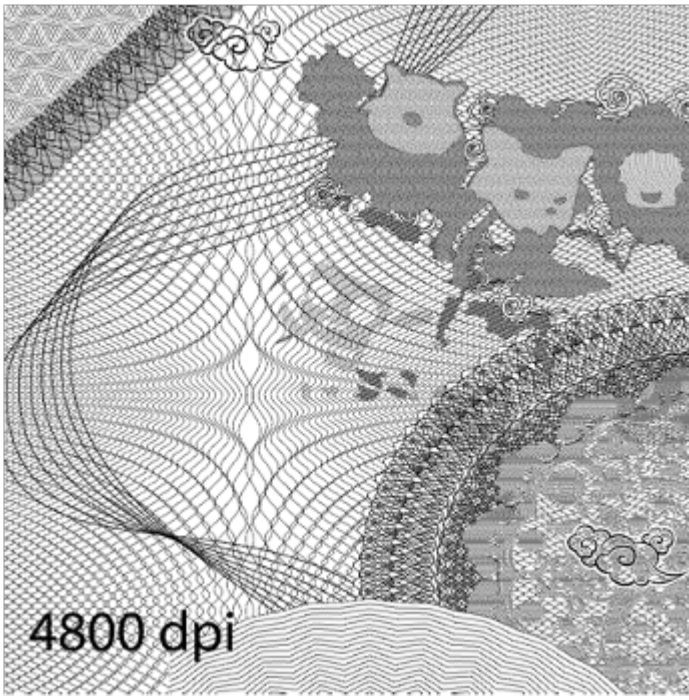


4,800 / 5,080 dpi High Resolution Option for KODAK TRENDSETTER Platesetters

OFFSET PLATES ONLY





OVERVIEW

Some applications demand higher-resolution imaging. Kodak has a 4,800 / 5,080 dpi High Resolution Option for Kodak TRENDSETTER Q400/Q800, Q1600 and Q2400/Q3600 Platesetters. This capability can be used to image exceptionally small features with complex background patterns, or microprinting, that are indiscernible to the naked eye. It is ideal for security printing applications, lenticular printing and high-resolution art prints.

IMAGING PRECISION

The 4,800 / 5,080 dpi High Resolution Option enhances imaging precision by using a standard Thermal 2 and Thermal 6 head combined with a specialized software algorithm. This algorithm doubles pixel addressability in the subscan direction, enabling 4,800 x 4,800 dpi imaging with a 2,400 dpi head, or 5,080 x 5,080 dpi with a 2,540 dpi head. Unless otherwise noted, references to 2,400 and 4,800 dpi also apply to the 2,540 and 5,080 dpi versions.

Note that throughput is reduced by about 50% for high-resolution jobs on X-speed TRENDSETTER Platesetters. However, standard 2,400 dpi jobs continue to run at full throughput.

APPLICATIONS

Kodak continues to recommend standard 2,400 dpi imaging for most applications. The effect of higher resolution can only be seen on very fine features viewed under magnification, so higher resolution should not have a visible impact on image quality for most jobs. The 4,800 / 5,080 High Resolution Option enables the following applications:



Microprinting (small text) / Guilloché (swirling pattern):

Extremely detailed output can be used for high-resolution art printing and for accurate reproduction of the small text sizes that are required for bond and other certificate printing. Text is generally small enough to be indiscernible to the naked eye.

Security Applications: The 4,800 x 4,800 dpi resolution can be used to image small, highly detailed features that are difficult to reproduce, so that copies are visibly distinguishable from the original. Typical images include main image components overlaid by a secondary pattern of fine lines, background patterns of wavy lines of variable width, and very small font text.

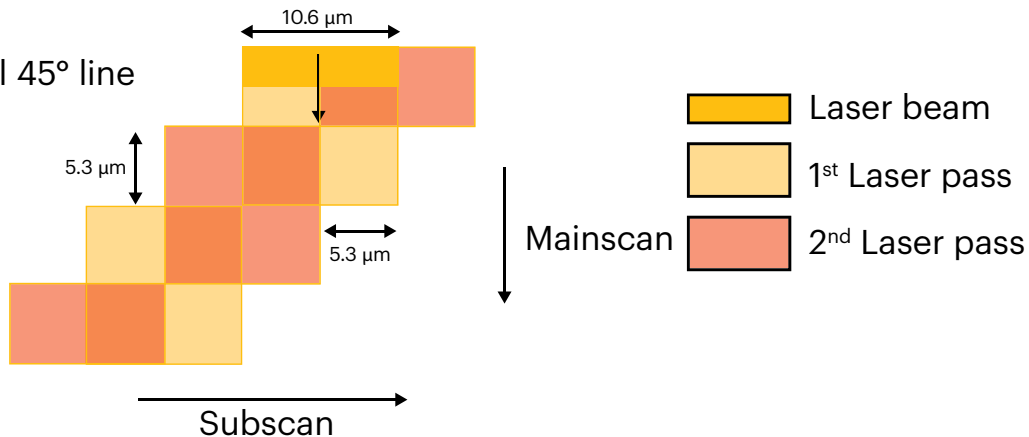
Lenticular Applications: Variable mainscan resolution (VMR) allows printers to accommodate slight variations in the lens pitch. With 4,800 dpi fixed resolution now available in both mainscan and subscan, the base images can be rendered with a high level of detail, resulting in impressive 3D, motion, flips, or morphing effects.

HOW IT WORKS

Higher mainscan resolution has been available via Kodak's Variable Mainscan Resolution. The subscan (along the drum) direction's resolution depends on the thermal head's optics; at 2,400 dpi, pixels are 5.3 μm high by 10.6 μm wide, with positions spaced 10.6 μm apart. By offsetting two 2,400 dpi grids, 4,800 dpi addressability is achieved, allowing pixel placement anywhere on a 4,800 dpi grid without changing the minimum feature size. This enhances the smoothness of fine lines, features, and small fonts.

Example:

Fine 3 pixel 45° line



MEDIA

Due to the fine details imaged, this option requires high-resolution media capable of holding the fine features that may be imaged. High-resolution media are those qualified for Staccato 10 imaging, such as KODAK ELECTRA XD and ELECTRA MAX.

The option applies to **offset plates only** and is not qualified for any other media, such as KODAK DITR Thermal Film.

THROUGHPUT

When imaging at doubled resolution, throughput is reduced by approximately half. The carriage speed is reduced so it advances by half a swath per drum revolution, thereby doubling the imaging time. In addition, the thermal head has a lower maximum drumspeed for imaging at higher resolution in the mainscan direction. This may also cause an increase in imaging time depending on the device and media.

The overall effect on throughput depends on the rated speed of the device. On F-speed TRENDSETTER Platesetters, the impact is less because the imaging

time is a smaller proportion of the total cycle time for one plate.

The throughput for jobs imaged at 2,400 dpi is unchanged from a device without the 4,800 / 5,080 dpi High Resolution Option (i.e. standard F or X speed). See the CTP Media Imaging Performance Database for details of the throughput for each configuration.

SCREENING

KODAK PRINERGY Workflow supports the several types of screening at 4,800 dpi:

- KODAK MAXTONE Screening provides the standard AM screen through the entire tonal range, with a wide choice of rulings, angles, and dot shapes at up to 5,080 dpi.
- MAXTONE CX hybrid AM screening lets printers adjust highlight and shadow dot sizes to match their equipment. It's also suitable for high-screen commercial offset printing to prevent single pixel dot issues on plates and presses.

- KODAK MAXTONE SX provides a gradual transition between AM screening in the midtones and FM screening in the highlight and shadows, with resolutions up to 5,080 dpi.
- MAXTONE IS (Irrational Tangent Screening) is used for specialized imaging purposes, such as seamless flexographic sleeves and cylinders, direct cylinder engraving, and gravure imaging applications.
- MAXTONE IS CX hybrid AM screening enables printers to configure the size of highlight and shadow dots to suit the resolution-rendering capabilities of their output device, plate, and pressroom, when using MAXTONE IS.
- KODAK STACCATO Screening is a stochastic solution that, when paired with KODAK SQUARESPOT Imaging Technology, enables routine use of FM screening.*

*Supported resolutions are 300, 360, 600, 720, 1016, 1200, 1270, 1500, 1600, 2400, 2540, 3200, 4,000, 4800, 5080, 6400, 9600, 12800 (dpi).

COMBINING WITH OTHER FEATURE LICENSES

The 4,800 / 5,080 dpi High Resolution Feature can be combined with the following license:

Variable Mainscan Resolution: You can use the VMR and 4,800 / 5,080 dpi options at the same time. This would be suitable for a lenticular printer looking for the ability to image highly detailed work. With VMR-96, the subscan (along the drum) resolution is fixed at either 2,400 (2,540) or 4,800 (5,080) dpi and the mainscan (around the drum) resolution is variable up to 9,600 dpi. In practice the 9,600 dpi is probably higher than needed and is also subject to plate capabilities. A lenticular printer might choose to image at 4,800 x ~4,800 dpi using the high resolution feature, and apply the VMR option to vary the mainscan resolution to precisely match their lens pitch. Of course, they can also use VMR on its own with 2,400 dpi in subscan; this is a common configuration for lenticular printers today. For security printing of fine lines and microtext on non-lenticular substrate, VMR is not necessary and the printer would only need the high resolution feature.

ABOUT KODAK

Eastman Kodak Company is driving innovation and change for customers in commercial, packaging and functional printing, and enterprise services markets with one of the broadest portfolios of technologies, products, and services in the graphic communications and commercial printing markets. Solutions from Kodak offer exceptional quality, streamlined production, and scalability to grow with our customers' businesses, and only Kodak provides digital and conventional solutions within a unified workflow. We are a worldwide team that performs with excellence, works with customers to help them succeed, and brings innovative solutions to market.

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