

Mitsubishi: Diamond Eye



In brief

■ **System name:**
Diamond Eye

■ **Manufacturer:**
Mitsubishi Heavy Industries, www.mhi-ppm.com/e/index.html

■ **Measurement device:**
Line sensor (full paper width)
RGB-IR LED

■ **Measurement position:**
No-mark measuring in the complete print image

■ **Function:**
A fixed measuring bar continually scans the complete web

■ **Colour reference:**
Image data used as target values for colour corrections



Scanning the web, the line sensor measures the actual values in the print. Image data are used as reference for colour corrections.

Diamond Eye is a markless print quality control system for newspaper presses that continually scans the full paper width and matches the print according to the target values. The key aspects for the newspaper users are to maintain a consistent quality and to reduce the start-up waste.

Mitsubishi has offered its Diamond Eye quality control system also for newspapers presses (e.g. Diamondstar) since 2005. Diamond Eye controls colour automatically and without the use of colour control strips or marks. For this purpose, a special line sensor is used that works with several LED light sources (RGB and IR). The image sensor is located at the delivery of the printing unit.

Continuous control of all page data

The system works at web speeds up to 15.2 m per second. Takashi Uchiu, Sales Director Printing Machinery, Mitsubishi Heavy Industries Printing & Packaging Machinery, describes the system's working method as follows: "Based on the printing characteristics of the newspaper press, the target density values of each CMYK colour are calculated from the printed image data and then the ink supply amounts are adjusted automatically until the actual density matches the target density.."

The system takes control of ink supply at press start-up and thus ensures a fast reaching colour.

The signal from the image sensor is directed to the image processing PC in the control cabinet where it is compared to the prepress data. From there, the control signal goes via the press control to the ink key controls and is simultaneously reported to the operator console. Ejection of waste copies is controlled there also.

The image sensor is located at the exit of each printing unit; it does not traverse the width of the web, as is the case with several other control systems.

A touch screen is integrated into the control desk that is positioned on the operating side of the press and the image data servers are located beside the presses or in the CTP room.

Special features of the system and advantages for the user

The special features of Diamond Eye include the continuous measurement of the complete web. The manufacturer emphasises the following major advantages of the system:

- Uniform print quality throughout printing presses in different printing plants
- Fewer operator skills required
- Relieved operator workload
- Less paper waste (especially in the start-up phase)



The automatic controls can be tracked in real time on the touch screen of the operator console.

Workflow of the Mitsubishi Diamond Eye density control system

