*press*SETUP

basICColor®

Quick Guide

Preface

Using the *basICColor pressSETUP* test form a printing press can be set so it works within a certain standard, like the Process Standard Offset (PSO) for example. This can be achieved in a very short time with all requirements met. Furthermore, unusual and new paper types and foils, that aren't defined in a standard can be set to a defined house-standard.

The great advantage of the *basICColor pressSETUP* test form is that the full setup of the printing press and the CtP image-setter is done in just one print-run.

In less than 2 hours a printing press is set to new stock or a printing standard (keyword FOGRA51/52).

Quick results are achieved by using *basICColor certify*, a module of the quality control software *basICColor catch QC*. Immediately the inking zone with the largest printing contrast (normal inking) and the smallest ΔE to a certain reference is shown for each ink.
basICColor *calibrate* creates calibrating curves for the image-setter-RIP that are more accurate than out-of-the-box image-setter calibrations.

This quickguide explains how to use the *basICColor pressSETUP* test form to setup a printing workflow.

Preparation

It is absolutely essential to establish a reproducible environment and to keep records when setting up an offset printing press to a certain standard. This makes it easier to trace an error if color deviations appear at some stage!

Following points must be done and documented prior to the setup.
- calibrate image-setter
- determine density status of the process control
- keep record of ink type and series
- check blankets and for wear and tear and replace if required
- record climatic environment
- keep record of conductance value

Recommendation: Please handle the printed pressSETUP sheets with care - the TVI is measured on the same sheets at a later stage.

Sequence of work

Preparation

Printing of the test form

Evaluation
chromaticity coordinates/ink application/
density values

Evaluation of the tone value increase

basICColor pressSETUP

Optional profile creation
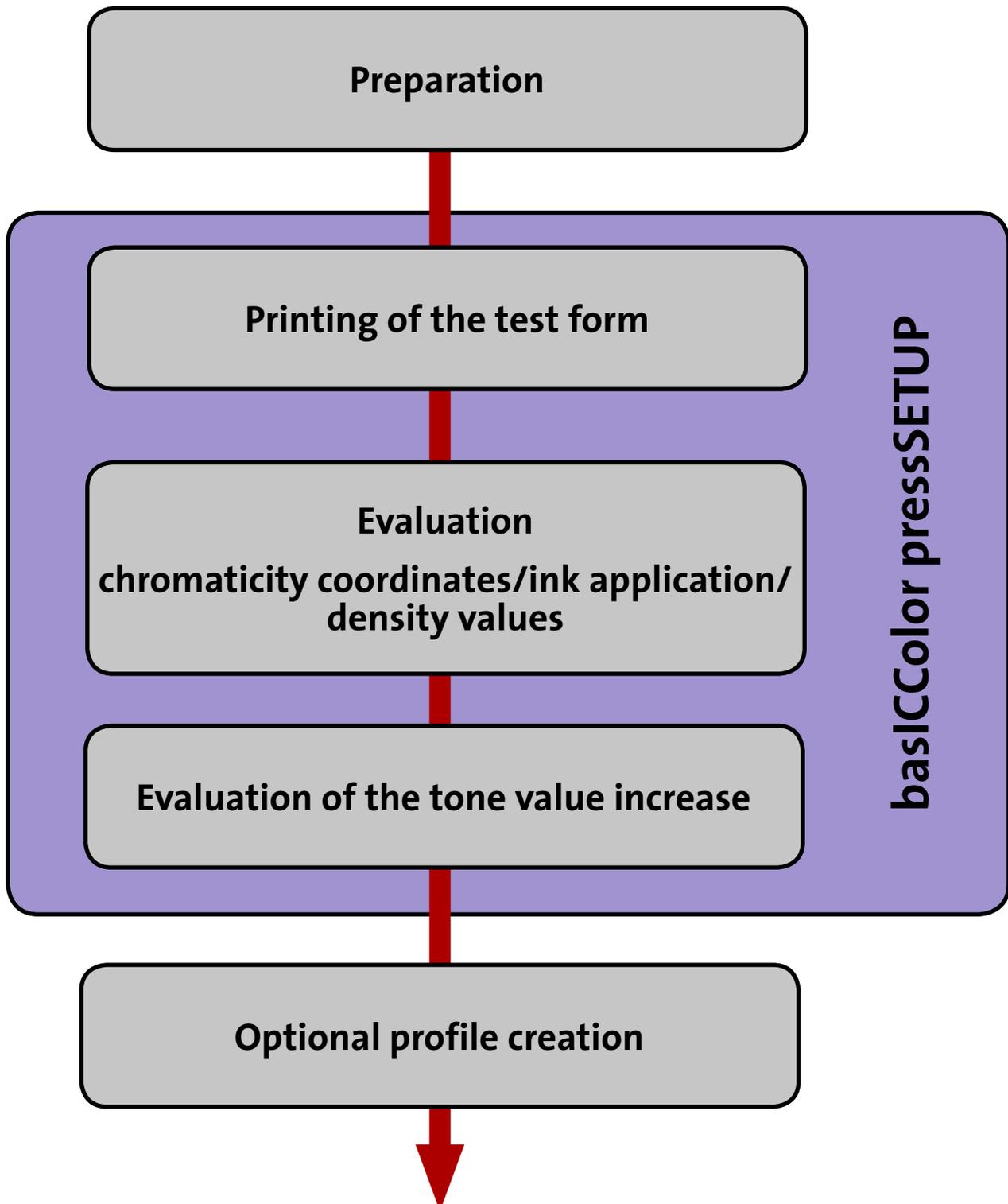
Overview of the bas
printing test fo

Density gradation- chart
This chart shows the ideal density gradation over the sheet width for each primary color.
The zero point for the over- and under coloring is ideally in the middle of the printing sheet.

Slurring and ghosting
This area hosts the printing control tools for slurring and ghosting.
Also, the primary color circles are located here. Big circles indicate an over inking in this area, small circles indicate under inking.

Solid tone densities & print contrast
These two measuring rows (A and B) are for determining the solid tone densities and the relative print contrast

Information
In this area a record of the printing parameters must be kept..

Wet- and Dry densities
A record of the determined wet- and dry densities must be kept here
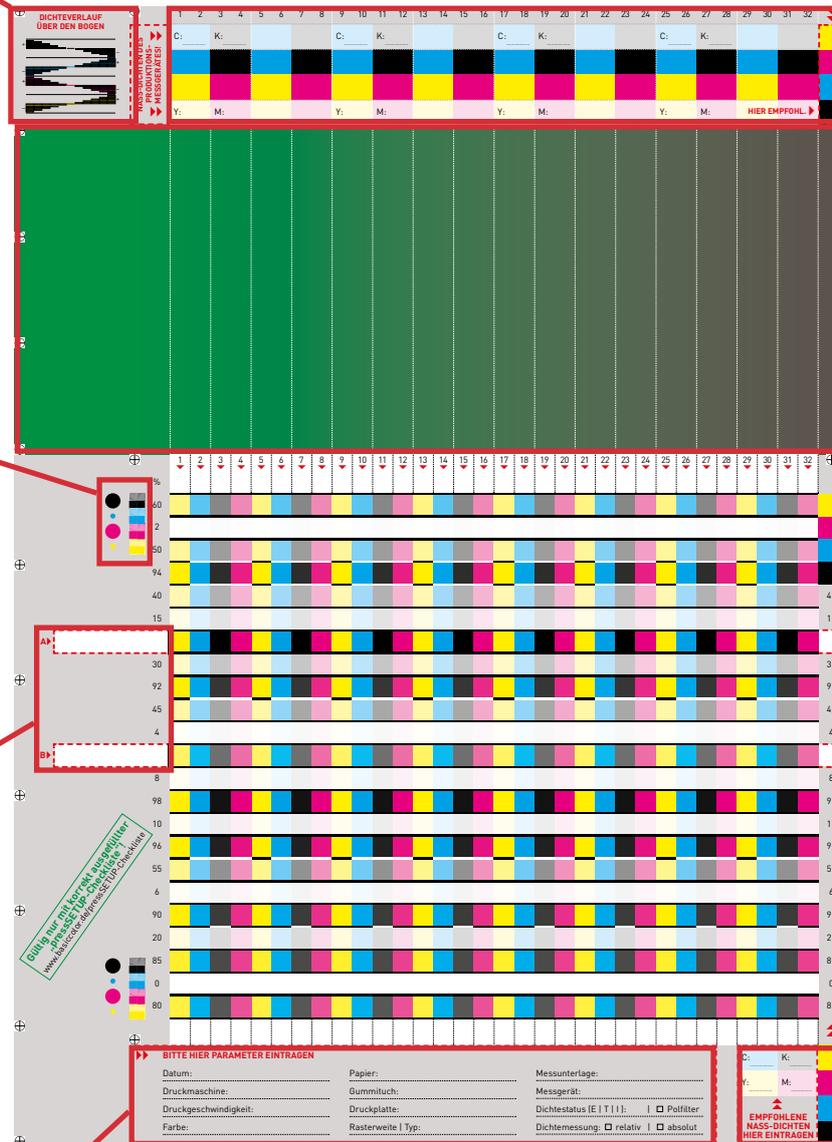
sICColor pressSETUP
rm - elementes
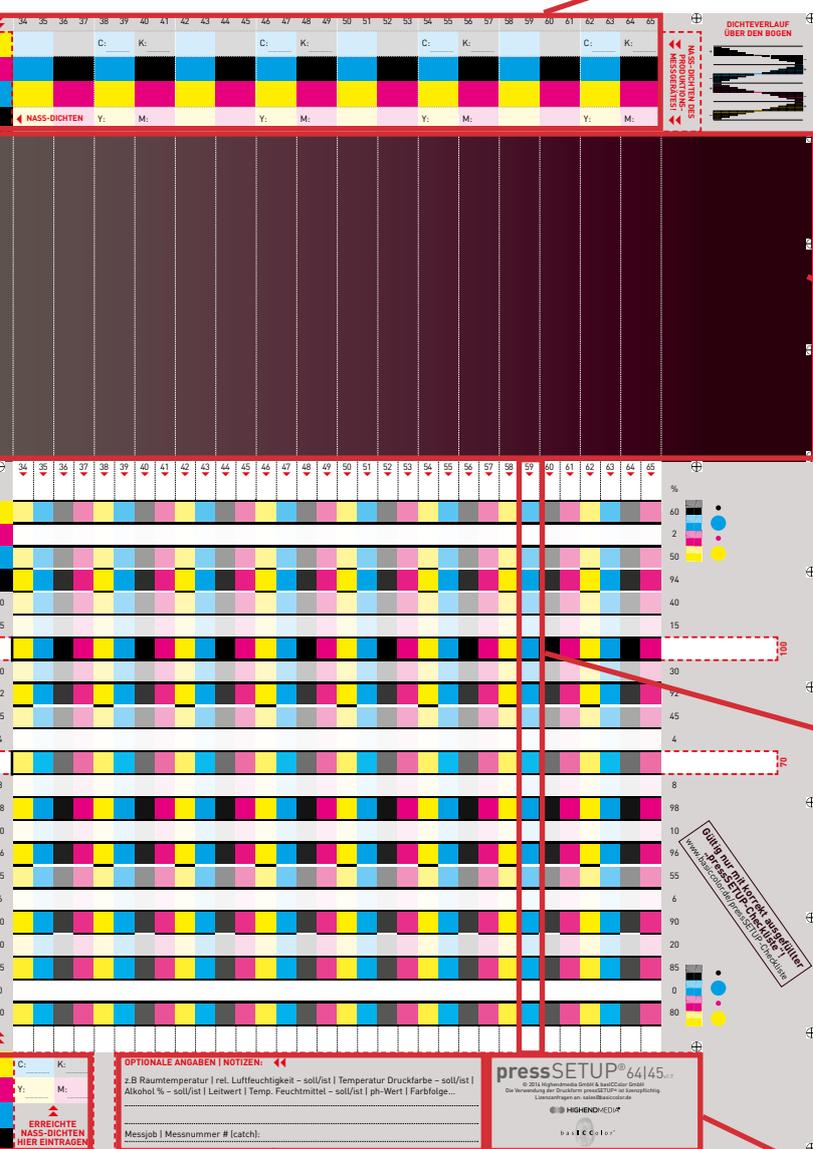
Densitometer-measurement bar
In this area the solid tone densities of each primary color can be measured with a hand-held densitometer and can be documented also.

Ink gradation
The gradient across the sheet width achieves an varying ink decline of the primary colors in the different ink zones - this produces an under- and overinking on purpose

TVI - Tone Value Increase curve
The columns 1-65 are for measuring the tone value increase of all primary colors.
To determine the TVI only one strip is measured for each primary color. It is the strip where the optimal density, ink application or chromaticity coordinate was established.

Optional information
In this area you can add additional information to the job or the printing conditions..

Copyright & Version
Detailed copyright and version information of the *basICColor pressSETUP* test form

Printing the test form

When printing the test form it is a must that ALL ink keys for each ink are set to the same value, as to achieve an even ink spread over the width of the sheet.

Reference for all ink zones is the ink zone that is considered to have the ideal density values (normal inking).
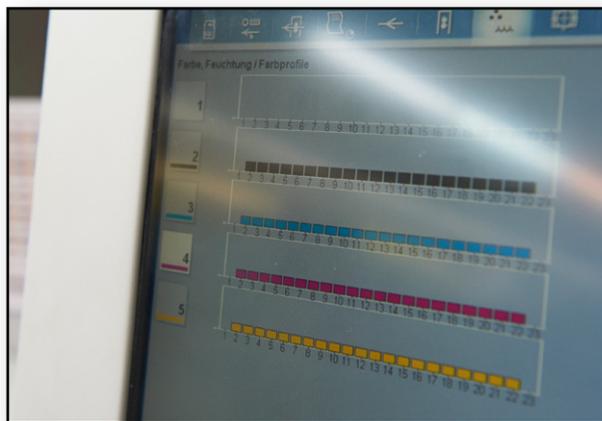
With the even opening of all ink keys an over- or under inking of each primary color occurs in the respective zone over the width of the sheet. This effect is specifically wanted and an essential part for the correct setup of the printing press with the *basIC-Color pressSETUP* test form.

The ideal case would be an over- or under inking as shown on the pictures below. (left: optimal ink gradation, right: practice example)
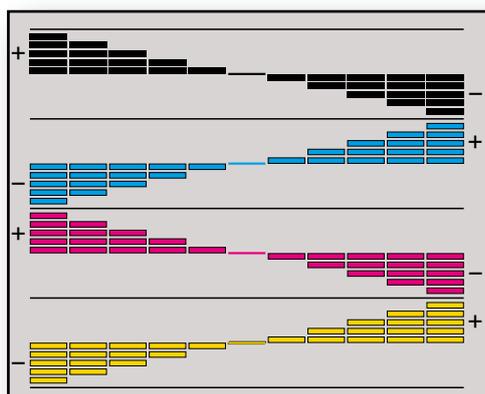
5 to 10 printed sheets are needed for the evaluation and the further setup process. Please take the sheets evenly spread from the print run.

IMPORTANT: *save the measuring report of the printing press or transfer the density values for each zone to the test form manually.*

Evaluation chromaticity coordinates / ink application / density values:

The selected sheets have to be measured and evaluated next.
Start *basICColor catch 5* and select the „Solid Color" Job that fits your measurement device and the required standard in the category „pressSETUP".
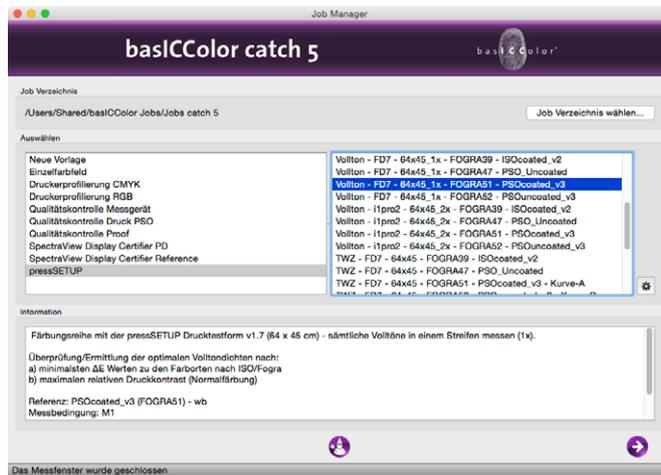
! **Note:** *Please bear in mind, that jobs marked with „*- 64x45_1x -*" are for measure-ment devices with a longtrack guide like the Konica Minolta FD 7. With this kind of guide it is possible to measure the row in one go over the sheet width. For measurement devices with a shorter guide like the X-Rite i1 pro, the test form was developed to measure the row in two separate strip-reading actions (left part --> right part). For this type of measurement device the fitting jobs are marked „* - 64x45_2x -*".*
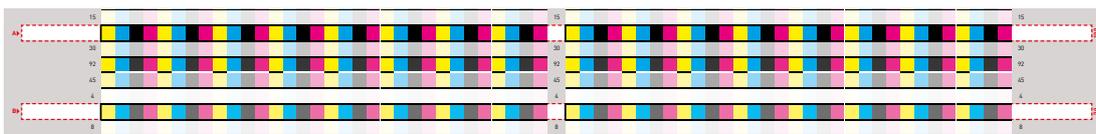
The rows marked A and B, sitting transverse to the printing direction, are to be measured.

Depending on the printing stock used we recommend to use a varying number of sheets to compensate for process related deviations. The basic rule is: the duller, coarse or struc-tured a printing media is the more printed sheets should be measured and averaged.
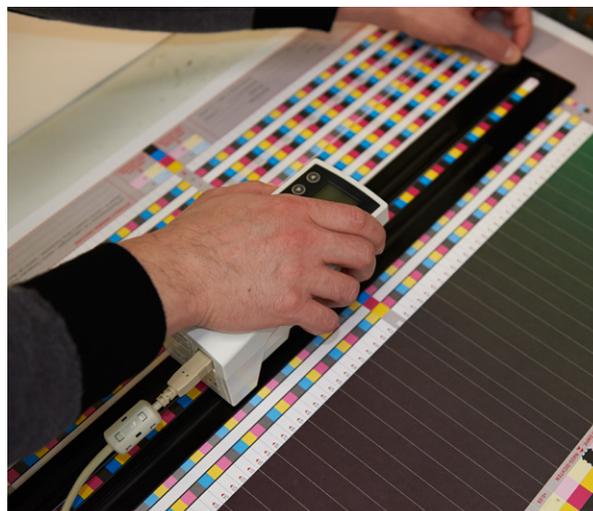
Averaging the results

The measurements are then merged into one measurement by applying the „Average" function of *basICColor catch*.

Once the measuring of the last sheet is complete click on the icon ◺ „Measurement" in the measuring window of *basICColor catch* an select „New Measurement" to create a new measurement. This measurement will later hold the averaged measurement data. Open this dialog window again, but this time select „Load…"

Now mark all measurements you wish to average with <cmd>-click on Mac and <strg>-click on PC and confirm with a click on „Average".
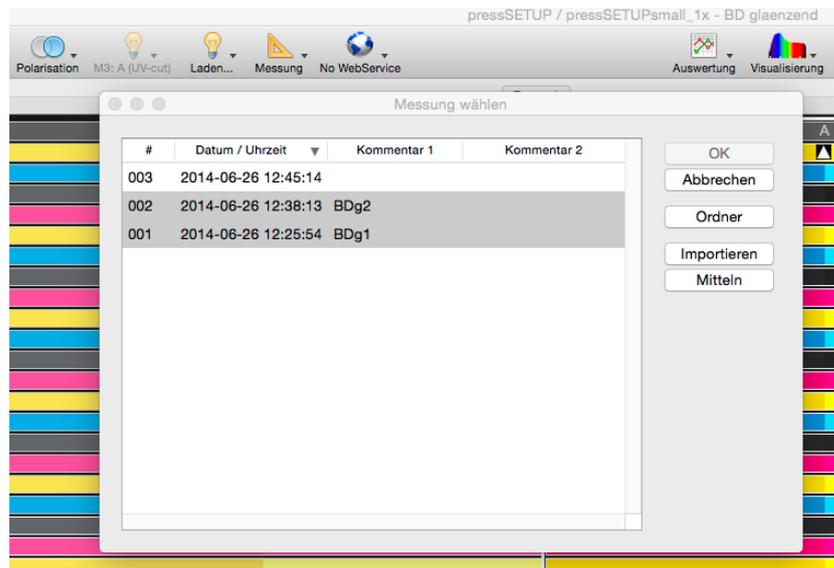
The averaged data is now calculated and saved in the earlier created measurement.

With this approach deviations, that might happen throughout the print-run, can be compensated and the user gets one measurement file that reflects the print run.

❗ *Please note that the basic module basICColor catch is needed for the „Average" function.*

Printing contrast/smallest ΔE

Within the measuring window *basICColor catch* marks two color patches for each primary color with an icon.

This icon appears in the measurements for the solid colors densities. basICColor marks the solid color measurement with the smallest color deviation (ΔE) compared to the chosen standard (FOGRA51 for example).

This icon appears in the second column (or column 3 and 4 for jobs with the „short" ruler) and shows the achieved maximum printing contrast at a (not corrected) tone value of 70%
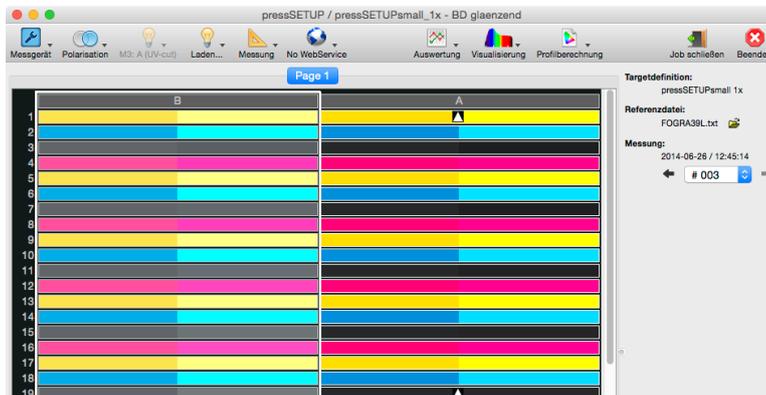
Depending on the aim of setting up the printing press (adaptation to a standard or setting up for a house-standard) one or the other method can be use to chose the solid color density of a primary color.

Select the marked patches of the primary color one at a time and open the spectral window via <cmd>/<strg>-m or via the icon „Visualization" --> Spectral curve
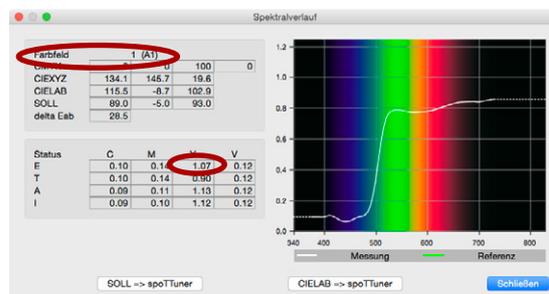
In the spectral window you can find the ID of the measuring patch (for example „patch A1 for solid yellow) as well as the respective density value (Status E -> Y=1.07 in this example).

Mark the determined color patch on all printed sheets and make a note of the deter-
mined density in the notice-field also.

These established solid tone densities (dry) now serve as reference values for the
measured printing process. Take the corresponding solid tone densities (wet) from the
notes taken on the printed *pressSETUP* test form in each zone.

Transfer the determined values to the software of your printing press control panel and
instruct the press operator.

! **Note:** *The solid tone densities determined for the smallest ΔE or the print contrast
are assessed by the basICColor catch jobs not against the printing standard, they are
for information purposes only.*

Tone value increase - TVI

After the solid tone densities have been established, the tone value increase curves can be measured.

You can find predefined jobs in *basICColor catch* under the *pressSETUP*.
The jobname is structured as follows: TVI - <measurement device> - 64 x 45 - < printing standard name>. For a Konica Minolta FD-7 measurement device and a standard „PSO Coated v3 - FOGRA51" the job name would be as follows: TVI - FD-7 - FOGRA51- PSO Coated_v3"
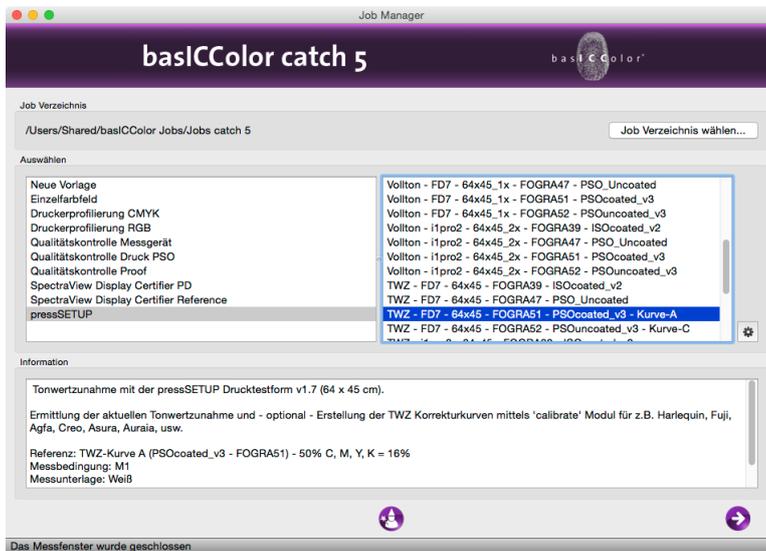
In the measurement window of *basICColor catch* you can see that only 4 strips have to be measured on the printed sheet. One strip per primary color. It is the strip matching the solid tone density on the printed sheet.
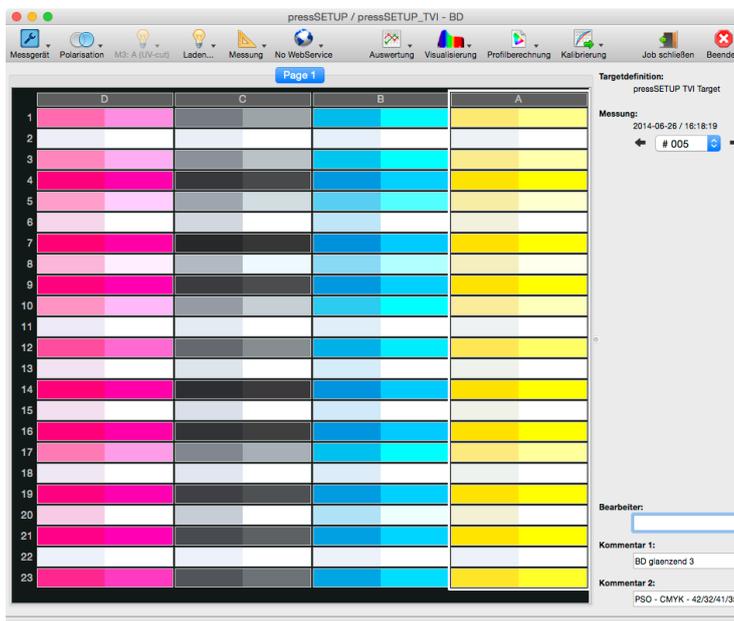
For example, if the determined density value for solid color cyan was the patch ID: 10, then the vertical strip with this ID has to be measured to determine the cyan tone value increase.
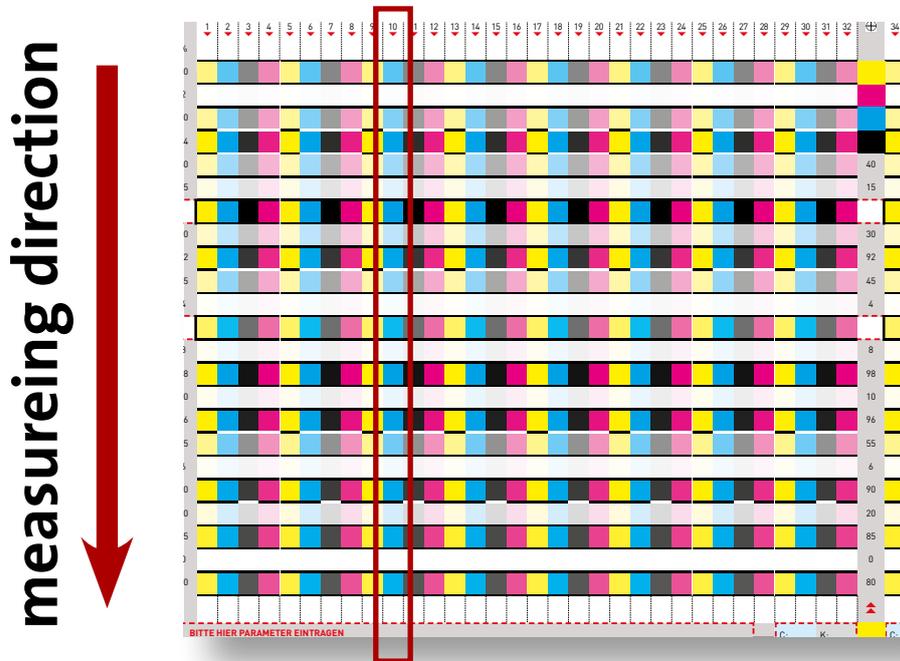
This process is done with each corresponding strip of each primary color.

The procedure is repeated on all selected printed sheets (sheets that were used for measuring the solid tone).

The measured data has to be averaged now. Unlike when averaging the solid tone densities, no new measurement needs to be created in *basICColor catch* now. Instead the additional module „*calibrate*" of *basICColor catch* is used.

To open this module click on the icon „Calibration" in the measuring window of *basIC-Color catch*.
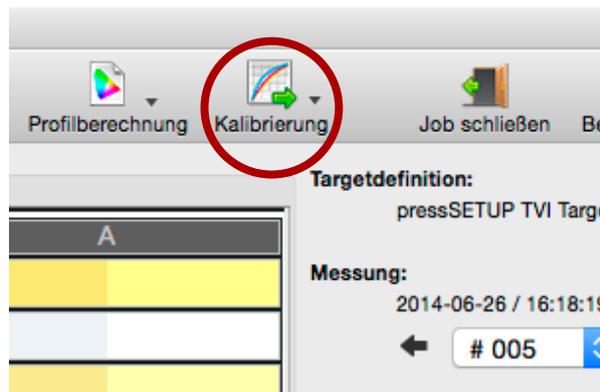
Please select one or more measurements for the creation of a tone value increase curve with „*calibrate*".

Please ensure you only select measurements that were measured on the printed sheets just before.
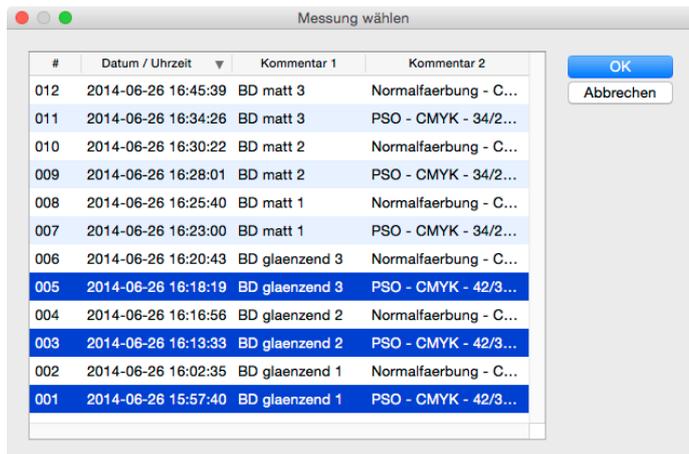
basICColor *calibrate* offers to toggle between measurements to locate and eliminate faulty measurement data.
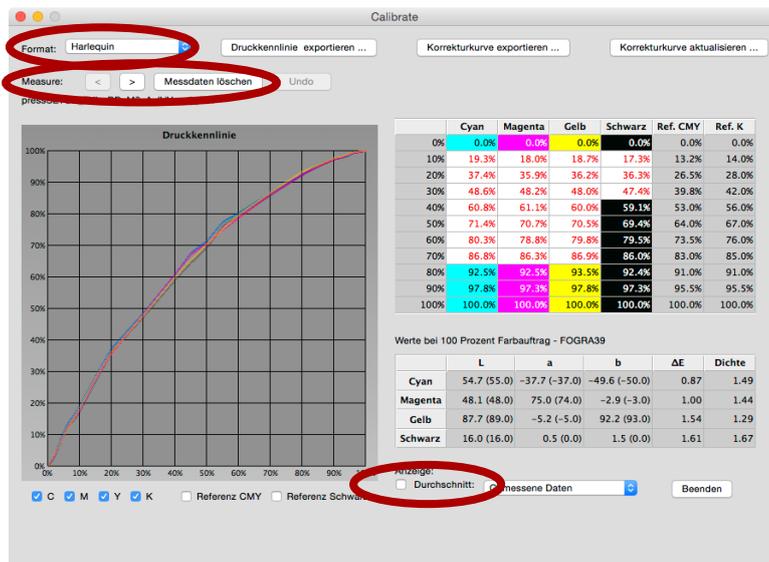
Once satisfied with the selection, click on the ckeckbox „Average" and the measurement data is averaged and a tone value increase curve is created that reflects the average of the print run.

This new printing characteristic / correction curve can now be exported and implemented into the RIP

calibrate supports a large number of RIP-file-formats. Select via „Format" the RIP in use first and save the printing characteristic curve or the correction curve after. Which curve is needed is dependant on the RIP used. Please refer to the operating manual of your RIP.

Summary

By loading the printing characteristic curve or the correction curve to the RIP the process of the press calibration / standardization is completed.

By use of the *basICColor pressSETUP* test form the solid tone densities of the primary colors that are nearest to the standard or had the best printing contrast were determined. Then the tone value increase curves were measured from the same printed sheets and implemented in the RIP in form of correction curves or printing characteristic curves.

When adapting a printing standard, like the PSO Coated v3 (FOGRA51), the exposed printing files have to be in this color space. This can be done with an ICC profile conversion or with a DeviceLink profile. At which point in the production process this color transformation happens is very dependant on the workflow. It can happen at a late stage, just prior to the exposure in the RIP or via a color server or already when the PDF is created in the layout application.

The standard-conform setup process is thereby completed.

The print run for this workflow is now as usual , carried out with the newly determined wet/dry densities and the ink keys of the press be adjusted so that the coloring on the entire printing width is evenly again.

Optional - Profile creation

If it is desired to have an even more exact color adaptation or a more precise house standard, then another ICC profile or DeviceLink profile has to be created for the just set workflow.

- Exposure of the profiling target with the just created image-setter curves.

- Print proof the profiling test form and ensure that an even print happens over the width of the sheet; the print proof has to happen with the determined wet densities.

- Print 50 good sheets; register inaccuracy, slurring and ghosting need to be eliminated prior

- Measuring of appx. 3-5 sheets, the measurement data is then averaged and optimized and a profile is created.

Furthermore we recommend the creation of DeviceLink profiles for the optimal implementation into the workflow.

Product information basICColor pressSETUP test form

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