

Primescan and Newcolor

Reproduction

Quality in Color

Raising your sights
on scanning performance

HEIDELBERG



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Primescan and Newcolor • You need top quality results, while speeding up throughput. Heidelberg raises your sights on scanning with a new hardware/software combination. Primescan takes vertical drum scanning to a new level of quality, while Newcolor extends your scanning capabilities without steepening your learning curve.



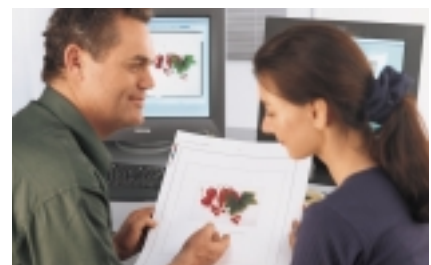
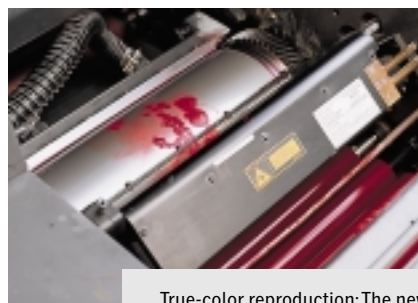
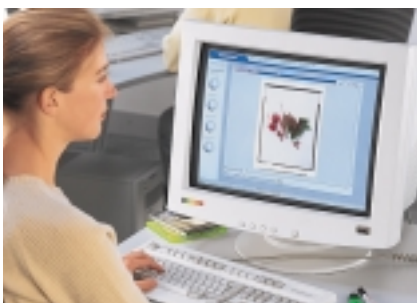
Primescan: top quality drum scanning in a minimum of space.

A better way to scan

The new Primescan family of drum scanners and Newcolor 7000 high-end scanning software are the perfect combination. Together they set new standards for scanning quality and color. Primescan uses optimized special lenses and high-grade sensitive photomultipliers to deliver point-precision image signal quality, which translates to absolute brilliance. Newcolor, meanwhile, can handle any job with ease.

Skin tones, tricky vignettes, soiled colors and colorcasts in backgrounds can be processed effortlessly and speedily. And, different color spaces no longer present a problem. Newcolor lets you navigate among all the color spaces without any loss of data or detail. Newcolor 7000 also offers an easy entry route to the challenging realms of CMYK corrections. For instance, the new Freeze View feature lets you perform direct before-after comparisons in real time, right on your monitor.

Newcolor also equips you with a completely transparent 16-bit workflow and a unique Color Management system. So with Primescan and Newcolor on your side, you can achieve the performance levels set out in detail on the following pages of this guide.



True-color reproduction: The new combination of scanners and software from Heidelberg offers high-performance work-flows that deliver quality designed to make your customers take notice.

Sharpness and color • The secret of an inspiring image lies in its color composition. You can enhance its effect by individually processing the focus and contrast.

The multitude of broken colors on these rusting trucks create a striking visual effect. The effect can be enhanced by removing the color soiling.



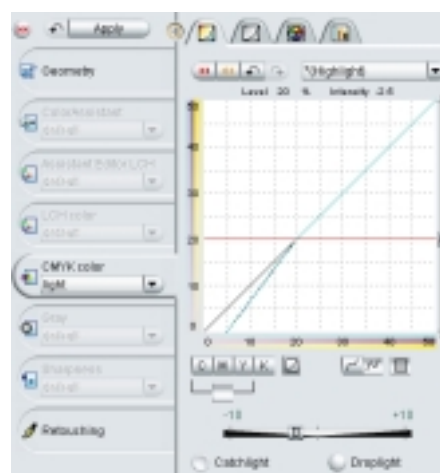
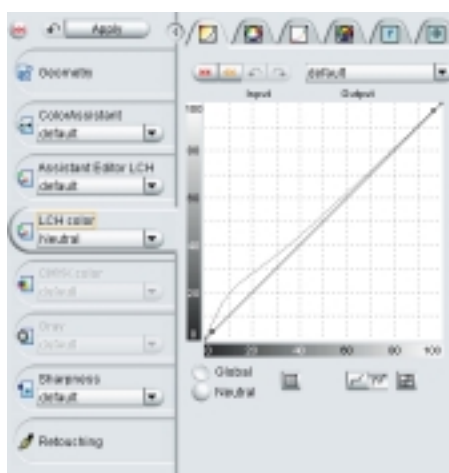
Sharpness and color

This antique truck graveyard with its broken colors and tertiary shades creates a striking visual effect. The image can be further enhanced using fine sharpness and contrast. Brightening the neutral gradation will remove color soiling from the

rust tones. The soiling is caused by the graying colors – purple-blue, ochre and olive green. Visual control of the focus enables your operator to find the optimum sharpness for the image, which when corrected has greater contrast and creates a more colorful effect. In addition,

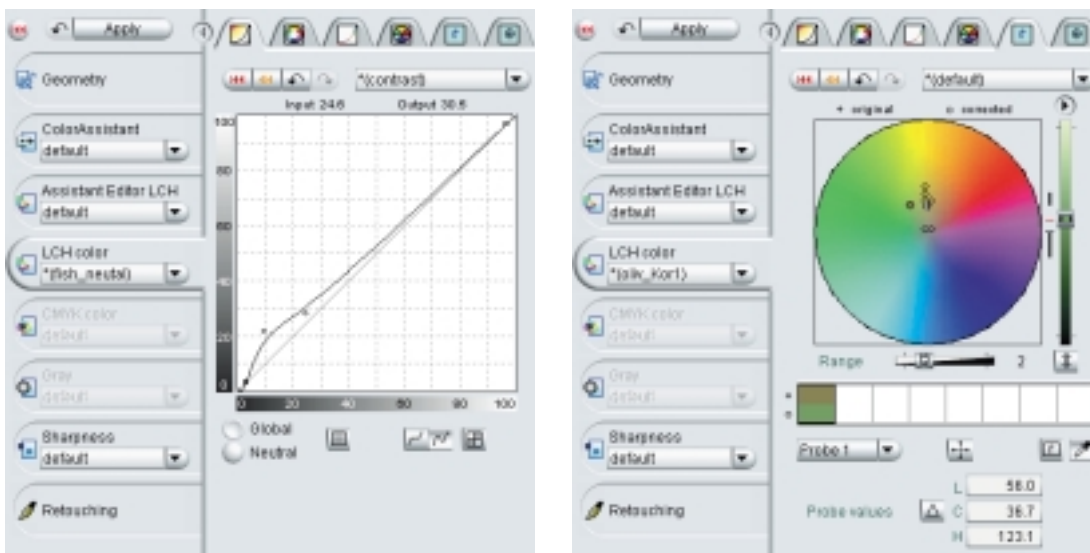
generating a highlight mask, known as catchlight enhancement, gives the image the points of sparkle it needs.

Brightening the neutral gradation removes the gray values from the rust tones and creates the desired brightness. The overall impression is enhanced.



Brightening the neutral gradation in the shadows into the 60% tone area enhances the chrominance. A highlight mask with a starting point of 20% lifts the brightness contrast into the neutral highlight areas.

Detail in shadows • Aquatic images should create a fresh, cool impression. The seaweed and the moistness of the seafood suggest that the items are very fresh and of the best quality. The effect of the image is further enhanced by the darkness and coolness of the slate background. But it's only after precise color correction in the shadows that the image can really convey the freshness of the sea.



A fresh look

Brightening the detail in shadows (three-quarter tone) in the neutral gray axis opens up the dark tone areas and maintains them in the neutral reproduction. This effect also opens up the olive green of the

seaweed for extended color sector correction. Slightly reducing the magenta proportion of the olive tone enhances the effect of the fresh green tone.

Brightening the detail in the shadows opens up the dark tone areas and maintains them in the neutral reproduction.



The customer wants the freshness of the seafood to come over as realistically as possible. The seaweed, visible moistness and the natural stony background enhance the effect of the overall image. The required quality can be achieved using expanded color sector correction.

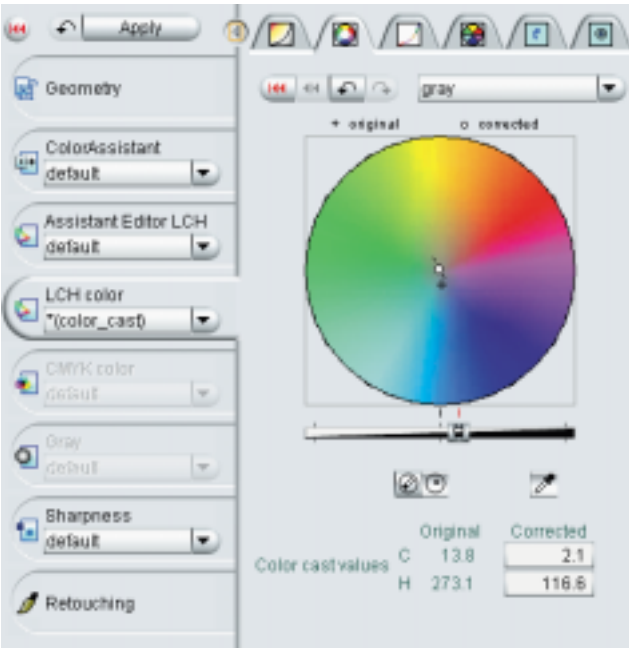
Color cast compensation • To get the message of an image across, it is often necessary to use specific setting parameters. The idea is to create a consistent mood and to give the image an unmistakable style. By storing the desired specifications for each job, making the required corrections using layout data is reliable and straight forward.

More refreshment

A glass beaded with water droplets and filled with slices of lemon, ice cubes and mint leaves is intended to communicate thirst-quenching refreshment. To enhance the message behind the image, specific settings are needed. The examples opposite show how the color play in the glass has been softened. A bit of minus magenta correction in the

mint leaves and a touch of highlight masking provide the catalyst needed to create the required freshness. What's more, correction requirements based on layout data can be reproduced at any time. That's because stored customer jobs contain the setting parameters needed to ensure that images are always interpreted in the same way.

Color measurement in the original converts a bluish gray into a neutral gray to slightly reduce the high chrominance in the colored gray areas.



Here's the original color effect with a different color play in the gray area.

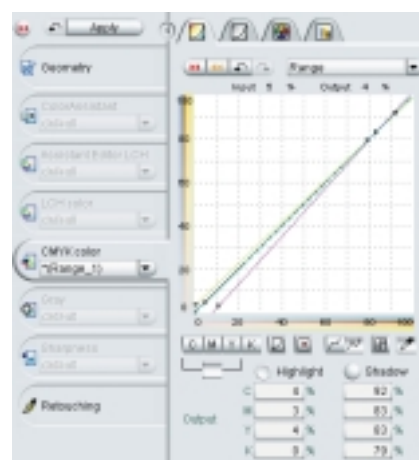


Neutralization in the colored gray area makes the original warmer.



Positive conversions • Newcolor converts negatives to color positives in a flash. Color values are optimized and masking errors corrected.

LCH correction optimizes the brown tone.



A typical color negative with color gamuts that are very uneven but low.



Color positive

Just select the type of image-reflective or transparency. Newcolor lets you activate scanning of color negatives directly. Color negatives generally exhibit uneven but low color gamuts. Masking errors can easily be identified and corrected by using the positive representation of the original color negative. Here, LCH correction was performed on the handle of the saw to optimize the reproduction of the brown masking color in the negative. Additional density range matching in image highlight and image shadow areas gives the subject the desired color volume.

LCH correction • Processing skin tones and fabric colors is a great challenge. Newcolor lets you handle it with ease.

Fashion shots with tricky skin tones and colors demand maximum precision.

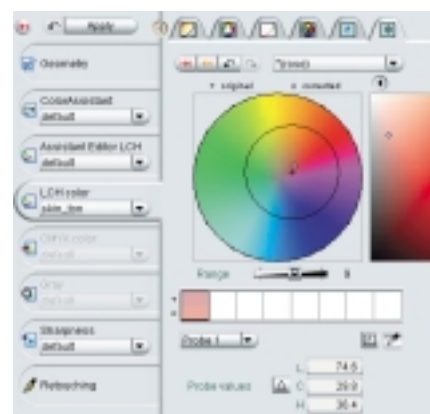


Keeping the customer happy

In the image shown here, the customer wants greater fine sharpness in the model's hair. The shadows need to be opened up so that the remaining definition in the dark hair is retained. The color of the outfit also needs to be changed so that it becomes a warm red. The skin tones also need some correction. Magenta needs to be reduced in the rosé tone in the original, and the yellow proportion needs to be slightly increased. The operation is fast and simple, thanks to the perfect interaction of Newcolor's LCH and CMYK application tools.

For even higher quality

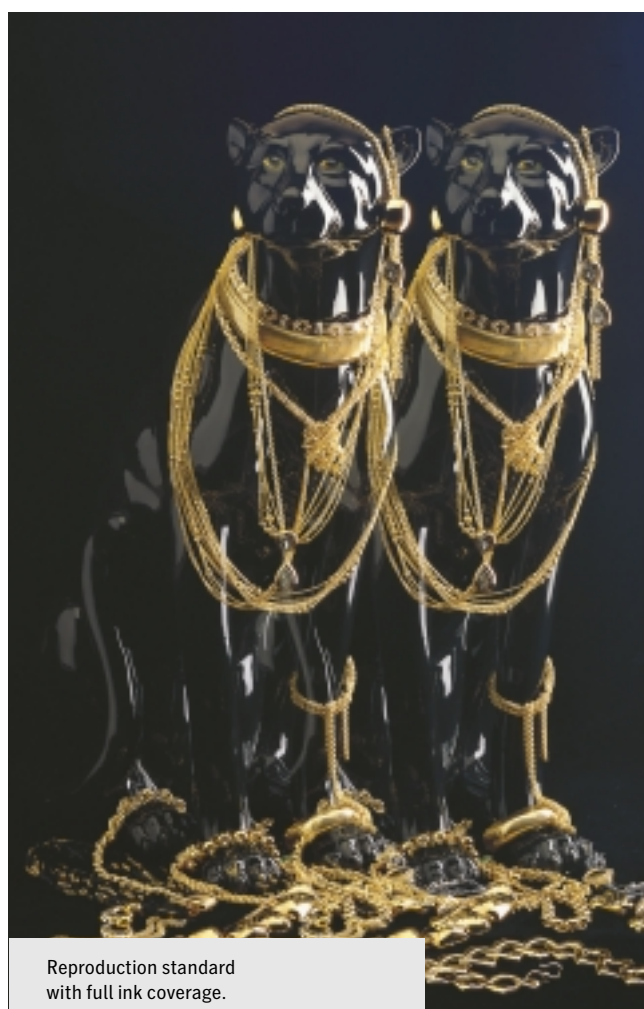
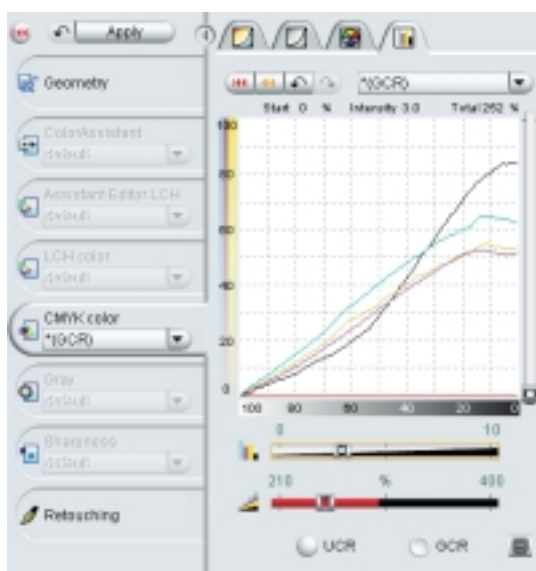
In this example, the optical definition in the hair is improved and the skin tone is smoothed. LCH correction is also carried out on the skin tone. Density range matching enhances the contrast between light and shadow in the motif.



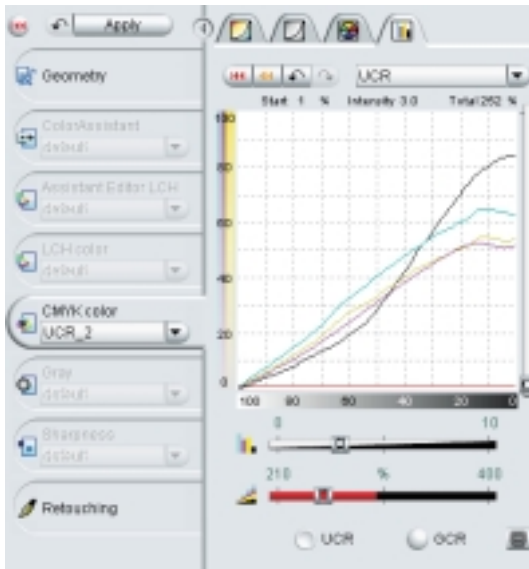
Black generation • The task facing the reproduction experts is to ensure the job can be printed at high quality and low cost. Unusual quality requirements can often be met using targeted black generation.

For better printability

The advantage of this technique in practice is that it stabilizes the gray balance. That ensures a more stable color behavior when printing achromatic colors, or tertiary colors such as brown and olive tones. The three applications show the practical changes on the quality of the color effect described. The black-blue effect of the spotlight projection is good reproduced using Gray Component Replacement (GCR) synthesis.



Reproduction standard with full ink coverage.

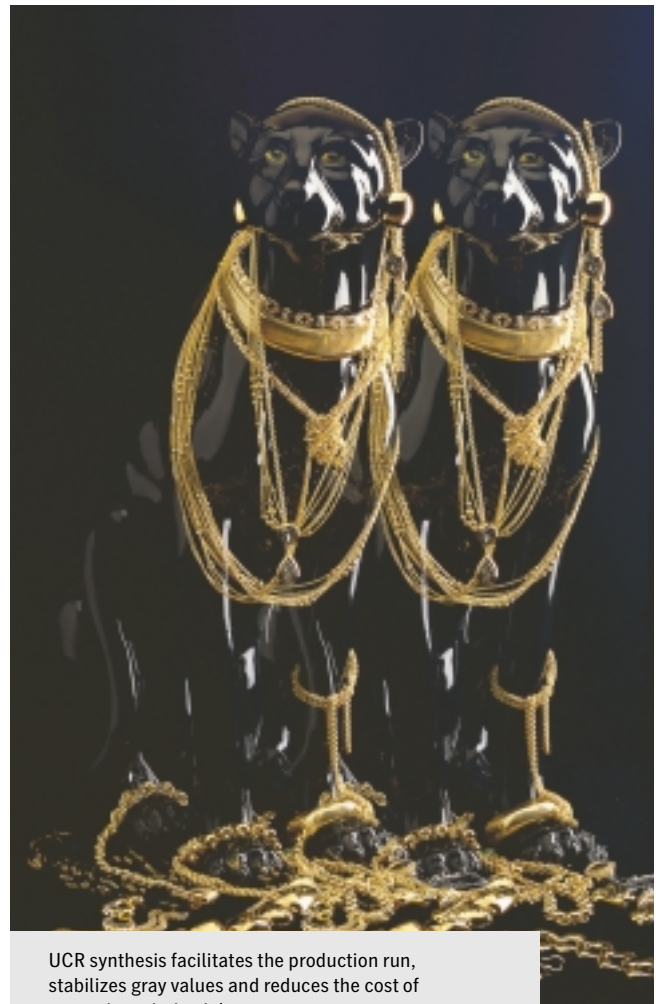


Under Color Removal

Under Color Removal (UCR) also reduces ink coverage and stabilizes the gray balance. In this example, coverage of 253% was set for both GCR and UCR synthesis. The gold tone was also enhanced. Since the presentation of the jewelry is the purpose of the image, the gold tone was also enhanced by a three-quarter tone in the CMYK correction.

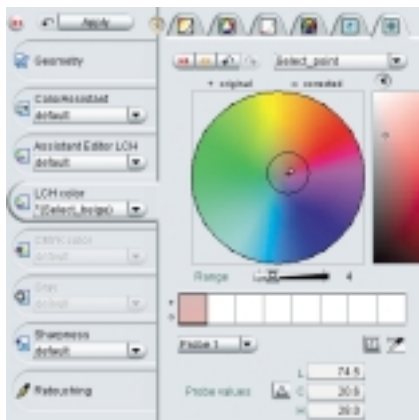


GCR synthesis allows good reproduction of the black-blue effect of the spotlight projection.



UCR synthesis facilitates the production run, stabilizes gray values and reduces the cost of expensive printing inks.

Fine range correction with USM • A typical challenge is to rework an image to reflect a more natural perception of color and brightness. At the same time, you have to mind the fine definition as well.



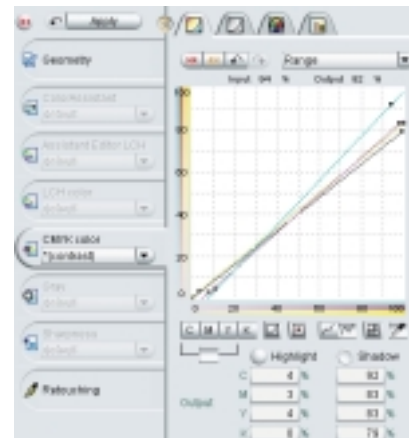
Precision down to the last detail

This image of historic facades and lightly contrasting pastel shades is being reworked as the customer has requested. You can see the advantage of Lab-based LCH correction, which allows changes to be made with a more natural perception of color and brightness. LCH corrections also make a sharp distinction between brightness and color without altering the gray balance. Color nuances can be neutralized or the purity of the color can be enhanced. As a result, the fine definition of the balconies and masonry is not neglected.



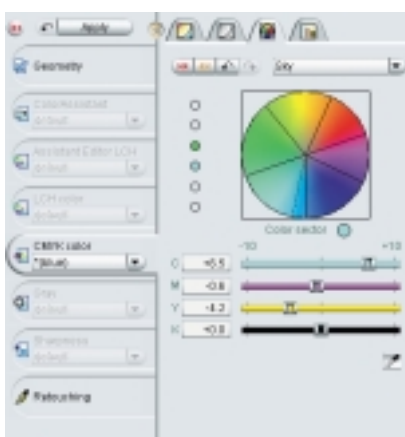
An advance scan in fine detail resolution is a sure way of choosing the precise sharpness setting. The effect of the contour width and the intensity of the light and dark contours at detail transitions can be set up precisely.

CMYK correction • Reproducing high-quality calendar images can be a challenge. Subjective image and color evaluation maximize the appeal and the message of the image.



Original and individual

In the example shown here, the villa needs to be neutralized, and the slightly red overtones to the image need to be removed. Additional correction data from the layout call for extra contrast in the red flowers and color matching of the olive green to suit the fresh green of the lawn. CMYK correction places the blue of the sky in full definition, creating a real Caribbean feeling.



Reproduction made easy.

The clearly structured, easy-to-use reproduction tools in Newcolor allow you to process image content quickly and reliably.

ICC profiles • Without an internationally recognized standard, true color processing would be impossible. ICC profiles provide that standard and form the basis of an end-to-end color workflow.

Example 1: Color matching for art paper using ICC profiles.



A vital standard

ICC profiles describe the properties of the various input and output devices and the way in which they relate to one another and to the printing material utilized.

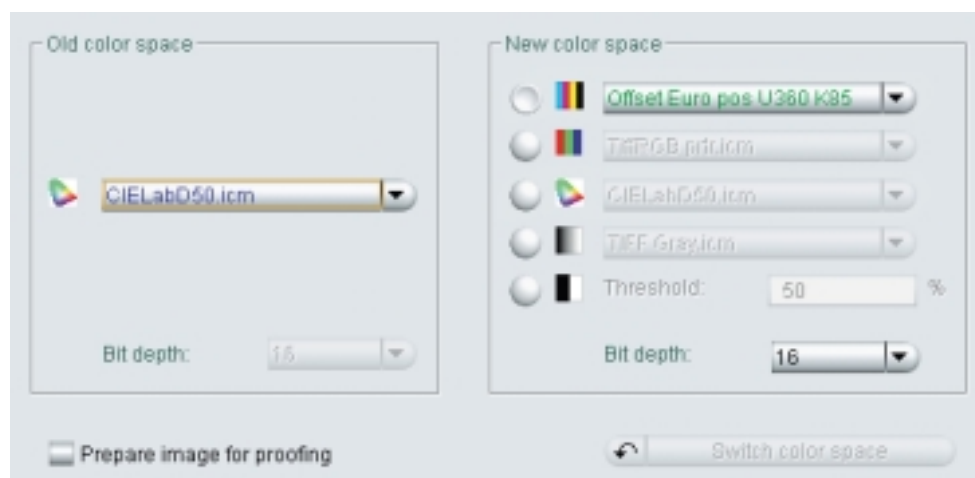
A device-independent color space (Lab) can use ICC profiles to perform color space conversions at any time. Print matching to machines and materials can be carried out using the standard ICC profiles available or with ICC profiles that have already been individually modified. Thanks

to the profiles employed, you can look at the monitor and the proof immediately after the scanning operation to see what the result will be at the end of the printing process.

ICC profiles in use

The original is scanned in Cielab as a digital image. Since scanning is media-neutral, the image data can be used as many times as required, and can be employed for a wide range of output processes in tandem with ICC profiles. The ICC profiles convert the image data for the appropriate output medium with optimum color space matching (gamut mapping). Heidelberg's many years of experience with gamut mapping ensures top color reproduction for each output process.

Example 2: Color matching for newsprint using ICC profiles.



Two application examples demonstrate the functions of the ICC profiles "European standard U360 K 85 % on art paper" and "Newspaper ifra97 GCR70" (for newsprint). Both are part of the standard list of Heidelberg ICC profiles.

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Imprint

Printing date: 09/00

Printing plate production: CtP with Topsetter

Printing: Heidelberg Speedmaster

Finishing: Prosetter 562

Fonts: Heidelberg Gothic, Heidelberg Antiqua

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