

The 6 Cs of Color Management

How many sheets will be used during verification in EFI ColorGuard?

In EFI™ ColorGuard™ verifications will use a single sheet for all handheld and scanning measurement instruments. There are some exceptions, like a verification against G7® Colorspace for instance. That is done with a TC1617 / IT8.7/5 profiling charts and depending on the used measurement instrument, can take several pages. This is not a verification that a user would do on a daily basis though typically. Most verifications are based on small charts / wedges like G7 Verifier, Idealliance® Control Wedge 2013, or Fogra Media Wedge 3.0, which are all small and fit on a single sheet.

How reliable can we handle color consistency by using EFI ColorGuard?

EFI™ ColorGuard™ allows you to set up verification and recalibration schedules. You can set the schedules up in a way that they match the stability of your specific printer/media/toner/ink combination. Especially when you verify on a regular basis, you can't miss any deviations in color. Recalibrations have proved to be a very good way to get a system back under control if a verification "fails", or, when you also set up recalibration schedules on a regular basis, you can entirely avoid ever ending up with a "failed" result. So EFI ColorGuard does a reliable job in this area.

Which color standards would you recommend? Would it be Fogra standard or ISO 12647? Using the Fiery® digital front end (DFE)?

Many factors play a role here. I'd highly recommend trying our <u>EFI™ ColorGuard™ verification</u> <u>assistant</u>. It gives you quick and useful advice on how to get started with EFI ColorGuard in YOUR print shop!

In Fiery Color Profiler Suite, which one should we use when color matching 2 printers? Printer Match or Device Link?

In Fiery® Color Profiler Suite Printer Match is your best choice when you have multiple printers of the same model and want to align their color. In general, the alternative, if you have different models, maybe even from different brands, is to work with simulation profiles. You could compare the different media profiles for your printers in Profile Inspector (Fiery Color Profiler Suite) and find the one with the smallest gamut. If you know select the media profile with the smallest gamut as your simulation profile, then all other printers will attempt to simulate the colorspace of your "smallest" printer. The color management workflow would be:

- Source profile -> Simulation Profile -> Media Profile
- The Source profile is defined by your job typically GRACoL[®] 2013 or PSO Coated V3.
- The simulation profile is the media profile of your printer with the smallest gamut.
- The media profile is the individual media profile of your printer.

You can always remove the simulation profile, for instance temporarily, if you want to print on the full capability of a printer. But as long as the simulation profile remains active, all printers will simulate the one with the smallest gamut, which aligns their color.

I would recommend relative colorimetric rendering intent with black point compensation as the rendering intent for both the simulation profile and the media profile.



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I have a Xerox Iridesse printer and I use my own profile calibration, how can I use the same profile on my monitor to give the same color that I wish to print?

First you will need a calibration and a profile for your monitor. Without that, color management does not know how to "translate" your colors to your monitor. You have a calibration and profile for your printer, so that is covered. Now there is a really nice and straight forward workflow through Fiery® ImageViewer that I would recommend. There is a short video from us on YouTube that you should watch.

I know Adobe® InDesign® doesn't export transparencies easily. Unless you set the proper export PDF preferences?

In the DTP application of your choice, look for an "export" option that allows you/your customers to save the PDF in the "PDF/X-4" format. That is a really good start and will take care about your transparencies as well.

How do I access the EFI ColorGuard software?

EFI™ ColorGuard™ is one of the EFI IQ™ apps. As EFI IQ is a cloud solution, you need to create an account at iq.efi.com and onboard your Fiery driven printer. Purchase a subscription to EFI ColorGuard via your Fiery reseller, or on our EFI eStore at estore.efi.com. Learn more at https://colorguard.efi.com. Do not forget that we also have eLearning courses on all aspects including getting started with EFI ColorGuard right here.

Does Fiery have solutions for wide format - specifically HP Latex printers?

Yes. Fiery® XF is our software digital front end for wide to superwide print production and proofing. Here, you can find a list of all 2,200+ supported printers, including HP Latex printers.

We typically print our products on coated 10pt stock, but we run our calibrations on 80# gloss stock. Should we be calibrating to the 10pt stock instead?

We highly recommend using individual calibrations for individual media types. You can get away with using one calibration for multiple media types if they are **very** similar...in terms of weight, media weight, and coating. But if you are working with a glossy and a non-glossy media, two individual calibrations will be a much better idea. And you should recalibrate both of them on the matching media. Creating a calibration is not that tricky. I recommend creating one for the 10pt stock, then recalibrating on 10pt stock media on a regular basis (easy to set up with EFI™ ColorGuard™), and then create a second calibration for the 80# gloss stock and recalibrate on the 80# gloss stock on a regular basis as well. And ideally, you couple those two calibrations with two individual media profiles as well – that will give you the best results.

Is it an issue if files are mostly TIFFs?

It's not an issue per se, as color management can be done with TIFF files without problems as well of course, but if your customers provide files with brand colors that need to be reproduced very precisely, then this is rather complicated with TIFF files, as TIFF files can't include named spot colors, like the Adobe® PDF file format. Those spot colors will be detected by the DFE and then get translated into the proper device-independent L*a*b* value, which can then be separated out on your printer for the perfect match. If spot colors do matter to you and if your customers do not have any special requirements like VDP printing, or provide documents with complicated transparencies and overprints, then sticking to TIFF is perfectly fine. In our



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experience, the PDF file format is completely dominating the print industry though and there are multiple good reasons for that.

We currently use AVA software to send files to the Fiery as TIFFs, would this be an issue with color management?

See answer above.

How can we uncheck a media defined profile in the current Fiery Command WorkStation version?

Rather than select a specific output profile for your job, you can let the Fiery[®] server determine the output profile automatically. The color mode and media type used in the print job determine the profile, or if the job uses media from Paper Catalog, the output profile specified in Paper Catalog is used. For a Fiery Server with FS150/150 Pro or earlier software: Set Output profile to "Use media defined profile". For a Fiery Server with FS200/200 Pro or later software: Set Output profile to "Use job defined settings". This is a very useful feature and makes the choice of media profile immune to manual errors. If you want manual control however, just double-click the job, go to "Color" in Job Properties and select a specific media profile - this is then the opposite of letting the Fiery chose a media profile for you.

What is the best media to use for calibration? I am using Konica Minolta C1060, and the tech told me that 100lb glossy text is the best. Is that correct?

Use the media you need to print your jobs on. In general, each media type needs its own calibration set. The only exception is when media is **very** similar in terms of weight, gloss, and media white point.

If we have to calibrate with paper other than what is in the library, can the color still be consistent?

Sometimes certain calibrations can be used on multiple media types, especially when the media types are **very** similar in terms of weight, gloss and media white. In general however, you will want to recalibrate a calibration on exactly the media it was created for, otherwise the outcome can be unreliable and in the worst case counterproductive.

Is this something that Fiery JobExpert would manage to perform some form of Conformance?

PDF conformance can be achieved in multiple ways. You can achieve it with a "workflow template" on a Fiery[®] XF and Fiery proServer DFE. You can achieve it by manually configuring an older Fiery version based on a detailed (but easy) guide we will provide to you when you sign up for the certification. Fiery JobExpert™ is just by far the easiest way to pass the certification as it configures the entire Fiery DFE in literally two clicks.

PDFs — Is there a PDF guide to share with my clients to use when they save their job as a PDF for Ricoh/Savin 7210sx printer?

In the DTP application of your choice, look for an "export" option that allows you / your customers to save the PDF in the "Adobe® PDF/X-4" format. That is a really good start.



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Years before we've seen scoring system for Calibrator, which is telling us to check print engine or not (according to measured delta). But the delta value recommended to check the print engine was always different. Can you clear this topic? What's the good practice for checking acceptable delta?

For calibration we try and display a visual difference between the target and the measured value. Since we are showing this based on density, we cannot display this in dE. We give you a percentage of difference based on visual perception. If there is only 1% difference in visual, then there really is not a need to call service or make a new calset. If you start seeing a 5% or more, then you should take some action, or an engine side service process. We use these general guidelines, so you are not stopping production for variance that is not going to really impact the quality.

Many digital press vendors today work with metallized color channels. Any solutions here from EFI CPS you provide to make customers' life easier?

We do not have a profiling solution for metallic colors, as the measurement part is really tricky (you would need multiple angle measurements, a gloss meter and then the light conditions would play a major role). They can't easily be measured as L*a*b* values, which makes them hard to handle within a color management solution. Fiery® Spot Pro allows users to control process colors and metallic colors in the context of a named spot color. ImageViewer allows users to control the gradation curves of metallic channels and the Fiery DFE has options to generate metallic channels as well.

One issue that we've run into is knowing who to reach out to in order to find out how to correctly use/utilize our press and software for optimal color accuracy. EFI/Fiery will recommend one thing but the press technicians will recommend something different. Who are the best people to contact to learn how to have the press/Fiery RIP setup correctly?

A very neutral way of approaching the topic is to dive into our free eLearning courses at https://learning.efi.com/. They are all sorted by topic, and you will be able to easily identify the courses that help with color accuracy. If you want a more hands-on or even onsite experience, then ordering a professional service from EFI[™] is an option as well. If you want to evaluate your options, you could start with this request form.

How do I get EFI ColorGuard? Is it part of Fiery Command WorkStation?

No, it isn't part of Fiery Command WorkStation®. EFI™ ColorGuard™ is one of the EFI IQ™ apps. As EFI IQ is a cloud solution, you need to create an account at iq.efi.com and onboard your Fiery Driven™ printer. Purchase a subscription to EFI ColorGuard via your Fiery reseller, or on our EFI eStore at estore.efi.com. Learn more at https://colorguard.efi.com.

What tool could I give my print buyers to ensure that their PDFs conform?

Unfortunately, there is no solution EFITM can offer in this area, as we are more focused on the print shops. The minimum requirements that you should raise towards your customers is that they save their PDFs in the format of PDF/X-4 as that will already prevent a lot of issues. A solution you could discuss with your customers might be the one from Enfocus Pitstop for preflighting. Enfocus has a subscription model and even a 30-day trial. If you want to check the



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PDFs in the print shop instead, then check out a new feature in Fiery[®] Graphic Arts Propackage called Fiery Preflight Pro that checks for PDF conformance. Find more here.

I want to minimize receiving non-conforming PDFs, so a tool like Fiery Preflight Pro would be local to my shop rather than my clients checking their own PDFs before they submit. What could they use?

Unfortunately, there is no solution EFITM can offer in this area, as we are more focused on the print shops. The minimum requirements that you should raise towards your customers is that they save their PDFs in the format of PDF/X-4 as that will already prevent a lot of issues. A solution you could discuss with your customers might be the one from Enfocus Pitstop for preflighting. Enfocus has a subscription model and even a 30-day trial. If you want to check the PDFs in the print shop instead, then check out a new feature in Fiery[®] Graphic Arts Propackage called Fiery Preflight Pro that checks for PDF conformance. Fine more info here.

Can you calibrate from different color pattern, and can it be more than one?

In many cases, Fiery® DFEs offer different layouts for calibration charts so that users can choose the one they like most. There are different pros and cons. For instance, a randomized chart has the downside of not being "readable" by the human eye (if you want to verify that your gradations are smooth, for instance), but has a better spread of the patches over the sheet, which can make the calibration more solid on systems with deviations from left to right and top to bottom. A sorted chart is readable by the human eye, but isn't ideal if your printer deviates (e.g. in density). In general, our recommendation is to choose a randomized calibration chart for best results. You can rely on the calibration doing its job properly without having to verify it with the human eye.

Is the EFI ColorGuard FREE TRIAL fully functional?

Yes, the EFI™ ColorGuard™ is fully functional without any restrictions on as many printers in your print shop as you like for 30 days. Learn more here — a good place to get more details and watch product videos and "Start a trial".

In Consistency you mentioned Fiery Driven printers. What about the environment and paper?

By scheduling verifications on a regular basis (the fifth C – Control), you can make sure that you capture environmental and media changes as well. If the verification for instance gives you high dE values only in the area of the media white, then you can check whether the operator really used the correct media. You ideally control the environment of your print shop in terms of humidity and temperature and keep it as stable as possible, but if that is not possible for any reason, then again in the stage of verification ("Control") you will see that your values are going up and you might even "fail" a verification. The corrective action of choice is then a recalibration, which will bring the printer/media/toner/ink combination back to the state it was before, and it can react to environmental changes as well and counter them. If you schedule recalibrations on a regular basis, then you can avoid these problems without having to find them first!



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I assume that I need Color Profiler Suite to be able to do all these adjustments that have been covered so far. What's the cost to get the license for this?

Calibrations and recalibrations can be done with Fiery® Calibrator, which is also part of Fiery Command WorkStation®, so free. Profile creation (our "Characterization" C) is done by Fiery Color Profiler Suite. There are multiple configurations available and the lowest one starts at \$3,500 MSRP for Fiery Color Profiler Suite with 1 year of Software Maintenance and Support and an EFI ES-3000 measurement instrument, or at \$2,370 for Fiery Color Profiler Suite with 1 year of Software Maintenance and Support without the measurement instrument, e.g., if you already have one. Please check with your local reseller on what price they can offer to you, or, visit the EFI eStore.

Is Fiery JobExpert part of Fiery Color Profiler Suite?

Fiery[®] JobExpert[™] is part of the Fiery digital front end (DFE) and supported on "newer" Fiery systems. If you want to find whether your system supports it, then please have a look at this web page.

How does Fiery work for Landa Presses with seven colors CMYK+OGV. Is it possible to create extended gamut profiles?

Yes, it is possible. Fiery[®] Color Profiler Suite supports CMYK+OVG calibration and profile creation.

Considering that Adobe® CC is not using pantone libraries anymore, how will Fiery manage the Pantone colors?

All Fiery[®] servers ship with Pantone libraries. If documents contain Pantone colors, those will match the libraries in the Fiery and won't require any special license to print those Pantone® colors.

Can we check a printer's condition through the DFE?

It depends a bit on what you mean with "printer condition". A good way to check the condition of a printer is performing a "verification". You can trigger this either offline through Fiery[®] Color Profiler Suite, or online and scheduled through EFI™ ColorGuard™. If you have Fiery Color Profiler Suite installed locally, then you can also right-click a specific job and go for a "Color Verification…" which will verify the output of the selected job in a small wizard.

Can the DFE calibrator check the engine condition as well during calibration?

Fiery Calibrator supports some self-calibrating techniques of printers, but the answer heavily depends on the printer model. If the self-calibrating techniques are supported, then Fiery® Calibrator allows users to select them in the calibration wizard. The self-calibrating techniques are then initiated BEFORE the calibration takes place so that the printer is in a "defined" and reliable state. It is as easy as choosing the desired self-calibrating technique in a drop-down in the user interface.



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I work in the printer manufacturing industry. Our customers tend to use the most economical paper stock available to them. These papers have, historically not been compatible for use in ISO standard color management and tend to cause failures at the verification stage. This in turn means most commercial printers abandon the process. Is there any change to this situation? i.e.: have standards changed to accept a wider array of media?

A great question and something many customers struggle with. Most of the international standards have their roots in analogue printing systems and define the targeted media white by color references like GRACoL® 2013 or PSO Coated V3. Many production media are quite "far away" from these media whites and often even include optical brighteners, which can mean that your verification is already "failed" before you put any toner or ink on the media, just because the media white is completely off, which is frustrating. Fortunately, there are alternatives. First organizations like Idealliance® and FOGRA have understood this challenge a long while ago and they offer "media relative" alternatives for verifications in the digital printing space. Those will treat the media white of your production media in a "relative" way so that you will not fail the verification just because the media white is different. You will want to check out the tolerance sets "Fogra PSD 2022 media-relative" for Europe, and G7[®] Colorspace Proof - Relative (SCCA), G7 Colorspace Press - Relative (SCCA), and G7 Targeted - Relative (SCCA), with "SCCA" being the keyword. These are media relative versions of the G7 tolerance sets and is the solution in the Americas. All of these are supported in Fiery[®] Color Profiler Suite and EFI™ ColorGuard™. EFI ColorGuard on top offers an interesting alternative that we call "device benchmark". Here we just capture the current state of your printer/media/toner/ink combination but not in relation to an industry print standard, but rather just by its own. The next time you verify against your own device benchmark (think of like a snapshot), we will just figure out if anything changed and then recalibrate as necessary. So this is a verification workflow that can be used completely independent of the official industry color standards and some users appreciate that.

Is there a software option that checks the PDF files for correct setup?

There is a new feature in Fiery[®] Graphic Arts Pro package called Fiery Preflight Pro that checks for PDF conformance. You can find more information <u>here</u>.

How do we get operators properly trained and certified on Color Profiler Suite? We currently have 3 Ricoh 9200 Color machines, and we are having A LOT of problems getting our machine colors to match. Is there someone we can reach out to help us with this? We are in the healthcare market and brand color and consistency is VERY important. We just don't have the knowledge to fix it?

The best place to start is by going to our free courses in our learning platform here.

Does Fiery Preflight Pro contain the GWG tests and checks?

Here is a list of Fiery® Preflight Pro functions: Verify file compliance against industry standards, like ISO (PDF/X, PDF/VT, PDF 2.0, etc.), or Ghent Workgroup, Identify potential errors like low-resolution images, overprint, or missing spot colors, View errors and warnings in the interactive Fiery Preflight Pro report.



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How can I select which one I want to check and preflight?

In Fiery® Command WorkStation® you select a job, right mouse click and in the drop down menu there will be an option for Preflight Pro. When you hover over Preflight Pro you will see the options for the various GWG preflight settings. You can then pick the one that best matches your workflow (CMYK, CMYK and RGB, CMYK and spot, CMYK and RGB and spot). From there the preflight will run and you will be presented with a report.

Can the verification average range can be defined by me?

Pretty much anything in a target tolerance set can be edited by the user, for instance in order to create a custom or a house standard. You can typically activate and deactivate tolerances, you can change the target values and you can make it easier or harder. The level of customization is high enough that you can really create a verification that 100% fits to your specific needs. This is true for both Fiery® Color Profiler Suite and EFITM ColorGuardTM.

I have a really old copy of Fiery Color Profiler Suite somewhere, can I use it for step 3?

Possibly. Of course, you need to bear in mind operating system support etc. plus that there's been may improvements over the year. Find out your version and maybe take a look at the why-upgrade and how to upgrade pages on efi.com.

I have Fiery RIPs on my large format printers too, does this all work the same?

In principle yes. The 6 steps are all relevant. The only difference is right now ColorGuard isn't available for Fiery XF or proServer, however you can verify with CPS, but, tracking color over time, verification schedules, reporting, and analytics would need to be done manually. The Ghent PDF certification is fully supported by Fiery XF and Fiery proServer as well!

How do I know when I need to create a fresh profile, versus when I need to just recalibrate? How do I tell?

Starting with a recalibration is always the best first step. Chances are that the recalibration will get you back into the passed state, if the media profile was made for that specific media. If you do a verification against a custom or industry standard after the recalibration and you are still not in the passed state, then creating a new profile is the next logical step.



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To have my output not only consistent over time, but also across all my digital printers, do I need to stick to one printer brand, or can I mix and match?

A great way of aligning the color output of multiple printers of different models and different brands is to stick to industry color standards. If your devices print within the tolerances of an industry standard, which you can verify against on each printer, then you can basically print your jobs on any of the printers and they will look very similar as long as each printer/media/toner/ink combination is capable of simulating the industry standard which you can again find out by doing a verification. On top of that there are additional techniques like the usage of a common simulation profile or Fiery Color Profiler Suite's Printer Matcher that you can use to further align the color output of printers. I would recommend checking our eLearning offering in that area...you will find it very helpful.

Another component to consider here is whether the DFE of your choice is capable to drive multiple printer brands and technologies, or whether it is proprietary, so only working with a particular brand. Choosing a DFE that can drive multiple brands is very beneficial as all your operators, also the potentially new ones in future, only need to learn a single workflow, not multiple, which can have a huge impact on your productivity.