



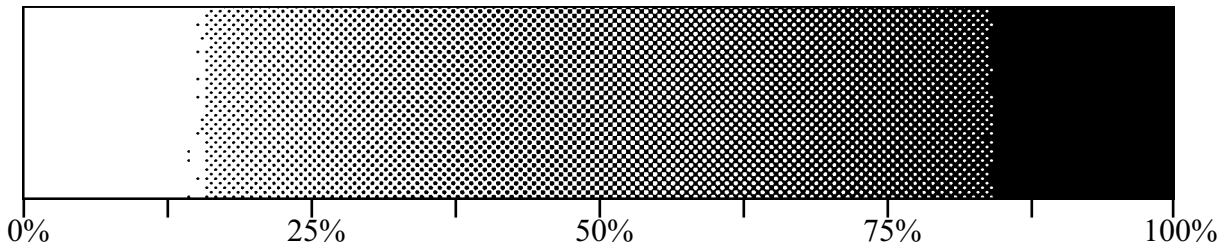
A Comparison of Modern Screening Technologies

THE PROBLEM

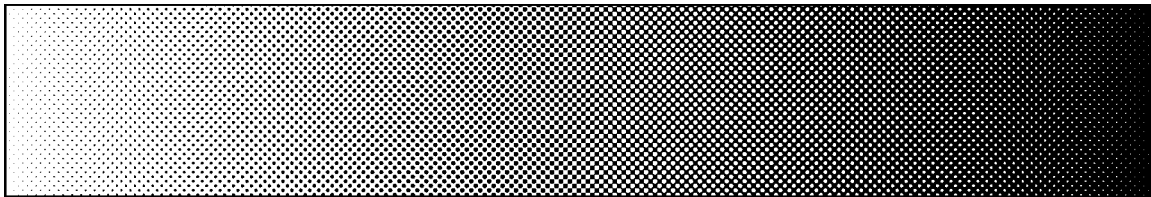


Poor resolution output devices and plates do not render smaller dots in the highlight and the shadows.

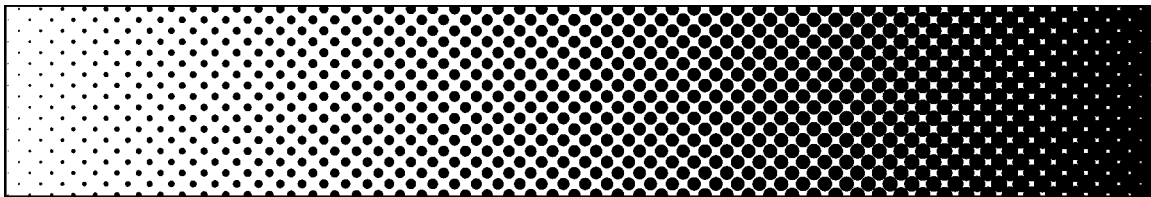
Reproduction range is clipped.



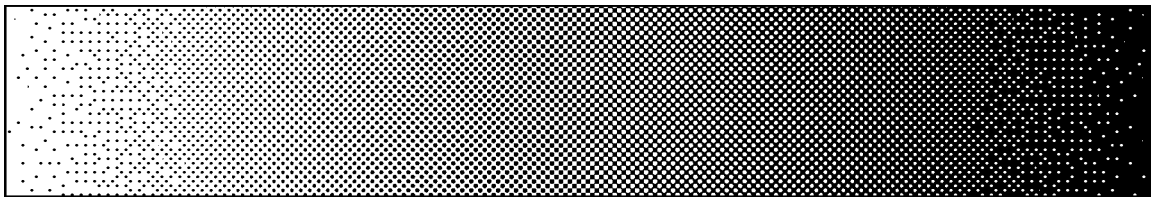
THE SOLUTIONS



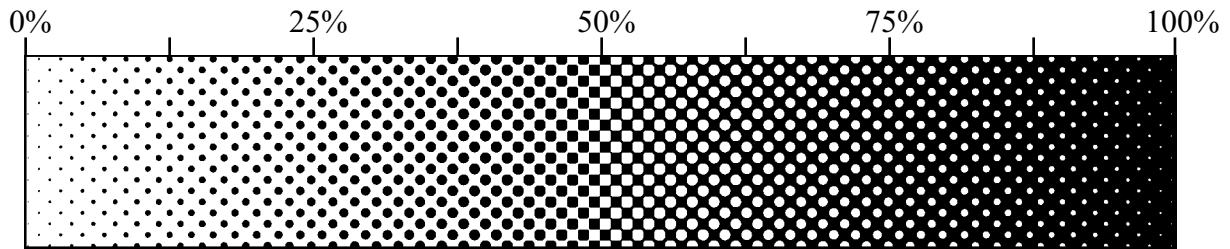
Sharper Imaging with SQUAREspot® - even single pixels (10 microns) are rendered consistently and accurately on plate and presswork to deliver full imaging integrity without compromising LPI, highlight or shadow dots. Prinergy, Brisque and Allegro use supercell techniques to preserve grey levels at high lpi.



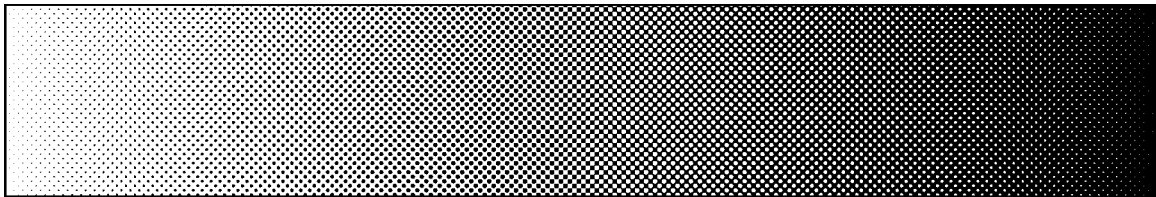
Lowering the screen ruling – larger dots in highlights and shadows are better suited to the rendering capability of lower resolution output devices and plates. Improves reproduction range. Good highlights and shadows but the low lpi sacrifices image detail.



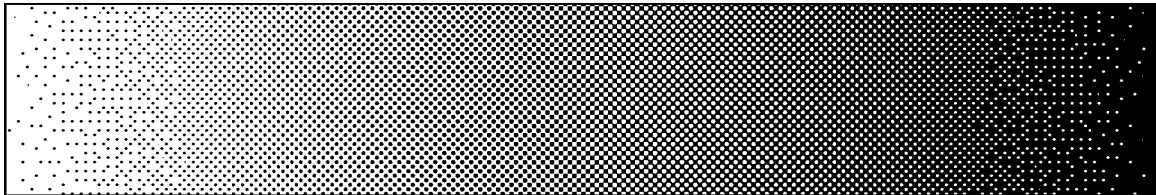
Maxtone™ - Hybrid AM – AM screening with highlight and shadow dots constrained to a size that can be rendered on lower fidelity output devices and plates by varying the number of dots (FM) rather than the size of the dots (AM). Improves reproduction range on low resolution devices at higher screen rulings (lpi) but may compromise uniformity of highlights and shadows. Creo's Maxtone is a Hybrid AM screen suited for flexo and low resolution plates, but not needed where SQUAREspot renders all pixels reliably.



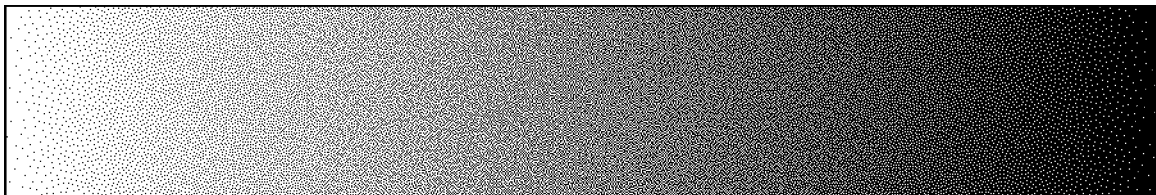
AM (low lpi) – all tones are rendered by varying the size of the dots. Easy to image and print with full tone range, but delivers poor detail rendition.



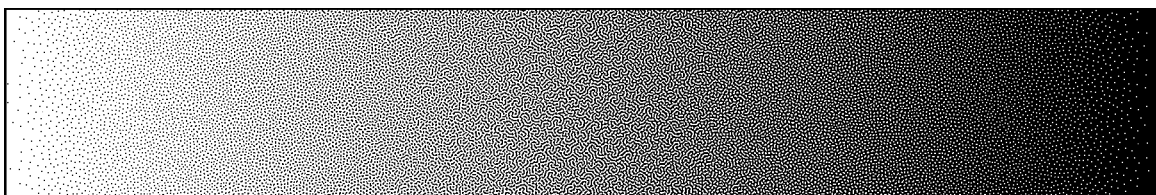
AM (high lpi) – all tones are rendered by varying the size of the dots. Slightly more challenging to image and print. Requires very high resolution CTP to maintain full tone range and supercell screening techniques to preserve greylevels. Any Creo RIPs driving a Quantum CTP device meets these needs.



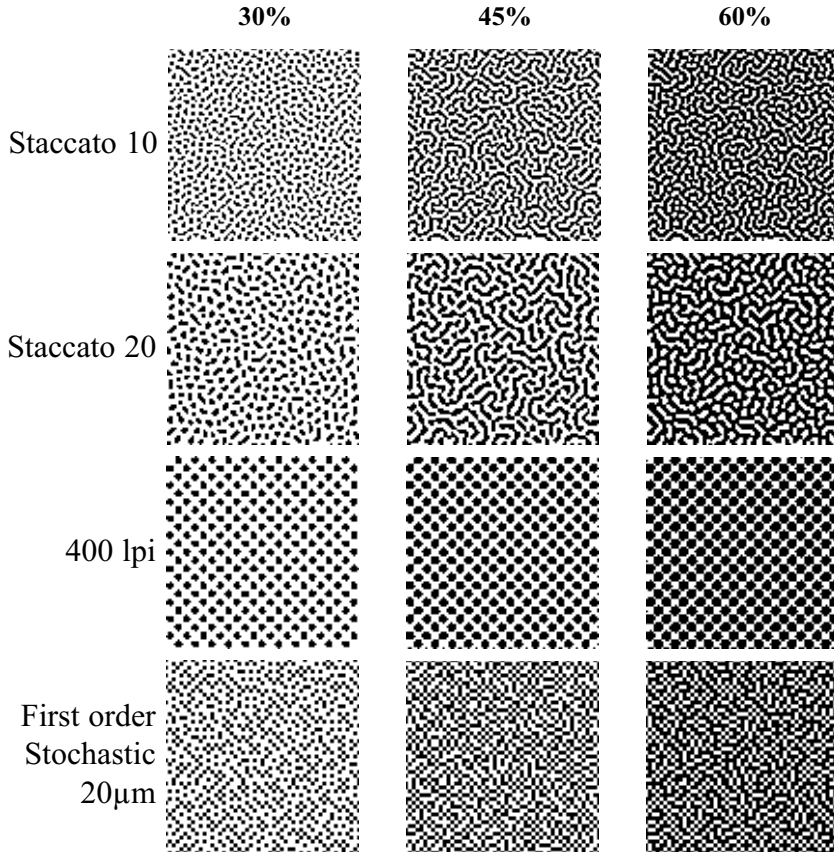
Hybrid AM (Maxtone™)– This is AM screening, except that highlights and shadows are rendered by varying the number of dots (FM) rather than size of dots (AM). Creo’s Maxtone is a Hybrid AM screen suitable for low resolution devices, plates and printing processes. Recommended with flexo, film and non-Quantum CtP systems to overcome problems rendering small dots at higher than normal screen rulings.



Stochastic – all tones are rendered by varying the spacing of equal sized dots (FM). These are referred to as first-order FM screens. These screens are visibly grainy and dot area can be inconsistent when exposed with gaussian (non SQUAREspot®) output devices and low resolution plates. Considerable attention to process stability in the pressroom is required to stabilize output.

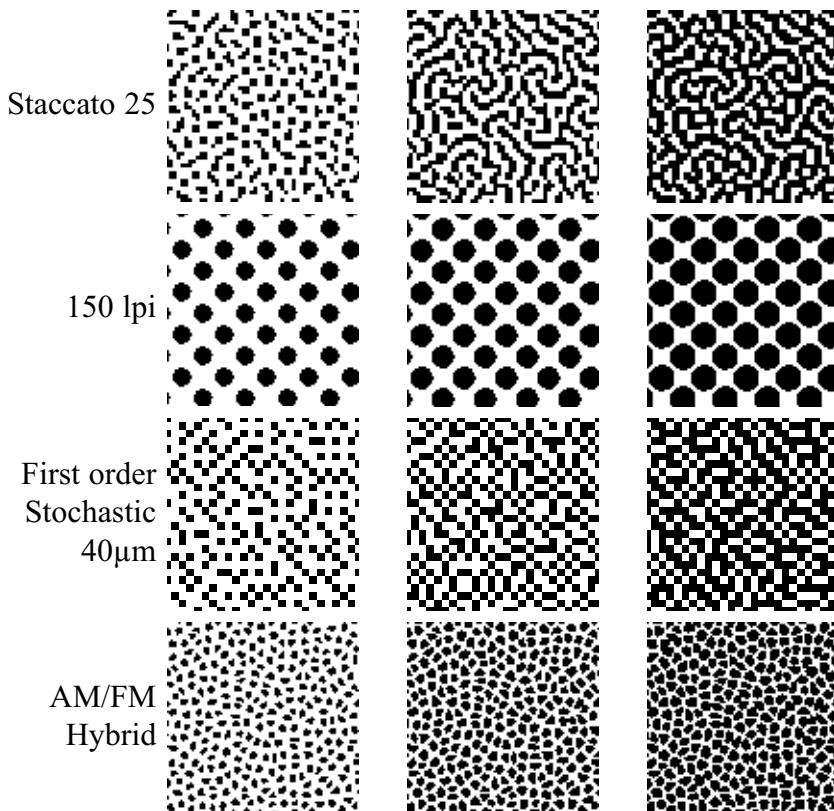


Creo Staccato – tones are rendered by varying the spacing and the shape of the dot structures. These are referred to as a second-order FM screen. Orderly clusters eliminate concerns about grain and improve on press performance.



SQUAREspot for single pixel printing and Staccato consistency.

Coarser screens for lower resolution devices, plates and applications.



Staccato

Staccato is scalable from 10 to 70 micron on Quantum devices, bringing the benefits to all offset print applications.

SQUAREspot® renders every pixel consistently, making Staccato a reality that is easier to plate, proof and print than traditional stochastic screens.

High lpi AM screening

High lpi screens require the same level of effort to plate and print as Staccato, but still have drawbacks of AM screens.

Stochastic

These screens are visibly grainy and dot area can be inconsistent with non-SQUAREspot CtP. More difficult to print than Staccato and AM.

Staccato

Staccato's coarser screens are smooth and deliver the benefits of FM, without compromising resolution.

Low lpi AM screening

Lower lpi screens can be rendered on most devices.

Coarse Stochastic

These screens are too grainy at 40µm for most print applications.

AM/FM Hybrid

Suitable for gaussian imaging where finer screens are unstable. AM like dots may be sensitive to plugging, tone jumps and secondary patterns.