Co-Res SCREENING

SCREENING: FUJIFILM Co-Res SCREENING 300LPI
Higher quality, easier to print

Fujifilm advances deliver improvements to traditional AM and FM screening.

Although CTP can be considered an established process, further advances in technology bring new benefits to users. Fujifilm brings two screening products to their users, revolutionary AM screening Co-Res and next generation FM screening TAPFETA. These together with established Fujifilm Quality Screening provide users with the widest choice and ability to deliver superb printed results.

Co-Res SCREENING

The ultimate in AM screening technology, delivering balance between printing ease and high resolution.

Co-Res SCREENING (Common Resolution Screening) is a screening product that enables the output of high screen rulings using low output resolutions, offering the highest quality reproduction without stringent process requirements of stochastic screening. Co-Res SCREENING provides wider on-press latitude, superior image quality with the same effort and process control as traditional 175 line screening.

INSIDE Co-Res SCREENING

MULTI-TEMPLATE TECHNOLOGY

At its core, Co-Res SCREENING takes advantage of the way human perception works with colour and density. Fujifilm’s Multi-Template Technology is a completely new way of arranging the halftone dots that are the size equivalent of 64-gradation dots within the smallest area the human eye can perceive. Rather than monochromatic dots native to AM screening, in Multi-Template Technology each of the 64 dots consists of, for example, a 3 x 3 matrix that effectively increases the number of grey levels by a factor of nine. The result is that through the use of Co-Res SCREENING, printers can achieve 256 levels of grey with 300 lpi screens at 2,400 dpi. This yields markedly smoother images and gradations, and greater image detail.

Example of a 3x3 matrix

<table>
<thead>
<tr>
<th>Average Value</th>
<th>Value</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>100 x 100µm² or less</td>
<td>50%</td>
<td>75%</td>
</tr>
<tr>
<td>125 µm²</td>
<td>25%</td>
<td>50%</td>
</tr>
<tr>
<td>250 µm²</td>
<td>50%</td>
<td>75%</td>
</tr>
<tr>
<td>375 µm²</td>
<td>75%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Conventional printing is 1,568 steps per gradation.

Average Value = 50.96%

Average Value = 51.68%

MOIRÉ SUPPRESSION TECHNOLOGY

Generating 300 lpi halftone dots with lower resolutions can be susceptible to single-colour moire and patterning artifacts caused by conflicts with the screen frequency and scanning pitch. Fujifilm have solved this problem with powerful Moire Suppression Technology that anticipates when and where single-colour moire will occur and alters the dot structure to effectively eliminate any noticeable moire pattern.

Halftone dot arrangement resulting in pronounced moire as shown in red.

Adjusted halftone dot arrangement resulting in suppressed moire.
TAFFETA 20

Revolutionary FM screening technology adds value with such features as complete elimination of moiré, better colour saturation.

But that's not all. Thanks to Fujifilm original technology, TAFFETA 20 FM screening goes further than ordinary FM screening by reducing unevenness and graininess and also improved printability.

FEATURES:
- Moiré and rosette are completely eliminated
- Improved primary / secondary colour saturation
- Improved image detail reproduction
- Printing with more than 4 colours
- Reduced waste
- Improved texture
- Less ink consumption than traditional 175 lpi printing

FUJIFILM FM SCREENING TECHNOLOGY ADVANTAGES

Incorporating Co-Res SCREENING's simulation technology has brought about the evolution of Fujifilm original screening design technology. Computerized quantitative analysis of graininess and printing adaptability is used to control the screening pattern by placing dots in optimal position. The following technologies enable this:

1. Granniness Optimization Algorithm based on simulation using visual characteristics
2. Screening Pattern Optimization Algorithm for both minimizing graininess and maximizing printability

Example of Granniness Optimization Algorithm based on simulation using visual characteristics:
- Select a dot pattern that minimizes the quantitative value of perceptual graininess
- Calculate the quantitative value that represents perceptual graininess

Example of Results of Granniness Optimization:
- Trade-off between graininess (FM screen problem) and printability

THE AIM OF FUJIFILM TAFFETA

Achieve a better balance between printability & graininess, one level above the conventional limit. Make FM screen printing easier to use and more effective.