Accuracy, stability, and repeatability

Kodak
SQUARESpot
Imaging Technology

When good-looking presswork isn't enough

While all CTP systems can produce plates that result in nice presswork, this is not the only measure of a quality CTP solution—and it may not be the most important. In order to achieve a reliable, cost-efficient, and consistent print manufacturing process, the printer requires that the same criteria be met on plate as on press, the first time and every time. That is why we went beyond conventional CTP laser imaging technology to develop award-winning **Kodak** SQUARESPOT Imaging Technology.

What makes SQUARESPOT Technology different is its ability to enable a wider operating window for accurate plate imaging. **Kodak** Platesetters with SQUARESPOT Technology help thousands of Kodak customers deliver exceptional print, day in and day out. These devices can help reduce chemistry usage, plate waste, remakes, makeready times, compromised color, and premature plate wear, while enabling printers to tolerate a wider range of prepress and pressroom variables—critical for keeping your operation running smoothly and saving you money.

Variation: How much is it costing you?

Variation is an expensive, often overlooked issue. Variation in plates, chemistry, exposure, density, and ink/water balance all affect your ability to keep presswork on target. Printers with **Kodak** Platesetters benefit from an image on plate that is up to six times more resistant to process variation than competing technologies. This stability is achieved by the unique, high-resolution laser imaging system, which delivers a fine swath of energy at 10,000 dpi. Combined with intelligent Dynamic Autofocus, SQUARESPOT Technology produces an exceptionally accurate dot consistently and reliably, plate after plate.

The SQUARESPOT Thermal Imaging Head provides tonal uniformity across the plate. Its ability to maintain imaging accuracy despite normal variations ultimately extends the life span of chemistry, and results in a dot that is more durable on press.

The impact of variation on presswork

A 5% tone shift during plating at the 50% midtone (-5% M) and loss of 1 & 2 % highlight dots.

The client approved image.

A 5% tone shift during plating at the 50% midtone (+5% M) and loss of 1 & 2 % highlight dots.

What's the difference?

All CTP lasers expose dots according to a grid of pixels, typically of about 2,400 per inch. Laser systems found on many platesetters use a laser spot with an effective diameter of about 1500 dpi. More importantly, the laser energy tapers off towards the outer diameter in what is called a Gaussian (soft/fuzzy) profile.

The Gaussian profile creates an area of uncertainty in the laser imaging spot. This area is highly sensitive to variables such as exposure, processing, plate sensitivity, environment, etc.

Although more precise on one dimension, grating light valve (GLV) technology produces a similar area of uncertainty on the other dimension.

At the beginning of the developer life cycle, the halftone dots would be developed on plate exactly as planned, and the printed piece would have accurate color. However, once the developer has aged, even if only 10% through its life cycle, more and more of the fuzzy, uncertain exposure area would be developed on the plate. The result is larger spots, which create larger halftone dots and result in a different tone on press. Press operators must adjust color, leading to increased waste, reduced print quality, and reduced press productivity.

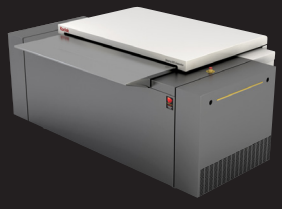
High-resolution, 10,000 dpi SQUARESPOT Technology substantially reduces the Gaussian effect, delivering halftone dots with greater immunity to normal process variations in prepress.

Kodak Magnus 400 **III** Platesetter, V-Speed

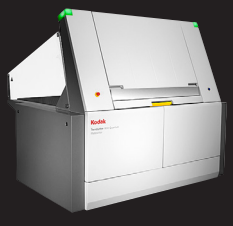
Kodak Trendsetter 400 Platesetter

4-up **Kodak** CTP Solutions with SQUARESPOT Technology

Kodak Magnus 800 Platesetter

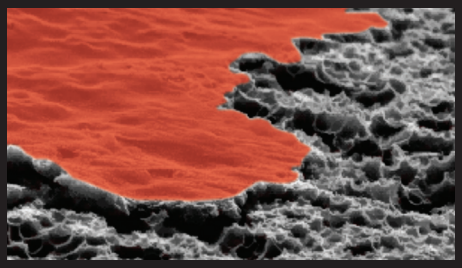


Kodak Trendsetter 800 Platesetter



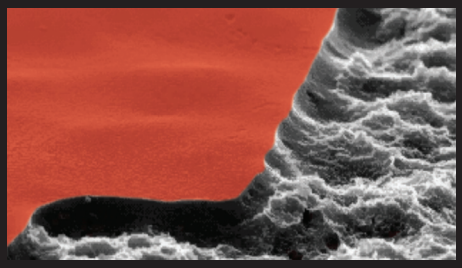
8-up **Kodak** CTP Solutions with SQUARESPOT Technology

Even after processing, the edges of dots can be weaker than the center, resulting in quicker dot wear on press, longer makereadies, differences between plate readings and press results, and more color variation through the print run. Dots created with **SQUARESPOT** Technology have harder edges, making them more resistant to wear on press than Gaussian or GLV dots. Stable, durable dots improve color consistency on press, reduce makeready time, and increase the useful run length of plates on press.



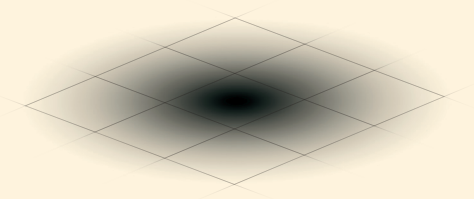
Conventional Gaussian dot

Photomicrograph of the edge of a single halftone dot from conventional thermal imaging. Note the irregular edge definition which results from variations in the imaging threshold, causing unpredictable tonal reproduction.

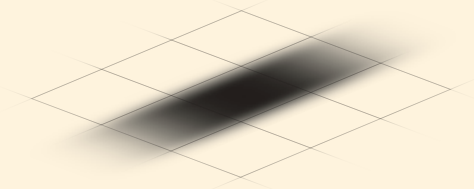


SQUARESPOT Technology dot

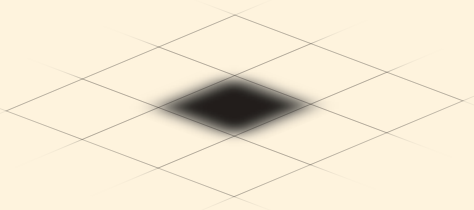
Photomicrograph of the edge of a single halftone dot from a Kodak **SQUARESPOT** Thermal Imaging Head. Note the uniform, steep edge definition, providing consistent tonal reproduction on plate, despite typical variation.



Conventional Gaussian laser energy profile

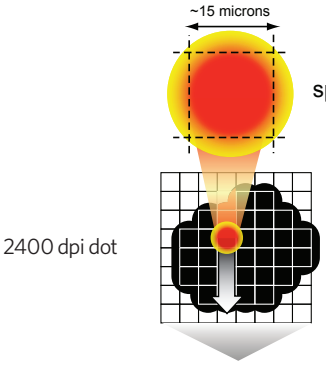


GLV laser energy profile

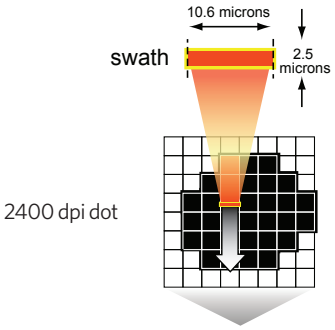


SQUARESPOT Technology laser energy profile

Conventional Gaussian Imaging

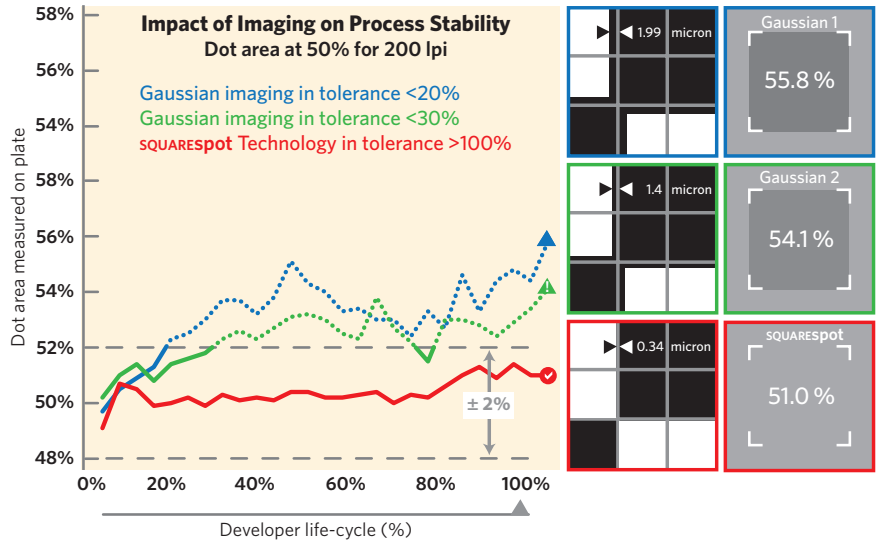


SQUARESPOT Imaging Technology



Stability with SQUARESPOT Imaging Technology

The chart below shows the results of a test comparing the halftones from **SQUARESPOT** Technology and two Gaussian imaging technologies as processor chemistry ages. With new developer, the dot area for all three technologies is at 50% after processing. However, when the developer is only 20% through its life cycle, the dot area of one of the Gaussian technology's dots exceed the 2% spec for variation. The other one is out of spec at 30% of the developer life cycle. The dots imaged with **SQUARESPOT** Technology, however, remain in spec throughout the developer life cycle.



Other elements of Kodak's CTP technology combine to deliver even greater stability:

- Automatic temperature compensation—enables accurate registration even with variations in ambient temperature.
- Geometrical correction—factory calibration provides matching plates from different **Kodak** Platesetters.
- Dynamic autofocus—reduces the chance of hotspots and image artifacts.

Kodak Magnus VLF Platesetter

VLF **Kodak** CTP Solutions with **SQUARESPOT** Technology

So reliable, you probably won't even think about it

When Kodak invented thermal plates and **SQUARESPOT** Technology, we knew the key to success for our customers was not just in delivering plates exposed without film. It was also about doing so in a reliable, consistent manner in real-world conditions. Today, with more than 15,000 thermal CTP installations worldwide, we stand by our products with comprehensive service plans and a global network of professional support consultants.

Our imaging heads are manufactured and tested under the most stringent conditions, which help ensure that **SQUARESPOT** Imaging Heads last without requiring service. In the unlikely event of laser failure, the redundancy engineered into every thermal head means that you probably won't even know about it. **SQUARESPOT** Technology uses many overlapping laser emitters to expose the plate. If one, two, or even three emitters fail, power to the other emitters is automatically increased to compensate, helping ensure continued operation with no effect on platesetter resolution or throughput. In addition, help is just a phone call away. Kodak's technical support can address most thermal head issues remotely, because we understand that uptime is critical.

Digital media for SQUARESPOT technology

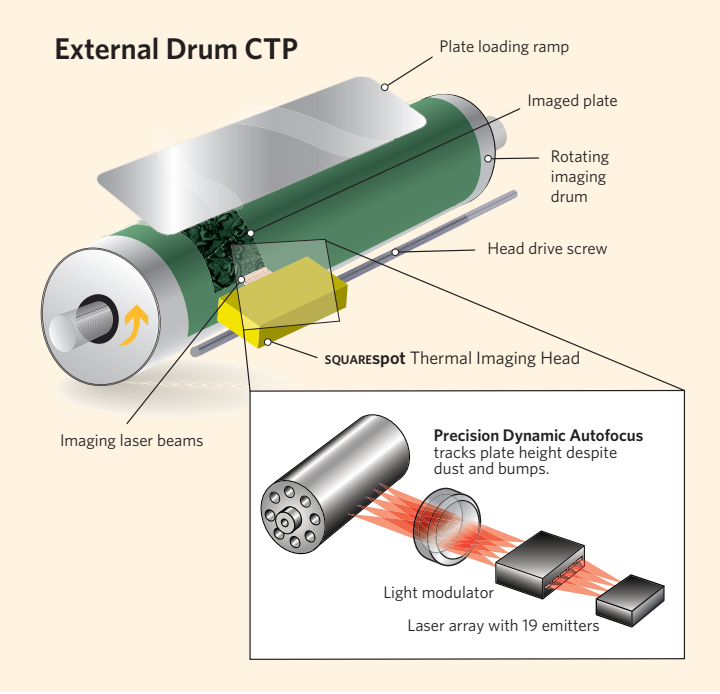
For optimum results on devices with **squarespot** Technology, Kodak offers a wide range of thermal plates for a complete solution that meets your individual printing requirements. Whether your application is long run or short run, high resolution or medium resolution, commercial, newspaper, or packaging, Kodak has a plate that will meet your needs. In addition, Kodak is committed to being an open systems provider; we have qualified over 60 different plate types from suppliers around the world on our CTP devices.

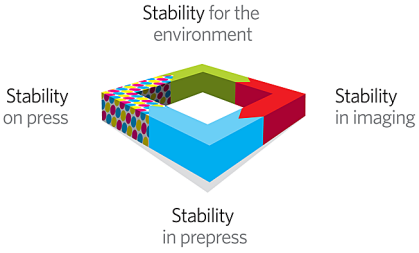
SQUARESPOT Technology is the standard

All **Kodak Trendsetter** 400 and 800 Platesetters, **Magnus** VLF and 800 Platesetters, and V-speed **Magnus** 400 Platesetters come equipped with the **squarespot** Imaging Head. Prior to 2010, **Quantum** Platesetters were the only commercial platesetters with **SQUARESPOT** Technology. Now more customers can benefit from the added stability, accuracy, and repeatability that **SQUARESPOT** Technology provides.

Quantum Platesetters deliver higher screening capabilities: 450 lpi AM screening and the option for 20- or 10-micron **Kodak Staccato** Screening. **SQUARESPOT** Technology enables you to achieve these screens consistently, over time and across devices.

Resolution drives stability





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