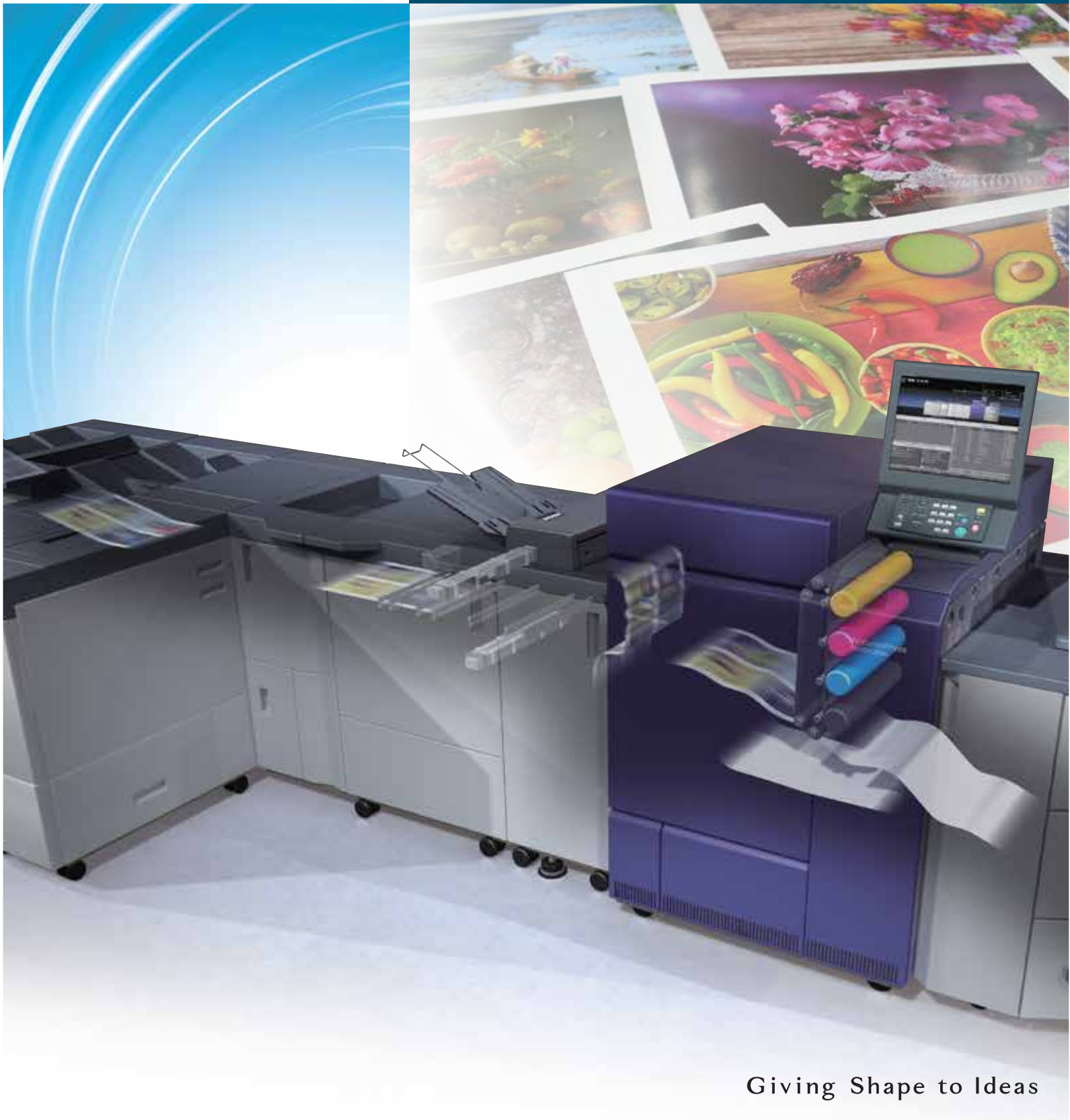KONICA MINOLTA

Automatic Quality Optimising Unit

Intelligent Quality Optimiser [IQ-501]

AccurioPress Series

Giving Shape to Ideas

Delivers high quality prints in a quick and reliable manner

Intelligent Quality Optimiser IQ-501

Delivers print products in the ever growing digital print market based on key words "High quality", "Consistent" and "Short turnaround". "Intelligent Quality Optimiser" newly developed by Konica Minolta achieves cost reduction thanks to higher quality, shorter turnaround and labour-saving, and contributes to competitive enhancement of the printing companies.

Automated colour and registration adjustment prior to print production

Adjustments on density, tone, colour and front-to-back registration, etc. that have been made manually for important print jobs as a regular practice in every morning are now automatically completed. This helps significantly reduce the time consumed for the adjustments, and contributes to operation rate of the printing machine and also to shorter turnaround.

Monitors the colour and front-to-back registration in real time during printing, and adjusts the print parameters accordingly. This enables to stably deliver high quality print products.

Colour correction & front-to-back registration adjustment in real time during printing

Majour functions and features
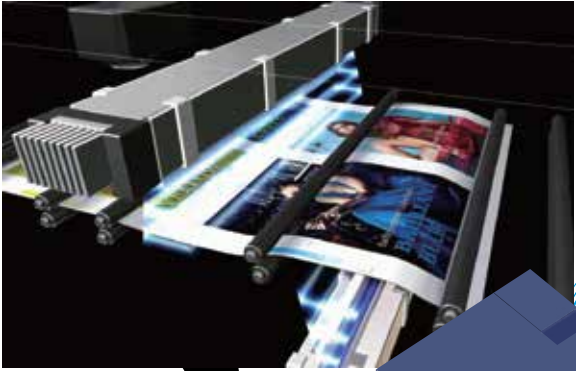
Skill-less adjustment in high precision

Since there is no need for manual adjustments, reliable and highly precise adjustments of colours or registration are made possible without any losses caused by measurement errors. High quality print products are delivered without need for high skill, thus contributing to labour recruiting and cost reduction.

Connecting with cloud type colour management software "AccurioPro Cloud Eye" enables uniform management of colours among multiple printing sites and printing machines. This helps calibrate the colours that have been difficult to control among different printers, which leads to trust enhancement of printing companies.
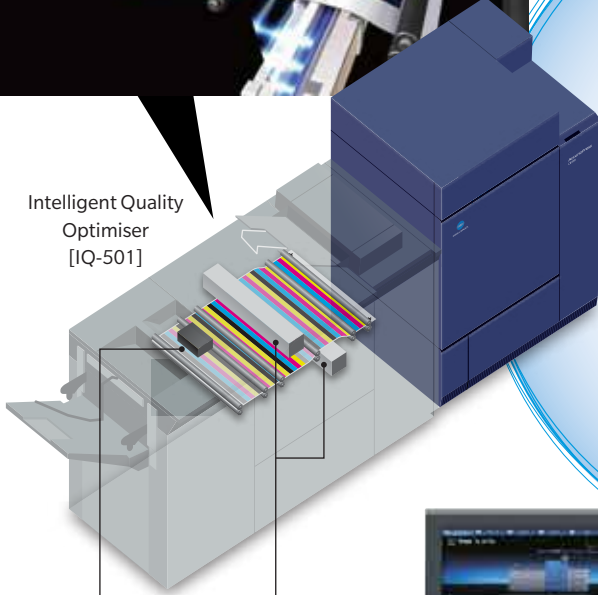
Consistent operation via cloud

Intelligent Quality
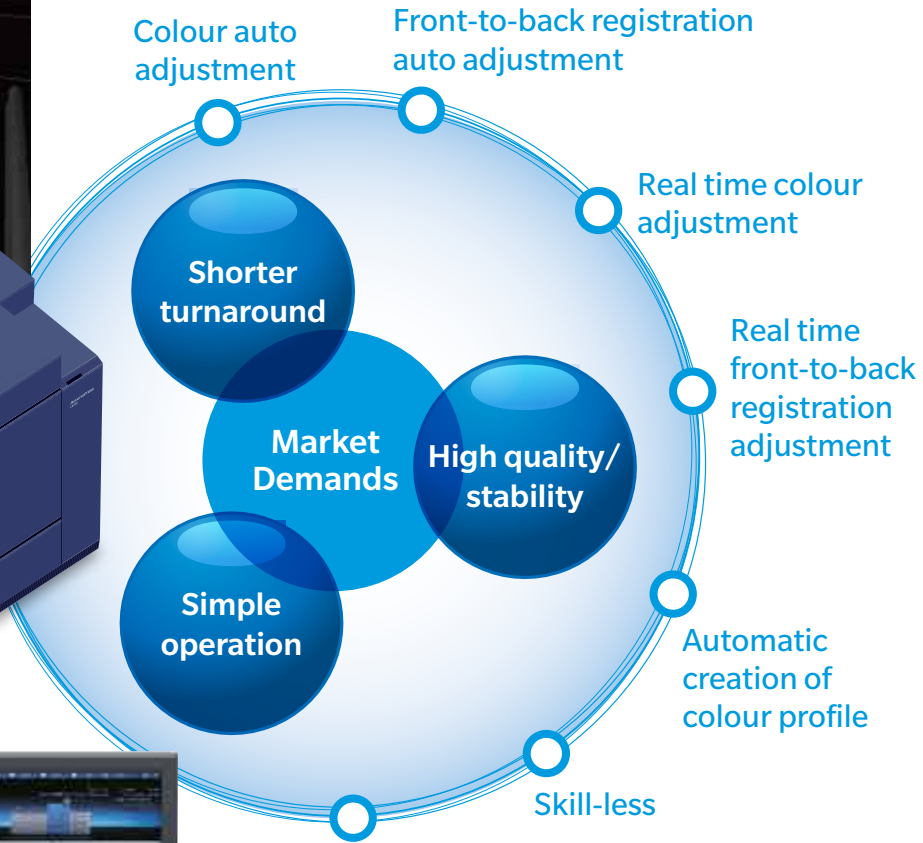Optimiser
[IQ-501]

Spectrophotometer   Scanner

Market Demands

Shorter turnaround

High quality/ stability

Simple operation

Colour auto adjustment

Front-to-back registration auto adjustment

Real time colour adjustment

Real time front-to-back registration adjustment

Automatic creation of colour profile

Skill-less

Cloud colour management
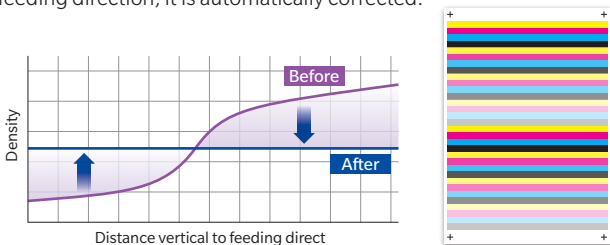
AccurioPro CloudEye

AccurioPress

Automatically adjusts colour/front-back registration in a quick and skill-less manner prior to print production

"Intelligent Quality Optimiser" automatically performs all of the operations that have been required for adjustment of colours and front-to-back registration. This not only reduces the time required for measurements but also enables skill-less and accurate adjustments with no fear of errors. In addition, it contributes not only to higher quality/stability of the print products but also to shorter turnaround due to improved productivity resulted from shorter adjustment time.
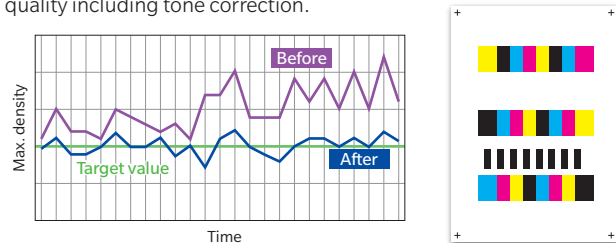
Density balance auto adjustment

If density unevenness is detected in the direction vertical to the feeding direction, it is automatically corrected.

Before

After

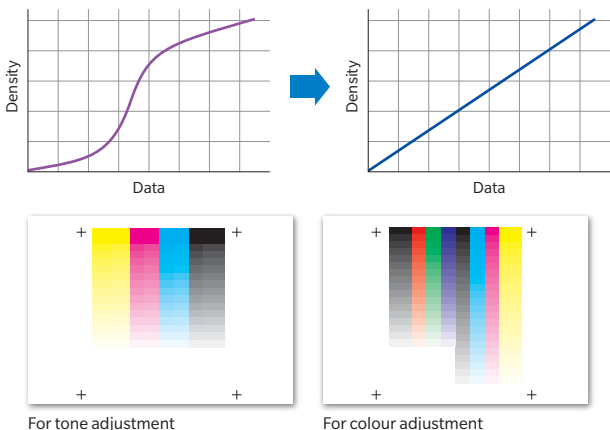Density

Distance vertical to feeding direct

Max. density auto adjustment

Density of each CMYK colour at 100% saturation is automatically corrected to maintain the density at designated level. Maintaining the solid density at designated level helps to keep stable image quality including tone correction.

Before

After

Max. density

Target value

Time

Colour density control

Using the stock and screen to be actually printed, density adjustment and tone correction are automatically performed. The correction is made on CMYK process colours as well as on RGB+3C gray chart so that highly accurate correction is ensured.

Density

Data

Density

Data

For tone adjustment

For colour adjustment

Smooth gradation due to tone correction

Improves the quality of skin tone and gradation that tend to show bandings resulting in streaks and uneven colouring.
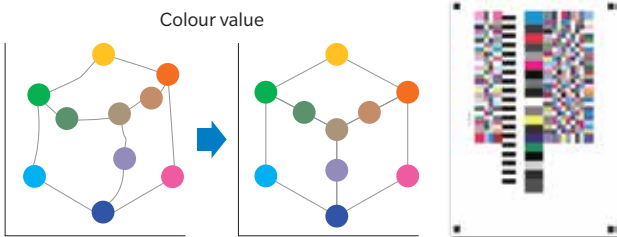

For the output of sheet where various files including package/tag, business card, images of high density, design with different tint colours are imposed, it is not necessary to worry about as long as the output is made with adjustments on density balance across the sheet and on maximum density completed prior to the printing.
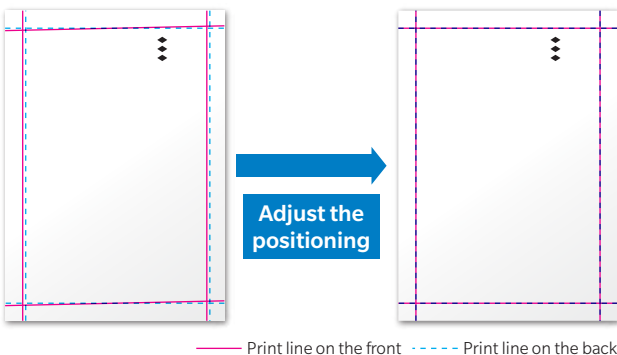
Gray balance adjustment (Exact Color)

Printing CMY mono colour ~ CMY mixed colour (tertiary colour), a deviation from the reference of each colour is automatically corrected. This helps put the colour gradation in linear as well as improve the gray balance.

Colour value

Front-to-back registration auto adjustment

Specify the media and tray that are actually used. Then the front-to-back registration will be automatically adjusted. Front-to-back registration is adjusted by adjusting the vertical/horizontal position as well as the image skew. It is also possible to automatically perform periodical adjustments at an interval of every 100+ sheets.

Adjust the positioning

—— Print line on the front   - - - - Print line on the back

Gray balance adjustment

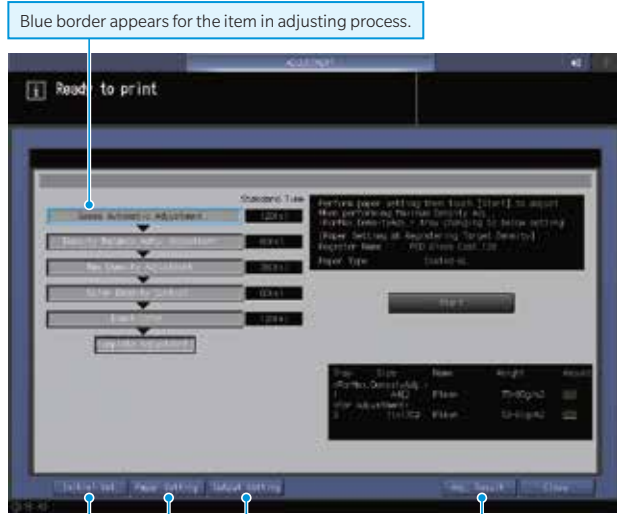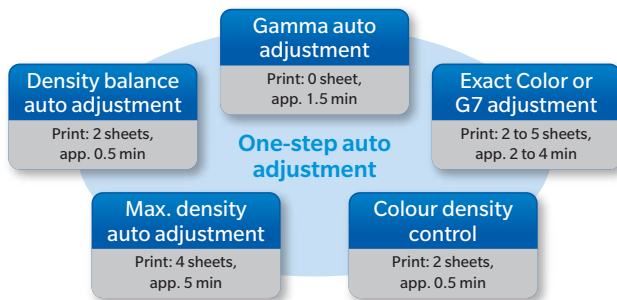Specifically helps minimise the deviation of mixed gray.

Front-to-back registration auto adjustment

For the thick paper used for business card, shop card, coupon printing, where front-to-back registration requires attention, it is possible to deliver high quality print products and to suppress the cost increase caused by print waste thanks to automated adjustment on front-to-back registration.

One-step (packaged) auto adjustment

"Gamma adjustment", "Max. density adjustment", "Density balance adjustment", "Colour density control", "Gray balance adjustment", these five items shown on the left can be collectively performed. Since it is not necessary to individually adjust each item, you can efficiently proceed with the prior adjustment. In addition, you can select any adjustment items and perform adjustment of selected items collectively.

Gamma auto adjustment
Print: 0 sheet, app. 1.5 min

Density balance auto adjustment
Print: 2 sheets, app. 0.5 min

Exact Color or G7 adjustment
Print: 2 to 5 sheets, app. 2 to 4 min

One-step auto adjustment

Max. density auto adjustment
Print: 4 sheets, app. 5 min

Colour density control
Print: 2 sheets, app. 0.5 min

Blue border appears for the item in adjusting process.

Items to be adjusted can be selected from "Default Settings" in advance.

When adjusting the max.density, the tray for this purpose switches to the setting used for target density setting.

Select the output tray for max.density adjustment.

Verifies the adjustment settings.

05

Quality control/auto correction by real time colour control & front-to-back registration adjustment during printing
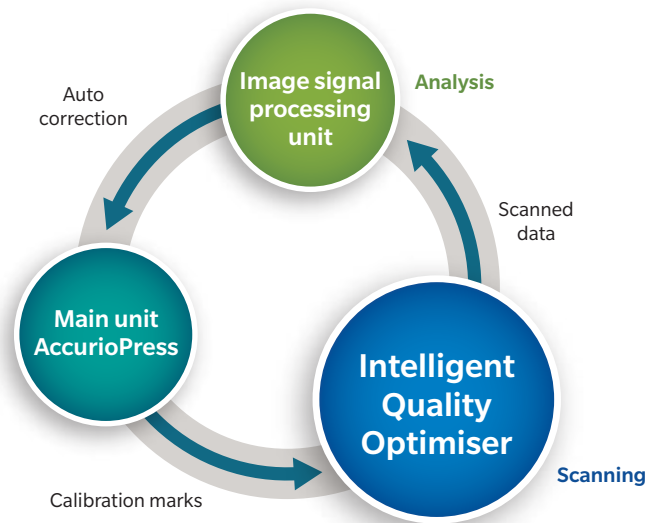
Turning ON "Auto Image adjustment" of Job Ticket will print charts for gradation adjustment and register mark for front-to-back registration adjustment on the margin around the image area, allowing for tone correction and front-to-back registration adjustment in real time. To do this, it is necessary to secure blank margins along the edge using A4+ or A3+ format.

Real time tone correction

Based on the information obtained in the output density control that has been performed prior to the printing, variation of tone is monitored, and tone correction is performed as necessary. Colour patches of CMYK and RGB+3-colour gray are alternately output. However, output of such patches is performed only when the sheet has a blank margin around the image.

Real time front-to-back registration monitoring/correction

Based on the front-to-back registration adjustment performed using the paper and tray that are actually to be used, the registration is continuously monitored and corrected during printing. However, such is performed only when the sheet has a blank margin around the image. In addition, it is equipped with a function that interrupts the printing when an error in registration is detected.

Paper sizes compatible with real-time gradation and front-to-back registration adjustment

Standard sizes	SRA3, SRA4 or paper with margins in the sub-scanning direction
Nonstandard sizes	225mm or more in the sub-scanning direction

Intelligent Quality Optimiser not only ensures the colour reproduction but also minimises the colour fluctuation during printing using real time tone correction function.
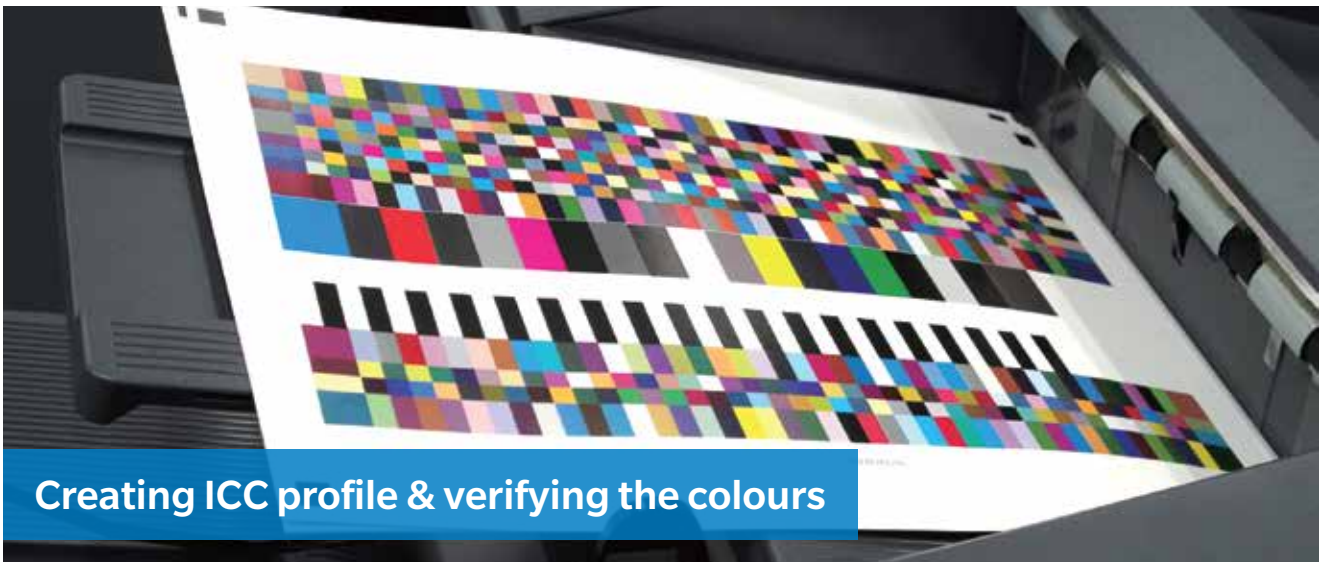
Real time registration adjustment ensures stability in print quality that is critical for the print application that needs an accurate trimming or for booklet with page numbers.

Example:
Chart for tone correction and register marks are printed on the blank margin.

Tone correction is performed by outputting CMYK and RGB+3C alternately.

Creating ICC profile & verifying the colours

Creating a printer profile

It is necessary when a new media type is to be used. ICC profile that is manually created by measuring the chart printed on the sheet in the past is now automatically created. As the result, the time consumed for this procedure is shortened from approx. 30 min to 5 min or less.
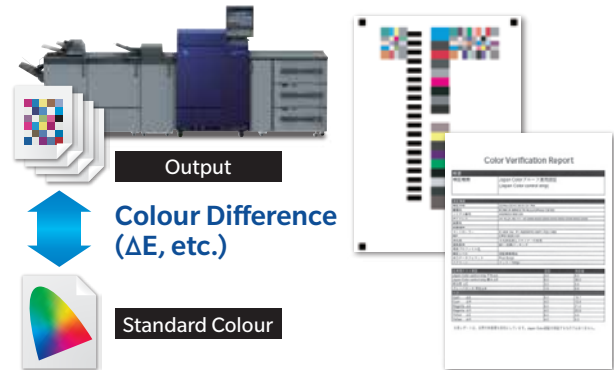

Measuring devices for off-line use

Automated →

Without need for manual measurement of the density

Colour verification

It is necessary to be performed prior to the output of jobs where the faithful colour reproduction is essential or when the printer profile is changed. The result of measurements on colour difference between the printed colour and the reference colour will be reported.

Output

Colour Difference (ΔE, etc.)
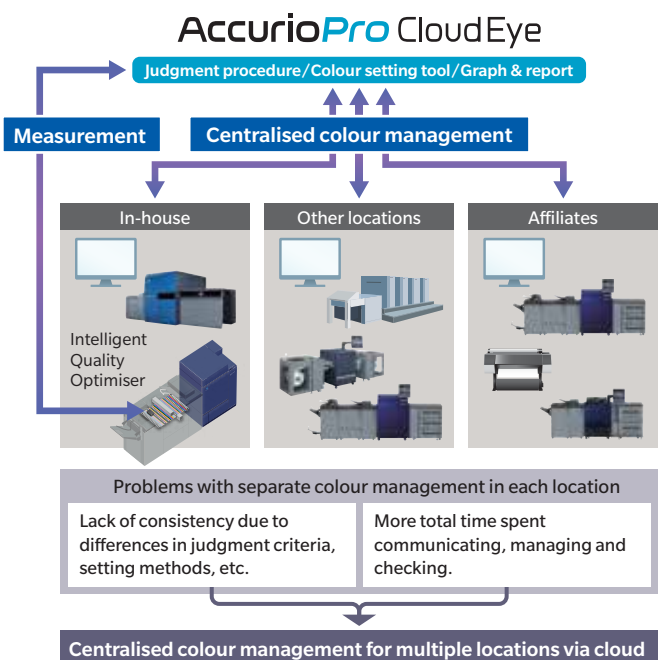
Standard Colour

Color Verification Report

Colour management via cloud [AccurioPro Cloud Eye]

Konica Minolta's cloud colour management system enables centralised colour management of printers at multiple locations (in-house offices and factories, affiliates' facilities, etc.) via cloud. The colour reproduction of all connected printers, of wide-ranging models, is accurately monitored in real-time without requiring special skills. The unified and reliable colour management environment not only for a single printing machine alone but also for and between multiple printing machines installed at various sites is made available by the system, which helps the printing company to win more trust from the customers, to develop new customers and to expand its business domain with the strong backup by means of quality control.
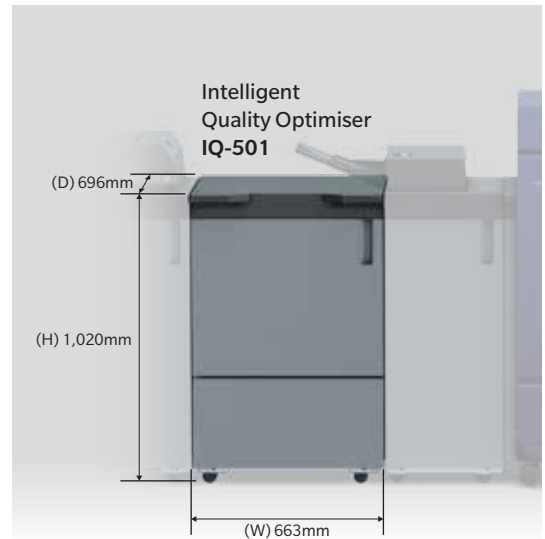
Superior points of AccurioPro Cloud Eye

Because the same measures/standards can be applied to the colour management among different sites or partner companies, unified management is made possible.

- Using the same standards, judgment of colour reproduction, settings (creation of device link profiles) and comparison of management status/results are enabled.
- Colour management status and results among different sites and partner companies can be displayed and checked on the same window of the web browser.
- Connecting with the printers equipped with ICCU enables automatic verification and calibration of colour reproduction.

AccurioPro CloudEye

Judgment procedure/Colour setting tool/Graph & report

Measurement | Centralised colour management

In-house | Other locations | Affiliates

Intelligent Quality Optimiser

Problems with separate colour management in each location

| Lack of consistency due to differences in judgment criteria, setting methods, etc. | More total time spent communicating, managing and checking. |

Centralised colour management for multiple locations via cloud

Majour Specifications: Intelligent Quality Optimiser IQ-501

Type	Console
Product Category	Automatic image reader
Configuration	IQ-501 + VI-511 (image processor, basic option)
Functions	Single pass duplex in-line scanner + spectrophotometer •In-line scanner 1: rear side •In-line scanner 2: front side •Spectrophotometer: colourimetry on the front surface (spectral reflectivity)
Print Speed	up to 150 ppm (A4, Letter (8.5 x 11 in.)) (depends on printer specifications)
Scan Width	Max. 350 mm (main-scan direction)
Compatible Format	95 x 139 to 331 x 488 mm (compatible with banner format)
Compatible Grammage	40 to 400 gsm (depends on the grammage of the connected printer)
Incompatible Media	Embossed paper, index paper, OHP
Power Source	100 to 240VAC 50/60Hz
Power Consumption	700W or less (including latter connected options)
Dimensions (W x D x H)	663 x 696 x 1,020 mm
Weight	Approx.184kg

Intelligent
Quality Optimiser
IQ-501

(D) 696mm

(H) 1,020mm

(W) 663mm

AccrioPress 6120/6136/6136P*

AccurioPress C3070/C3070p*/C3080/C73hc*/C83hc

AccurioPress C6100/C6085