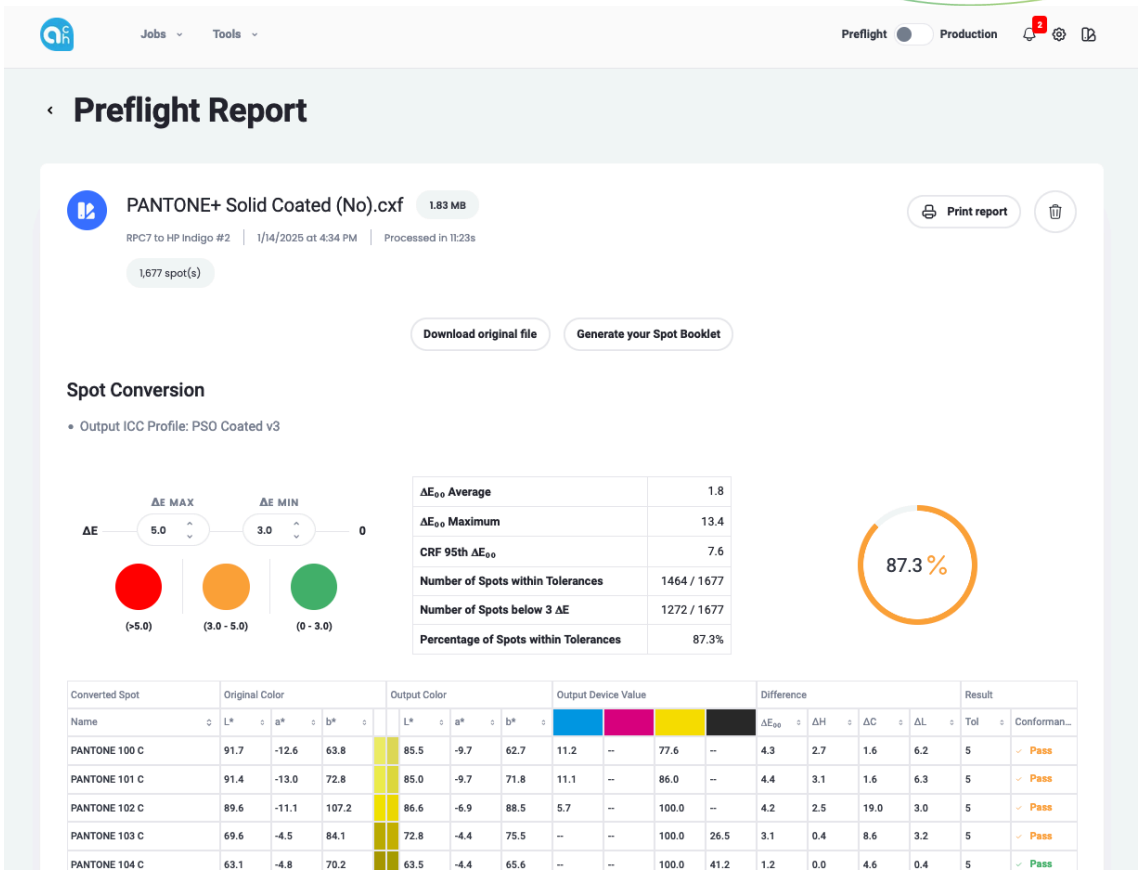
In Production mode files are processed as usual in the production workflow: files and reports are saved in chosen queues folders.

In Preflight mode, you can assess PDF files color management, ink savings, spot color conversions, optimization results, etc., without interfering with production queues and folders.
Displayed reports are temporarily saved in your scratch folder until cleaning.

Note that Preflight feature is available when your Alwan ColorHub license has a valid URTS.

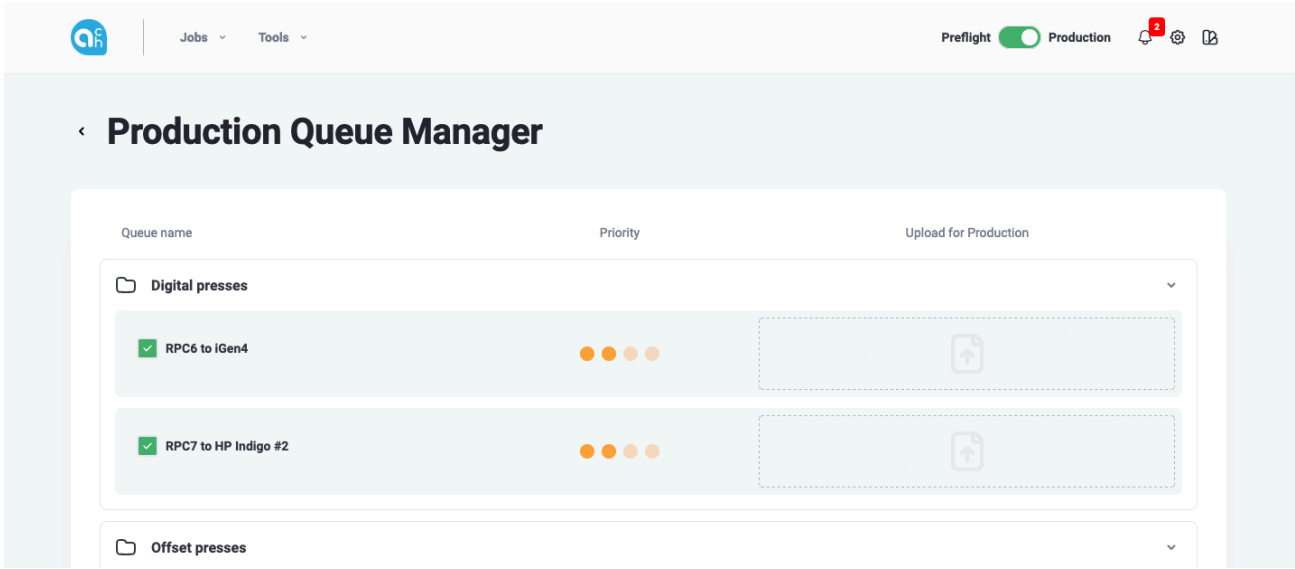
Preflight Jobs can be deleted manually (see Job History part) or automatically (see ACH Preferences… -> Advanced -> Limit History Data).

Web Interface "Preflight" mode lets user load a spot color library (.cxf, Adobe Color Book .acb, CGATS .txt) to assess the spot color reproduction capabilities of a print device:



2.8.2. Queue Manager

The Queue Manager window displays all queues created in Alwan ColorHub.



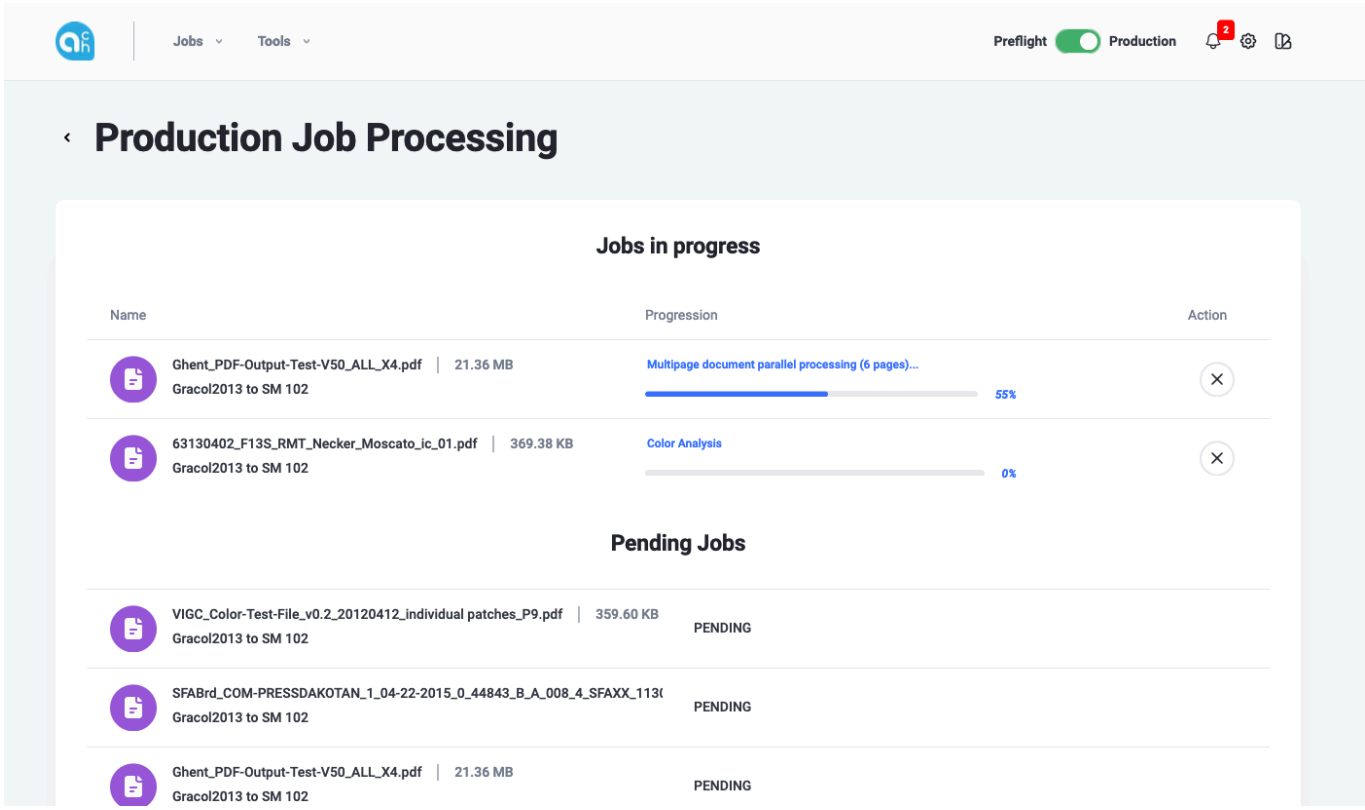
To process jobs you can browse or drag and drop files.

After processing jobs, reports will appear in the Job History part.

The description part of the queue will be shown below the queue name if it is used.

2.8.3. Job Processing

This window allows you to view all current and pending operations.

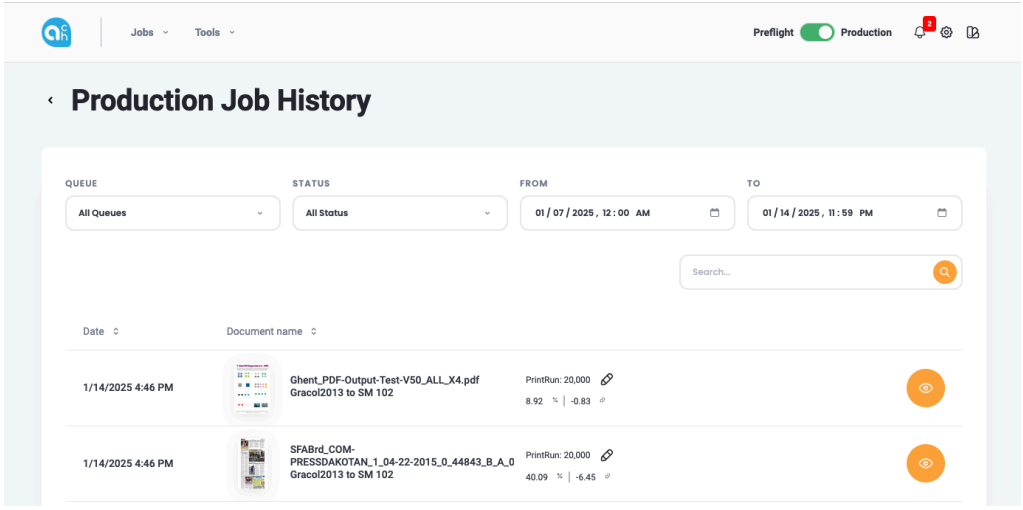


Job Processing displays for each file: Document Name and Size, Queue Name, Task in progress, Completion percentage of the Task and an action which is the possibility to abort the processing (icon on the left).

Multi-processing is done according to Alwan ColorHub preferences.
Pending files are waiting in the input folder before being moved into the scratch folder for processing purpose.

2.8.4. Job History

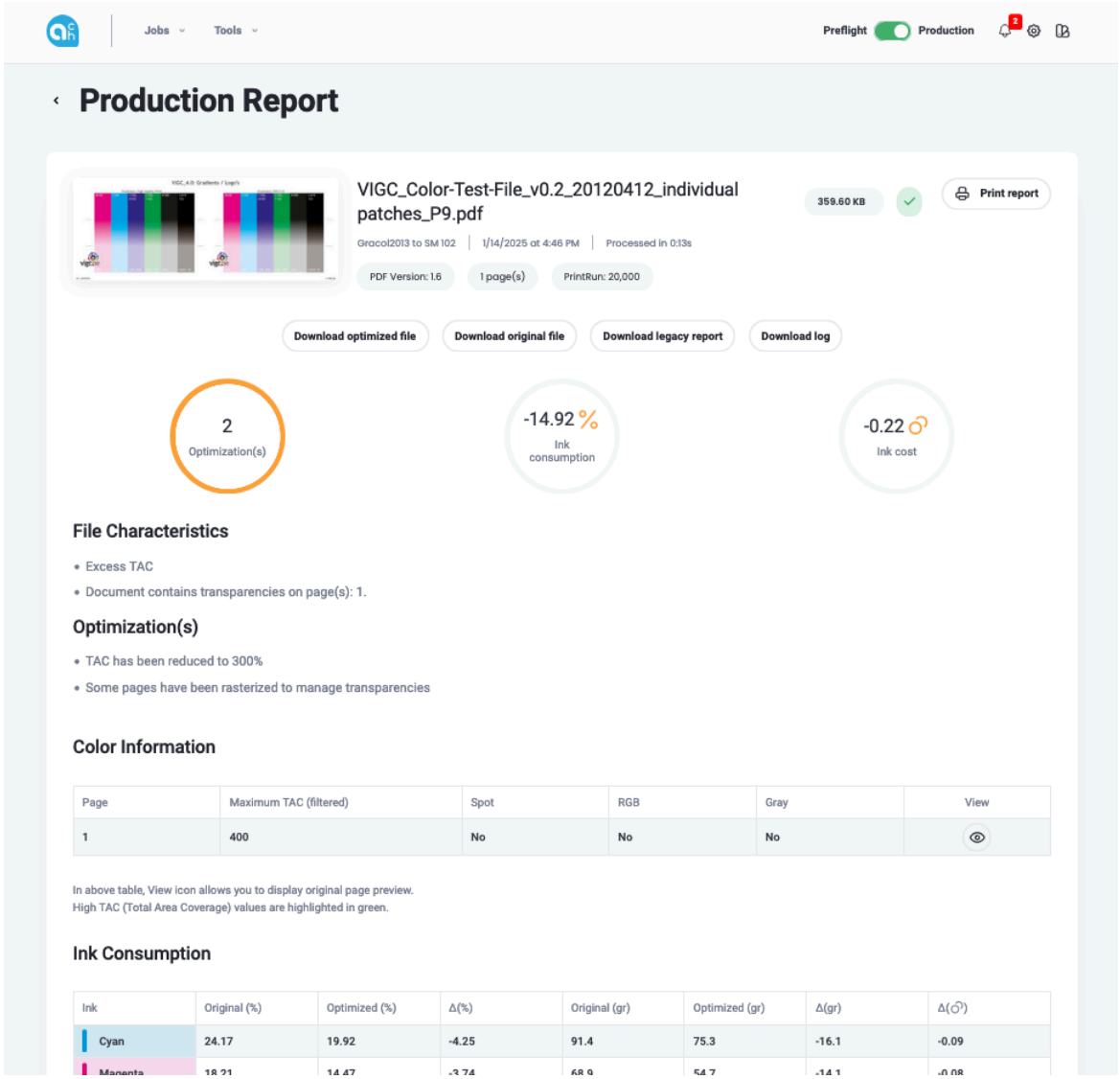
The Job History window displays information about processed files.



You can filter available data by Queue, Status, Date and Time, or Search field.

Preflight jobs can be deleted from History by clicking on the bin icon on the right.
You can also clean automatically or manually thanks to ACH Preferences… -> Advanced -> Limit History Data setting.

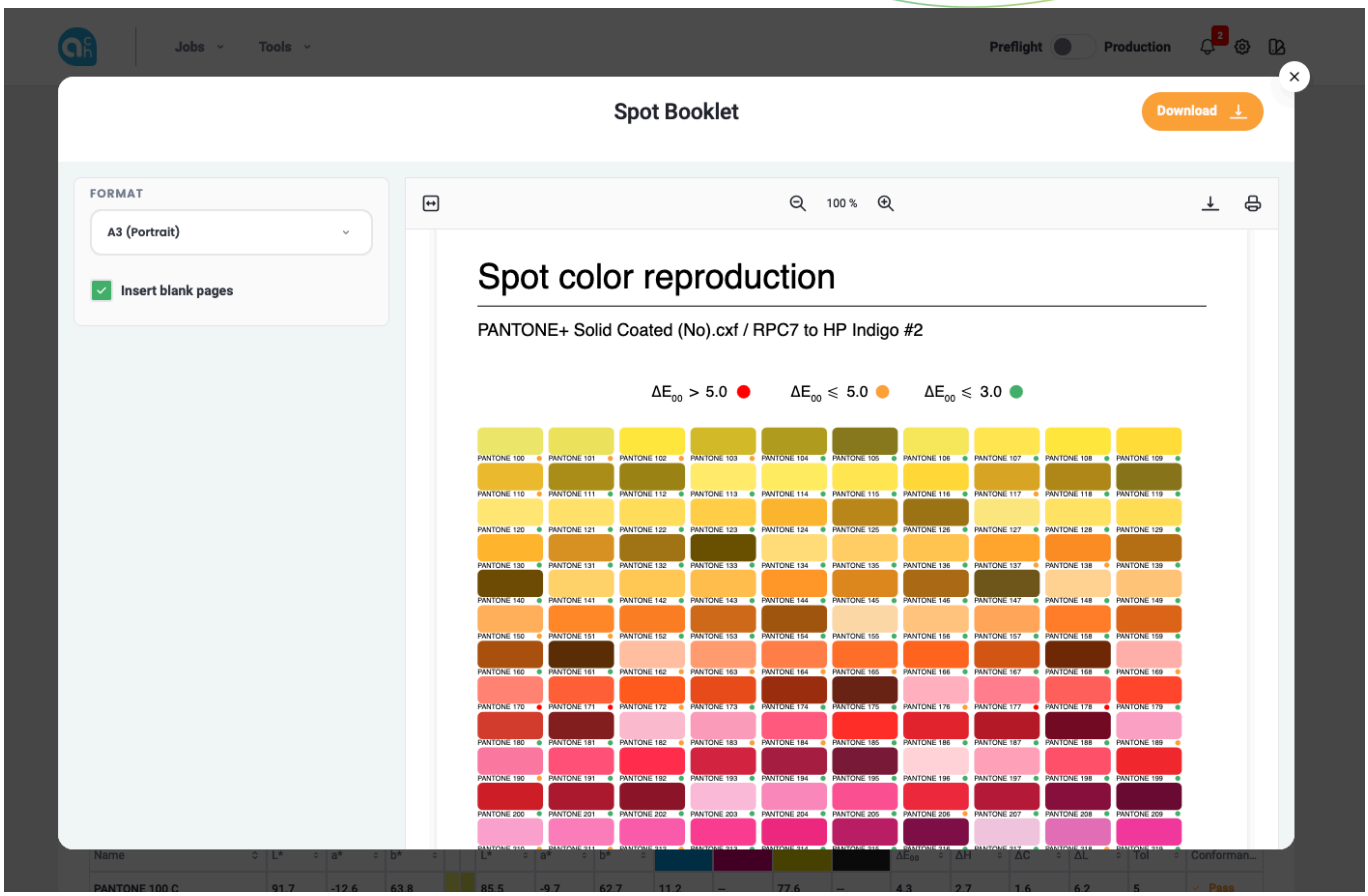
If you click on the job or on the eye icon on the right, processing report will be displayed:



All the information about the job processed is visible on this page; it corresponds to the information you have on a normal job report. Multiple buttons on the top of the report allows you to download the optimized file, the original file, the legacy report (.pdf) or the log (.txt). There is also the option to print this report.

In case of processing a spot color library or even a PDF with multiple spots in Preflight mode, it is possible to setup 2 ΔE limits: - the ΔE Max, spots above this ΔE will be shown as failed in red and – the ΔE Min, spots above this ΔE will be shown as pass in orange and spots below this ΔE will be shown as pass in green.

There is also the possibility to Generate your Spot Booklet from the Spots you have processed:



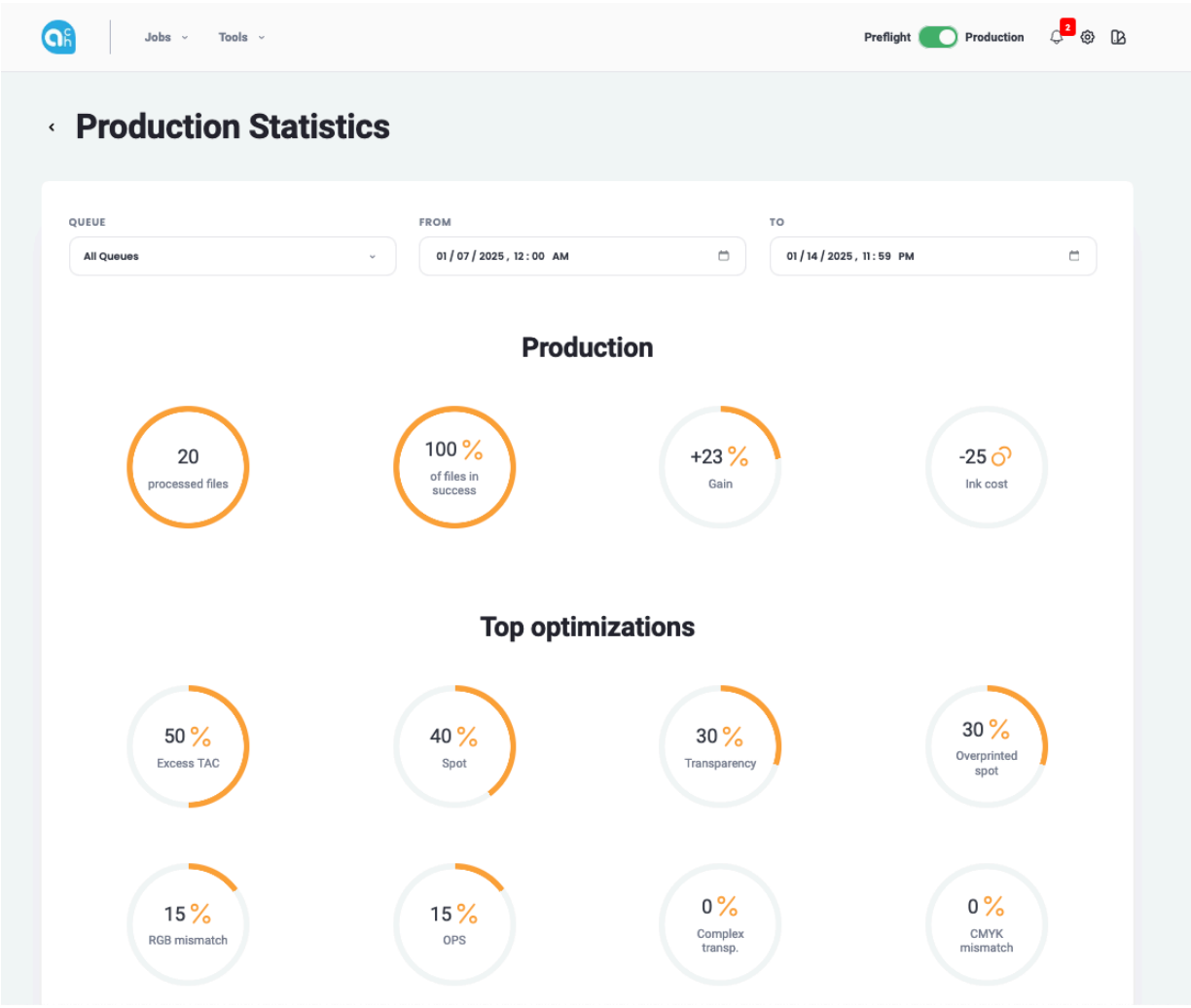
The Spot Booklet function allows to generate a PDF for different formats and to Insert blank pages in order to have one white page between each page of texts/patches. The first page contains a table of summary of the accuracy of reproduction of the spots.

Each spot has a circle of color depending on how good it can be reproduced. Their color corresponds to the ΔE limits set in the step before.

The Spot Booklet gives a full overview of the spot color reproduction capacity of the press.

2.8.5. Production Statistics

When Web Interface is used in Production mode, you can display Production Statistics:

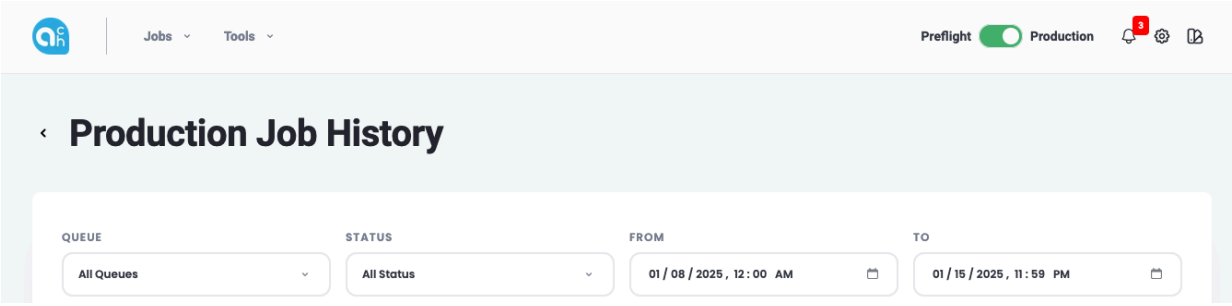


Displayed statistics can be filtered by queue and by date.

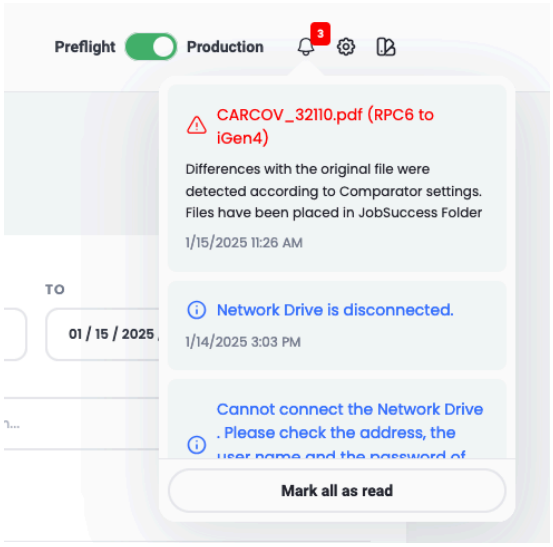
Production part is a summary of the job processing. Top optimizations part shows the most common elements optimized by ACH.

2.8.6. Notifications

In case of warnings or processing errors, new notifications are displayed in red on the bell icon in the top right part:



You can get more details by clicking on the bell icon and you can mark notifications as read.



Web Interface notifications are also displayed in ACH Log Manager.

2.8.7. Web Interface Settings

You can set up Web Interface Language, Queue Refresh Period, History Refresh Period and Statistics Refresh Period by clicking on the top-right Settings icon. The Default language is in English.

If a Localization File has been added to ACH, the new language should be in the Language list.

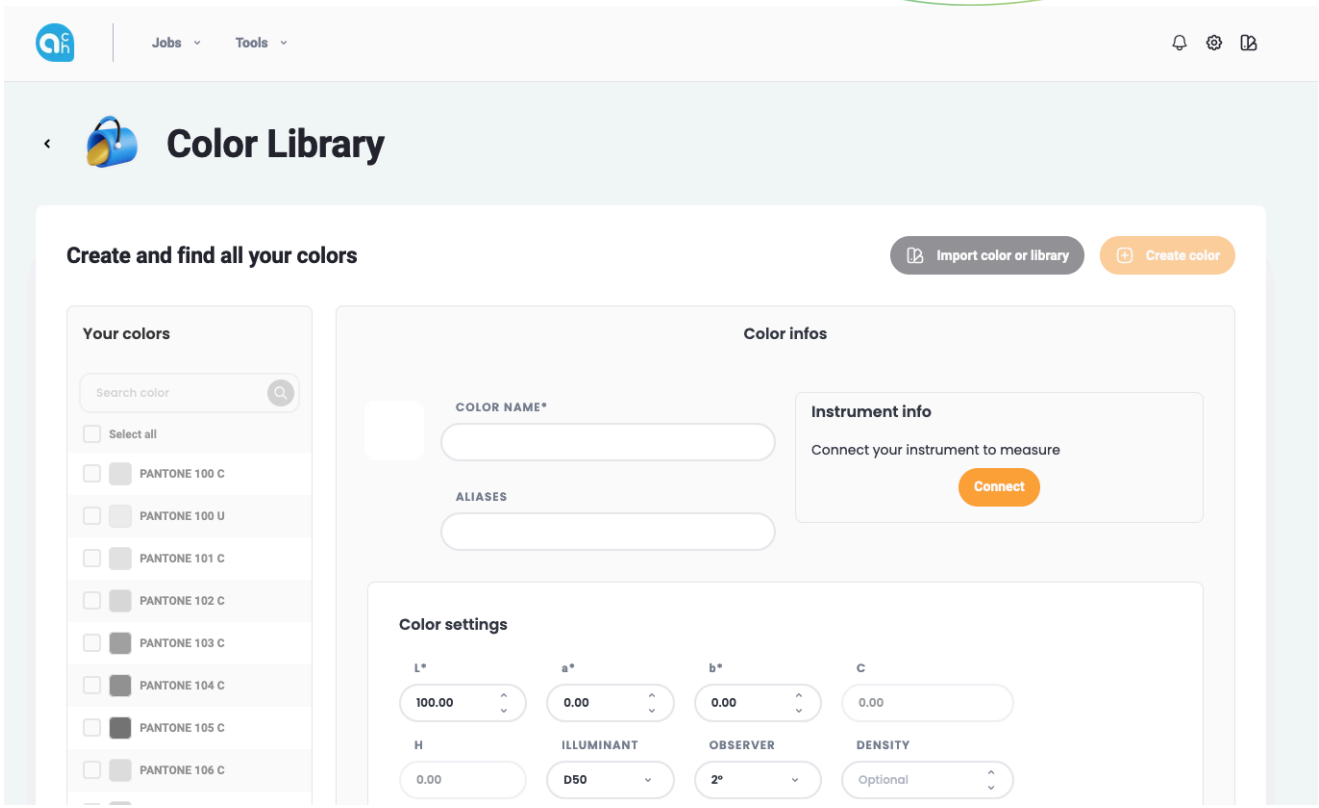
2.8.8. Color Library

The last icon on the top-right of the screen is the Color Library.

The database used is the one in ACH, any update in the Web Interface or in ACH will update the other too.

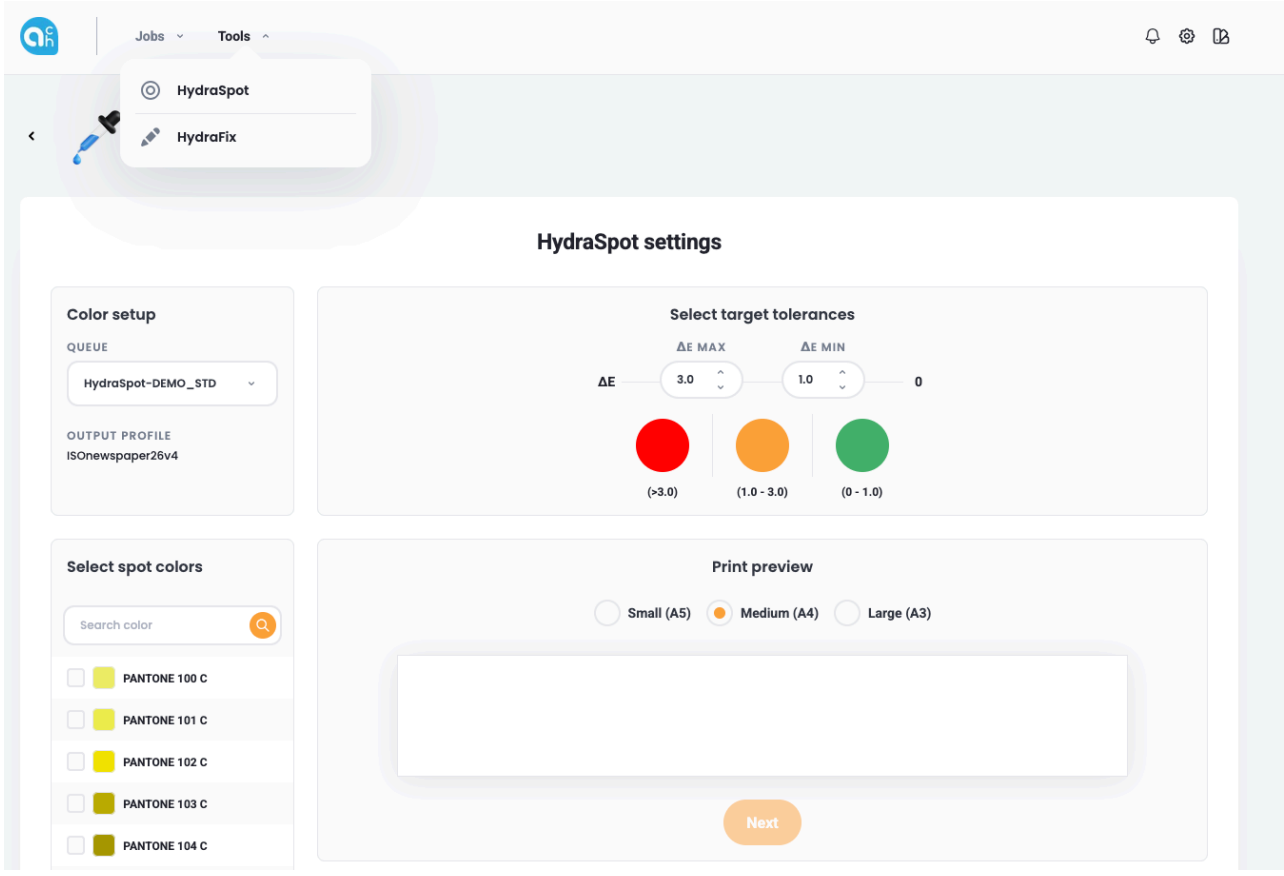
You can Import color or library (.cxf files) or Create color. When clicking on Create color the panel Instrument info appears, allowing you to connect an instrument in order to measure a new color. Existing colors can also be edited by clicking on them and modified by measuring with an instrument. Measuring a color adds a Color Specification list (with default names CS0, CS1, etc.) below the Color settings which allows to have multiple measurements in different Mode saved under the same name.

The library also supports to Export colors and Delete colors after selecting them with the checkbox on their left.



2.8.9. HydraSpot

The HydraSpot function is located in the Tools menu of the Web Interface.



To use HydraSpot, you need Hydra Profiling® licensing option.

HydraSpot goal is to improve the values of the spots with multiple iterations in order to print them with the smallest ΔE possible and match the reference color with the highest precision possible for the actual print device and substrate.

2.8.9.1. Settings

The first step of HydraSpot is to the select the ACH queue to use. The optimization will be done with the profile of this queue and at the end the Spots will be saved in the Task Settings of this queue.

On the left, spot colors from the Color Library can be selected to be optimized. This will not change their definition in the Color Library, only the devices values of transformation used for the selected queue. At the bottom of the list, it is possible to select the Measurement Mode to use when multiple definitions of the spots are available.

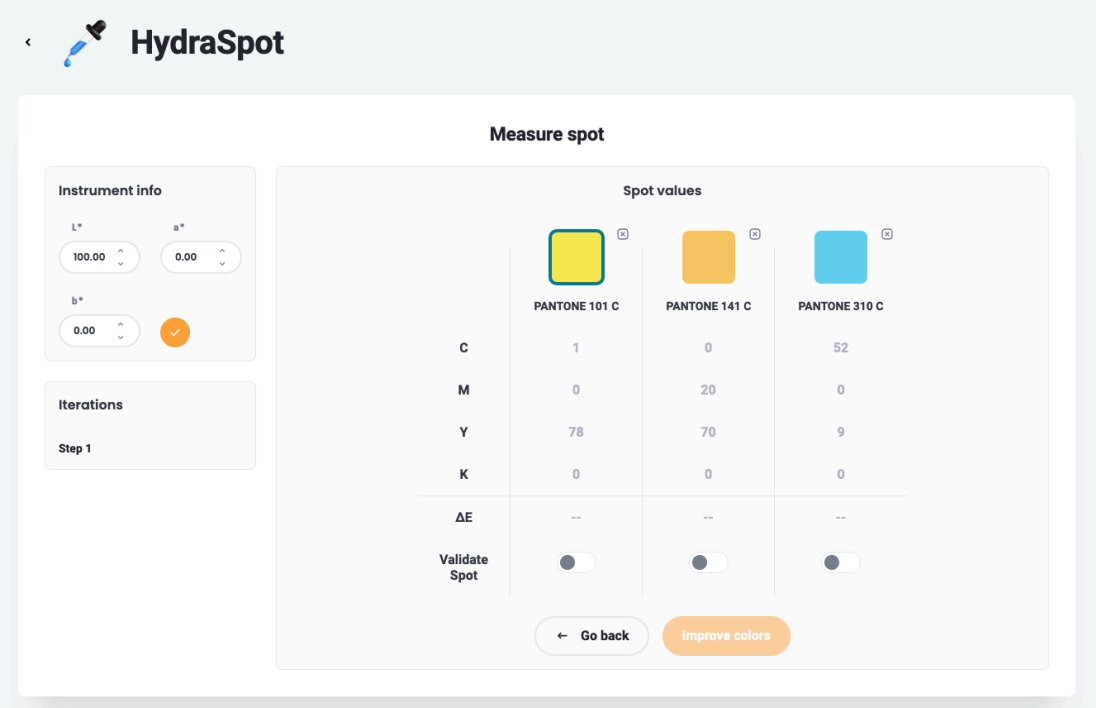
The tolerance can be set with 2 ΔE limits: - the ΔE Max; measurements of spot above this ΔE will be shown in red and – the ΔE Min; measurements of spots above this ΔE will be shown in orange and below this ΔE will be shown in green.

The Print preview shows the file that will be printed with the spots selected. It is possible to select the format of the file between A5, A4 and A3.

2.8.9.2. Iterations

The iterations start with the printing of the PDF file containing the spots. You can select whether to Download HydraSpot file and manually import them on the RIP or to directly Save in ACH Output Folder of the queue selected. The top of the file shows also the current step of iteration.

Then, the Measurement Module window show up to select the instrument, connect it and select the parameters. It is also possible to click on the cross on the top right of the window to enter the Lab values manually.



Once measured (or entered), the ΔE of comparison will be calculated using the reference from the Color Library. The number may be Red, Orange or Green depending on the tolerance selected in the settings. If the measurement gives a Green ΔE (lower than the ΔE Min selected in the first step), the Validate Spot toggle will be checked. If all spots are Validated with spectral measurement (measured with an instrument), you can access the multi-illuminant step. If not, the iteration step starts again with the printing of a new PDF file with newly optimized values for the spots.

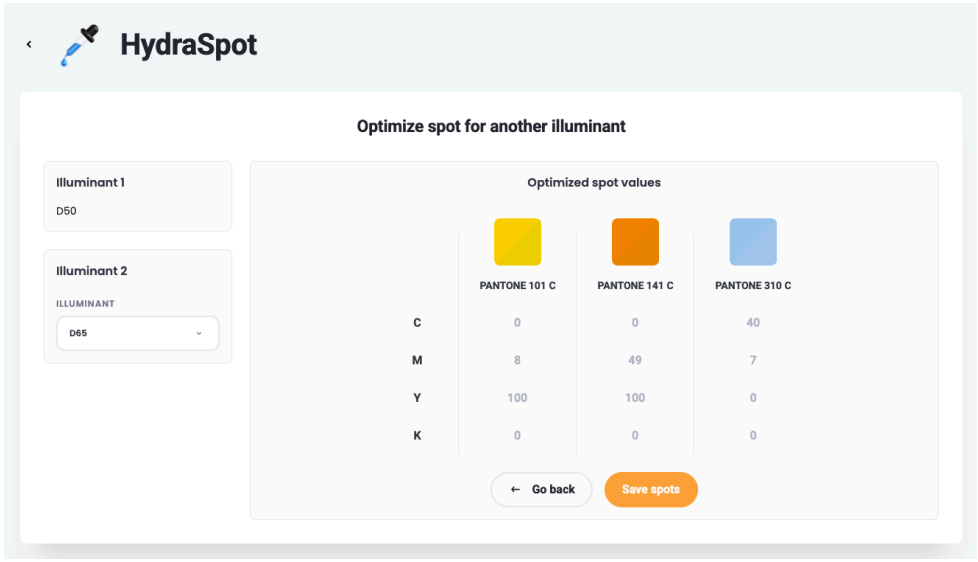
In addition to the ΔE measured, the function can give multiple information depending on the difference between the last step measured and the current measurement. There are 2 specific cases:
- if the ΔE measured is bigger than in the last step, a warning will appear showing the ΔE measured. The interface will show the better ΔE and CMYK values to continue the optimization (and save them at the end in ACH).
- at the 3rd step only, an algorithm will use all the measurements already done to determine if the spot can be reproduced with less than 1 ΔE. If this is not the case, an orange warning will appear to show that it may not be possible to print this spot with sufficient precision.

On the left of the window there is the list of all the iterations where you can check the number of steps you have done and what measurement was done for each spot at each step.

At the top of each column you can click on the cross to remove the spot from future measurements and optimizations. No change to this spot will be saved in the queue settings.

2.8.9.3. Multi-illuminant

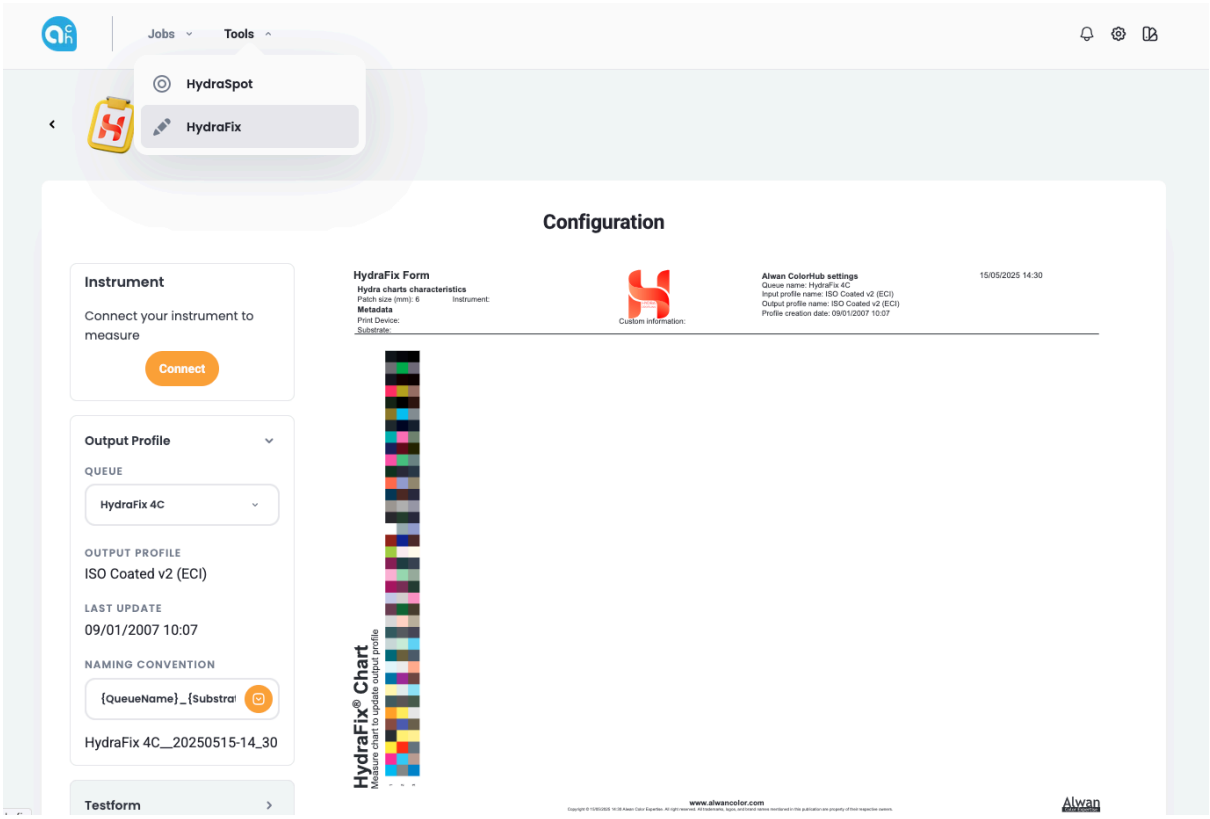
This is the last step of HydraSpot. It optimizes the spots in order to have a good spectral match with the reference under D50 (used for iterations) and under another illuminant (used for display and viewing) with virtually no metamerism.



Keeping the second illuminant at None or selecting D50 (same as measurement conditions) will keep the values optimized by the iteration steps unchanged.

2.8.10. HydraFix

The HydraFix function is located in the Tools menu of the Web Interface.



To use HydraFix, you need Hydra Profiling® licensing option.

HydraFix technology's purpose is to update the printing condition of a digital device - density/inkcut, dot gain/tonal curves, color tables/icc profile - in one easy and quick operation.

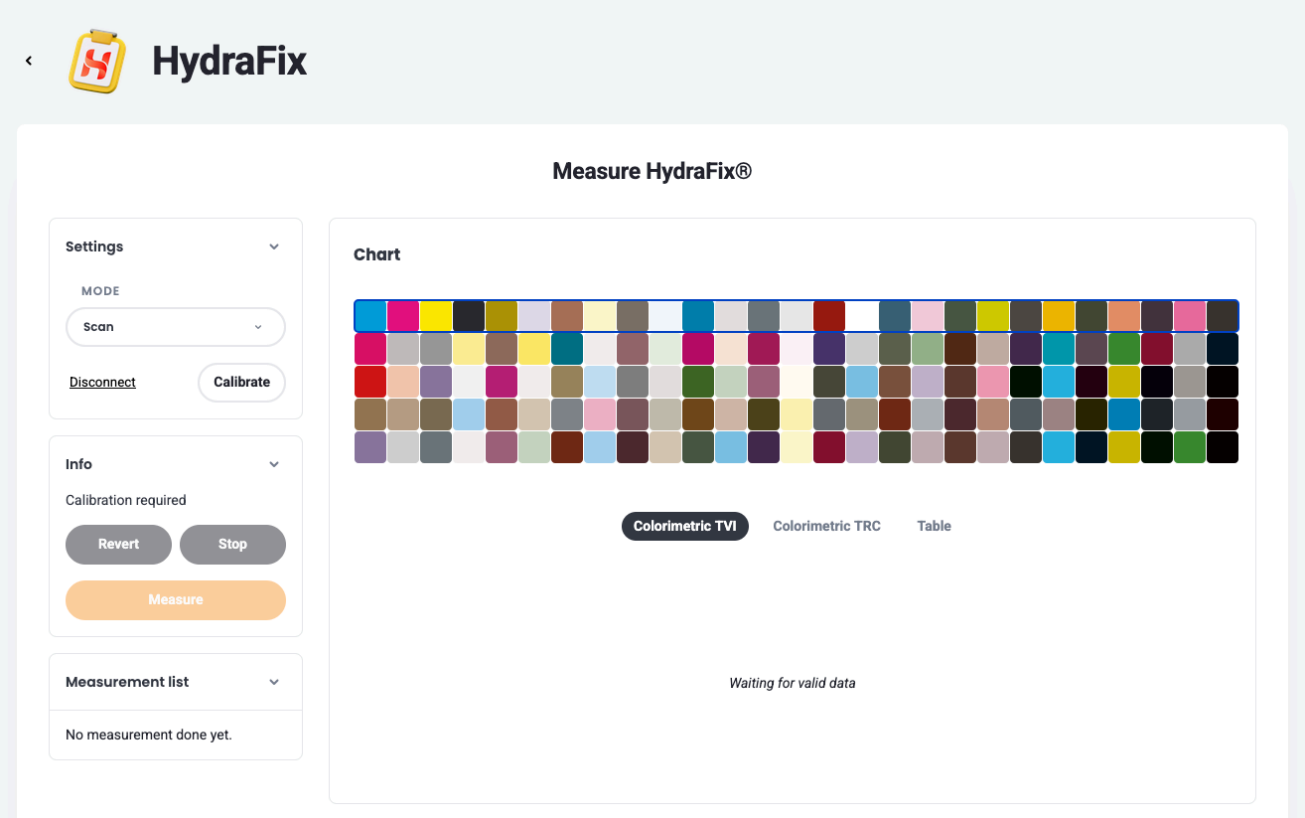
2.8.10.1. Configuration

The first step of HydraSpot is to the select the ACH queue to use. The new profile will be created with the same ink sequence as the output profile of the selected queue. The Naming Convention corresponds to the name of the profile that will be created. In Testform it is possible to select the template to use, the type of chart and any additional information that would appear on the HydraFix Form. Finally, the Metadata can be written to add more information to the Form that will be printed.

Connecting the Instrument will automatically change the testform so that it fits with the requirements of the device used. When clicking on Connect the Measurement Module window will show up to select the instrument, connect it and select the parameters. It is needed to connect an instrument before clicking on Generate Testform to have the correct template used.

2.8.10.2. Measure HydraFix

In order to create the profile of the press the HydraFix Form needs to be printed with No Color Management. The PDF to print can be found in the JobSuccess Folder of the selected queue.



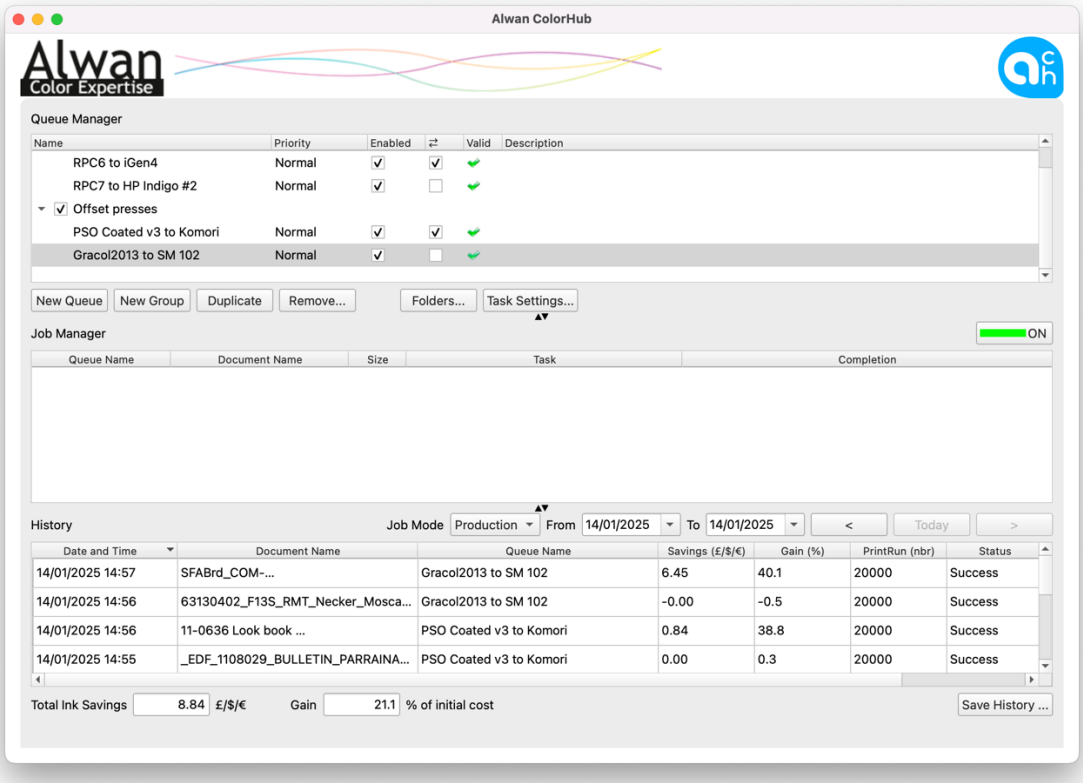
For most instrument, the Calibration is the first step to do before measuring. Then, the Mode can be selected between Scan (the whole row is measured) or Patch (every patch is measured one by one).

Once a measurement is done, it will appear in the Measurement list on the left and the information relative to the measurement will appear at the bottom of the window to show Colorimetric TVI, Colorimetric TRC and a table of important values.

After one measurement the button Update profile can be used to start the creation of the profile. At the end, the profile of the queue will be automatically changed.

3. Task Settings Interface

When you create a new Queue in Alwan ColorHub, you have to define its processing settings.
To do this, select the Queue and click on Task Settings… button.



3.1. Overview

3.1.1. Menu Buttons

On the top left of the Task Settings window, you can find three buttons that allow you to define ACH file processing parameters.

Input: allows to you to define the color management policy for input files and their content.

Input colors definition depends on these settings.

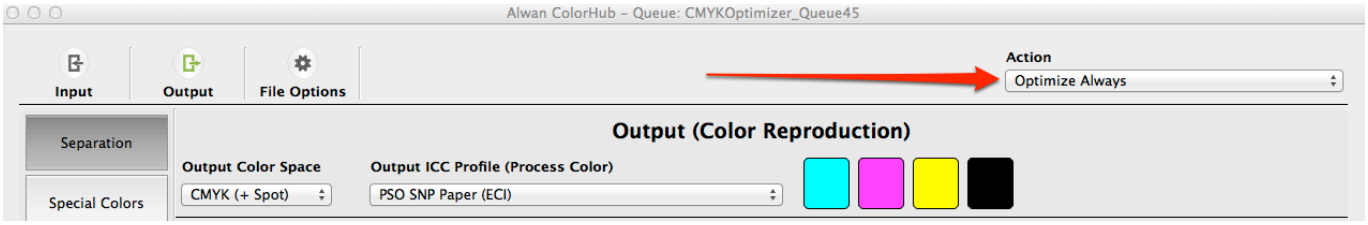
Output: allows to you to define the color management and separation policy for output files and their content.

Output colors reproduction depends on these settings.

File Options: allows you to define file related processing parameters.

3.1.2. Action

This menu allows you to define Alwan ColorHub desired action:



3.1.2.1. Check Only (Preflight)

Alwan ColorHub only checks whether files are compliant to your defined Task settings or not. No other action on the file is made. Compliant files will be placed in JobSuccess folder while non-compliant files will be placed in JobError Folder.

Parameters checked during Check Only (Preflight) are:

- Existence of any color space different from chosen Output Color Space.

- Existence of an embedded profile different from the Output Profile if Use Embedded Profile(s) option is checked.

If your Output Color Space is CMYK, following additional parameters are checked:

- TAC value resulting from DTAC analysis (Noise filter + Tolerate Excess TAC value)

- K max (if Separation tab is set to GCR or Maximum Black, in case of CMYK (+ Spot) Output Color Space)

If your Output Color Space is HiFi, following additional parameters are checked:

- TAC value resulting from DTAC analysis (Noise filter + Tolerate Excess TAC value)

Note that if All Inks at 100% preservation option is activated (in Output -> Purities), elements made of all inks at 100% will not be taken into account during the Preflight.

Resulting analysis is described in the Log window.

3.1.2.2. Check and Optimize

Alwan ColorHub checks and optimizes files and contents of PDF files. The checking operation is done the same way as in Check Only (Preflight) mode.

If you are processing PDF with Check and Optimize, it is highly recommended to choose Preserve Original Separation (to keep the same separation on optimized pages and on pages that do not need optimization).

3.1.2.3. Optimize Always

All input files are systematically color managed and optimized.

This option is useful in case you want to change all images color or separation characteristics regardless of their preflight analysis.

3.1.2.4. Printer Calibration (Curve Correction Only)

This option is useful for Press Calibration and Characterization works.

Data will be compensated according to the chosen TRC defined in Output -> TRC Adjustment, but no color management is applied.

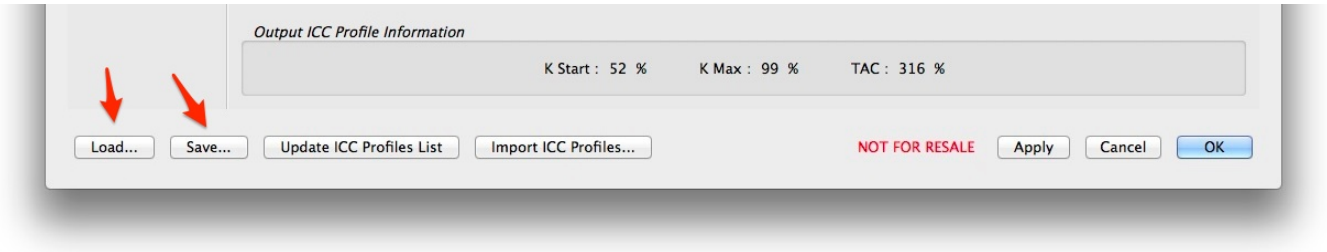
3.1.3. Load and Save Buttons

Task settings management is very useful to save and share your Task Settings with other Alwan ColorHub users. Task Settings manages the parameters set for a Task as well as the ICC profiles used within this Task.

Note: Before exporting and importing settings, please make sure that ICC profiles embedded are royalty free and intended for public use. When settings are saved, ICC profiles are automatically embedded.

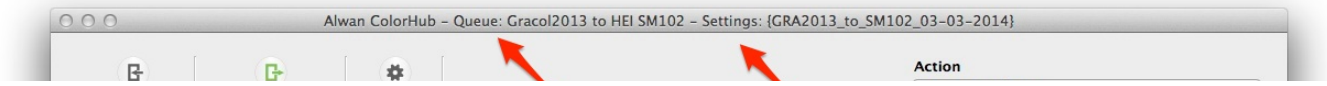
Click on the Save... button to save the settings of the current Task window. This button is located at the bottom-left of the Task window.

Click on the Load... button to load Task Settings file. This Task Settings file will be applied to the current Task window.



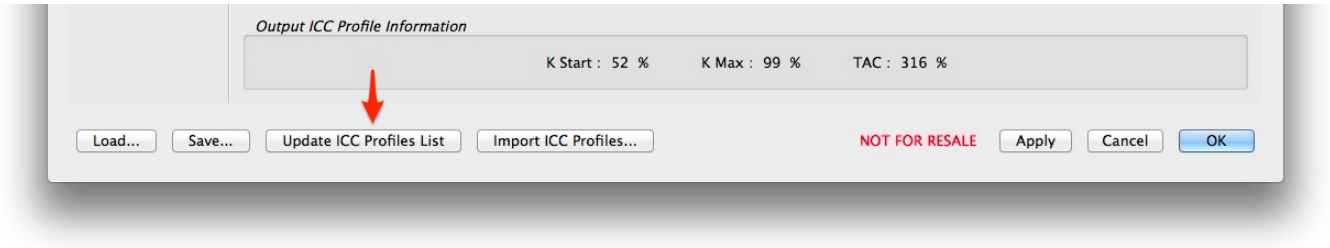
To make sure that a Task Settings file is correctly applied, double check names on the top of the Task window:

The name in the brackets corresponds to the loaded Task Settings file.



Note: Loading settings from previous ACO version is only possible if they have been saved with ACH version 3.9.10 or later. It is highly recommended to check settings after import because new settings have been added in new versions.

3.1.4. Update ICC Profiles List



Update ICC Profiles List button allows you to update the list of ICC profiles available in Alwan ColorHub Profiles local menus if you modify the content of one of your local ICC Profiles folders after application startup.

3.1.5. Import ICC Profiles

Import ICC Profiles... button allows you to import any ICC Profile into Alwan ColorHub database.

3.2. Input (Color Definition)

The Input Menu allows you to define the color management policy for input files and their content. Input colors definition depend on these settings.

3.2.1. Default Definition

Source profiles generally correspond to the images assumed or known working space.

You can select Default Profile and Default Rendering Intent for each kind of Input Color Space.

Alwan ColorHub supports embedded ICC Profiles v2 and v4.

Usual ICC Rendering Intents are available: Perceptual, Relative Colorimetric, Absolute Colorimetric, Saturation.

Hybrid Colorimetric Rendering Intent combines ICC Absolute and Relative Rendering Intents for unprecedented color accuracy. This rendering intent is aimed to provide an ICC Absolute Color reproduction without media white point reproduction.

When using this rendering intent, you can expect:
Highlights and White Point to be very close or identical to Relative Colorimetric Rendering Intent.
Mid-Tones and Shadows to be very close or identical to Absolute Colorimetric Rendering Intent.
Shadows and Black Point to be very close or identical to Absolute Colorimetric Rendering Intent (i.e. with no artificial boost of the black point when output gamut permits it).

Notes:
Please make sure that output process gamut is bigger than input process gamut (same as for a proofing workflow).
Black Point Compensation (BPC) is not available with this Rendering Intent.

Black Point Compensation (Default and Embedded): This option will compensate for the differences in dynamic range between Input and Output device gamut.
Blacks and three quarter tones will not be clipped or lost if the Destination gamut is smaller than the Source gamut.
Blacks and three quarter tones will not lose their visual deepness and contrast if the Destination gamut is larger than the Source Gamut.

3.2.2. Embedded Profiles and Rendering Intents Policy

3.2.2.1. Use Embedded Profile(s)

You can choose whether to use or discard ICC profiles that are embedded in input files (except HiFi profiles, that cannot currently be embedded in files) by ticking the check box or not. In the latter case, selected Default ICC Profiles are used as source profiles for color conversions.

3.2.2.2. Use Embedded Rendering Intent(s)

In case of PDF file processing, you can choose whether to use or discard embedded Rendering Intents. In the latter case, selected Default Rendering Intents will be used.

Black Point Compensation (Default and Embedded) allows you to activate Adobe BPC when applying an ICC color transformation.

3.2.2.3. Use Embedded Black Point Compensation(s)

This option is useful for PDF 2.0 file format, which allows BPC definition within the file.
When BPC is embedded in a PDF 2.0 file, this option has priority over usual "Black Point Compensation (BPC)" option.

3.2.3. CMYK Input

3.2.3.1. Prefer HiFi C, M, Y, K

This option is useful for Multicolor PDF Repurposing, including Esko® Equinox® extended gamut PDF. It enables ACH to perform automated conversion from any input multicolor space to any output multicolor space. Checking this option will force ACH to use the CMYK defined in HiFi Input default Profile, instead of CMYK Input default Profile.

Notes:

- This option is only effective if HiFi default profile contains at least C, M, Y or K inks. It cannot work if "Automatic Profile" is selected.

- If an object (CMYK, or subset of CMYK) is made of inks not included in HiFi Default Profile, CMYK Input default Profile will be used instead of HiFi Default Profile

- If PDF has embedded profile(s), CMYK "use embedded profile" has priority over "Prefer HiFi C, M, Y, K". Embedded Profile(s) will be used by ACH.

- Default CMYK Rendering Intent will be used for CMYK object regardless if "Prefer HiFi C, M, Y, K" is checked or not.

3.2.3.2. CMYK Input Static DVLP

Static DVLP is a dongle option.

It enables you to choose a Static DeviceLink Profile (DVLP) that will be used for CMYK input data processing (instead of choosing Alwan Dynamic Generation).

Notes:
- Static DVLP option is available when output colorspace is CMYK, and dongle option active.
- Using a Static DVLP instead of Alwan Dynamic Generation may affect overprints.
- If Default Static DVLP is set to None this option will have no effect. CMYK data will be processed according to chosen output separation.
- Purities and Separation options are grayed when using Static DVLP

3.2.4. Gray Input

If you choose the option Process Gray as K Only, Gray colors will be defined using Default CMYK Profile.

Gray values will be interpreted as a pure Black value. (Knowing that Gray 0% = Black 100%)

Note that if Output Color Space = CMYK, Gray PDF objects or Gray Tiff files will be converted into CMYK if Process Gray as K Only option is not active.

If Process Gray as K Only option is active, Gray PDF objects or Gray Tiff files will be saved in Gray Color Space after processing, even if chosen output color space is CMYK.

3.2.5. HiFi Input

HiFi colors are process colors that contain other inks or more inks than just CMYK.
CMOG and CMYKOGB are examples of HiFi processes.

Default HiFi Profile enables you to define the color of HiFi / n-color input data.

HiFi dongle option is needed to choose custom Input Default HiFi profile. Without HiFi option, "Automatic Profile" is applied

Use this option when you are sure that your original file separation and your default HiFi profile match. If they don't, ACH will calculate a new input profile that matches your input file channels before converting it to the output color space.

Default and recommended choice is Automatic Profile.
By choosing Automatic Profile ACH will automatically calculate the input color profile using the color definition found in input file data, combined if needed with other Defaults Color Spaces profiles.

Note: we recommend that you use the following settings for an optimal HiFi to HiFi separation:
Output -> Advanced -> DVLP Generation Parameters:
Out of Gamut Colors Mapping: Between -5 and -3
Force DVLP Resolution to 21 pts

Note that in most cases, the CMYK Rendering Intent should be kept the same as the HiFi Rendering Intent to have a consistent matching of the white points.

3.2.6. Extended RGB and CMYK Input Gamuts

Wide Gamut Standard RGB / Super Wide Gamut Standard RGB profiles: can be chosen as default Input ICC Profiles to Saturate / Saturate More output colors

Wide Gamut Standard CMYK / Super Wide Gamut Standard CMYK profiles: can be chosen as default Input ICC Profiles to Saturate / Saturate More output colors

3.2.7. Spot Input

Spot Default Definition can be chosen between Prefer PDF Spot Definition or Prefer Color Library.

Please refer to "Default Spot Policy" part of this manual for further explanations about Spot colors conversions policy.

Spot Rendering Intent choices are Hybrid or Relative Colorimetric when HiFi default rendering intent is set to Relative Colorimetric.
Otherwise when HiFi is set to Perceptual, Absolute or Saturation, Spot Rendering intent and HiFi Rendering Intents are forced to the same choice for better color management consistency.

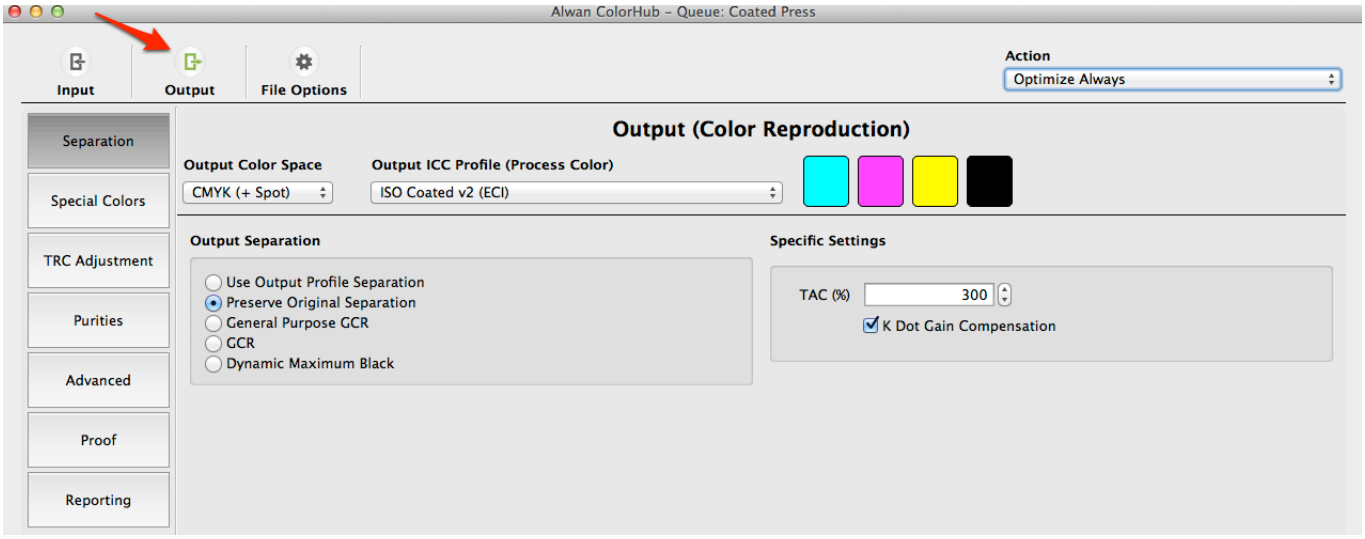
3.3. Output (Color Reproduction)

3.3.1. Separation

3.3.1.1. Output Color Space

This combo box allows you to choose the Output Color Space for your processed file. You can choose between: RGB, Lab, Gray, CMYK (+ Spot) and HiFi (+ Spot).

3.3.1.2. Output ICC Profile (Process Color)



You can select the Output ICC Profile for the queue. Available profiles depend on the chosen Output Color Space.

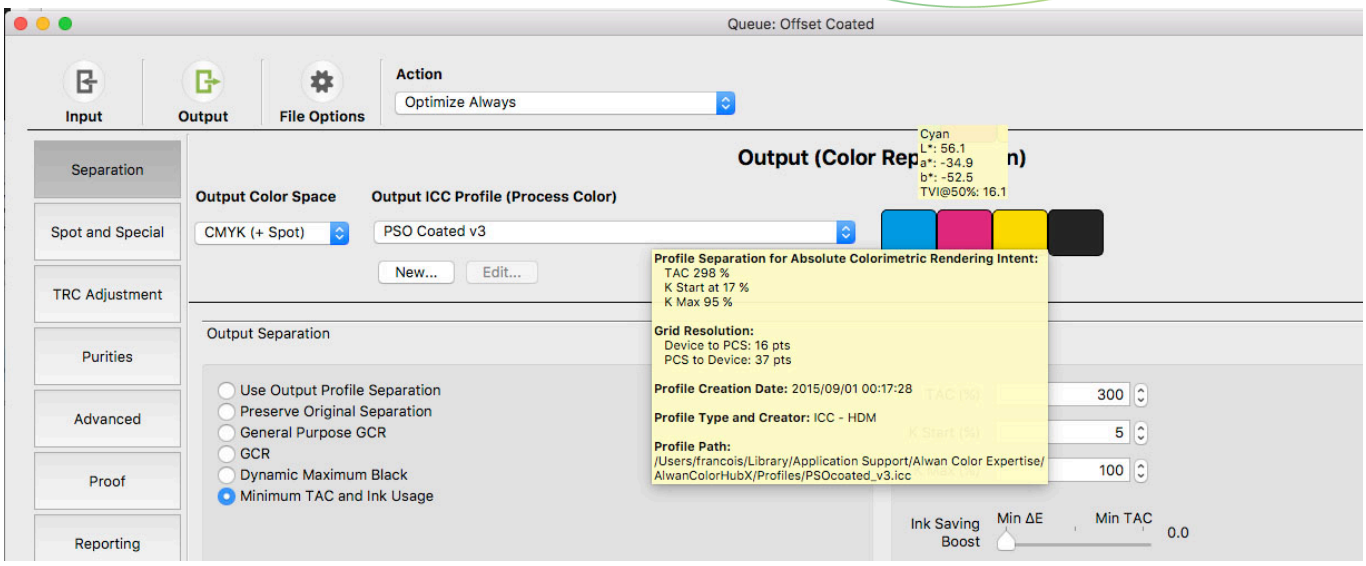
The output ICC profile should correspond to your desired Reference Printing Conditions (RPC) or match your printing process Actual Printing Condition (APC).

This ICC profile generally corresponds to your destination processes generic or custom profile.

Note that informative tooltips are displayed for Output ICC Profile (Separation, Grid Resolution, Creation Date, Creator) and for Inks (Lab, Dot Gain).

3.3.1.3. Output Profile Information

Information about ICC Profile is displayed as a tooltip containing Separation, Grid Resolution, Creation Date, Creator, Ink Lab, and Dot Gain at 50%. They are displayed as follow:

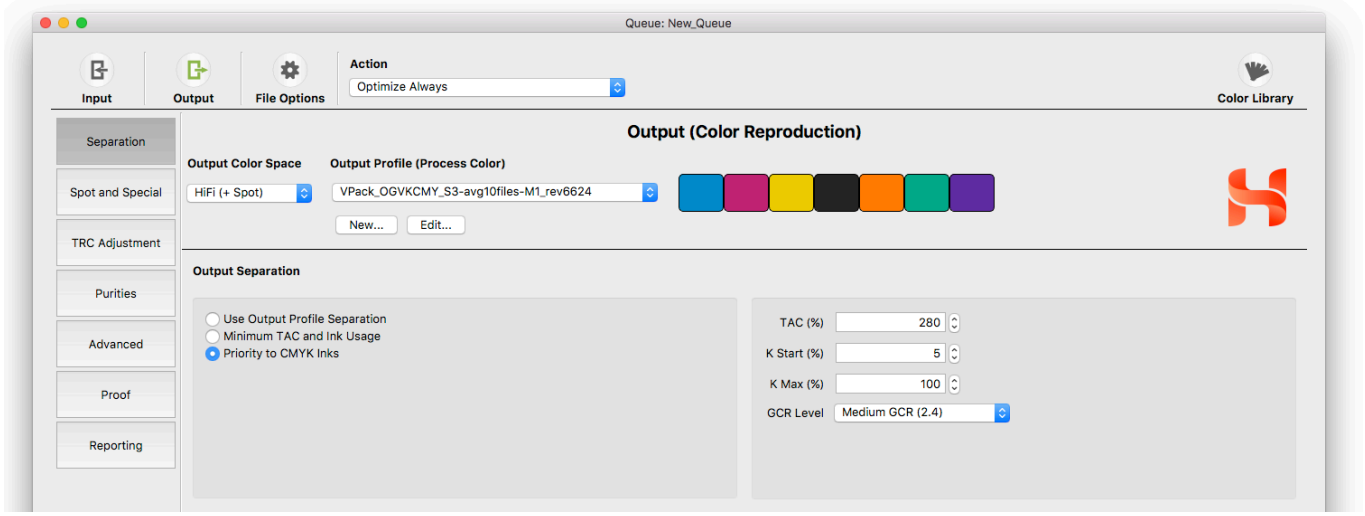


TAC 298 % Total Area Coverage indicates the maximum amount of CMYK overprint obtained in the Output profile separation.

K start at 17 % indicates where black generation starts in relation to cyan channel. The value calculated from the output table here is 12%. This means that black will appear where the CMY values are approximately 12% or more. This value can be modified when GCR or Maximum Black are selected in Separation tab.

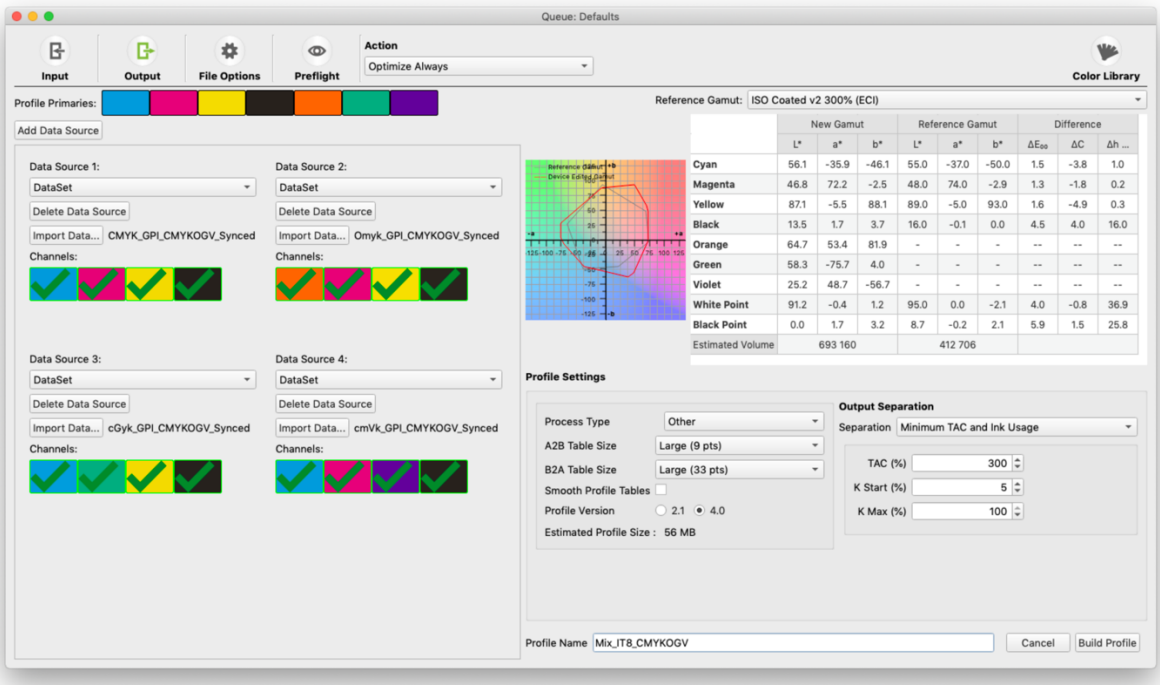
K Max 95 % indicates the maximum amount of Black obtained in the Output Profile separation.

3.3.1.4. Profile Editor



Buttons New... and Edit... are available only if the Profile Editor option is activated on your license. These buttons open the Profile Editor window.

Hydra Profile Editor allows you to create an ICC Profile from one or several measured datasets and to choose its creation parameters. It also allows you to edit a profile previously created with ACH.



Profile Primaries element represents the ink sequence that will be used in the created profile. It is limited to 7 different inks and is the sum of all selected ink channels used in imported datasets.

Data Source can be selected from 3 inputs: - DataSet, - Alwan ColorLibrary and - Ink Definition - CxF/X-4

Below, you can import a dataset by clicking on the Import Data… button, you can add another data source with the Add Data Source button and remove it with the Delete Data Source button. For the Alwan ColorLibrary input, you can directly select a color from the Color Library that is defined as CxF/X-4 (non-CxF/X-4 color can't be used to create a profile).

When a data source is imported, ink channels that are included in the file are displayed. You can rename them by right clicking on the colored box. If you make a double click on it, you will enable or disable the ink channel for the profile creation. If several datasets use the same ink channel, they will be averaged for the profile creation. You can also select the measurement mode if multiple conditions are defined in the CxF/X-4 or Color Library.

On the right part of the Profile Editor window, you can select a reference gamut, that will be compared in a graph and a table with the profile that will be created.
Below, the Profile Settings part allows to select options linked to the profile creation, such as the Process Type, the size of its tables (A2B Table Size and B2A Table Size) and the Separation (described in below part).

The Process Type optimize the combination of inks measured for the printing process technology used. The Other type corresponds to the default technology used in the older versions of ACH.

When Smooth Profile Tables is checked, ACH will always smooth profile tables. It can be useful if you need to prioritize profile's smoothness over accuracy and foster more evenness in separations.
When Smooth Profile Tables is unchecked, ACH applies nevertheless a soft smoothing to profile tables. This ensures good accuracy while improving separation smoothness.

The button Build Profile will start to create a profile with chosen data, settings and the name defined in Profile Name. The profile will be available in Alwan ColorHub lists of profiles.

Notes:

- To get better results with the profile creation, please give priority to datasets using spectral data, instead of Lab ones.
- Imported datasets can contain any number of patches. However, Hydra Profiling® technology is able to create very accurate profiles with few patches.

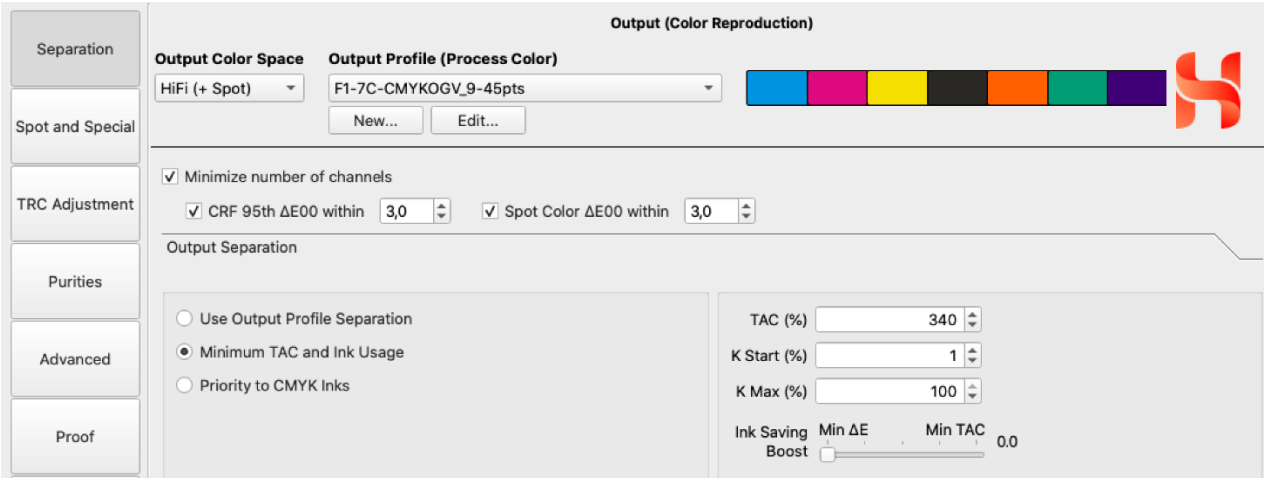
If the profile selected in Output ICC Profile list is a profile previously created with Alwan ColorHub, when you click on Edit…, you will find back the data and settings used to create it previously.

3.3.1.5. Separation

Separation allows you to take full control on the output file color channels and black generation.

Some options can be active or grayed depending on the Alwan ColorHub edition used (see part 1. for further details).

For all separation options except Use Output Profile Separation, new separation tables are calculated with the chosen output settings.



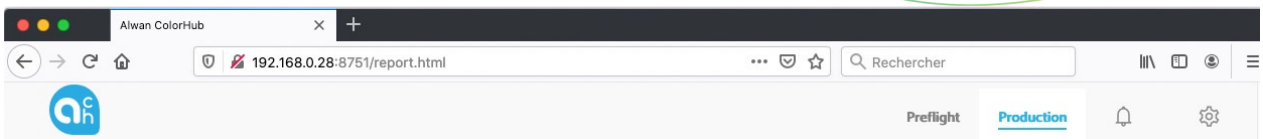
3.3.1.5.1. Minimize number of channels

Minimize number of channels automatically reduces number of required primary channels, while keeping color accuracy within chosen tolerances. This applies on the full PDF.

This feature requires ACH 7.7 or later, with HiFi option. It is available when ACH output HiFi profile includes CMYK channels or CMYK Output Color Space is used and separation is different than Use Output Profile Separation.

95th percentile ΔE00 and Solid Spot ΔE00 are assessed using Alwan Hybrid Rendering Intent.
Hybrid Rendering Intent allows accurate color comparisons while ignoring paper color differences between input and output colorspaces.

ACH Web Interface is the best place to see the processing result.
Selected channels, estimated 95th percentile ΔE00 and Solid Spot ΔE00 are displayed as follow:



Alwan ColorHub

192.168.0.28:8751/report.html

Rechercher

Preflight | Production

Production Report

Cornetto Pistachio 100314.pdf | 14,58 MB |

ECG_Minimum_Channels {7CminChan} | 31/05/2021 at 19:05 | Processed in 21:51s

PDF Version: 1.4
1 page(s)
PrintRun: 20 000

Print report

< Go back to History

- Summary
- Color Information
- Ink Consumption
- Spot Conversion

Download optimized file
Download original file
Download legacy report
Download log

7 Optimization(s)

+5,78 % Ink consumption

-0,01 Ink cost

File Characteristics

- CMYK mismatch
- HiFi mismatch
- Some spot colors must be converted to Output Colorspace

Optimization(s)

- Minimize "F1-7C-CMYKOGV_9-45pts" to Output Channels: Cyan, Magenta, Yellow, Black, Green
- Convert From "WideCMYKl2l1l0" with Relative Colorimetric + BPC to "F1-7C-CMYKOGV_9-45pts"
- Convert From "WideCMYK" with Relative Colorimetric + BPC to "F1-7C-CMYKOGV_9-45pts"
- Convert From "WideCMYKl2" with Relative Colorimetric + BPC to "F1-7C-CMYKOGV_9-45pts"
- Convert From "WideCMYKl2l0" with Relative Colorimetric + BPC to "F1-7C-CMYKOGV_9-45pts"
- Convert From "WideCMYKl0" with Relative Colorimetric + BPC to "F1-7C-CMYKOGV_9-45pts"
- Spot colors have been converted to "F1-7C-CMYKOGV_9-45pts"

Color Information

Page	Maximum TAC (filtered)	Spot	RGB	Gray	Average ΔE_{00} / CRF 95th ΔE_{00} / Max ΔE_{00}	View
1	283	Yes	No	No	0,7 / 2,8 / 10,0	

In above table, View icon allows you to display original page preview.
High TAC (Total Area Coverage) values are highlighted in green.

Ink Consumption

Ink	Original (%)	Optimized (%)	Δ(%)	Original (gr)	Optimized (gr)	Δ(gr)	Δ( )
Cyan	5,83	0,10	-5,72	113,7	2,0	-111,7	-0,61
Magenta	2,58	5,23	+2,66	50,3	102,1	+51,8	+0,29
Yellow	13,12	13,89	+0,78	255,9	271,1	+15,2	+0,08
Black	0,00	8,33	+8,33	0,0	162,5	+162,5	+0,65
Green	9,08	12,19	+3,11	177,2	237,9	+60,8	+0,33
Red	0,50	0,00	-0,50	9,8	0,0	-9,8	-0,05
PANTONE 4695 C	6,48	0,00	-6,48	126,4	0,0	-126,4	-0,70
Total	37,58	39,75	+2,17	733,3	775,7	+42,4	-0,01

Ink Consumption	+5,78 %
Ink Cost	-0,01

Ink Cost depends on job print run, individual ink cost and ink demand settings of the queue.

Spot Conversion

Converted Spot Colors	Original Color				Output Color			Output Device Value					Differenc			
Name	L*	a*	b*		L*	a*	b*						ΔE_{00}	ΔH	ΔC	ΔL
Red	46,8	74,8	48,3		47,3	68,2	44,6	--	100,0	92,0	0,9	--	1,7	0,4	7,6	0,5
PANTONE 4695 C	23,9	16,0	11,4		23,8	16,0	11,7	--	59,2	59,8	80,5	--	0,2	0,2	0,2	0,1
Green	56,5	-83,6	7,6		53,0	-79,0	3,9	--	--	--	--	100,0	3,8	3,4	4,8	3,5

Notes:

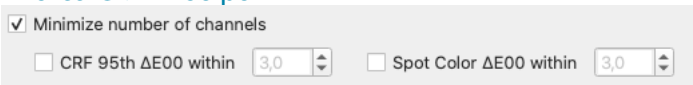
- File naming

File naming can be adjusted to identify which channels are used in optimized file. Please see "File naming" section for further details.

- Processing power

Minimize number of channels option needs high CPU and RAM performance (at least Quad Core Processor and 16 GB RAM).
Make sure ACH Preferences -> Job Manager -> Number of processors for a Job is set to Maximum.
Note that first processing is longer than the following processing because some profile computations are archived and then re-used for further processing.

- Force CMYK output



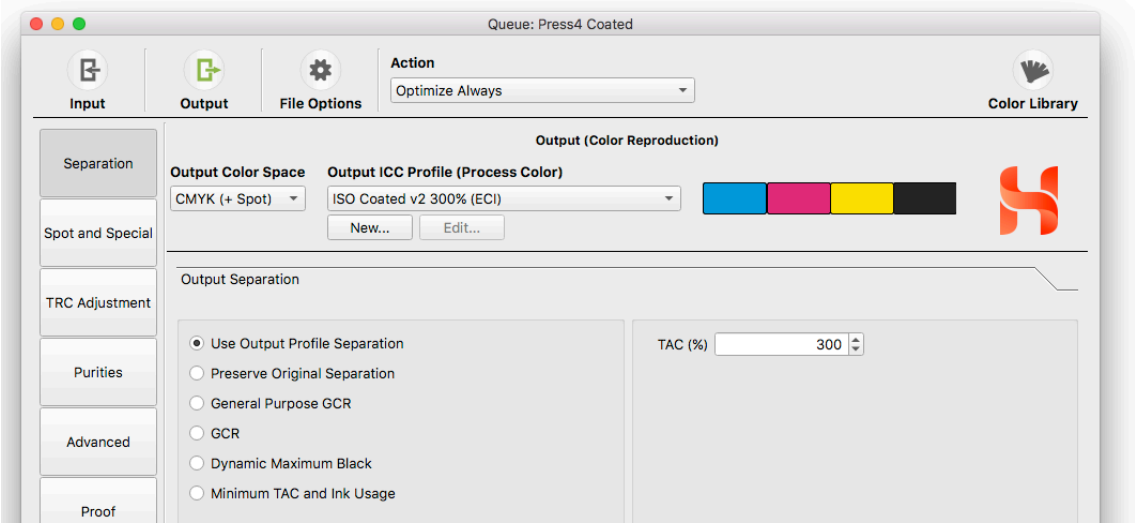
If CRF 95th ΔE tolerance and Spot Color ΔE tolerance are unchecked, output files will always be optimized to Cyan Magenta Yellow and Black channels.

- CRF 95th ΔE00 within

This option also allows the Minimize number of channels to use as low as 1 channel to optimize a file if possible. Without this option the minimum number of channels that can be outputted is 4 as CMYK.

3.3.1.5.2. Use Output Profile Separation

Use Output Profile Separation allows you to use your chosen Output Profile tables separation.

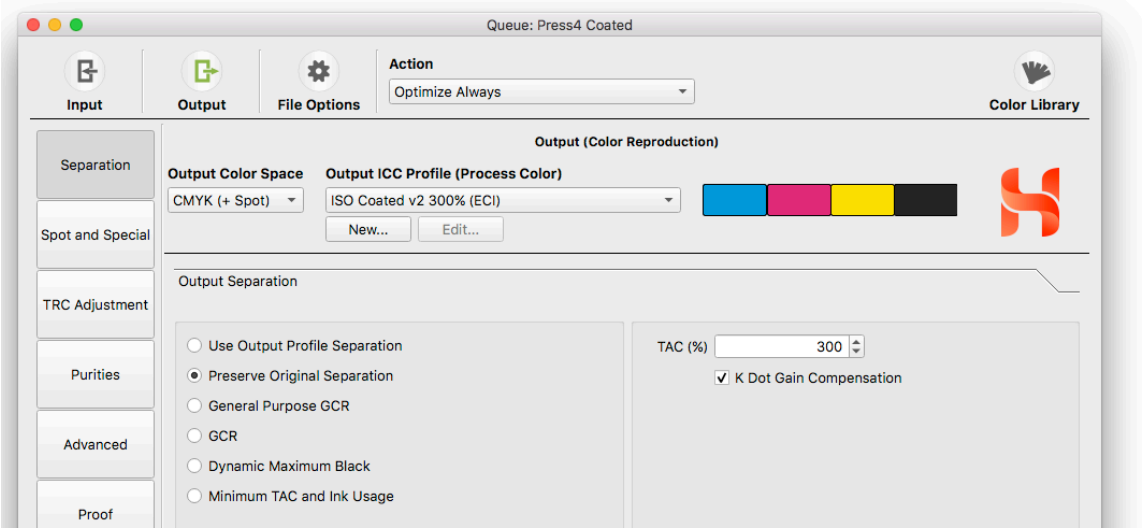


This option is useful if you want to use your Output profile gamut mapping or if you want to obtain the same the same color separation as with a standard ICC color conversion.

3.3.1.5.3. Preserve Original Separations

Only for CMYK (+ Spot) Output Color Space.

This option allows you to preserve the original black generation of the input file.



With the same ICC profile selected as Input and Output Profile for the queue, the integrity of input separation is preserved. Only dark areas exceeding the chosen maximum TAC are recalculated by the software to meet the maximum target TAC.

You can choose to use the K Dot Gain Compensation. If K Dot Gain Compensation is unchecked, output CMY values will be calculated keeping original K values, so that original black generation is preserved.

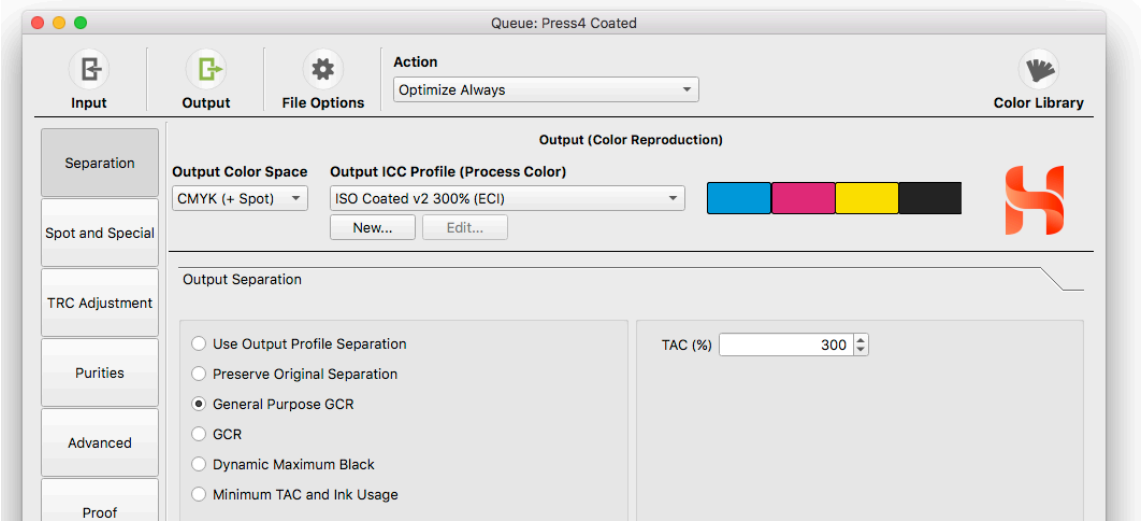
If K Dot Gain Compensation is checked, output Black channel would be Dot Gain managed using Input/Output Profiles black dot gain difference. CMY values are calculated depending on those new K Values.

3.3.1.5.4. General Purpose GCR

Only for CMYK (+ Spot) Output Color Space.

Output CMYK values are calculated with a General purpose GCR.

This choice corresponds to a Heavy GCR (1.7), Kstart at 10% and a Kmax at 98%.



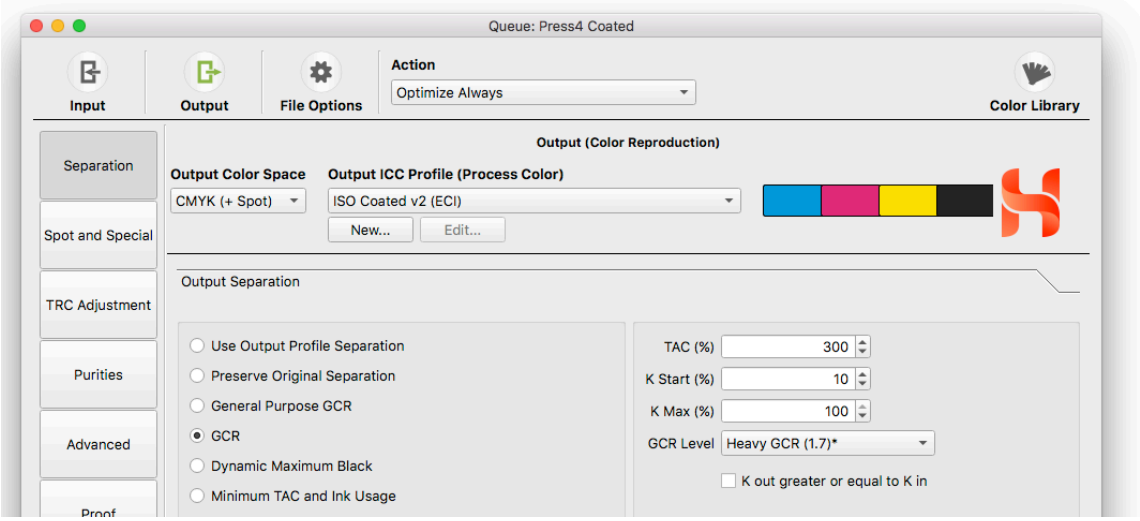
Displayed TAC default value is extracted from the Output ICC Profile.

3.3.1.5.5. GCR

Only for CMYK (+ Spot) Output Color Space.

This option allows you to take full control of your output Black Generation.

GCR stands for Gray Component Replacement i.e. Black replacing CMY grays in the separation.



All Black Generation parameters can be set.

TAC (%) Total Area Coverage indicates the maximum amount of CMYK overprint obtained in the Output separation.

K Start (%) indicates where black generation starts. Black ink component will be generated for colors having a L* lower than [100 – K Start]. K start value will also be adapted taking into account profile dynamic range characteristics (white and black points).

K Max (%) indicates the maximum desired amount of Black obtained in the Output separation.

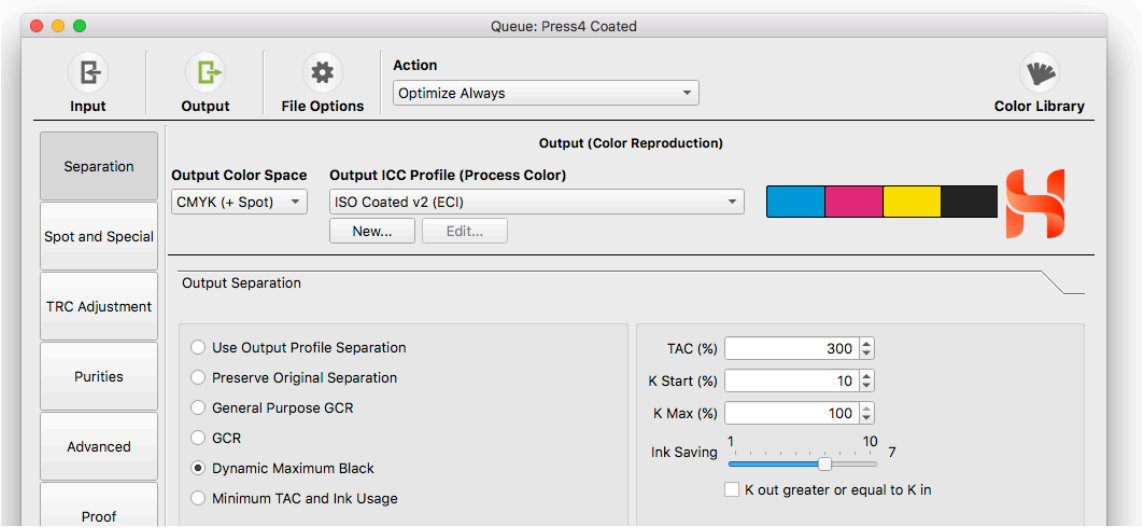
GCR Level menu allows you to choose the strength of Black replacement. The range of selection is very wide, from No Black (CMY only) to Maximum Black replacement (practically all equal amounts of CMY are replaced by equivalent black). GCR levels with a * correspond to Adobe Photoshop®) GCR levels (Light, Medium, Heavy, Maxi) proposed in Photoshop Color Settings -> Working Spaces -> Custom CMYK…

K out greater or equal to Kin option is available only when input and output CMYK colorspaces are identical, and when Separation option is set to GCR or Maximum Black. When activated, this option ensures output Black to be greater or equal to input Black. The resulting benefit is that Cyan, Magenta and Yellow values will never increase after optimization.

3.3.1.5.6. Dynamic Maximum Black

Only for CMYK (+ Spot) Output Color Space.

This option allows you to use the maximum amount of Black ink possible with your print device without compromise on print quality including in shadows and three-quarter tones areas.



TAC (%) Total Area Coverage indicates the maximum amount of CMYK overprint obtained in the Output separation.

K Start (%) indicates where black generation starts. Black ink component will be generated for colors having a L* lower than [100 – K Start]. K start value will also be adapted taking into account profile dynamic range characteristics (white and black points).

K Max (%) indicates the maximum desired amount of Black obtained in the Output separation. For significant ink savings, set a high value (90% -100%).

Ink Savings slider allows you to use the maximum amount of Black ink for your printing process without loss of details in shadows and three-quarter tones.

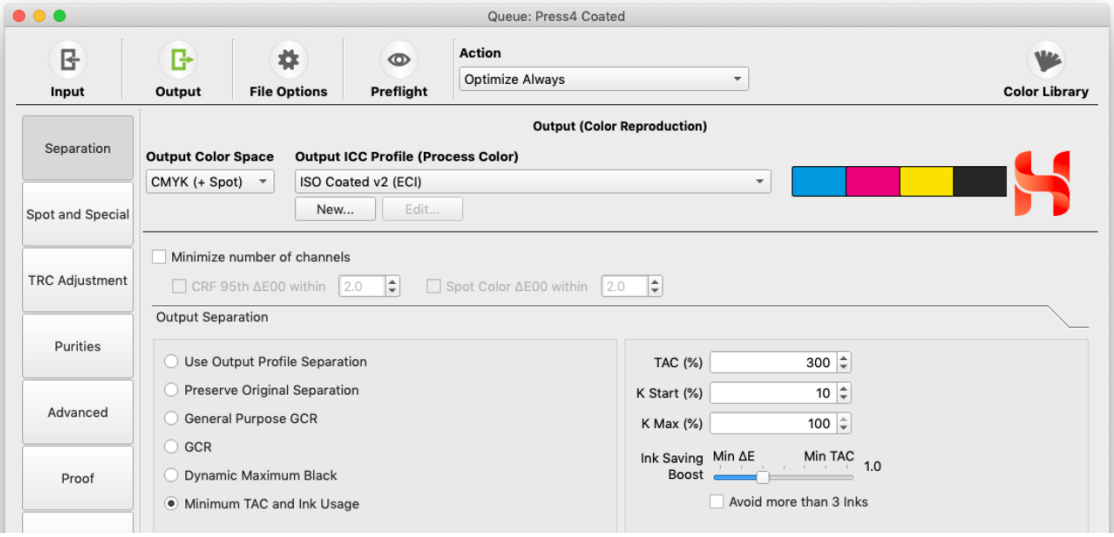
MIN setting is approximately equivalent to Maximum GCR.

MAX setting allows you to typically save between 10% and 30% more ink in comparison to conventional GCR.

K out greater or equal to Kin option is available only when input and output CMYK color spaces are identical and when Separation option is set to GCR or Maximum Black. When activated, this option ensures output Black to be greater or equal to input Black. The resulting benefit is that Cyan, Magenta and Yellow values will never increase after optimization.

3.3.1.5.7. Minimum TAC and Ink Usage

This separation is available for HiFi and CMYK Output Color Spaces.
This option allows you to use the minimum amount of total ink possible to reproduce colors, resulting in significant Ink Savings.



K Start (%) and K Max (%) are similar to Dynamic Maximum Black Separation, see previous paragraph description for further details.

TAC (%) Total Area Coverage indicates the maximum amount of ink overprint obtained in the Output separation. If dark colors can be reproduced with a lower amount of ink, the TAC separation will be lower than the chosen value.

Minimum TAC and Ink Usage best results are achieved by using Output -> Advanced -> DVLP Generation Parameters -> ΔE Mode = ΔE2000.

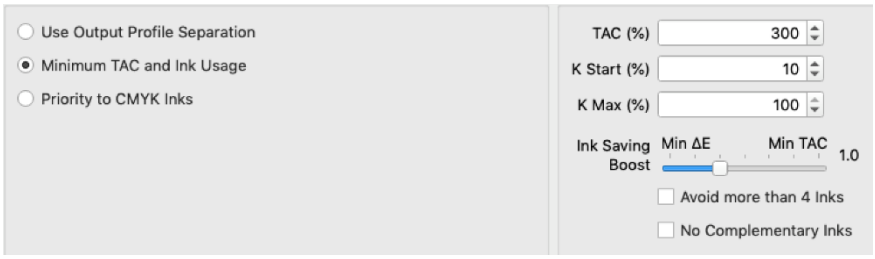
Ink Saving Boost

Ink Savings can be boosted by activating the Ink Saving Boost.
If Ink Saving Boost is set to 0 (Min ΔE), Ink Saving are achieved without compromise on color reproduction accuracy. It saves a little bit more ink than Dynamic Maximum Black 10 separation.
If Ink Saving Boost is set to 2 (Min TAC), Ink Saving are boosted, knowing that a small compromise on color reproduction accuracy (up to ΔE of 2) is accepted.

Avoid more than 3 Inks tries to optimize the file using locally maximum 3 Inks per color. The full file can use all inks but no zone should have more than 3 inks (some pixels of transition can exist having more than 3 inks). As it is a big constraint, it is recommended to use a K Max (%) of 100% for this option to work best.

In HiFi, this option becomes Avoid more than 4 Inks, using a maximum of 4 inks.

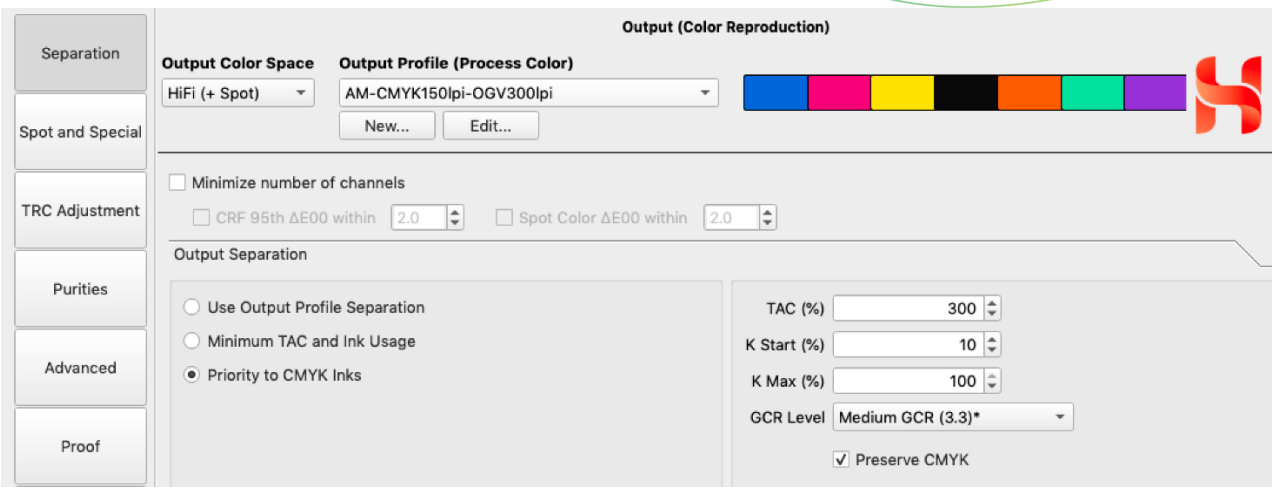
No Complementary Inks is an option that tries to reduce the use of complementary inks in output colors (only visible in HiFi).



3.3.1.5.8. Priority to CMYK Inks

Only for HiFi (+ Spot) Output Color Space, with a HiFi profile including CMYK inks.

This option allows you to make a HiFi separation which gives the priority to CMYK inks usage over other inks, and, for CMYK inks, it will give the priority to K ink usage over CMY inks).



TAC (%) Total Area Coverage indicates the maximum amount of inks overprint obtained in the Output separation.

K Start (%) indicates where black generation starts. Black ink component will be generated for colors having a L* lower than [100 – K Start]. K start value will also be adapted taking into account profile dynamic range characteristics (white and black points).

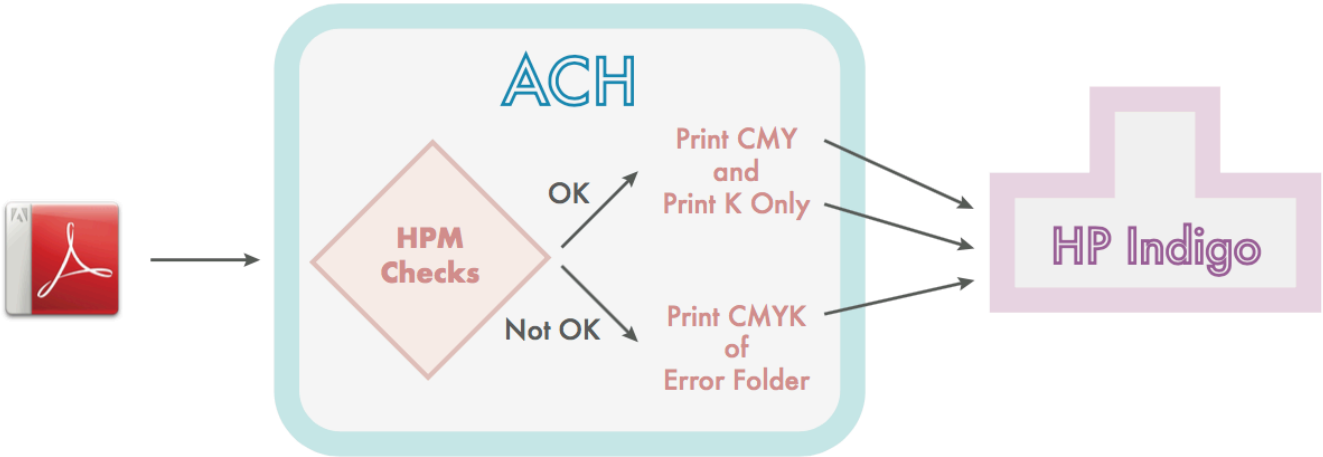
K Max (%) indicates the maximum desired amount of Black obtained in the Output separation. It is recommended to set a high value (90% -100%).

GCR Level menu allows you to choose the strength of Black replacement (GCR).
The range of selection is very wide, from No Black (CMY only) to Maximum Black replacement (practically all equal amounts of CMY are replaced by equivalent black).
Please note that GCR stands for Gray Component Replacement i.e. Black replacing only CMY grays in the separation.

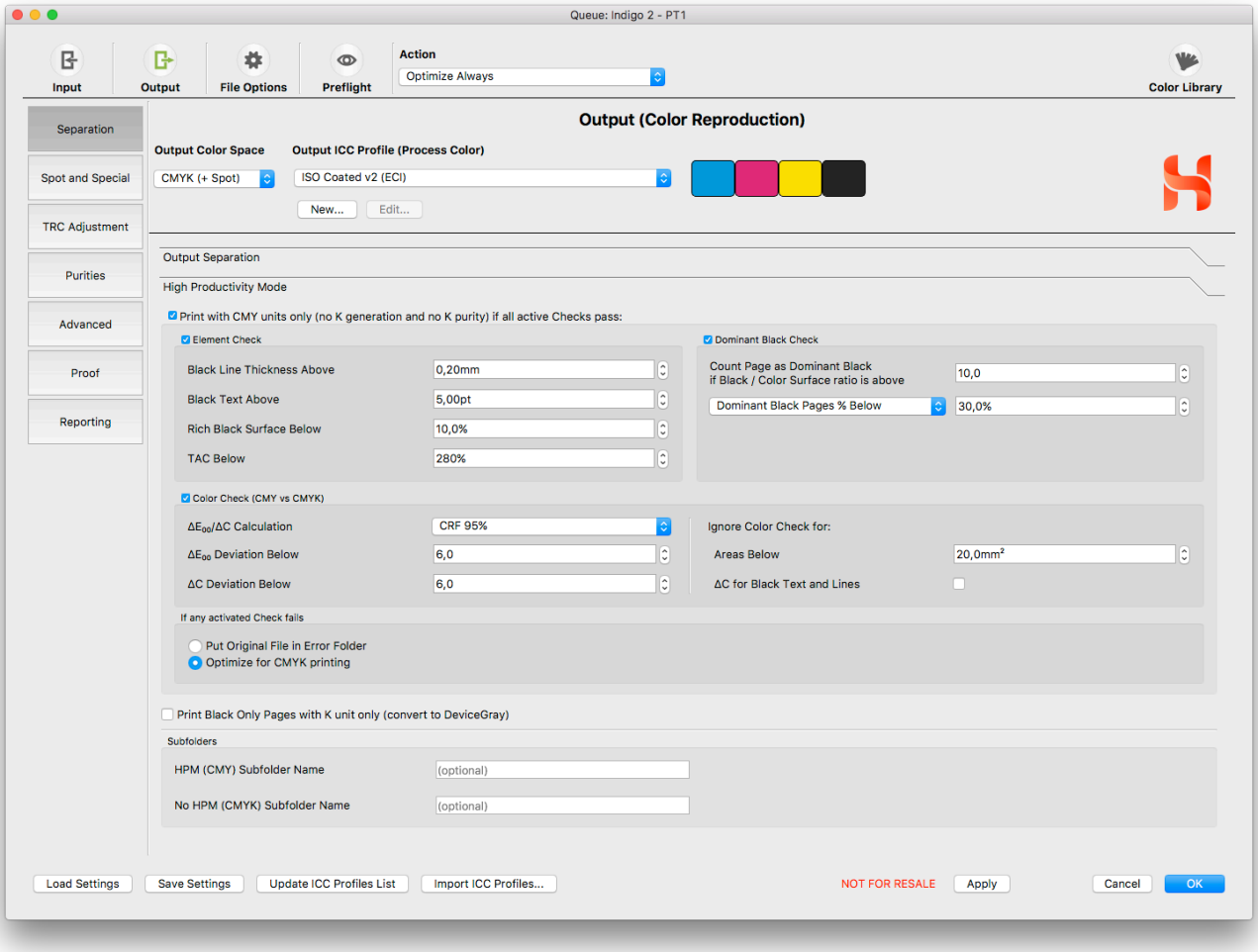
Preserve CMYK only appears in Priority to CMYK Inks Separation. If this option is activated, input colors made of only CMYK channels will remain in CMYK after optimization.

3.3.1.6. High Productivity Mode (HPM)

High Productivity Mode (HPM) is a paid option that enables you to optimize files for CMY printing on HP Indigo® devices equipped with EPM option.
The diagram below shows how HPM processing works:



When HPM option is active, following dedicated user interface is displayed:



ACH Output profile must be the custom HP Indigo CMYK profile.
When ACH optimizes files through HPM, CMY colors are dynamically computed based on the HP Indigo CMYK output profile.

Notes:
- All other ACH settings (Purities, TAC value etc..) remain active also in HPM (i.e. CMY only), except the settings involving K channel (K purities, K start, K max, separation choice).
- When using HPM, it is recommended to use following ACH settings:
  Optimize always
  Convert spot
  Embed ICC profile
- Using HPM feature can increase processing time up to 300% (when all HPM checks are active).

3.3.1.6.1. Print with CMY units only (no K Generation and no K purity) if all active Checks pass

This option allows you to output a CMY file - no Black - if all selected HPM Checks pass.
If no Checks are selected, the file will be optimized with the HPM without doing any verification.

- Element Check

When selected, HPM is possible if all the following Element Checks pass:

Black Line Thickness Above: this HPM Check will pass if all black lines are above the threshold.

Black Text Above: this HPM Check will pass if all black text font sizes are above the threshold.

Rich Black Surface of any Page Below: this HPM Check is done on vector elements only.
Rich Black is identified if the color matches one of the 3 following cases:

Black	Cyan	Magenta	Yellow
K > 98	10 < C < 61	M < 1	Y < 1
K > 98	10 < C < 61	10 < M < 61	Y < 1
K > 98	10 < C < 61	10 < M < 61	10 < Y < 61

The file should have all its surfaces of Rich Black below the threshold for the Check to pass.
If you put 100% this setting will always pass.

TAC Below: this HPM Check will pass if the TAC of the file is below the threshold.

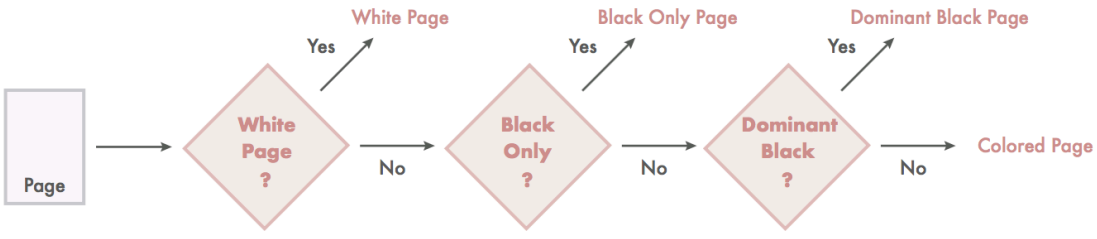
- Dominant Black Check

When selected, HPM is possible if all the following Dominant Black Check pass:

Count as Dominant Black if Black / Color Surface ratio is above: this setting defines how Dominant Black pages are identified. A page is considered Dominant Black if the Black / Color surface ratio is above the threshold.
A surface is considered colored if the Chroma is over 2, otherwise it is considered Black.
The ratio corresponds to the Black surface divided by the Color surface (within the TrimBox).

Dominant Black Pages Below: if the file contains less Dominant Black pages than the threshold (whether in percentage of the total or a number of pages), the Check will pass.
These settings are useful if you want to avoid printing Dominant Black pages in HPM. If you put 100% this setting will always pass.
Black Only Pages (cf. Black Only Pages parameter) are not taken into account in the total number of pages. For example, if a document has 1 Black Only page, 2 Dominant Black pages and 1 Colored page, the Dominant Black % will be 66%: 2 (Dominant Black) out of 3 (2 Dominant Black+ 1 Colored).

Please find below a diagram showing how ACH HPM identifies page types:



HPM Page Types

• Color Check (CMY vs CMYK)

These color comparisons are done between the CMY result given by the HPM and optimized CMYK file.
When selected, HPM is possible if all the following Color Checks pass:

ΔE00/ΔC Calculation: this setting allows you to choose if the comparisons in this section are done using the CRF 95% or the Maximum (100%) of all the pixels in the page.

ΔE00 Deviation Below: if the comparison gives a ΔE00 lower than the threshold, the Check will pass.

ΔC Deviation Below: if the comparison gives a ΔC lower than the threshold, the Check will pass.

Ignore Color Check for: Areas Below: if a surface is smaller than the threshold, it will not be taken into account for the Color Check.

Ignore Color Check for: ΔC for Black Text and Lines: if this parameter is checked, the Chroma of Black Texts and Lines will not be taken into account for the Color Check.

Note that Spot colors aren't taken into account by the HPM Color Check. In order to check if Spots can be converted, you can use "Convert to output printing device if ΔE00 ≤ x" option available from Output -> Spot and Special -> Spot Color Transformation.

• If any activated Check Fails

This section allows you to select ACH behavior for files that do not pass all Checks:
Put Original File in Error Folder: ACH will move the original file into the Error folder.
Optimize for CMYK printing: ACH will optimize the file in CMYK, without HPM.

3.3.1.6.2. Print Black Only Pages with K unit only (convert to DeviceGray)

A page is considered as Black Only if the Chroma of all of its pixels is below 2.
When activated, Black Only Pages will be converted to DeviceGray and will be printed only with the K unit of the HP Indigo.

3.3.1.6.3. Subfolders

These optional settings enable you to choose where the file will be stored after being processed by ACH.
This allows you to easily link ACH to Indigo EPM production workflow.
If Subfolder setting is not empty, the Subfolders are created in the JobSuccess folder of ACH.
If it is left empty, no folder will be created.

HPM (CMY) Subfolder Name: contains all the files passing HPM Checks. It contains CMY files, CMY files with some pages in DeviceGray and DeviceGray only files.

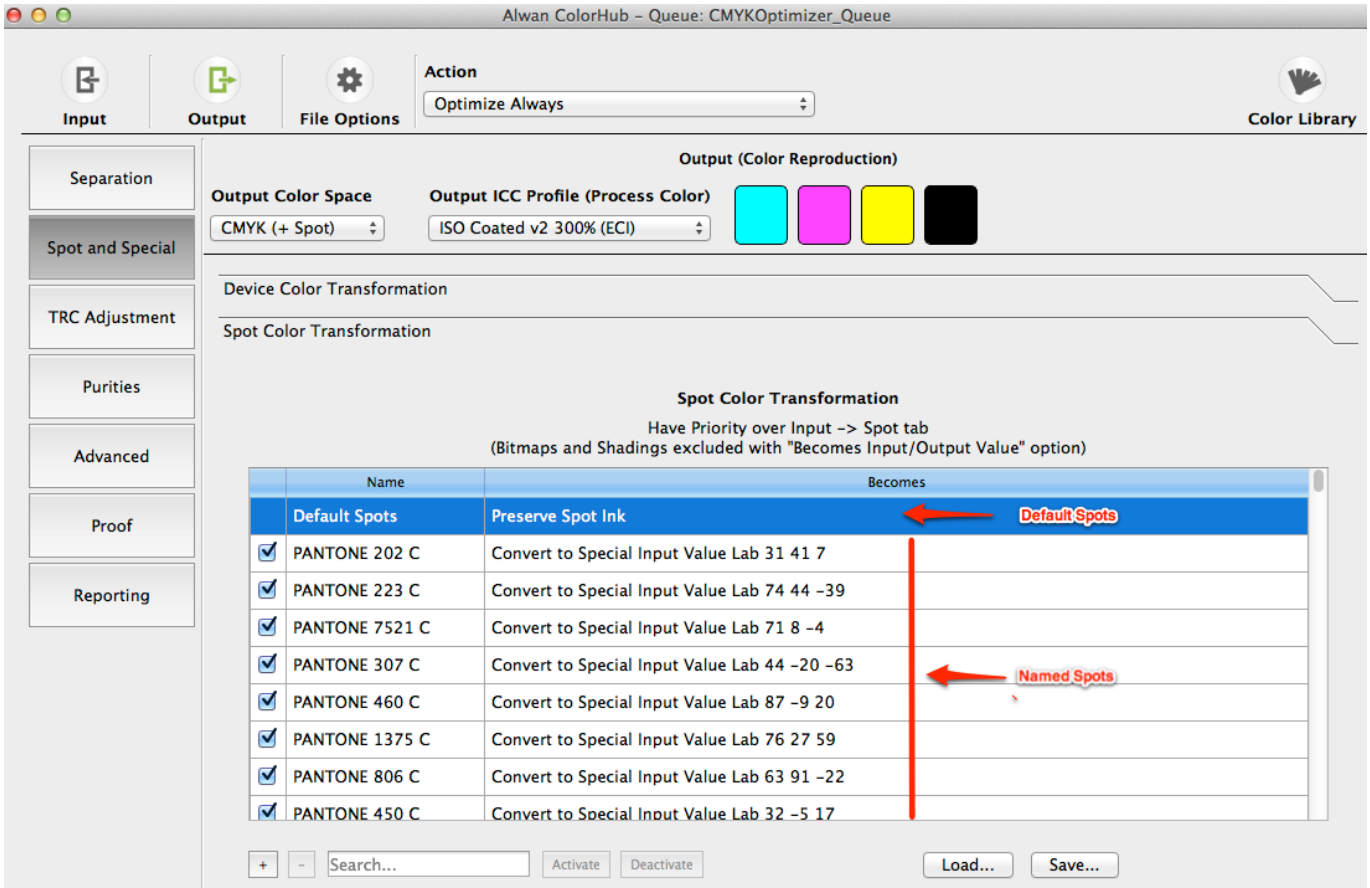
No HPM (CMYK) Subfolder Name: files in this folder can come from 2 scenarios:
- one of the activated Check fails and the setting Optimize for CMYK printing was selected
or
- only the setting Print Black Only Pages with K unit only (convert to DeviceGray) was checked, without the setting Print with CMY units only (no K Generation and no K purity) if all active Checks pass.
This folder contains CMYK files, CMYK files with some pages in DeviceGray and DeviceGray only files.

3.3.2. Spot and Special

Spot and Special options offer two types of color conversions: Spot Color Transformation and Device Color Transformation.

3.3.2.1. Spot Color Transformation

Spot Colors Transformation allows you to define the color management policy for spot colors. You can choose if it needs to be converted or not and how the spot conversion has to be done.



+ and - buttons add or remove entries in the list. The displayed list supports multiple selections, and users can activate or deactivate each entry by clicking on related buttons.
Search... field is useful when you have a long Spot Color list.
Spot Colors can be saved or loaded using Save... and Load... buttons. Supported Spot Colors file formats are .txt, *.CxF, *acb, *.tab and *.plist.

3.3.2.1.1. Default Spot Policy

The first entry is always the Default Spot policy. Default Spot policy will be applied for Spots that are not explicitly in the list above.

Default policy is to Preserve spots with the option: Preserve Spot Ink.
It can be changed to:

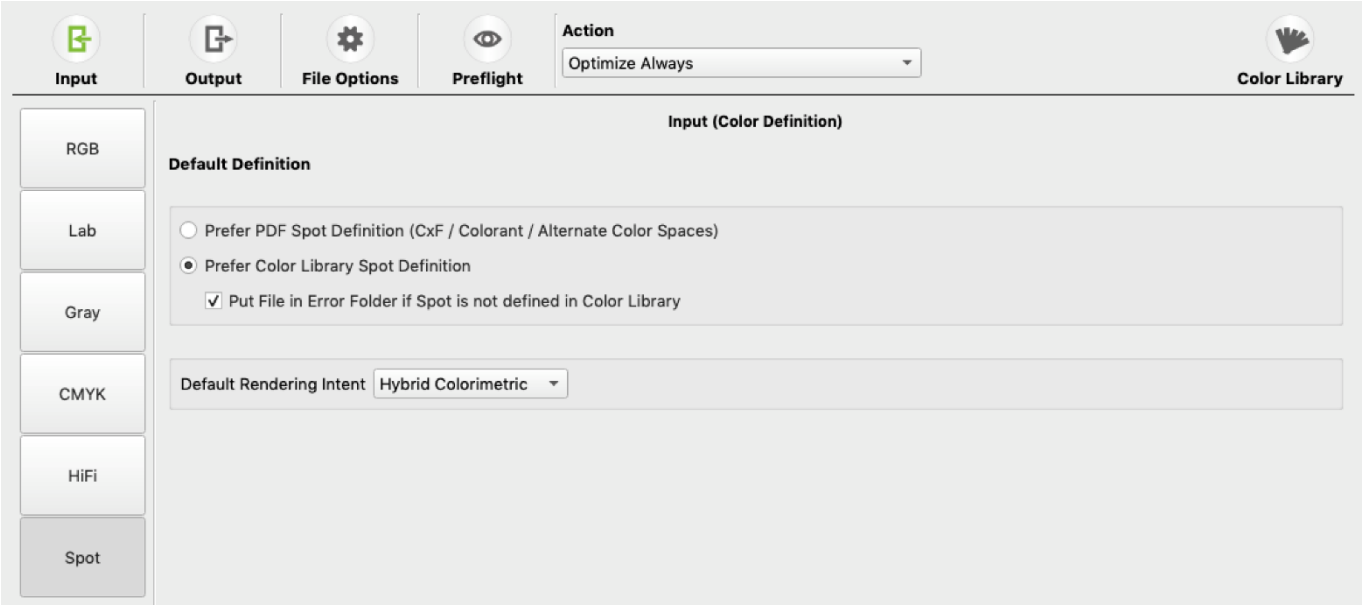
- Convert to Output Printing Device
- Convert to output printing device if ΔE00 ≤ x
- Convert using PDF Alternate Color Space Values
- Remove

Convert to Output Printing Device

This option converts Spot Colors to the output color space and such definition is chosen as follow:

If the spot name belongs to the Input HiFi Profile (i.e. Spot name matches one of the Input Hifi profile channel names), icc profile will be preferred for spot color definition.

If the spot name does not belong to the Input HiFi Profile, Spot color definition depends on Input -> Spot -> Default Definition choice:

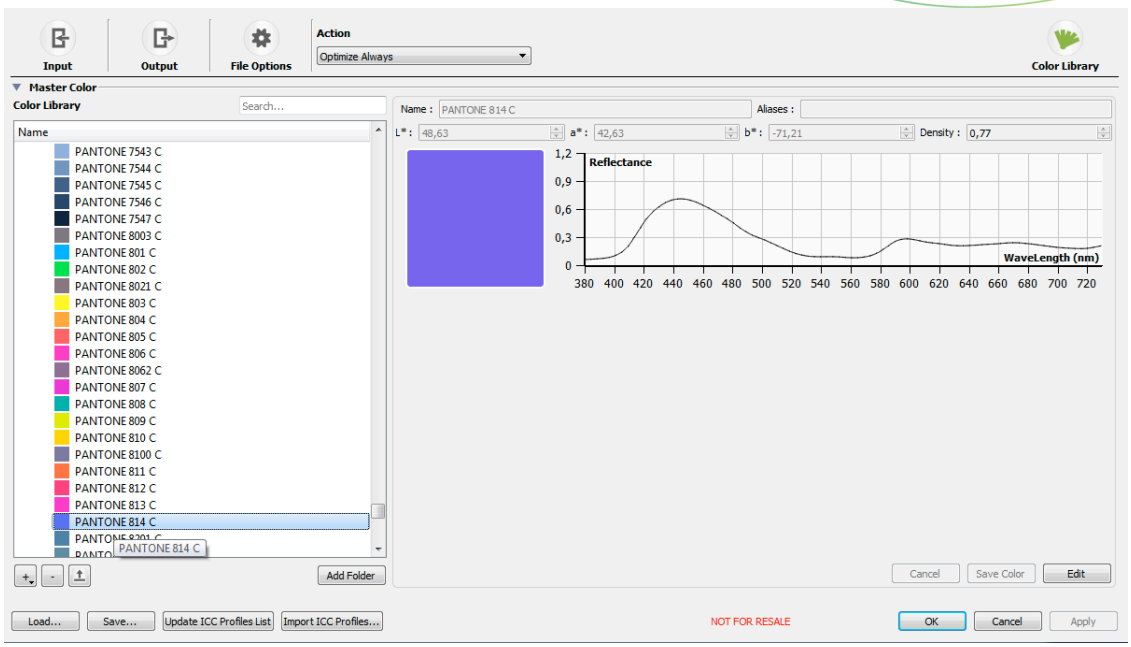


- Prefer PDF Spot Definition (CxF / Colorant / Alternate Color Space)

If PDF contains CxF color definition, it will be used.
If not, PDF Spot Colorant will be preferred if available.
If not, alternate color space values defined in the PDF will be used to find corresponding Lab value.

- Prefer Color Library Spot Definition

ACH will rely on Color Library Spot Color Definition.



Color Library is shared between all ACH queues.

+ and – buttons allow you to create colors, import measurement files or libraries and to remove colors from the Color Library. Export button allows you export the Color Library to import it in other Alwan software.

You can import Photoshop ColorBooks (.acb), CGATS txt, SVF, GMI csv, ISO-28178 xml, DI xml, CxF2, CxF3, CxF/X-4 file formats.

When using Prefer Color Library, the option Put File in Error Folder if Spot is not defined in Color Library can be checked. Spot conversion policy (defined in Output -> Spot and Special -> Spot Color Transformation) has to be set to Convert to Output Print Device or Convert to Output Print Device if ΔE00.
If specific Spots are removed or remapped, they won't be taken into account by this check either.
Note also that if a spot name matches an Input Default HiFi Profile channel name, the file will not be put in the Error Folder.

Convert to Output Printing Device if ΔE00 < x

This option assesses all Spot Colors embedded with incoming files to predict color differences once converted into Output ICC Profile.

If the predicted color reproduction is within specified threshold ($x \leq \Delta E$), then Spot Colors are converted into Output Color Space.

If the predicted color reproduction of the Spot color has a larger ΔE than the ΔE limit, then the Spot Color is preserved as is.

This option allows to automatically convert all Spot colors into your Output ICC profile as long as they are within X ΔE after conversion.

PDF report depicts color reproduction capability and expected color difference while informing user on which color is whether in gamut or not.

	Target				Optimized							
Converted Spots	**L***	**a***	**b***		**L***	**a***	**b***	**ΔE00**	**ΔH**	**ΔC**	**ΔL**	**In Gamut?**
PANTONE 650 C	86.3	-2.0	-8.0		86.2	-2.0	-8.0	0.0	0.0	0.0	0.0	Yes
Preserved Spots	**L***	**a***	**b***		**L***	**a***	**b***	**ΔE00**	**ΔH**	**ΔC**	**ΔL**	**In Gamut?**
PANTONE 2735 C	14.1	48.0	-68.0		23.9	22.1	-46.0	11.0	32.1	10.8	9.8	No
										Global		50%

Convert using PDF Alternate Color Space Values

This choice is available only for CMYK Output Color Space.

When you choose Convert using PDF Alternate Color Space Values, the spot value will be replaced by its alternate color space value and then converted like any other input device color. Such conversion matches ACH v3 convert Spots to CMYK purity option.

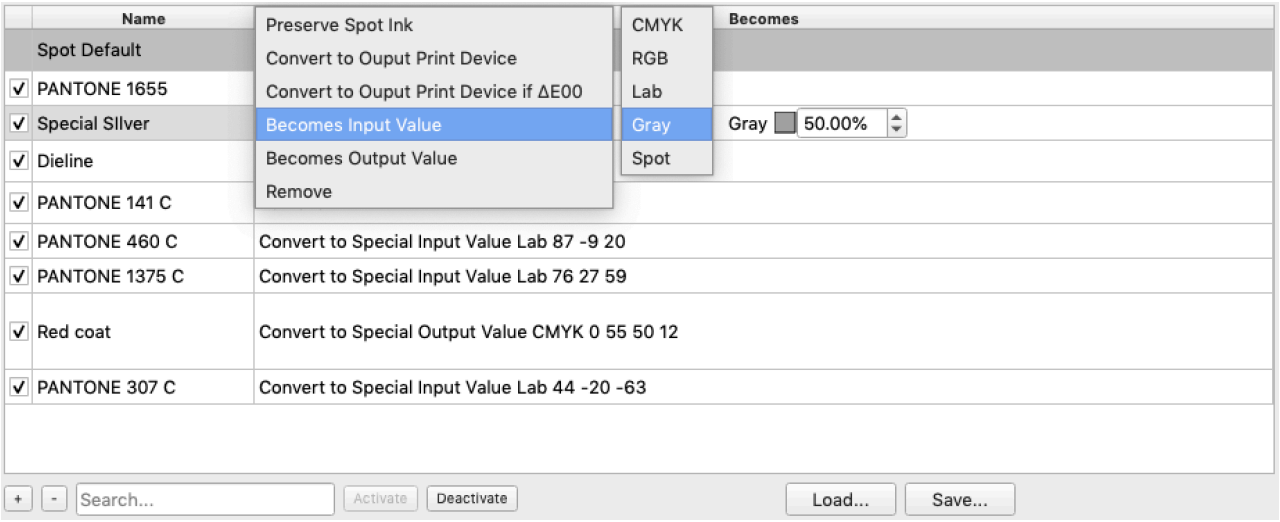
If you want to preserve Alternate Color Space Values, it is recommended to choose: CMYK Input Profile = CMYK Output Profile, with Preserve Original Separation or Use Output Profile option.

Remove

This option will remove all the spots in the file.

3.3.2.1.2. Named Spot Policy

You can also define a custom Spot Color Transformation:



The Name of spots can be an exact match of names in files or a generic name can be used to define a group of spots using wildcard. For example, to match all spots starting with "PANTONE" in a file it is possible to use the Name "PANTONE*" and they will all be treated the same. Another example: to remove all spots ending with "remove", the Name should be "*remove" and select the Remove option.

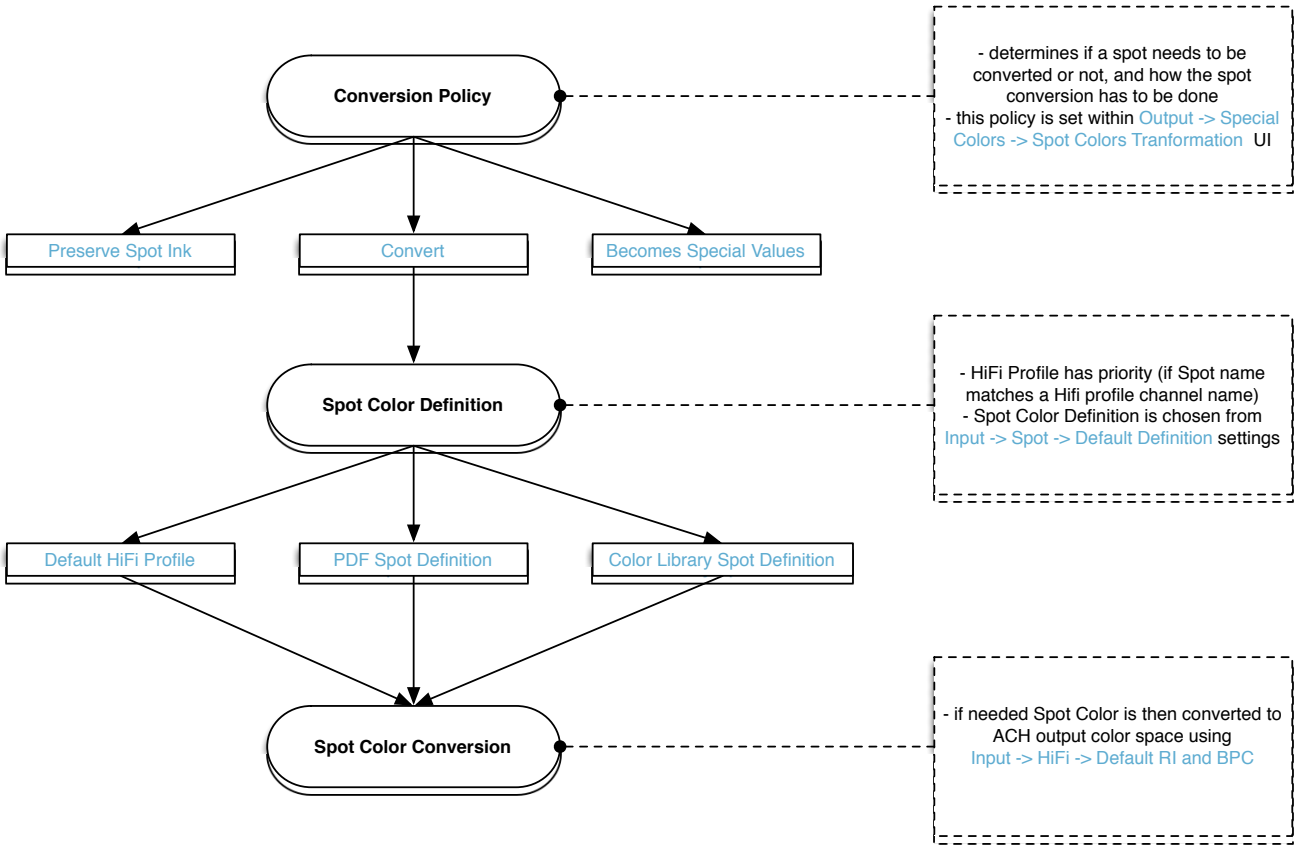
Preserve Spot Ink, both Convert to Output Print Device, and Remove behave the same way as for the Spot Default Policy.

Becomes Output Value: assigned values will be the output values that you will find in the output PDF.
Becomes Input Value: assigned values will be used as source device values before the color transformation. Color Space menu allows you to choose the color space to be used.

Selecting Spot as the Color Space shows the list of all the Spots available in the Color Library in order to replace a Spot by another.

3.3.2.1.3. Spot Color Conversions Diagram

Following diagram describes Spot Color Conversion summary



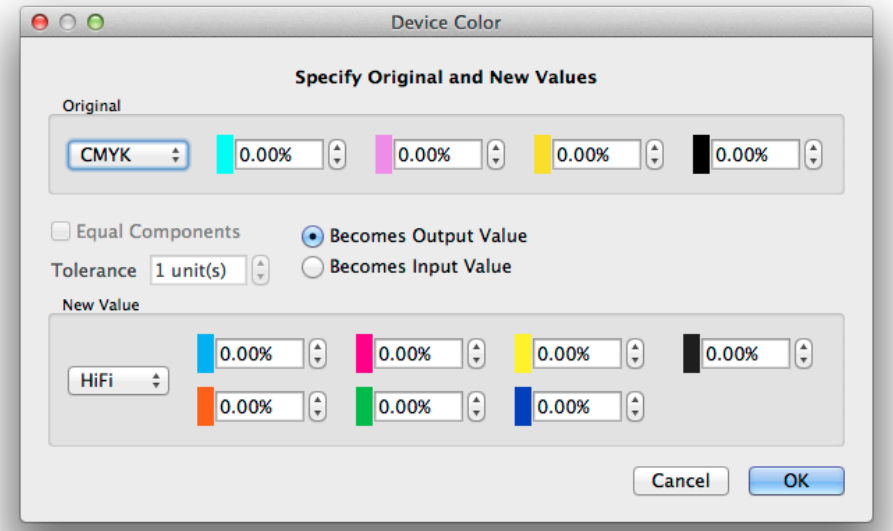
Notes:
- Converting Spot Colors may affect Overprint properties.
- When Spot rasterization is applied, it is recommended to use Convert to Output Printing Device instead of Convert using PDF Alternate Color Space Values.
- Spot Color Rendering Intents rely on HiFi Rendering Intent settings (available from AlwanColorHub task Settings -> Input -> HiFi -> Default Rendering Intent).
Note that Spot 100% will always be converted with Absolute Rendering Intent for maximum color accuracy. Other Spot tints (between 0% and 100%) will use a hybrid Rendering Intent (between Absolute and chosen Rendering Intent).

3.3.2.2. Device Color Transformation

This option allows you to define custom color conversion for specific Device Color Builds. This option applies only to vectors elements (bitmaps and shadings are excluded).

The Device Color Transformation list can be edited, loaded and saved using Edit..., Load... and Save... buttons. Double-clicking on a line already present allows to edit it.

To add a new entry click on + button at the bottom of the window:



The New Value replaces the Original value.

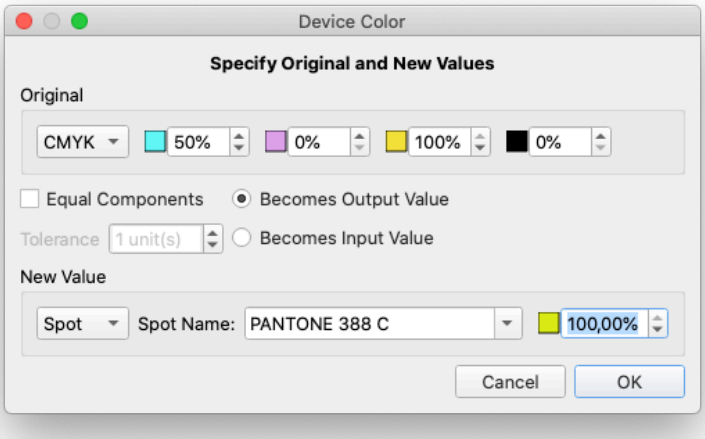
Original color spaces may be Gray (0-100), RGB (0-255), CMYK (0-100) or registration marks All (0-100). Note that Gray = 0 corresponds to a "black" color, and Gray = 100 corresponds to a "white" color.

The Color space used to define the new value is based on the selected Output Color Space for the queue.

If you choose Becomes Output Value, the original value is replaced by the new value which is the final value that you will find in the optimized PDF.
If you choose Becomes Input Value, the original value is replaced by the new value then this new value will be color managed like any other input value (the conversion will be "new value" to "Output Color Space").

It is also possible to choose Equal Components option for RGB and CMYK original values. In this case, the original R=G=B or C=M=Y=K value is replaced by Black or Gray value only. This option is very convenient to optimize Office RGB PDFs for print, but also to avoid registration issues. Note that you can define a Tolerance for Original Values, ranging from 1 to 10 units.

A device Color (RGB/CMYK/Gray/All) can be replaced by a Spot Color defined in ACH Color Library.



3.3.3. TRC Adjustment

Tone Reproduction Curve Adjustment option allows you to apply sophisticated curve corrections to your files.

3.3.3.1. Tone Reproduction Curve Adjustment (TRCA)

Tone Reproduction Curve Adjustment (TRCA) allows users to apply calibration curves for their printing process with ACH instead of applying them on their RIP. This can be very useful in 3 cases:

- Fully automated application of adjustment curves on output files

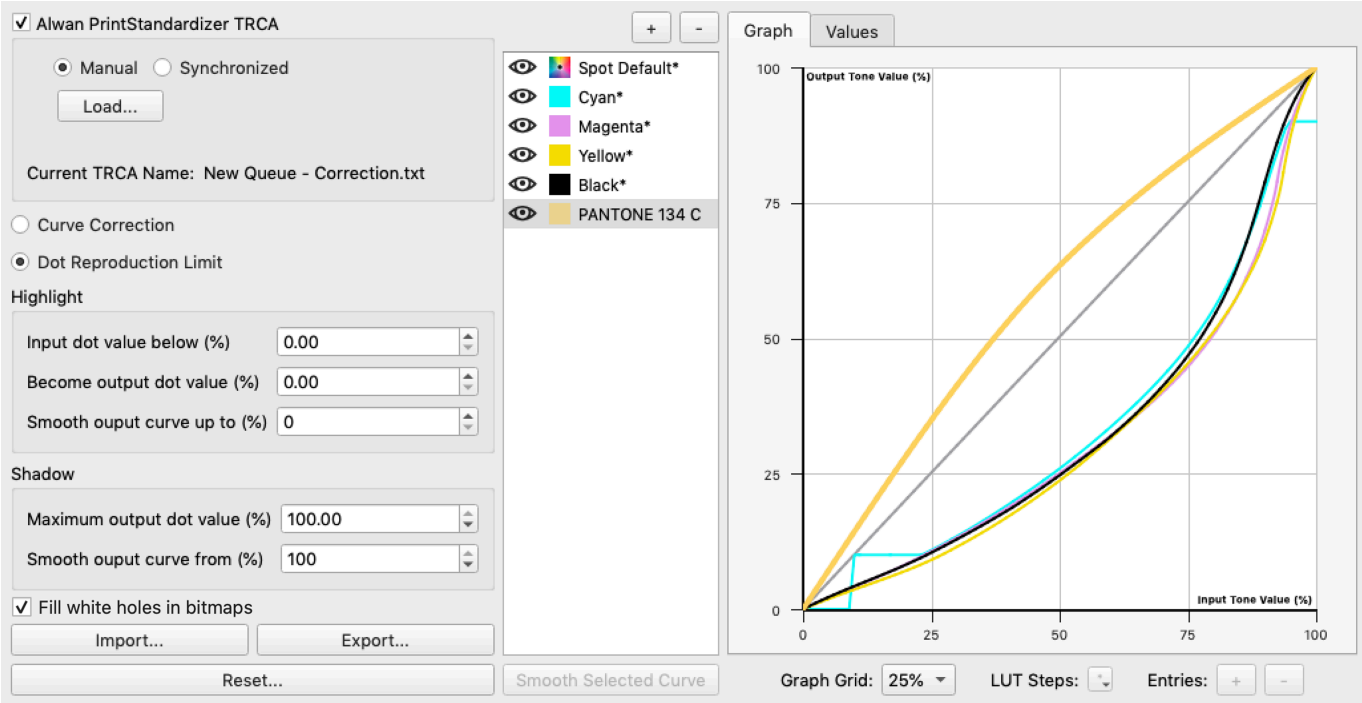
- Workflow RIP does not import any TRCA file

- Workflow RIP does not support HiFi or Spot inks TVI correction

ACH applies TRCA corrections after color management conversions.

If you want to apply curve correction without any color-management, you can choose Action = Printer Calibration (Curve Correction Only).

A curve is made of a number of points. Each point corresponds to a LookUp Table (LUT) entry point. You can create new entries thanks to the Values menu.



Output profile ink names are displayed with a star* in above list.

Spot Default applies to spot colors that are not color managed and that are not in the list.

You can also create specific Spot TRCA by clicking on + button at the top.

3.3.3.2. Alwan PrintStandardizer TRCA

You can import TRCA made by Alwan PrintStandardier in 2 different ways:

- Manual: import the file once and the curves will appear on the graph display.
Current TRCA Name displays the name of the imported file.

- Synchronized: automatically import TRCA files from Alwan PrintStandardier into Alwan ColorHub. Dy doing so, users can create a closed-loop system where corrections are automatically applied into ACH as soon as PrintStandardizer generates a new TRCA
Current TRCA Date displays date and time of PrintStandardizer TRCA file.

3.3.3.3. Curve Correction

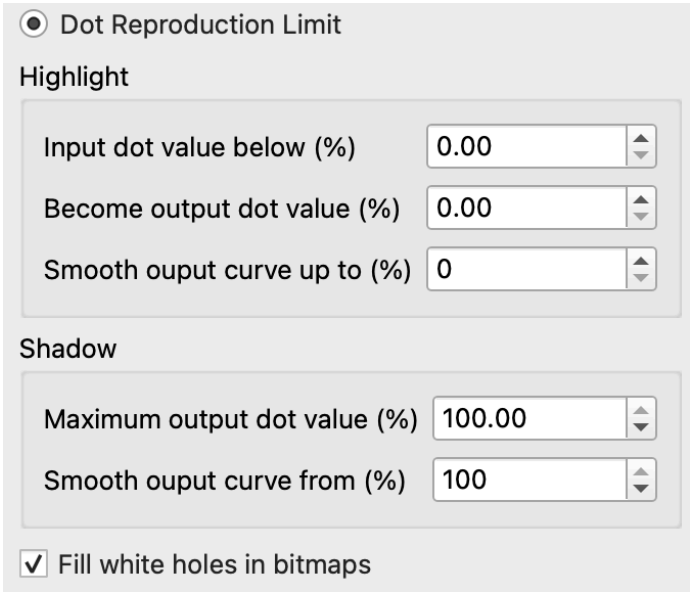
In Curve Correction mode, you can manually edit the different curves within the displayed graph or through the input/output LUT entries values in Values tab.

The modifications do not depend on the TRCA imported. If no TRCA was imported, they will be applied on the next TRCA file imported and if a TRCA was already imported, the modifications will change the resulting curves.

Important: in no way the imported file will be modified; the modifications are applied on top of it only in ACH, they are not saved onto the file.

3.3.3.4. Dot Reproduction Limit

In Dot Reproduction Limit mode, you can optimize your file tone reproduction to the printing process specifics. This enables you to define where dot values should start and stop for each ink. This feature can be very useful for some printing processes such as Flexo or Screen printing that cannot reproduce very small dot values lower than 10% or with processes that can print better without solids.



3.3.3.5. Highlights

Highlights is the range of tonal values between 0% and 20%.

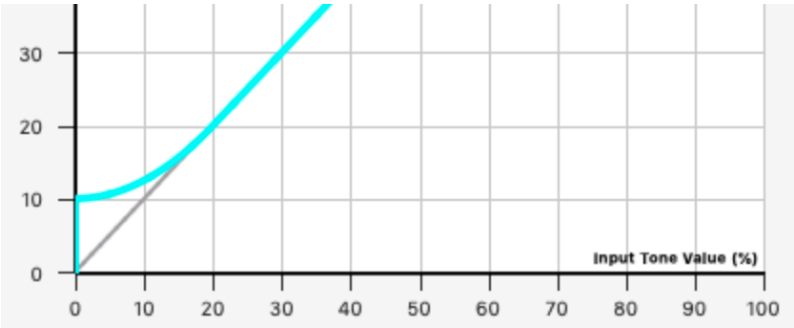
Input dot value below (%) defines dot values that you would like to see boosted on the output.

Become output dot value (%) is the minimum dot value you would like to see in the output file.

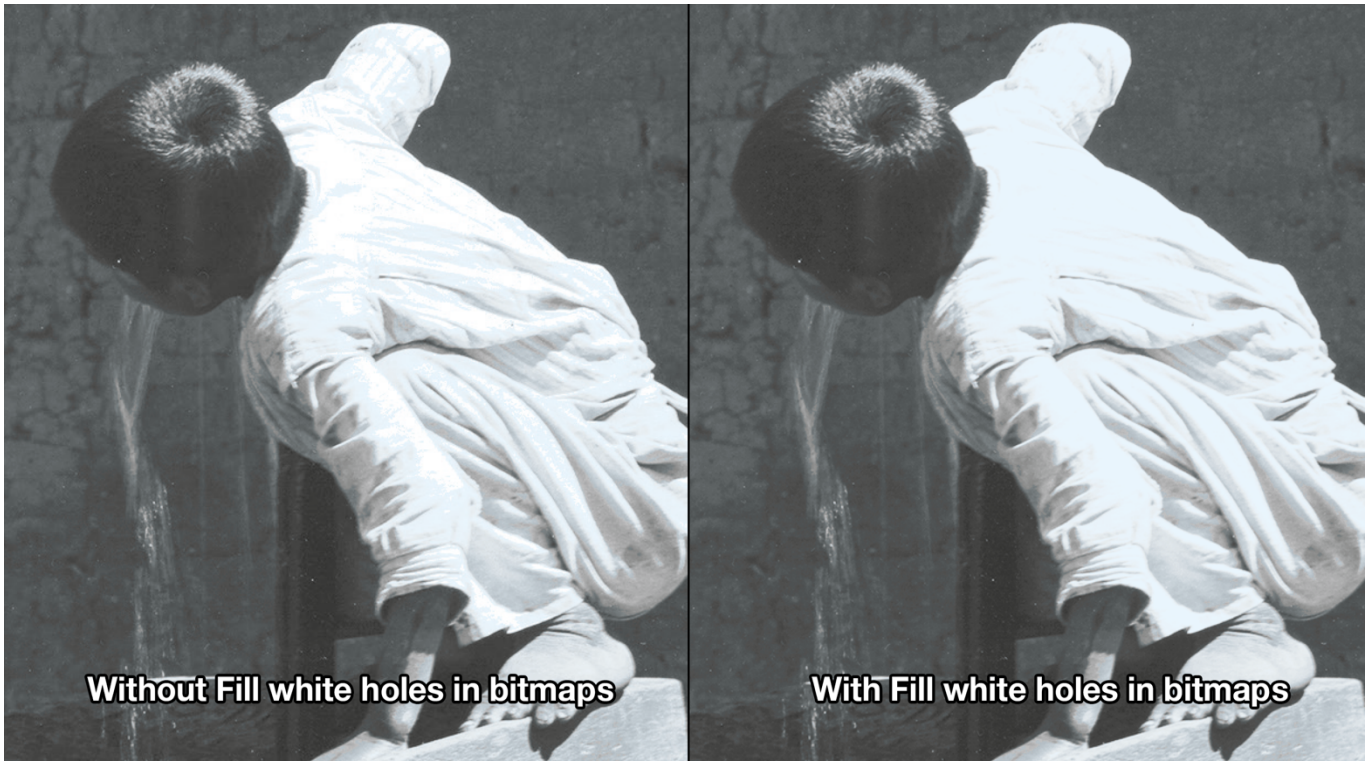
P.S. No dot on input remains no dot on output.

Smooth output curve up to (%) helps smooth the clipping action of the dot boosting.

Below is an example of Smooth output curve up to 20% and a Become output dot value of 10% on the Cyan curve.



Fill white holes in bitmaps option will add some ink values on original white part of images when they are enclosed by colored pixels all around the white zone. The values replacing the white depends on the Become output dot value written for each ink. In the example above, the white will be replaced by 10% of Cyan.



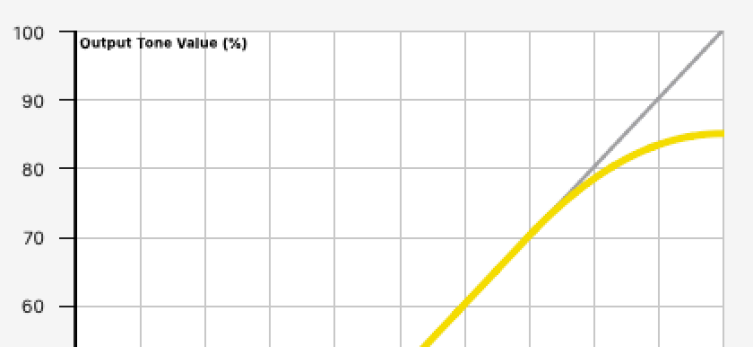
3.3.3.6. Shadows

Shadows are the values between 80% to 100%

Maximum output dot value (%) means that tone values in the output file will be limited to the specified value.

Smooth output curve from (%) helps smooth the clipping effect of dot limitation.

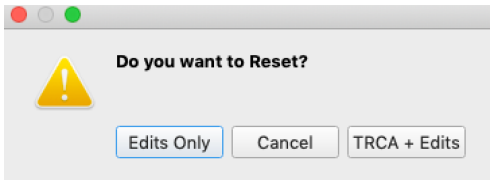
Below is an example where Maximum output dot value option is set to 85% and a Smooth output curve from (%) at 70% on the Yellow curve. This means that all input tonal values between 85 and 100% will be limited to 85% on the output.



Import... This button enables you to import a saved TRCA file (only .plist supported).

Export... This button enables you to export a set of TRCA file.

Reset... This button enables you to reset the current changes.



Edits Only removes Dot Reproduction Limit and Curve Correction modifications but keep the imported TRCA.

TRCA + Edits removes everything, including the loaded TRCA.

Graph Grid: it modifies the visual representation of the lines behind the curves at the % selected.

The following buttons are only available in Curve Correction mode:

- Smooth Selected Curve: it allows you to smooth the displayed correction curve. The smoothing effect is applied on graphic curves and numerical values. Pressing this button many times will make curve smoother and smoother.

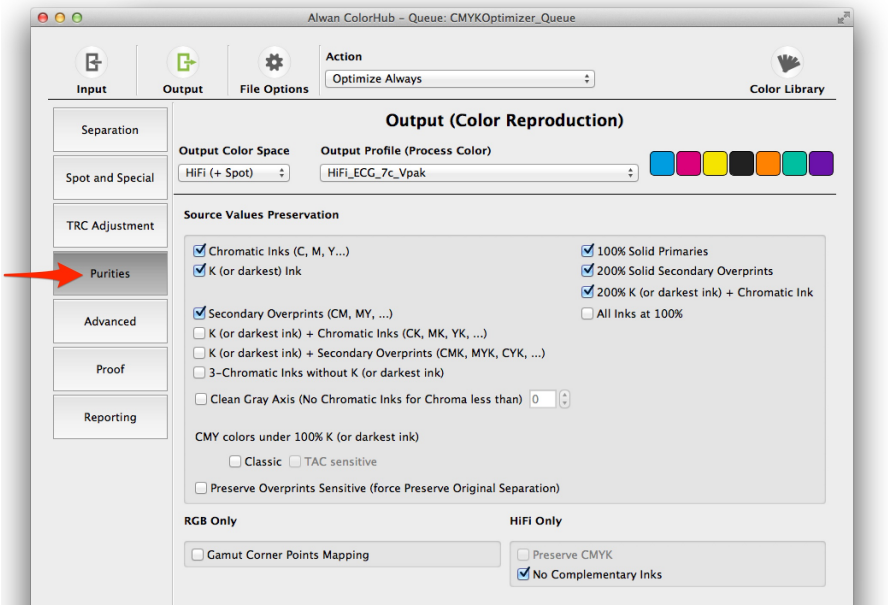
- LUT Steps: it changes the steps of the selected curves allowing for more or less precision in the modifications. Modifications made with a small % steps will be smoothed out selecting Create an entry each 50%.

- Entries:
  - +: adds a new entry to the selected curve
  - - (can only be used in Values tab): remove the selected value in the table

3.3.4. Purities

This tab lets you set constraints in the output separation in order to preserve the integrity of some of the input files values characteristics. It is available with "CMYK (+ Spot)" and "HIFI (+ Spot)" Output Mode only.

Preserving purities allows you to address printability issues that are encountered when color managing files. For all purity options, K stands for black. When no black exists in the process colors, the darkest ink in the input and/or output color space will have K channel properties applied to it.



3.3.4.1. Source Values Preservation (Image and PDF)

3.3.4.1.1. Chromatic Inks (C, M, Y...)

All input chromatic inks except K (or darkest ink) colors of any value will remain pure and without other ink contamination on the output. Only dot gain compensation will be applied. For example, a 50% Cyan on the input may become 54% Cyan only on the output. The output color remains pure Cyan, however its value is adjusted to take into account the difference of dot gain between the input and the output profiles.

3.3.4.1.2. K (or darkest) Ink

K stands for darkest ink channel. Typically for CMYK color space, K will be Black ink.

Darkest ink channel of any value will remain pure darkest channel in output file.

For example, a 40% Black only on the input may become 54% Black only output if this output color space includes a channel named Black. If output profile darkest channel is Brown instead of Black, 40% Black on the input can become 49% Brown only on the output.

3.3.4.1.3. Secondary Overprints (CM, MY...)

Input colors composed of two chromatic inks will be composed of two chromatic inks on the output as well.

If input color space is CMYK and output color space is CMYKOG, CM-MY-YC of any input value will remain CM-MY-YC on the output. Only dot gain compensation is applied.

For example, a C50-M50 (Cyan 50% and Magenta 50%) Blue Color may become C54-M56 on the output. The output color remained pure CM, but CM values have been adjusted to take into account the dot gain difference between input and output profiles and printing condition.

3.3.4.1.4. K (or darkest ink) + Chromatic Inks (CK, MK, YK...)

Input colors composed of a mix of the darkest channel (K) and a chromatic channel, will remain pure on the output if the same chromatic channel exists in output color space.

Darkest channel in input and output color spaces can be different (ex. Black channel in input color space and Brown channel in output color space). Typically, if input color space is CMYK and output color space is CMYKOG, input CK-MK-YK only colors of any value will remain pure CK-MK-YK on the output. Only dot gain compensation will be applied.

For example, a C40-K90 (Cyan 40% and Black 90%) Blue Color may become C35-K86 on the output. The output color remained pure CK, but CK values have been adjusted to take into account the dot gain difference between input and output profiles.

3.3.4.1.5. K (or darkest ink) + Secondary Overprints (CMK, MYK, CYK...)

Tints that are composed of 3 primary inks including the darkest channel (K) and two chromatic inks will remain as such if identical chromatic inks exist in the output color space. Only dot gain compensation and black generation will be applied.

For example, a C20-M20-K20 (Cyan 20% Magenta 20% and Black 20%) may become C18-M22-K23 on the output.

3.3.4.1.6. 3-Chromatic Inks without K (or darkest ink)

Tints that are composed of 3 chromatic inks without the darkest channel (K) will remain as such if identical chromatic inks exist in the output color space. Only dot gain compensation will be applied.

For example, a C20-M20-Y20-K0 may become C18-M19-Y18-K0 on the output.

3.3.4.1.7. 100% Solid Primaries

Input solid primaries remain unchanged in the output separation. For instance, input (C0 M100 Y0 K0) stays (C0 M100 Y0 K0) on the output, and input (C0 M0 Y0 K0 G100) stays (C0 M0 Y0 K0 G100) on the output.

3.3.4.1.8. 200% Solid Secondary Overprints

Input solid secondaries (superposition of two chromatic ink solids without black) remain unchanged in the output separation. For instance, input (C100 M100 Y0 K0) stays (C100 M100 Y0 K0) on the output.

3.3.4.1.9. 200% K (or darkest ink) + Chromatic Ink

Input colors made of the darkest channel K100 and 100% of other chromatic ink (ex. C100 or M100 or G100) will remain unchanged in the output if the same chromatic channels exist in the output color space. For instance, input (C100 M0 Y0 K100) stays at (C100 M0 Y0 K100) and (C0 M0 Y0 K100 G100) stays at (C0 M0 Y0 K100 G100).

3.3.4.1.10. 300% K (or darkest Ink) + Secondary Overprints

Input colors made of the darkest channel K100 and 100% of two other chromatic inks (ex. C100 M100 or M100 Y100 or G100 C100) will remain unchanged in the output if the same chromatic channels exist in the output color space. For instance, input (C100 M100 Y0 K100) stays at (C100 M100 Y0 K100) and (C100 M0 Y0 K100 G100) stays at (C100 M0 Y0 K100 G100).

3.3.4.1.11. 300% 3-Chromatic Inks without K (or darkest Ink)

Solids that are composed of 3 chromatic inks without the darkest channel (K) will remain as such if identical chromatic inks exist in the output color space.

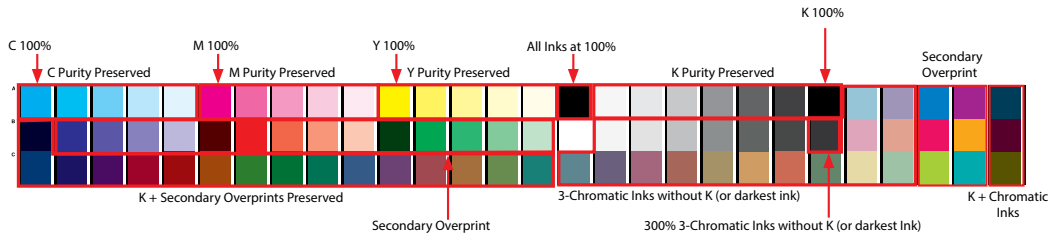
For example, a G7 Solid (C100 M100 Y100 K0) will not be modified on the output.

3.3.4.1.12. All Inks at 100%

Input files colors made of (channel1=channel2=…=channelN=100%) remain unchanged in the output file if output color space contains the same color channels.
This option does not affect registration marks made of the "All" special spot color. If you need to convert this special spot color named "All" you can edit Special Colors -> Device Color Transformation .

Output value will be limited to 400% even if output profile contains more than 4 channels to prevent from drying problems.

3.3.4.1.13. Example



3.3.4.1.14. Clean Gray Axis

When input colors are close to the gray axis, activating this option will force the use of only the darkest ink in output. The value entered defines the Chroma value until which the optimized color will only be made of the darkest ink.

3.3.4.1.15. CMY Colors Under 100% Black

This option handles images having black text defined within the bitmap (for instance a text made of C20 M5 Y10 K100).

CMY input values will be color managed and adjusted in the output separation keeping Black to 100%, and minimizing the underlying effect on C, M and Y plates.

This option has been revisited in CMYK Optimizer 3.8 to ensure a better color transformation accuracy and a better printability of optimized images.

This option is only useful when "text" is defined within the bitmaps.

Please keep in mind that usual 100% Black texts and elements (defined as fonts or vectors) are not concerned by this option and will always stay 100% Black even if this option is not activated.

3.3.4.1.16. Classic

We recommend having a high DVLP resolution grid when this option is active.

3.3.4.1.17. TAC Sensitive

This option adds a TAC dependent treatment to the Classic method which may enhance shadows & dark tones reproduction and give a more accurate output TAC.

PS: Please use this option only when needed and very carefully as it may have an impact on shadows & dark tones smoothness.

3.3.4.1.18. Preserve Overprints Sensitive

In some cases where specific CMY purity and overprints are detected, "Preserve Original Separation" option is forced. This is to avoid situations where artifacts due to Black generation modification in overprinted regions may appear. The consequence of this specific processing is that no ink saving will be achieved for the corresponding PDF page.

When such PDF is processed with this detection active, you will find following warning message in the PDF and text reports:

PDF page contains Overprints Sensitive that force the Preservation of the Original Separation.

However, if Overprints Sensitive Elements (OPS) rasterization option is checked from File Option -> PDF Page Rasterization -> Triggers, it will take the priority over Preserve Overprints Sensitive option, and the chosen GCR level will be applied.

Note also that in the versions of Alwan CMYK Optimizer that are older than 3.8, Preserve Overprints Sensitive option was a global setting available in Alwan ColorHub Preference file.

3.3.4.1.19. Gamut Corner Points Mapping

This option only affects RGB objects of the Original File.

Gamut Corner Point Mapping option will adapt chosen Output Profile to maximize the use of colors present in RGB Input Profile. It enables to get more saturated colors in output than with a classic conversion.

Notes:

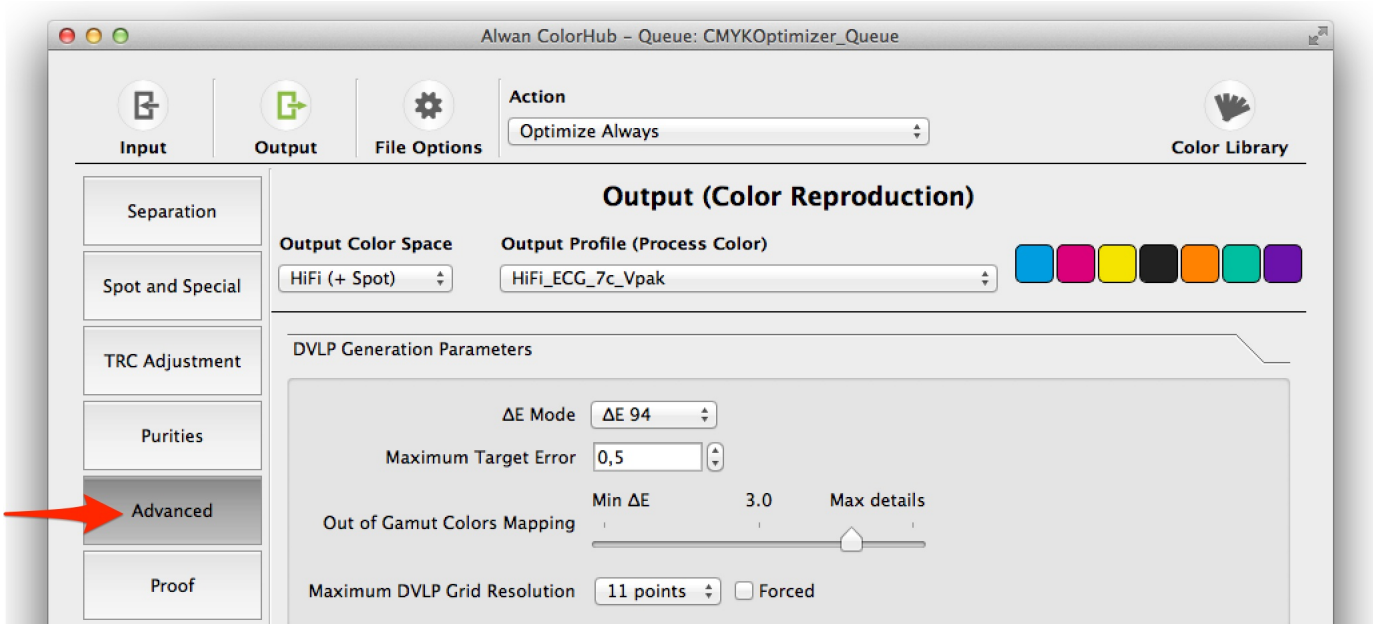
- Please be careful when using this option, as it can create unexpected color changes on specific colors, depending on chosen Output Profile.

- It is recommended to use to use "Wide Gamut Standard RGB" or "Super Wide Gamut Standard RGB" when Gamut Corner Point Mapping option is checked.

3.3.5. Advanced

3.3.5.1. DVLP Generation Parameters

This menu allows you to set some of parameters having an impact on ACH DeviceLink Profiles calculation and generation.



Default values must not be modified unless you know exactly what you are doing. Please contact Alwan Color Expertise or your Alwan dealer if you wish to make changes.

3.3.5.1.1. ΔE Mode

ΔE CIELAB or ΔE94 or ΔE 2000 formulae

You can choose between these 3 formulae. Default formula is ΔE94.
Note that ΔE 2000 formula is recommended when using Minimum TAC and Ink Usage separation.

3.3.5.1.2. Maximum Target Error

Defines the target ΔE for the DeviceLink Profile building calculation.

Lower ΔE requires more iterations and makes Profile Building longer, however it will increase profile accuracy and the quality of color matching. Default value is 0.5.

3.3.5.1.3. Out of Gamut Colors Mapping

Input Profile may contain colors that are out of the gamut of the Output profile.

In this case at profile building stage, a choice can be made whether to favor color accuracy or image details in the mapping operations:

Minimum ΔE ensures that output colors will match corresponding input colors as closely as possible.
Maximum Details ensures that image details on the output will be preserved as much as possible.
Default value is 3.

3.3.5.1.4. Maximum DVLP Grid Resolution (pts)

Allows you to choose Alwan ColorHub DeviceLink Profiles maximum size.

The higher the DVLP resolution, the larger the DVL profile, the longer DVL Profile calculation time will be. Default value is 11. Available DVLP resolution ranges from 3 to 21 grid points DVL Profiles.

Forced:

If Forced option is unchecked, Alwan ColorHub DeviceLink Profiles resolution is limited to the chosen DVLP Resolution provided it is lower or equal to the source profile grid resolution. This means that DVLP resolution cannot exceed the source profile grid number of points.

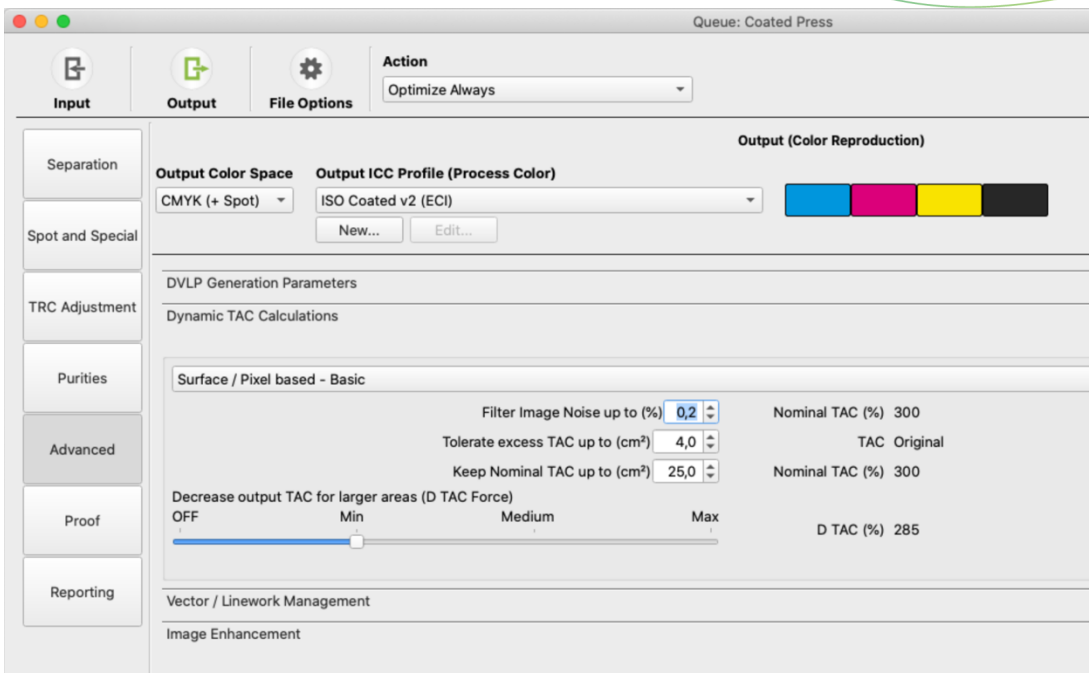
If Forced option is checked, Alwan ColorHub DVL profiles grid points will be forced to the chosen DVLP Resolution number.

3.3.5.2. Dynamic TAC Calculations

Alwan ColorHub analyses and preflights every page of a PDF document.

Dynamic TAC adds a powerful feature to TAC correction by introducing a new and innovative way of automatically calculating and correcting output files TAC. DTAC allows you to calculate and correct your file TAC in a dynamic way taking into account the surface of high TAC areas.

DTAC takes into account the possible risks on printability caused by large black areas and can set your files output TAC to values that are lower and more convenient for your print device than the designated nominal TAC while maintaining image contrast.



You can choose between 2 methods to calculate high TAC areas:

- Surface / Pixel based - Basic

- Thickness / Radial Filter - Advanced

With Surface / Pixel based method, high TAC surfaces are calculated using a basic pixel count method.

With Thickness / Radial Filter method, high TAC value surfaces are calculated using PDF elements thickness. A big advantage of this option is that non-adjacent high TAC values regions are not cumulated.

For instance, with Alwan ColorHub set to Tolerate excess TAC up to 2 cm (in Radial method):

- A square of 3 cm x 3 cm will be detected as problematic,

- But a rectangle of 1 cm x 9 cm will be OK

Regardless of surfaces that are both equal to 9 cm2.

Please note that Nominal TAC designates the TAC value that you typed in the Separation tab interface.

Note also that Processing a file using Surface / Pixel based method is quicker than processing a file using Thickness / Radial Filter method.

3.3.5.2.1. Filter Image Noise up to

This setting is available only for the Surface / Pixel based method.

Thickness / Radial Filter method does not offer this option as it recognizes and offsets image noise automatically by means of an advanced algorithm.

Filter Image Noise up to is the maximum percentage of high TAC pixels that Alwan ColorHub will offset during TAC analysis. Default value is 0.2%.

3.3.5.2.2. Tolerate excess TAC up to

Depending on the chosen DTAC method, this value is a surface or a thickness.

Any entered area (Default 0 cm2) will be tolerated during file analysis preflight.

This threshold is used during Preflight analysis (In Check Only (Preflight) or Check and Optimize mode) to determine if the file needs a TAC reduction.

For instance, if Alwan ColorHub finds an area, which is less than the designated 4-cm2 areas carrying excessive TAC, the file will be considered OK.

This threshold is also used to determine which TAC value will be applied during the optimization (in Check and Optimize, and in Optimize Always mode).

If the file TAC is below the Tolerate excess TAC threshold, and if the optimization is needed (Optimize Always mode for instance), the optimization will be performed by keeping the file original filtered TAC value, instead of the chosen Nominal TAC. This is to keep the maximum dynamic / contrast of the original file. You can deactivate this option by setting it to 0.

3.3.5.2.3. Keep Nominal TAC up to

This parameter is used in case of Optimization (Check and Optimize or Optimize Always modes), it determines the final TAC of the file, that is to say the output TAC of the DVL Profile used during optimization.

Keep Nominal TAC up to value corresponds to the area beyond which Dynamic Output TAC will be active.

Files having an excess TAC area which is less than this threshold will be normalized to the chosen Nominal TAC.

Files having an excess TAC area which is higher than this threshold will be normalized to a lower TAC value. This value is determined by the choice of DTAC Force.

3.3.5.2.4. DTAC Force

DTAC force correction factor decreases output TAC for pages having dark/black areas above the Keep Nominal TAC up to threshold.

Nil/Min/Medium/Max setting corresponds to Output TAC which can be respectively 0/5/10/15% lower than the chosen 300% Nominal TAC.

The settings above show that if a file has a high TAC area of more than 25 cm2, output TAC will be decreased to 285% instead of Nominal TAC.

This parameter is active for Check and Optimize and Optimize Always.

Note: decimal separator and area unit (cm <-> inch) are adapted to the OS country, to change them:

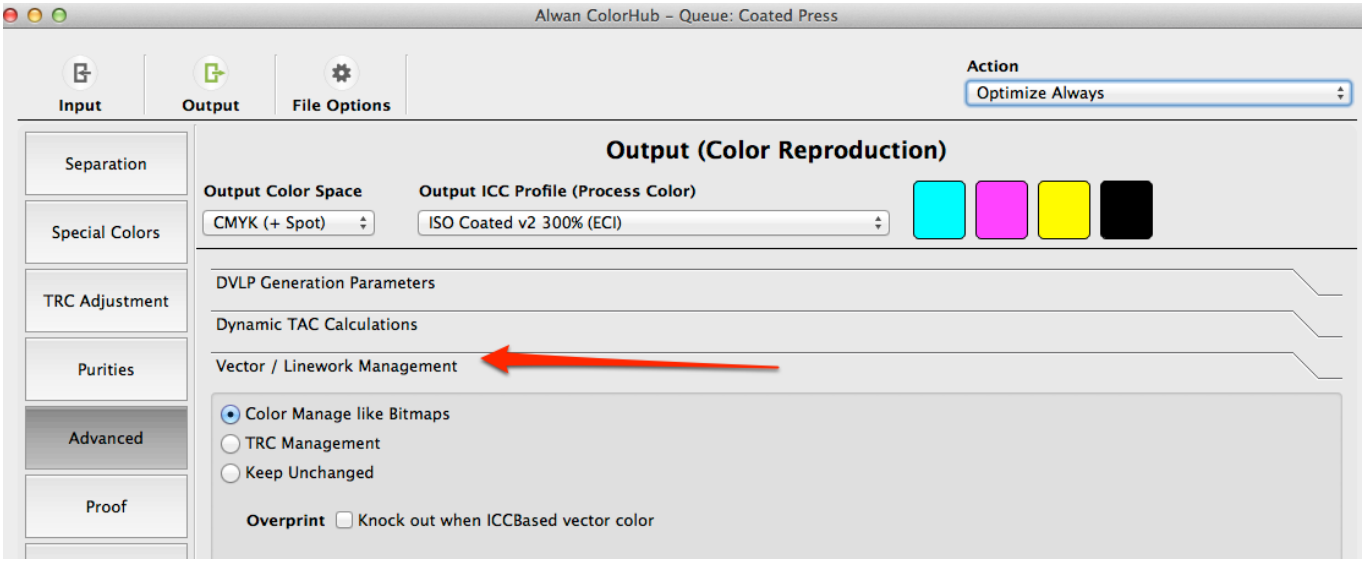
MacOS: System Preferences -> International-> Formats

Windows OS: Control Panel -> Region and Language -> Formats -> Additional settings…

Quit ACH, change System Preferences unit and relaunch ACH.

3.3.5.3. Vector / Linework Management

The Vector / Linework Management tab is active for PDF files.
It allows you to choose one of the 3 following processing policies for Vector and Linework elements:



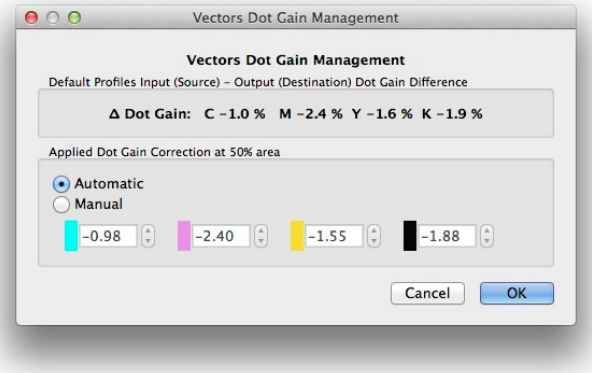
3.3.5.3.1. Color Manage like bitmaps

This is the default and recommended option.

With Color Manage like bitmaps option, vectors are managed like bitmaps. In this case, Source Values Preservation options set in Purity Tab are also effective for vectors.

3.3.5.3.2. TRC management

Dot Gain Management option enables you to manage Vector and Linework elements with Dot Gain corrections.



By clicking on the Vector TRC … button you can choose between Automatic (profile based) or Manual (custom) dot gain correction.

These corrections are effective for each C/M/Y and K channel.

In this case, Printer / Press Calibration button is not effective for vectors.

3.3.5.3.3. Keep Unchanged

You can also choose to not manage Vectors/LW elements by clicking the Keep Unchanged Button.

3.3.5.3.4. Overprint Knock out when ICC based vector color

This option enables you to choose how Alwan ColorHub will handle ICC Based vector colors having an active overprint.

If this option is checked, ICC Based vector colors will knock out other elements.

If this option is unchecked, ICC Based vector colors will overprint other elements.

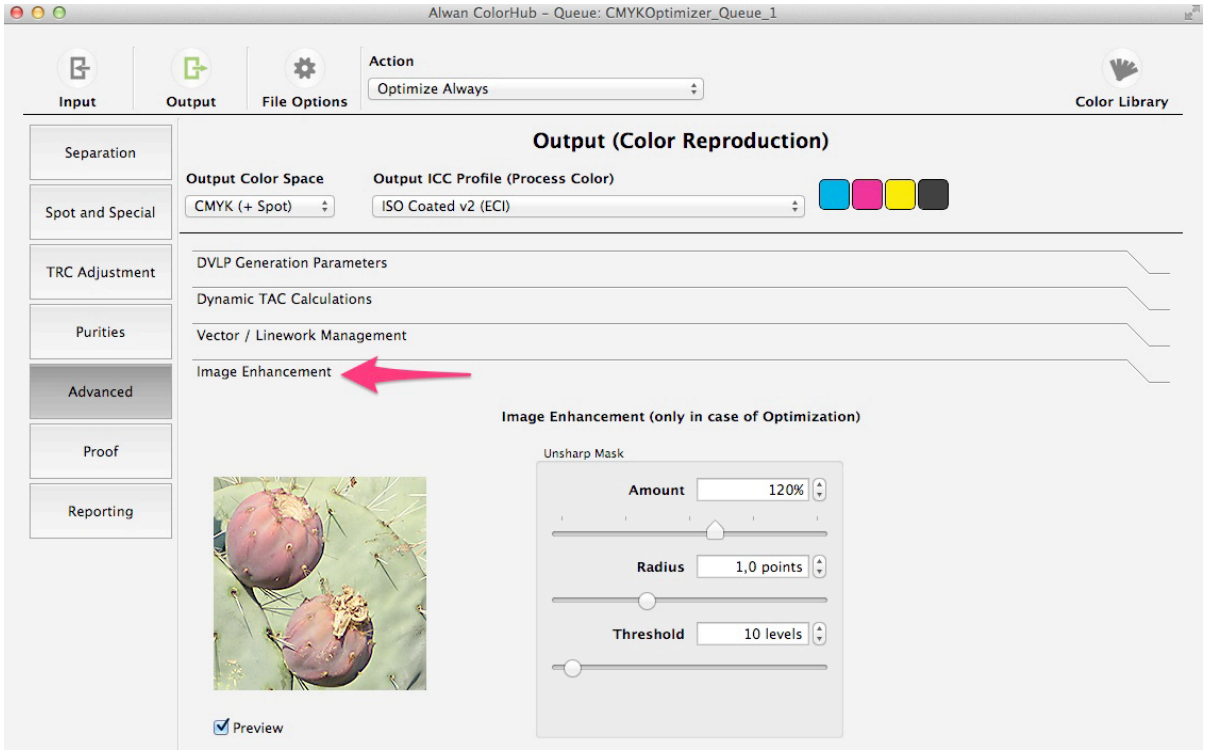
For instance, C0 M0 Y0 K100 ICC Based vector color will be optimized:

- to C0 M0 Y0 K100 Device CMYK if the option is unchecked

- to C0.2 M0.2 Y0.2 K100 Device CMYK if the option is checked. 0.2% values being added on 0% channels in order to force knock out.

3.3.5.4. Image Enhancement

Image Enhancement... option allows you to apply Unsharp Mask to image files or to bitmaps included in your PDFs files.



Unsharp Mask is used to improve image sharpness after color separation.

This filter is based on algorithms that lead to an improved image contrast.

Unsharp Mask is applied on all images and objects - CMYK, RGB, HiFi and gray - after color conversion.

Unsharp Mask is effective only in case of Optimization (Optimize Always or Check and Optimize with optimization needed).

3.3.5.4.1. Amount

This is a percentage that corresponds to the amount of added contrast. Set Amount to 0% to deactivate Unsharp Mask.

3.3.5.4.2. Radius

Unsharp Mask radius unit is not a pixel (like in Adobe Photoshop®) but printer point, also called DTP point.
A radius of 1 point corresponds to 1 pixel for an image at 72 dpi.
A radius of 1 point corresponds to 2 pixels for an image at 144 dpi.

Image resolution is thus taken into account during Unsharp Mask.

Radius Value controls how wide the edge rims become.
The higher the radius the more noticeable the sharpening effect will be.
A small radius enhances small-scale details.

3.3.5.4.3. Threshold

This value allows you to set the minimum brightness change that will be sharpened. So you can prevent smooth areas (like skin, sky, water surface) from becoming speckled.

Low values should sharpen more because fewer areas are excluded.

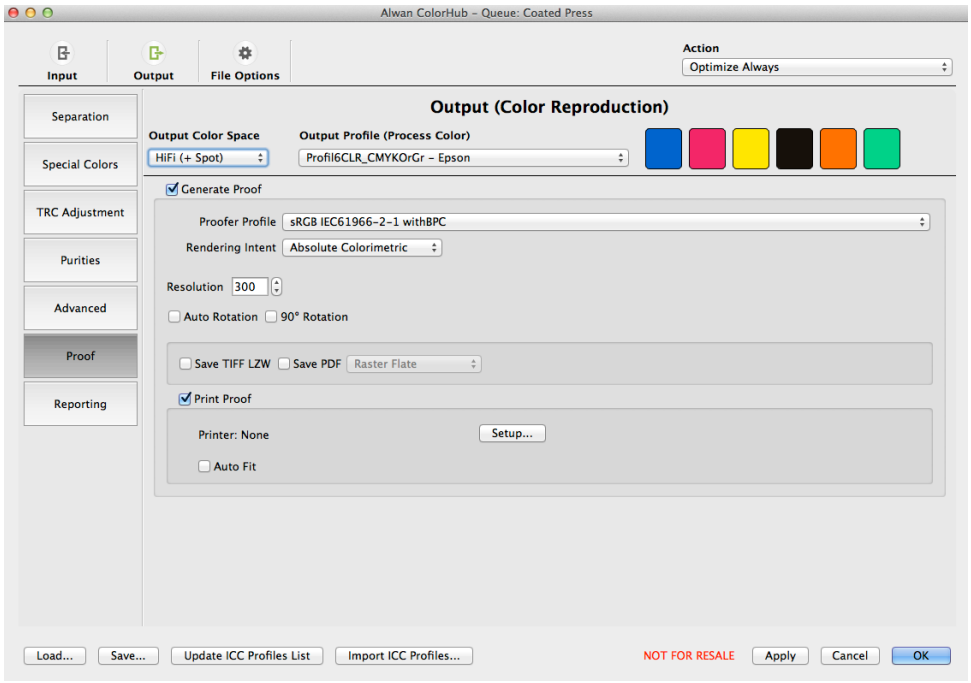
3.3.5.4.4. Preview

By activating the Preview option, you can see the effect of the chosen Amount and Radius settings.

3.3.6. Proof

Proof feature allows you to generate a low-resolution RGB files for the Web, to accurately proof optimized files on a proofing system, or both simultaneously enabling cross media workflows with Alwan ColorHub.

Generated Proof files are saved in the Proof Folder (selected in the Queue Manager, Folders…)



3.3.6.1. Generate Proof

Check Generate Proof to activate the proofing option for the selected queue

3.3.6.2. Proofer Profile

Proofer Profile is the output ICC profile used to convert the optimized file into the proofing color space. This ICC Profile can be any type of color space (RGB, CMYK, Gray, CIELab, N-channel).

For hard proofing purpose, the proofer ICC profile should be targeted.

For web purpose, you can choose an RGB profile such as sRGB.

3.3.6.3. Rendering Intent

This is the Rendering Intent of the ICC color transformation used to generate the proof file.

3.3.6.4. Resolution

The resolution can be set to the desired output resolution. The optimal setting is usually the proofer optical resolution or proofer resolution / integer number to save printing time (example 720 dpi or 360 dpi or 180 dpi…). DPI (Dots per Inch) is the unit used to define the output resolution. 72 dpi can be an appropriate

resolution to display on a website purpose while not suitable for hard proofing purpose. (1200 dpi is the upper limit)

3.3.6.5. Auto Rotation

Rotate the page according to the chosen Page Setup orientation.

3.3.6.6. 90° Rotation

Rotate the document 90° (counterclockwise).

3.3.6.7. Save TIFF LZW

TIFF LZW proof file is saved in Proof Folder.

3.3.6.8. Save PDF

PDF proof file is saved in Proof Folder.

Users can choose between 3 compression methods:

Raster Flate: the file is saved with a lossless compression method (ZIP)

Raster JPEG: the file is saved with JPEG compression, equivalent to the High Quality option in Adobe Photoshop®).

Raster JP2000HQ: the file is saved with JPEG 2000 algorithm with High Quality compression level.

Note: you can save simultaneously both TIFF and PDF files if needed.

3.3.6.9. Print Proof

Click on Print Proof checkbox to print the output file using the printer driver. (Setup… button)

3.3.6.10. Auto Fit

Resize file size to fit in the chosen paper format (Setup… button)

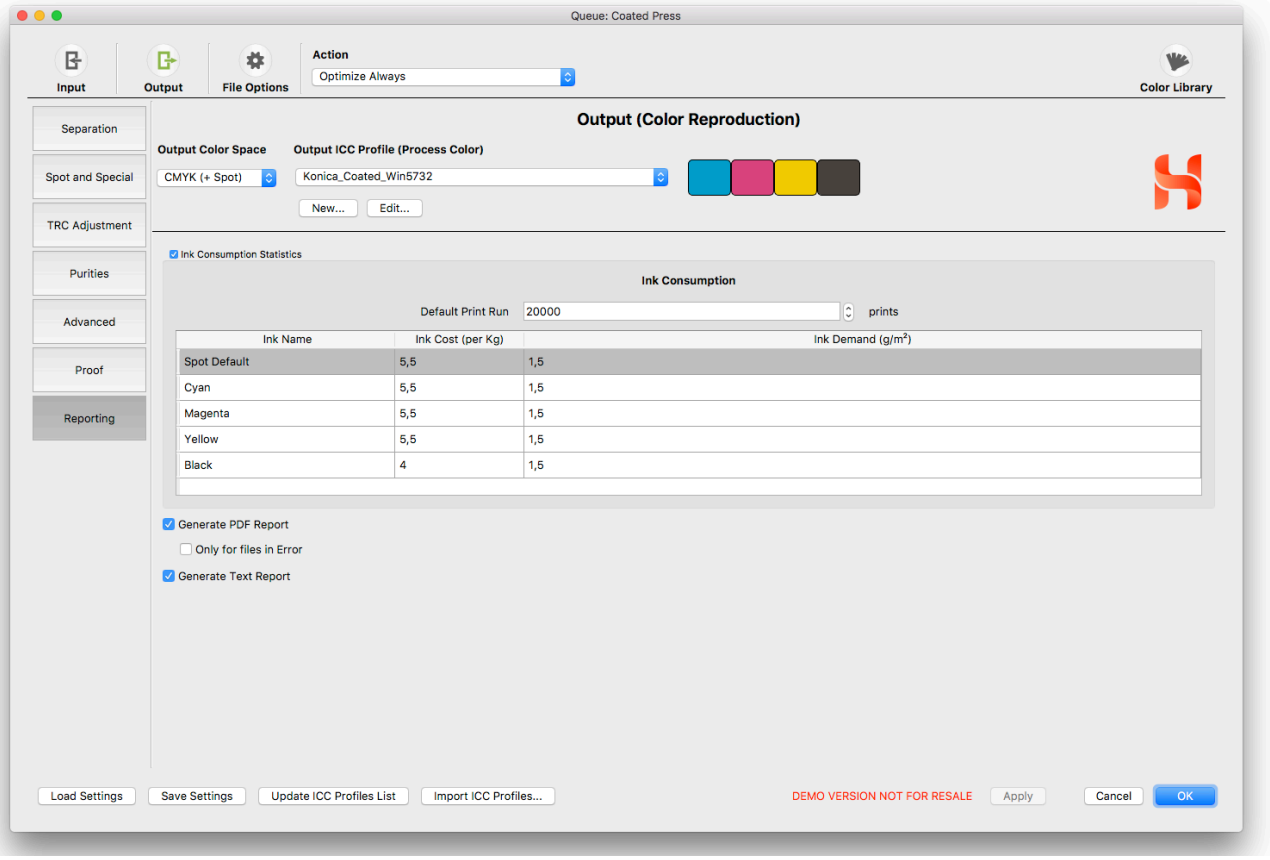
3.3.7. Reporting

3.3.7.1. Ink Consumption Statistics

Only for ECO and Platinum Editions.

Ink Consumption Statistics option enables you to view your individual files calculated ink consumption as well as any increase or decrease in this consumption due to your optimization settings.

You can activate this feature by ticking the relevant check box.



3.3.7.1.1. Ink Demand

Average weight of nominal solid ink density printed on 1 m^2 of paper (before drying). This figure is process and paper dependent. Its value can fluctuate from 1-2 gr/m^2 for an offset process to 7-8 gr/m^2 for gravure or flexographic process.

3.3.7.1.2. Default Print Run

This is the default number you will find under the Print Run column in the Reporting section of Alwan ColorHub main window.

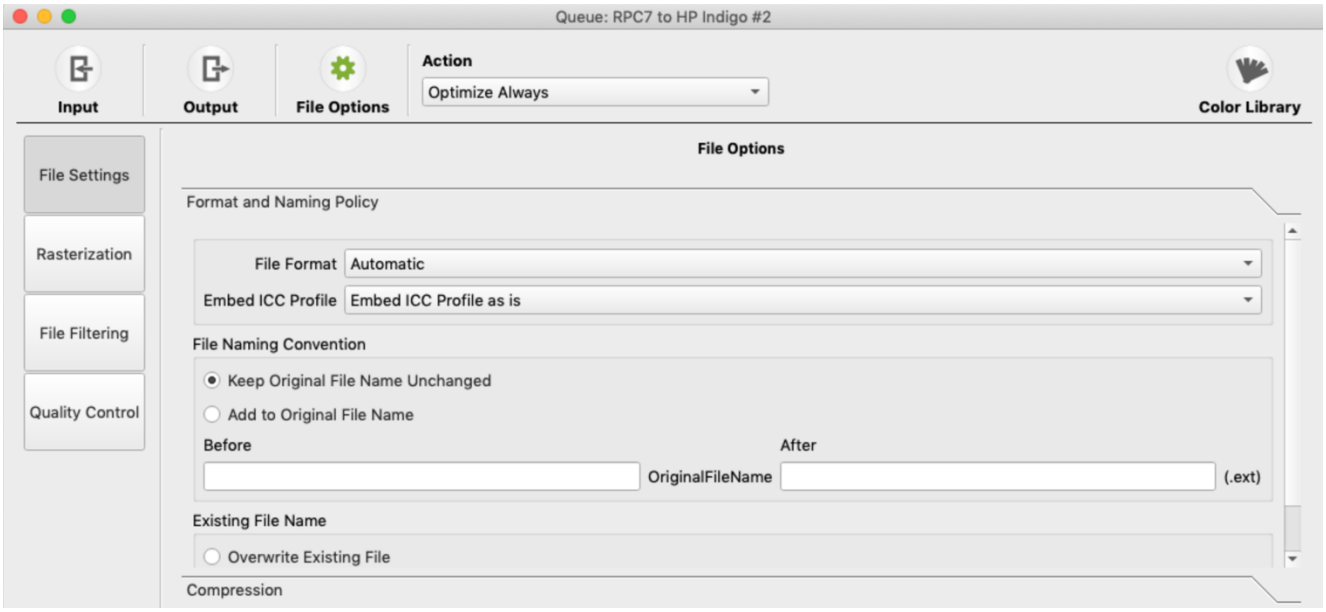
3.3.7.1.3. Ink Cost

Ink cost per kg. Enter actual figure if available. If not, default figure is 4 £/$/€ per kg for Black and 5.5 £/$/€ per kg for C M Y.

3.3.7.2. PDF and Text Reports Generation

Each time a file is processed by Alwan ColorHub, a report is generated in the chosen Report Folder. You can disable any kind of Report Generation (PDF or Text) by unchecking the corresponding checkbox.

3.4. File Options



3.4.1. File Settings

3.4.1.1. Format and Naming Policy

3.4.1.1.1. File Format

You can choose between: Automatic, PDF, JPEG, TIFF and TIFF LZW.

Automatic format means that each processed file will keep its original file format.

Please note that JPEG output File Format is only available for RGB and CMYK (+ Spot) Output Color Spaces.

Note that if the input file is PDF, the processed file format will always be PDF regardless of File Format choice.

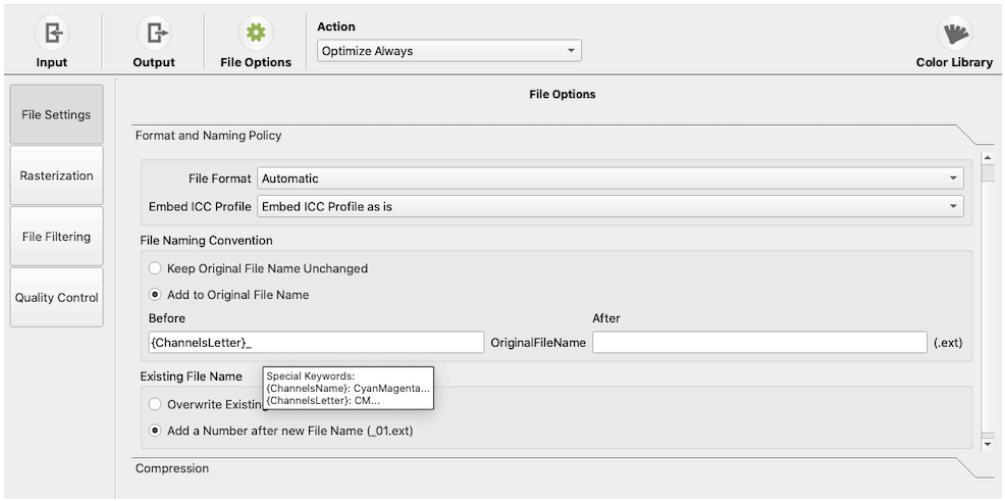
3.4.1.1.2. Embed ICC Profile

You can choose between the following options:

Do not Embed Profile: No profile is embedded in the optimized file.

Embed ICC Profile as is: Selected Output Profile is saved in the optimized file. In case of PDF-X files, output profile is saved as PDF Output Intent.

3.4.1.1.3. File Naming Convention



You can Keep Original File Name Unchanged or choose to add a prefix and/or a suffix to Original File Name.

The bottom part Existing File Name enables you to choose if you want to overwrite existing files having the same name in the output folder.

With Add a Number after new File Name (_01.ext) option, an incremental suffix will be added to your optimized file name.

For instance, MyJob.pdf will become MyJob_01.pdf in the Output Folder. If you place MyJob.pdf into the same hot folder a second time, it will be processed and saved as MyJob_02.pdf under the Output Folder.

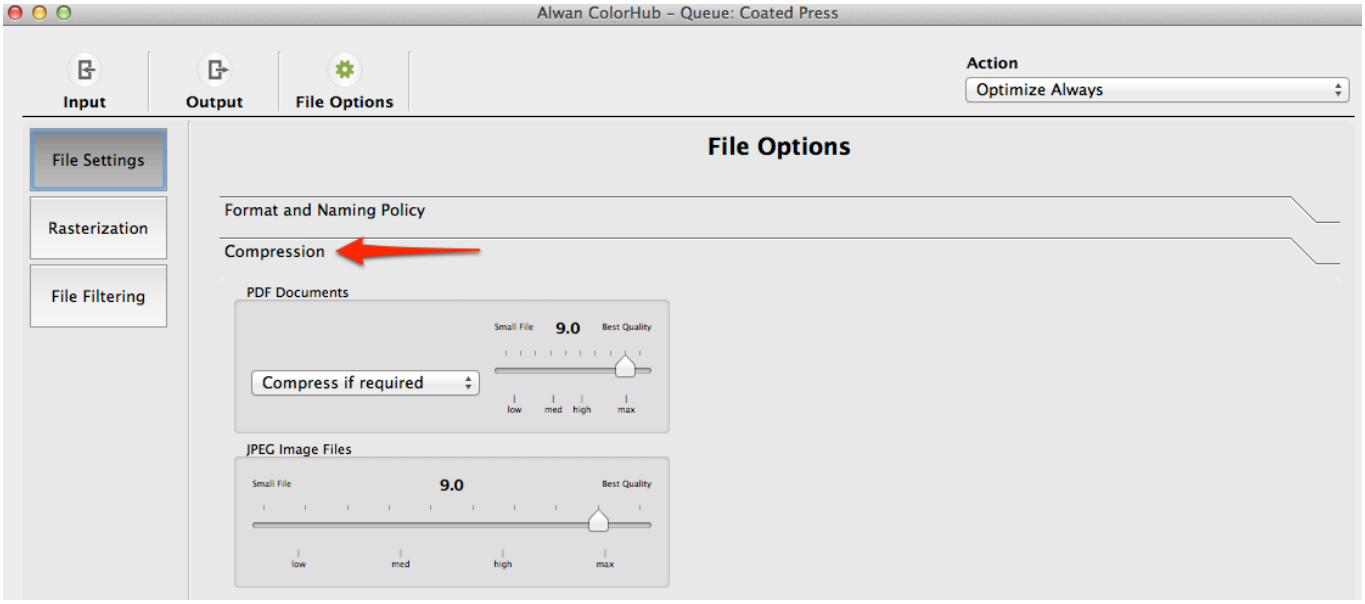
You can also use special keywords as shown in displayed tooltips:
{ChannelsName}: This will add channel names (as found in the ICC profile)
{ChannelsLetter}: This will add the first letter of the Channel name (except K for Black)

With a CMYKOGV output profile and above settings you can find such file names in the JobSuccess folder:

3.4.1.2. Compression

Compression can be applied on output files. This applies to PDF and JPEG output file formats.

The compression algorithm used is JPEG_DCT and is applied on bitmaps inside PDF, or on JPEG image files.



The top part of the window allows you to set PDF output file formats.

A drop-down menu offers three options for handling compression within a file:

Compress none (flate): no DCT compression is applied. However, a Zip (non-destructive) compression is applied.

Compress if required: compression is applied only to images that were compressed inside the original PDF.

Compress always: all images are compressed regardless of whether they are originally compressed or not.

Under each slider, you can see the labels low, med, high and max.

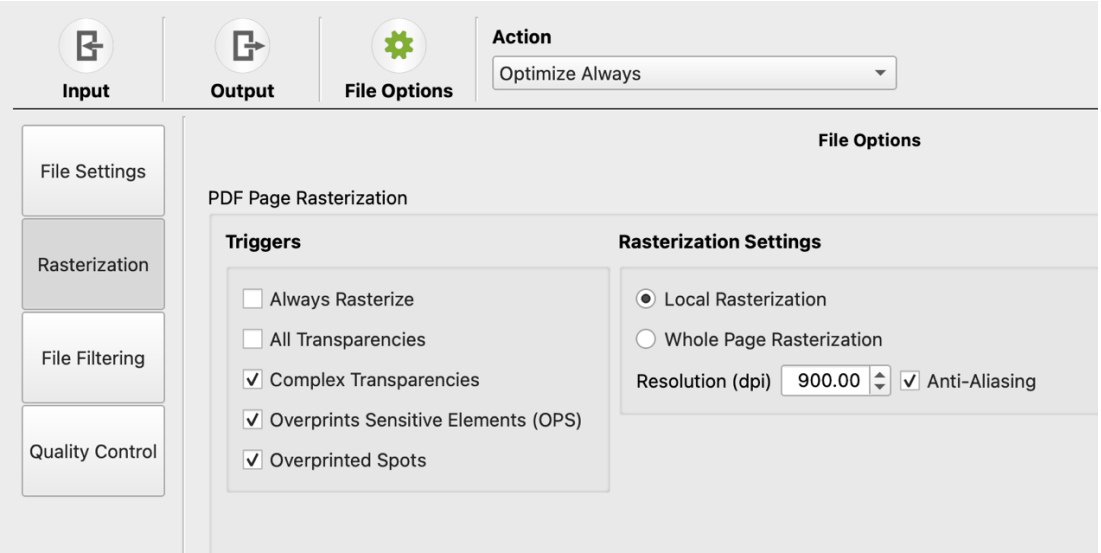
These presets are almost equivalent to Adobe Photoshop® JPEG compression presets.

The compression slider under JPEG Image Files allows you to set compression on Jpeg images only.

A value greater than 6.0 is recommended to avoid visible image quality loss.

3.4.2. Rasterization

This tab allows you to choose which element in PDF will trigger Page Flattening and Rasterization, with specified resolution.



3.4.2.1. PDF Page Rasterization Triggers

This part allows you to choose which kind of PDF elements can trigger Flattening and/or Rasterization of a PDF Page.

Always rasterize:

All pages will be rasterized regardless of the PDF content; other triggers are grayed.
It is possible to select the Local Rasterization or the Whole Page Rasterization depending on the file to process.

All Transparencies:

Detect if PDF contains Transparencies. In case of multipage PDF, only pages with transparencies will be flattened and/or rasterized.

Complex transparencies:

Detect if PDF contains Complex transparencies (i.e. non-normal blending mode) that may be misinterpreted on the RIP. In case of multipage PDF, only pages with transparencies will be flattened and/or rasterized.

Overprint Sensitive Elements (OPS):

Detect if PDF has pages that contain complex tints and overprints that may be misinterpreted on the RIP. In case of multipage PDF, only pages with OPS will be flattened and/or rasterized.

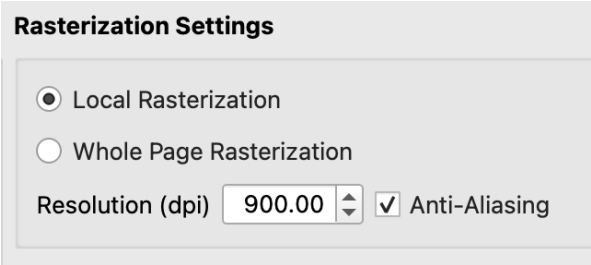
Overprinted Spot:

Overprinted Spot detects if PDF has a Spot Color overprinted by another object(s).
If spot is converted to Output Printing Device, the option has no impact.

Note that for All Transparencies and Complex Transparencies Triggers, flattening can be applied without rasterization if this is enough to preserve PDF integrity.

3.4.2.2. Rasterization Settings

This part allows you to choose the resolution of the bitmap created by Alwan rasterization.



Local Rasterization:

Local Rasterization allows you to rasterize limited areas and prevents from rasterizing the whole page. The benefit compared to Whole Page Rasterization is that created files are lighter and non-problematic areas remain intact. Flattening is always applied before local rasterization with settings equivalent to default Adobe Acrobat Settings.

Whole Page Rasterization:

This option will rasterize the whole page in a unique bitmap at a defined Resolution (dpi):

This option allows you to choose Rasterization resolution. The resolution set will be applied for Local Rasterization or Whole Page Rasterization. Unit is dot per inch (dpi) and default value is 900 dpi.

Anti-Aliasing:

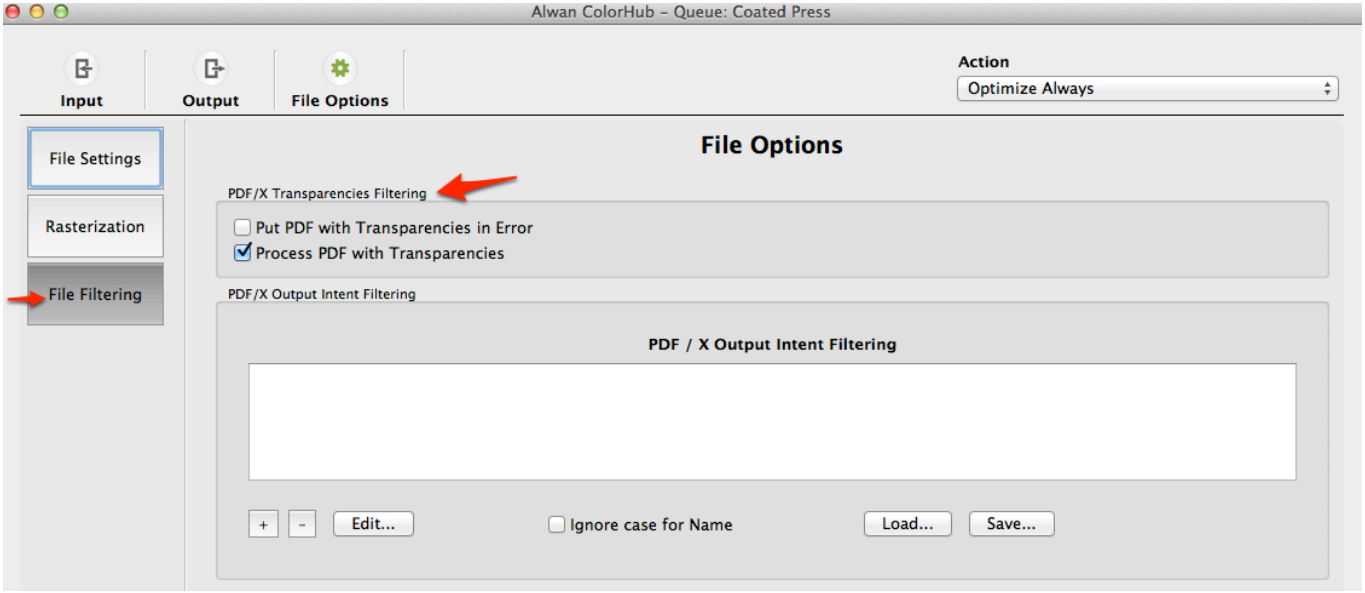
If you check this option, Anti-aliasing is applied during rasterization. Anti-Aliasing is a technology for smoothing and reducing stair step effect after rasterization.

3.4.3. File Filtering

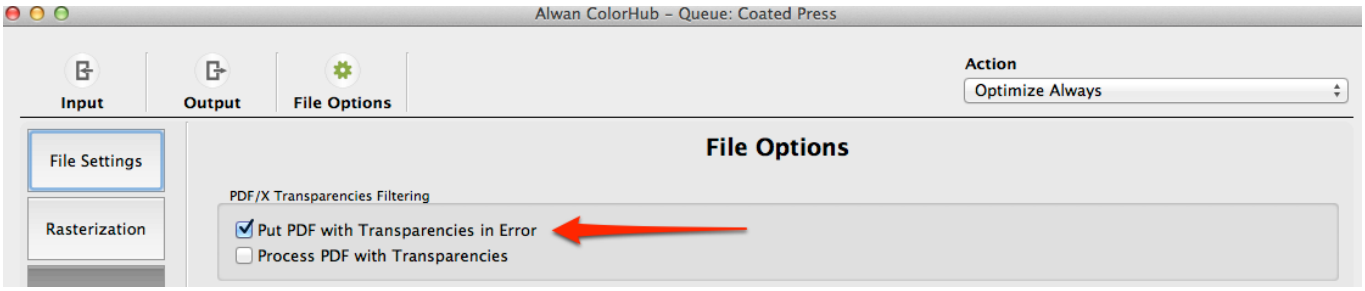
3.4.3.1. PDF/X Transparencies Filtering

PDF/X Transparencies Filtering menu allows you to choose if a PDF having transparency should be processed or not, and whether it should be outputted in JobSuccess or JobError folder.

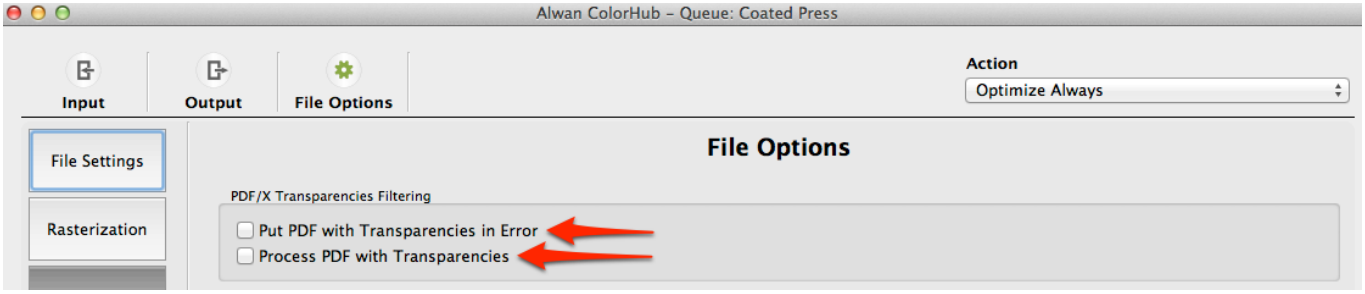
Note that this option takes priority over File Options -> Rasterization -> PDF Page Rasterization Triggers Transparencies options.



Above settings are the Default and recommended options, meaning that a PDF having transparencies will be optimized and saved in job Success folder.



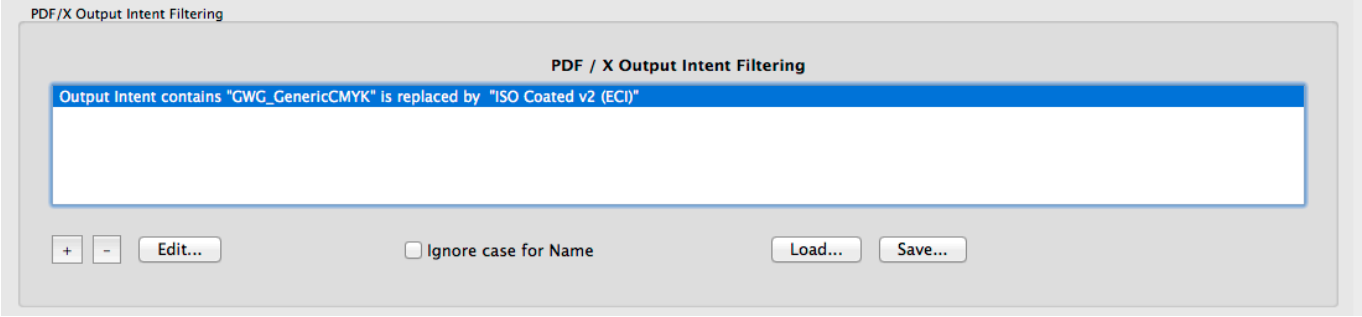
By choosing the above settings, a PDF having transparencies will not be optimized and will be saved in job Error folder.



By choosing the above settings a PDF having transparencies will not be optimized and will be saved in job Success folder.

3.4.3.2. PDF/X Output Intent Filtering

The PDF/X Output Intent Filtering menu is useful to replace an identified Output Intent that you consider irrelevant.



If you choose to use embedded profile option and if you put the above example, Alwan ColorHub will use any PDF Output Intents as input profiles except if the Output Intent is GWG_GenericCMYK. In this case, the Output Intent is replaced by an ISO Coated v2 profile, which will be used as Input Profile.

You can set the Filter to:

Contains (entered filter is part of the Output Intent)

Starts with (entered filter matches the beginning of the Output Intent)

Whole Words (entered filter matches exactly the Output Intent)

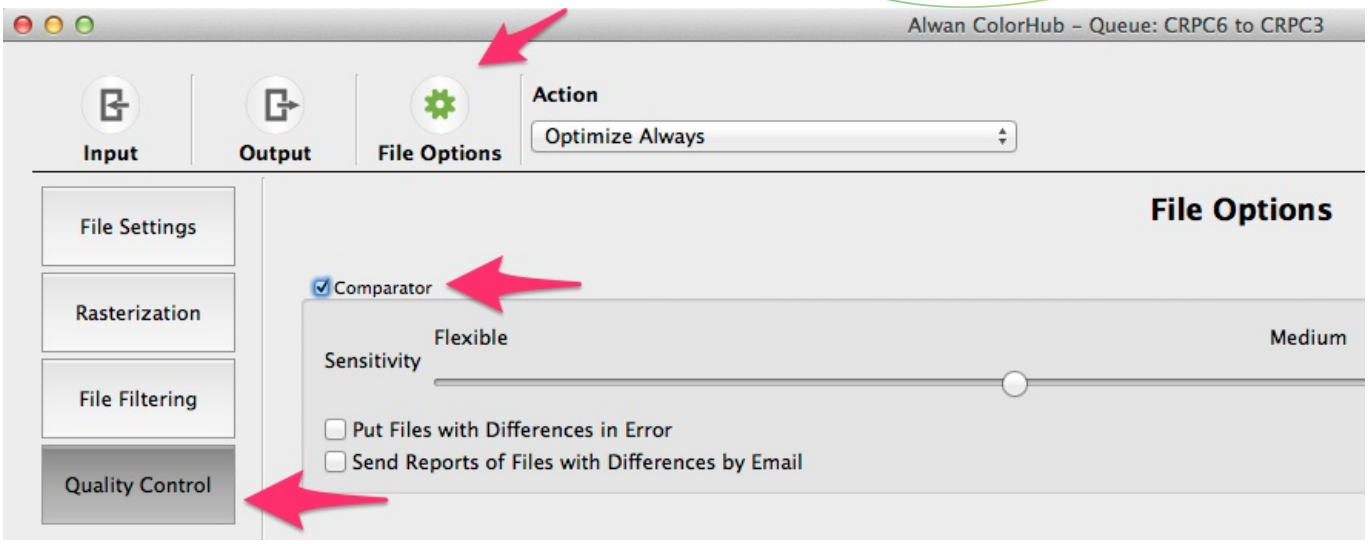
Ends with (entered filter matches the end of the Output Intent)

3.4.4. Quality Control

File Comparator is a quality control tool designed to increase security level when it comes to processing high volume of files in industrial environment. File Comparator evaluates original and optimized files to detect visual and perceptible differences between the two. Notifications can be reported in PDF report, User Interface (History/Status), and by email. This tool works with any input format, and it is not restricted to PDF.

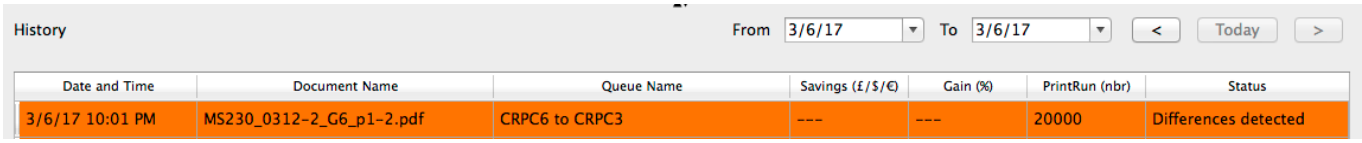
Users can activate File Comparator for each Task Settings by going to File Options -> Quality Control and ticking the Comparator checkbox.

Comparator feature relies on advanced image recognition algorithms to increase quality insurance in production. Depending on file size and other parameters, this feature - in average - can double ACH processing time.

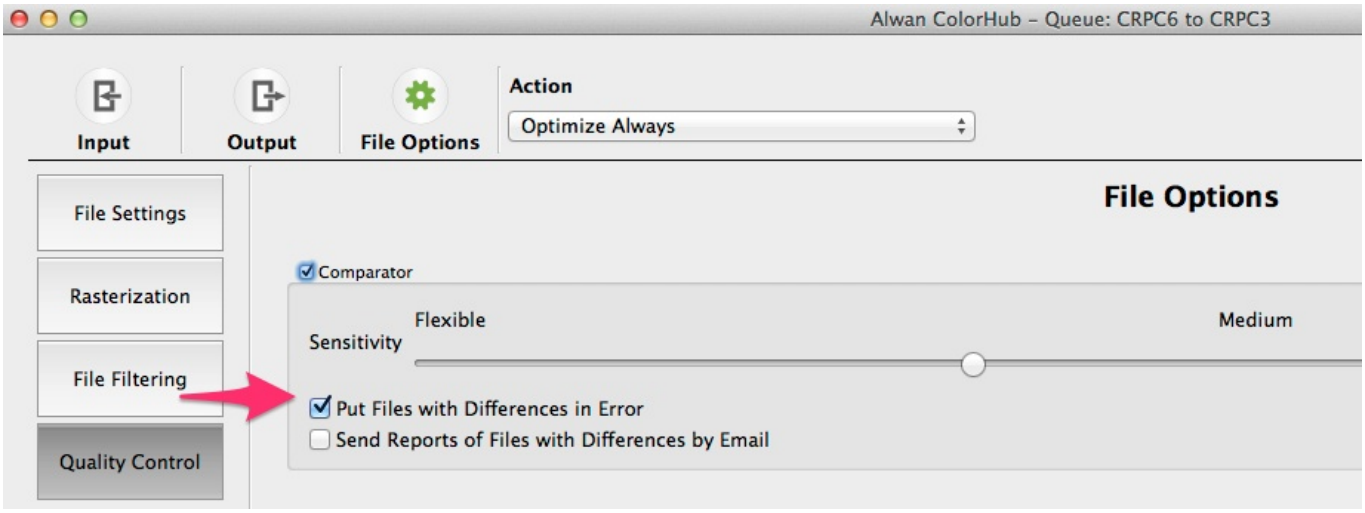


Users can choose Comparator sensitivity through the slider from Flexible to Strict. (Medium is the default and recommended settings for most applications).

ACH reports differences detected by the Comparator in the History section of the Main Interface, under Status category as Differences detected. When evaluation is completed, ACH moves files into JobSuccess folder unless specified otherwise.



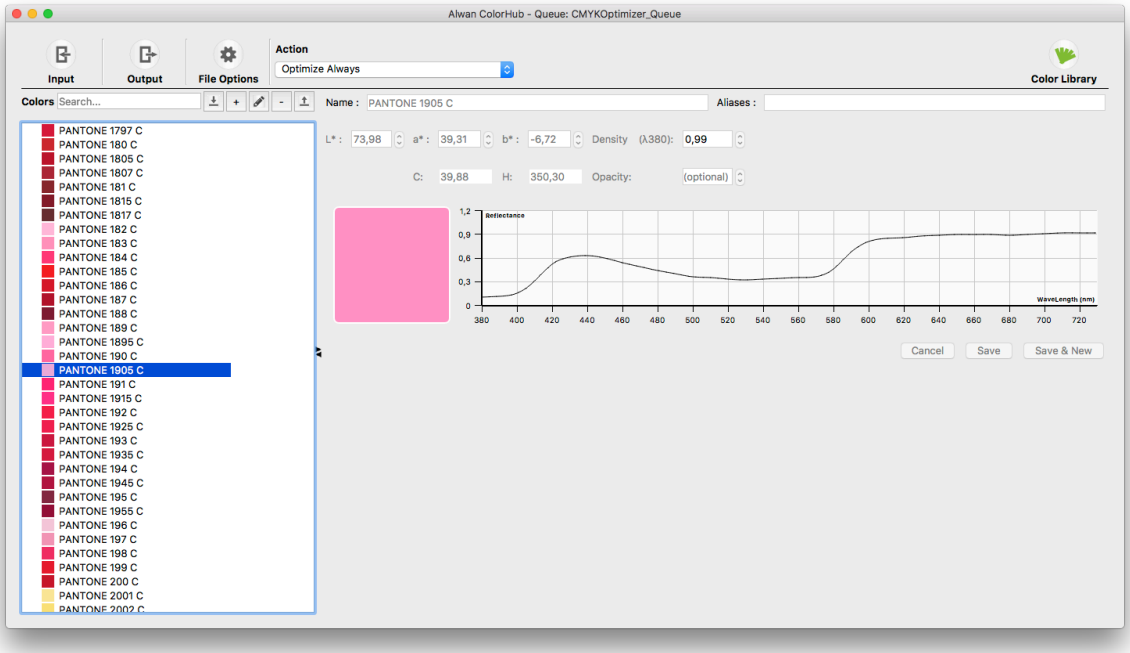
ACH can move optimized files into Error folder when differences are detected by ticking the Put files with Differences in Error checkbox.



In addition, ACH can also send a report by email when differences are detected. In this case, Users must have set up email parameters in ACH Preferences -> E-mail prior activating this option.

Processing time can be longer when using the File Comparator due to CPU demanding computation.

3.5. Color Library



Alwan Color Library enables you to define or import specific colors, which could be used to convert a Spot Color in your Output print Device Color Space.

The choice of giving priority to Alwan Color Library Spot Definition to convert spot Colors has to be done in Input -> Spot tab.

On the left side of Color Library you can choose to import, create, edit, delete or export colors.

Import button enables you to import Adobe Photoshop®) ColorBooks (.acb), CGATS txt, SVF, GMI csv, ISO-28178 xml, DI xml, CxF2, CxF3, CxF/X-4 file, X-Rite MIF file formats.
If measurement file contains different patches of the same solid, CIELab, Spectral and density values will be automatically averaged.
If color from this file already exists inside your Color Library, user can choose to Replace or Keep Existing color.

Export button will export selected colors in a .cxf file.
You can select several Colors to export them in a single .cxf Color Library file.

4. Advanced

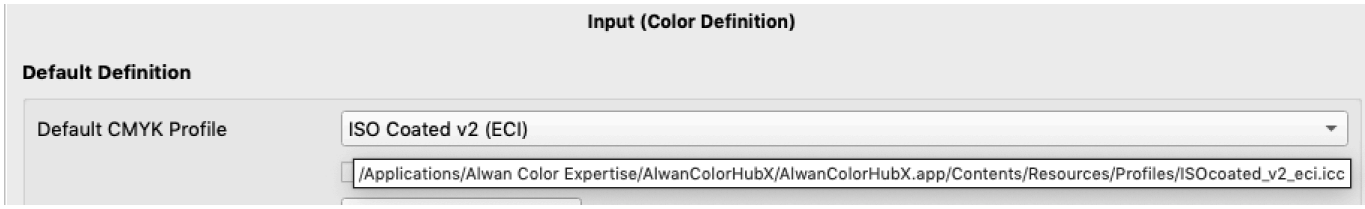
4.1. ICC Profiles

4.1.1. ICC profiles used by Alwan ColorHub

Under macOS Alwan ColorHub uses ICC profiles found in 6 different locations listed below:
- /Users/$USER/Library/Application Support/Alwan Color Expertise/AlwanColorHubX/Profiles
- /Applications/Alwan Color Expertise/AlwanColorHubX/AlwanColorHubX.app/Contents/Resources/Profiles
- /Users/$USER/Library/ColorSync/Profiles
- /Library/Application Support/Adobe/Color
- /Library/ColorSync/Profiles
- /System/Library/ColorSync/Profiles

Under Microsoft Windows Alwan ColorHub uses ICC profiles found in 3 different locations listed below:
- %APPDATA%\Alwan Color Expertise\AlwanColorHubX\Profiles
- C:\Program Files\Alwan Color Expertise\AlwanColorHubX\Resources\Profiles
- C:\Windows\system32\spool\drivers\color

To know the location of a selected profile, put the mouse pointer on the profile name and a tooltip showing ICC profile location will be displayed:



4.1.2. Import/Export settings with embedded profiles

When settings are saved, ICC profiles are automatically embedded. During settings import, embedded profiles are automatically saved in ACH specific folder:

- MacOS: /Users/$USER/Library/Application Support/Alwan Color Expertise/AlwanColorHubX/Profiles

- Windows OS: %APPDATA%\Alwan Color Expertise\AlwanColorHubX\Profiles

Note:

Before exporting and importing settings, please make sure that profiles embedded are royalty free and intended for public use.

4.1.3. PDF/X compliancy

PDF/X-1a: 2001, PDF/X3: 2002, 2003 and PDF/X4: 2008 are supported.

Alwan ColorHub is compliant with the following internationally recognized test suites:

- ECI Altona Visual and Technical,

- GWG 2006

- Kensington Suite

Output CMYK Profile is always embedded as the Output Intent for PDF/X files regardless of the "Embed Output Profile" box setting.

When PDF/X Output Intent profile is not embedded in the original PDF/X, ACH will look for the profile in all profiles folders as described in "ICC profiles used by Alwan ColorHub" paragraph.

Please copy all the profiles you intend to use in your Profiles folder for an automatic recognition by the software:

Windows: %APPDATA%\Alwan Color Expertise\AlwanColorHubX\Profiles

MacOS: ~/Library/Alwan Color Expertise/AlwanColorHubX/Profiles

If Output Intent refers to a Profile not contained in your Profiles folders, the Log Manager will inform you. In this case, the Queue Default Input CMYK Profile is used.

4.2. Advanced options for specific cases

Please contact Alwan Color Expertise Support if you need to change these defaults settings:
JobTask_enfocusCertification option can be set to:

0: Optimized PDF keeps its Enfocus® Certification tags (default setting)

1: Alwan ColorHub puts any Enfocus® Certified PDF in JobError folder and does not optimize it

2: Alwan ColorHub deletes Enfocus® Certified PDF tags after Optimization: useful for some Adobe Acrobat® and Enfocus Pitstop® versions that show an inconsistent behavior when reading an optimized Certified PDF.

By Default, this option is set to 0

JobTask_markPDFFile can be set to:

YES: Every PDF you process using Alwan ColorHub will be marked and recognized if submitted to a second optimization.

NO: PDF won't be marked when optimized with Alwan ColorHub.

JobTask_treatMarkedPDF can be set to:

YES: All PDF whether marked or not will be processed with Alwan ColorHub.

NO: PDF previously processed by Alwan ColorHub, won't be processed again. This option is useful to prevent a second undesirable optimization from occurring

By default, JobTask_markPDFFile is set to NO and JobTask_treatMarkedPDF is set to YES.