

hamillroad 

Transforming the image of print



Auraia DM Screening

**Unparalleled screening
technology for Offset printing**

What is Auraia DMS?

A disruptive and innovative screening method:

- Measured ink savings of 12% to 18% (and water/heat savings)
- Assessed best output quality
- Patent protected ⁽¹⁾
- Improved pressroom productivity ⁽²⁾
- Compatible with existing systems and processes
- Thermal, violet and UV plate options
- In use at major commercial and newspaper printers worldwide

⁽¹⁾ Patents granted in US/UK/China, EU/India/Additional-US patents in progress

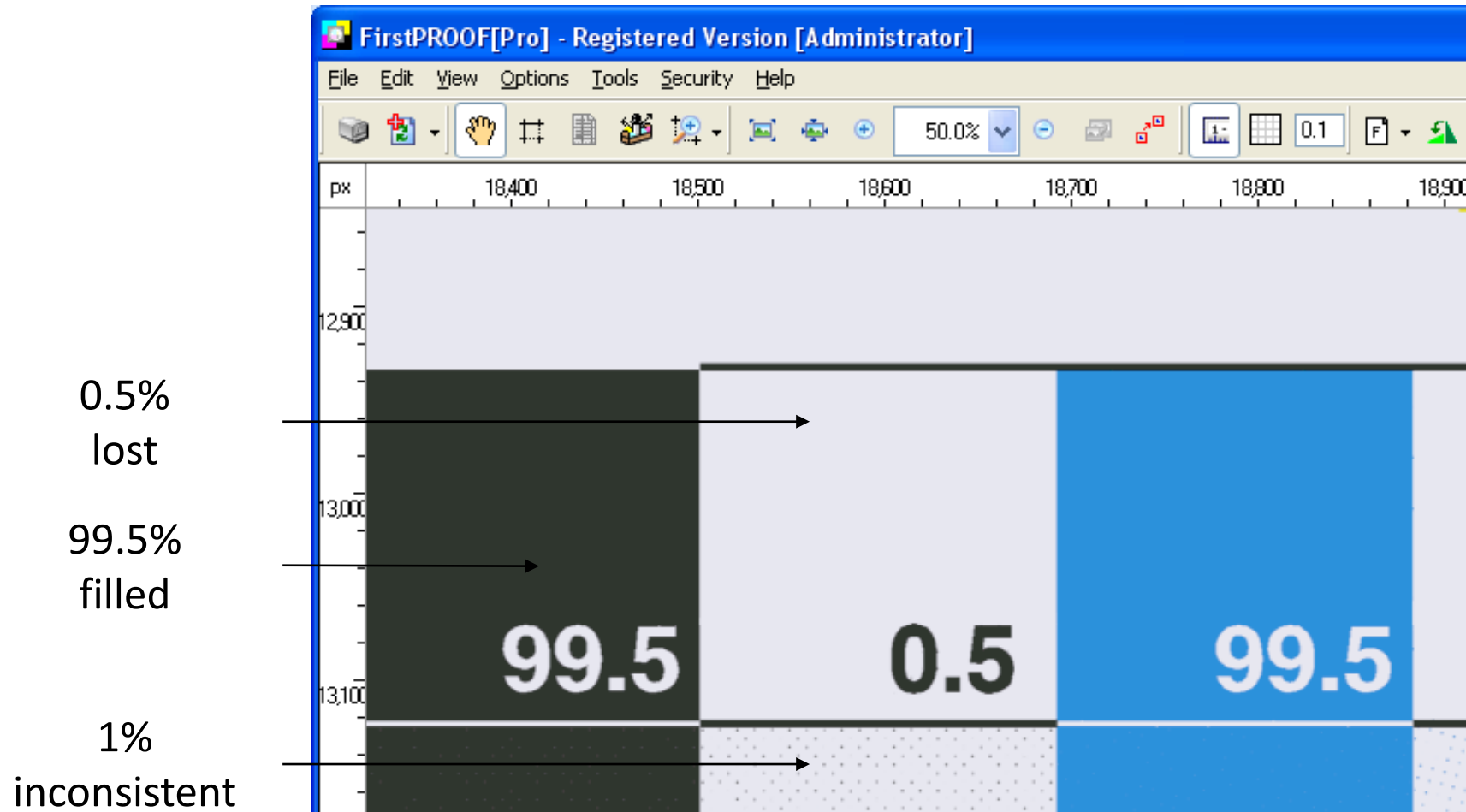
⁽²⁾ Enhanced controllability on plate / press, faster make-ready, less bad copies, fewer press / bindery jams,...

Comparison of DM / FM / AM / XM / CS¹

Attributes (a “✓” is good)	DM	FM	AM	XM	CS
Hilite dots down to 0.5% and less	✓	x	x	✓	x
Shadow dots up to 99.5% and more	✓	x	x	✓	x
Smooth flat tints (≤ 200 lpi, 30μ)	✓	x	✓	✓	✓
Smooth flat tints (≥ 250 lpi, 20μ)	✓	x	x	x	x
Screen moiré free	✓	✓	x	x	x
Content moiré free	✓	✓	x	x	x
Color shift free	✓	x	x	x	x
Noise shift free	✓	x	-	-	-
High image detail - coated (350+ lpi)	✓	✓	x	✓	x
High image detail - uncoated (350+ lpi)	✓	x	x	x	x
Easy to plate	✓	x	✓	✓	x
Easy to calibrate	✓	x	✓	✓	x
Easy to print	✓	x	✓	✓	x
Ink savings	✓ 15-30%	✓ 3-15%	x	x	✓ 15-30%
N-color printing	✓	✓	x	x	x
Hexachrome printing	✓	✓	x	x	x
Useable on violet CtP	✓	x	✓	✓	x
Useable on thermal CtP	✓	✓	✓	✓	✓

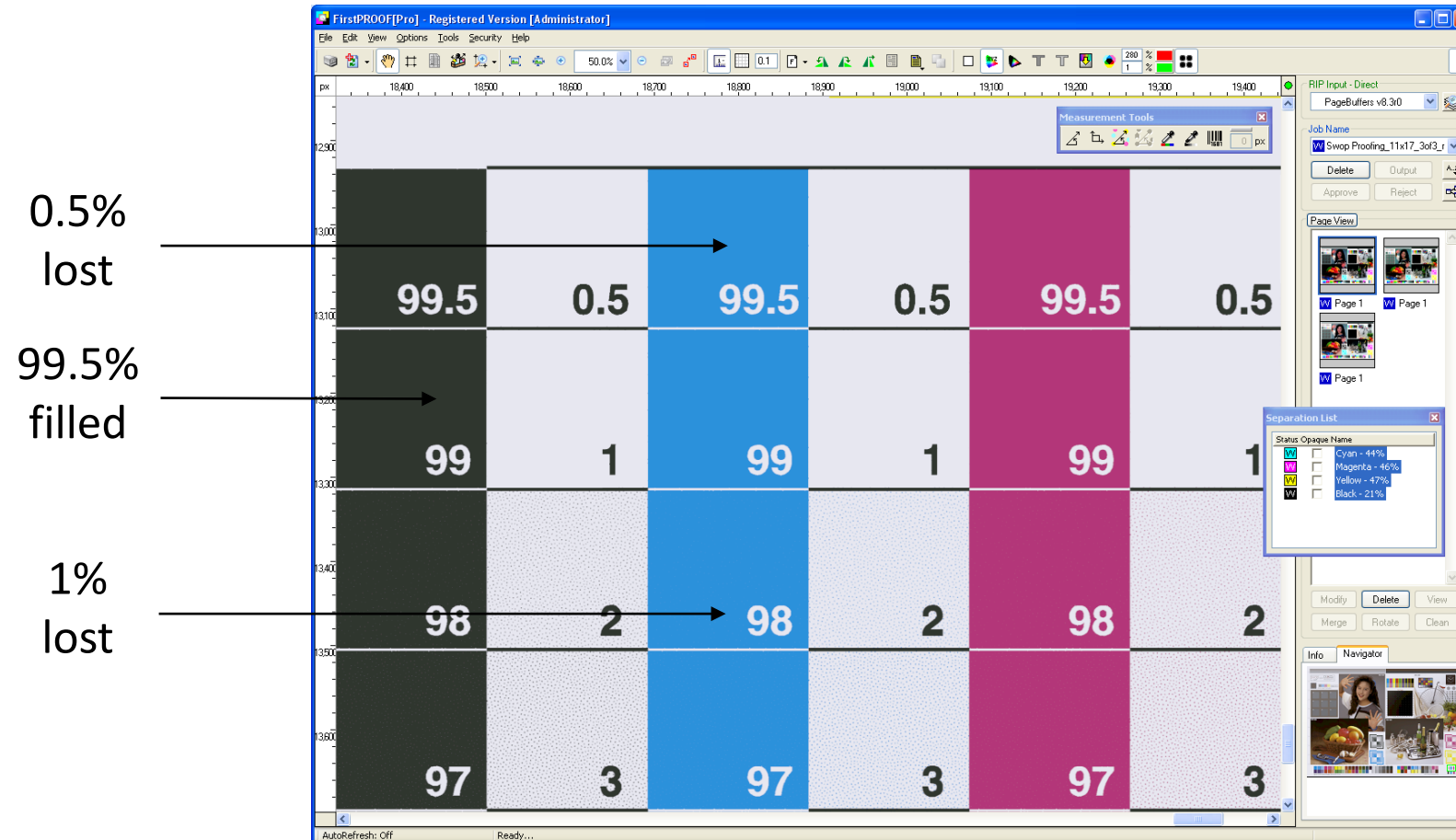
1. CS is Concentric Screening, Concentric is a trademark of Esko-Graphics.

Hilite / shadow dots (AM)



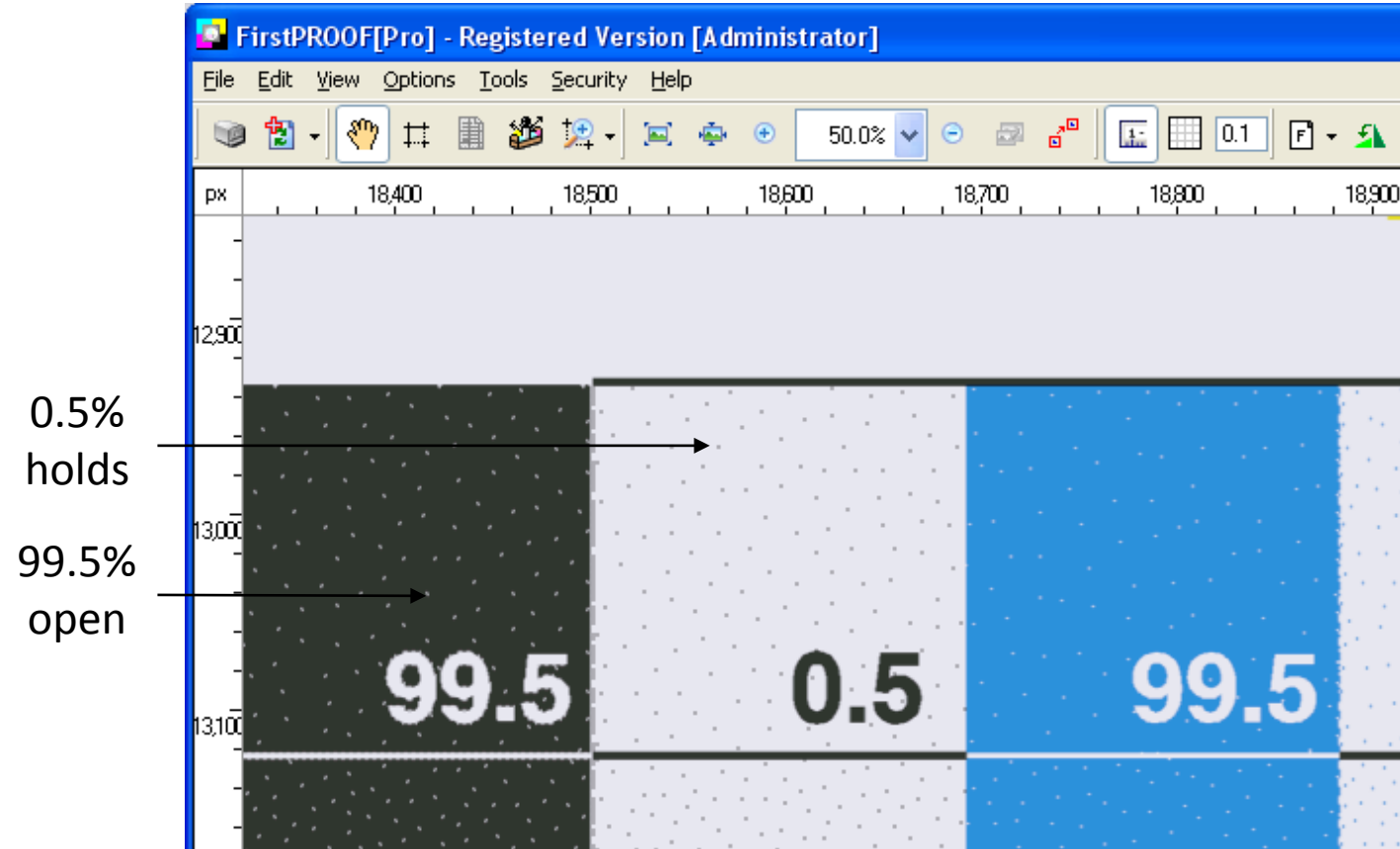
Hilite / shadow dots (FM)

[HDS / Staccato / Randot X / Satin¹]



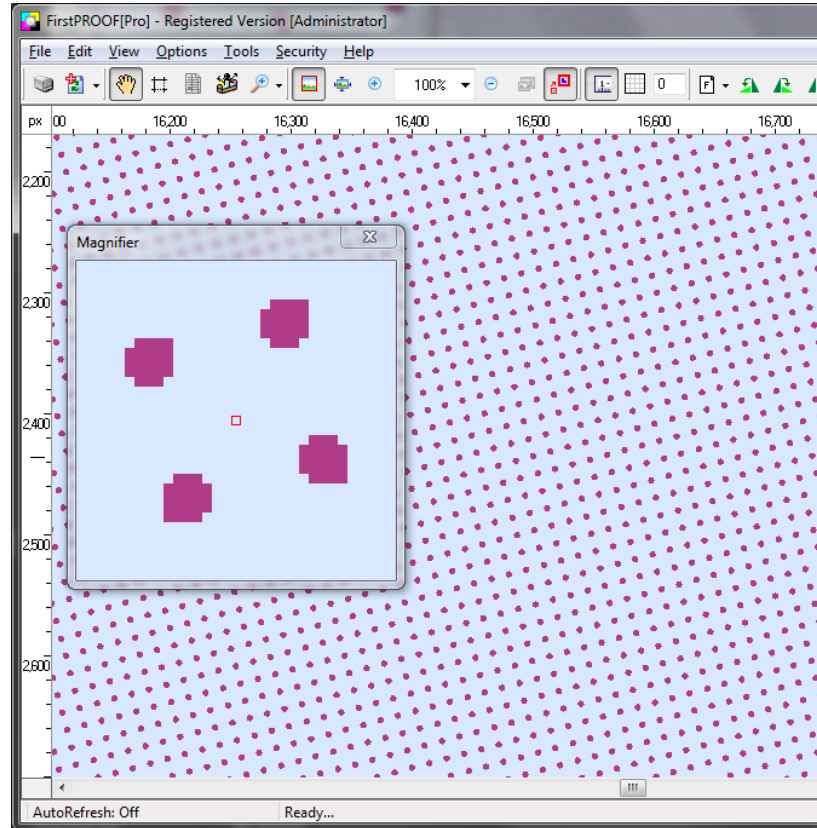
1. HDS is a trademark of Global Graphics, Staccato is a trademark of Creo / Kodak, Randot X is a trademark of Screen, Satin is a trademark of Heidelberg.

Hilite / shadow dots (DM)



Flat tints (AM)

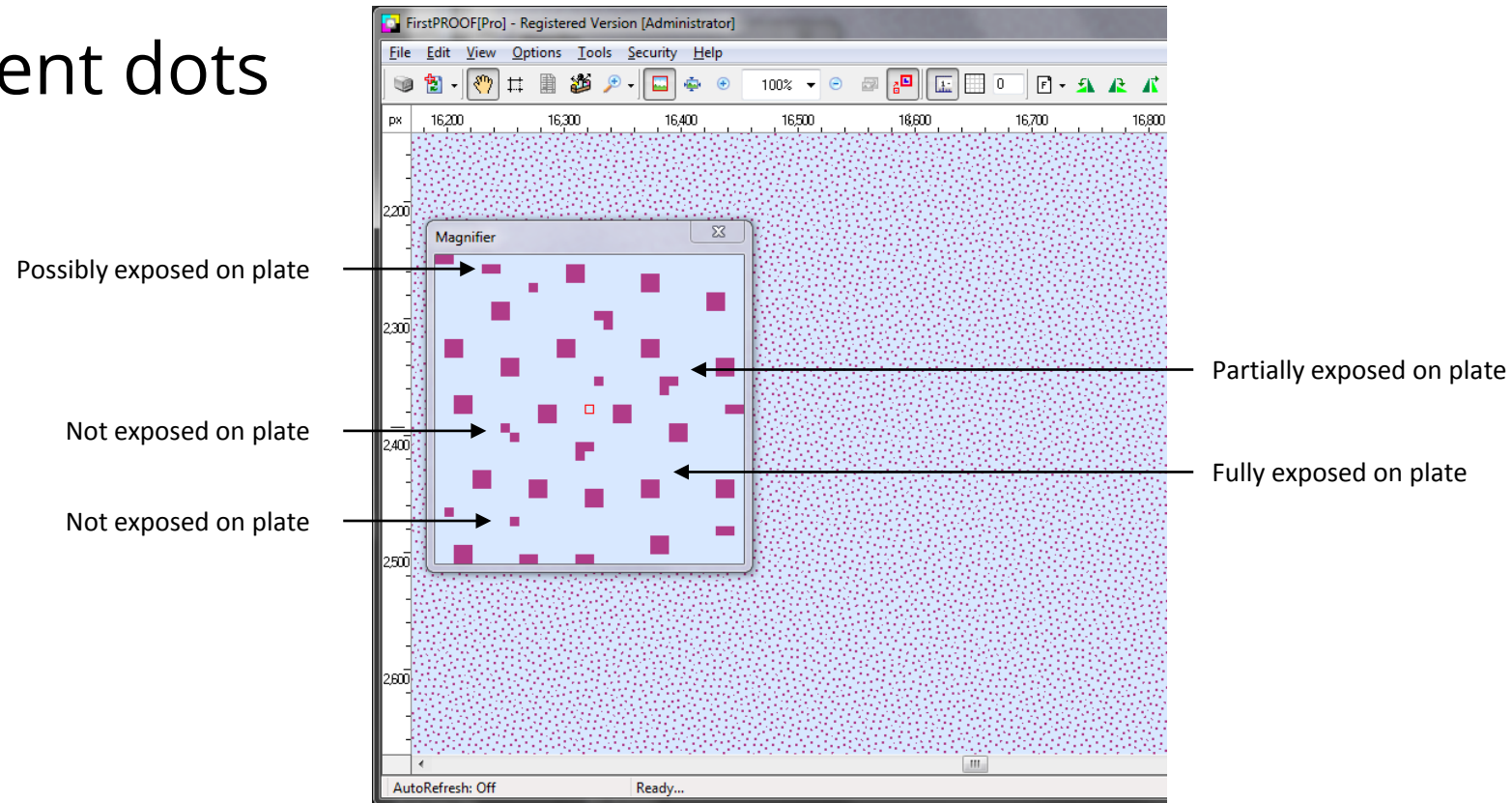
Consistent dots



Flat tints (FM)

[HDS / Staccato / Randot X / Satin¹]

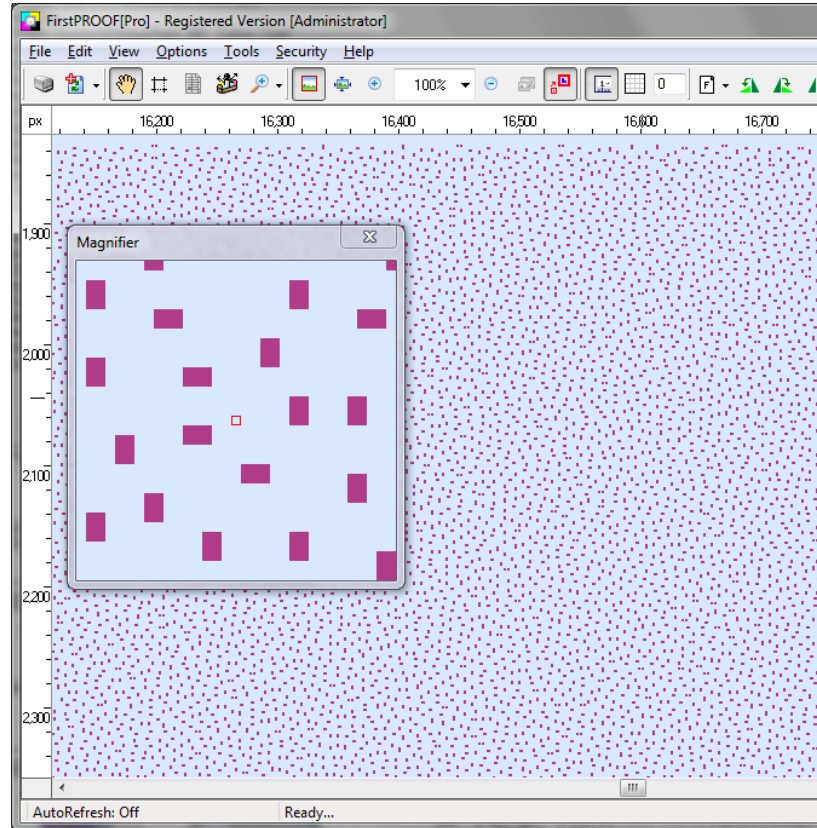
Inconsistent dots



1. HDS is a trademark of Global Graphics, Staccato is a trademark of Creo / Kodak, Randot X is a trademark of Screen, Satin is a trademark of Heidelberg.

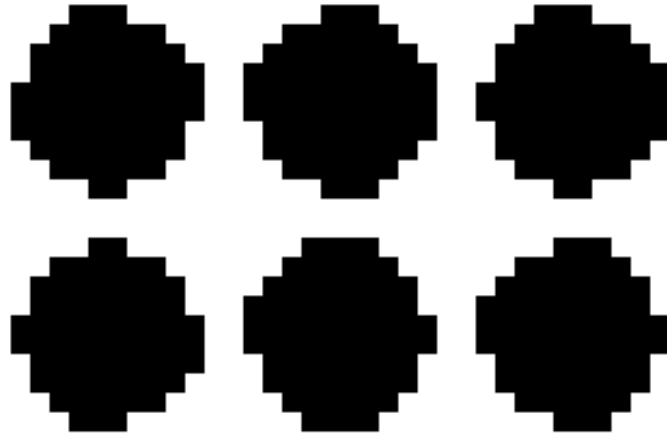
Flat tints (DM)

Consistent dots



Gain issues – 50% (AM)

Consistent dots gain the same:



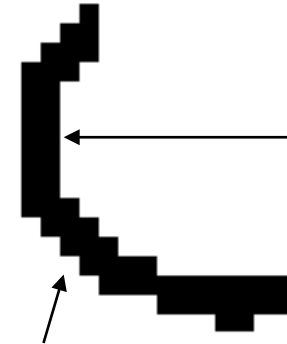
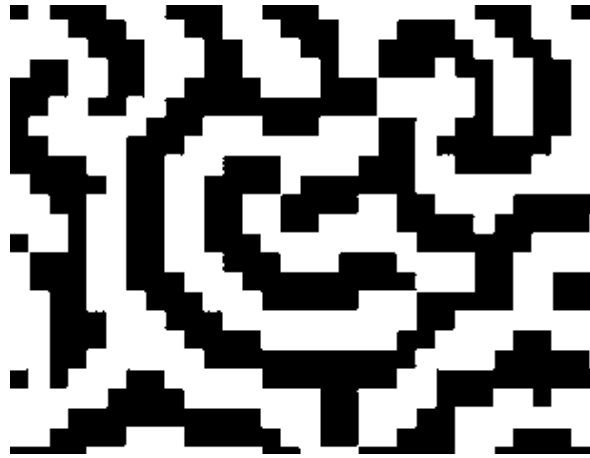
All are 100 microns across & down and contain either 71 or 72 pixels

All have 12 internal corners, per 71.5 pixels, 16.8% of area

Difference of 1.4% before gain, 2-3% (?) after gain

Gain issues – 50% (FM)

Inconsistent 'dots' (swirls) gain differently:



20 microns wide

21.2 microns wide (~6% wider)
28.2 microns wide after gain if it fills in
But gains more and not easy to control

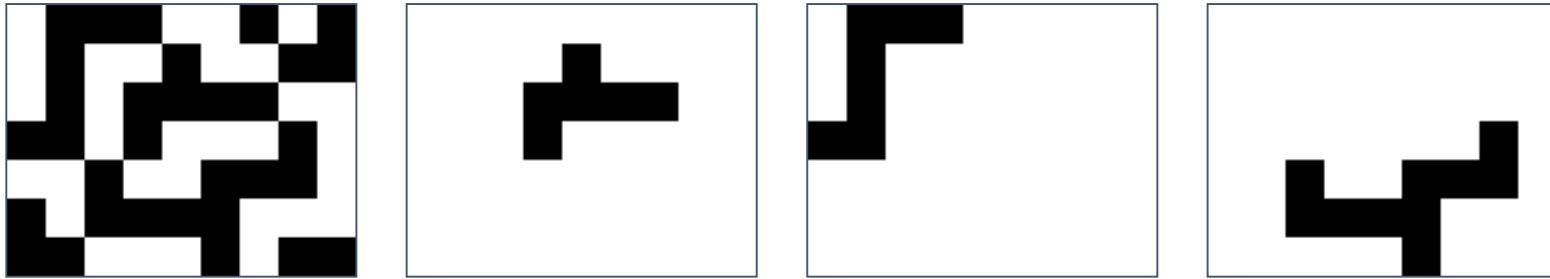
Thickness varies from 1 to 1.4 to 2 to 2.12

Have 0 (!) to ~7 internal corners, per 10 pixels, 0-70% of area

Difference (between 2 and 2.12) of 6% before gain, 35% after gain

Gain Issues – 50% (DM)

Consistent dots gain the same:



Thickness always 2 pixels

Have:

- 3 corners, per 24 pixels, 12.5% of area

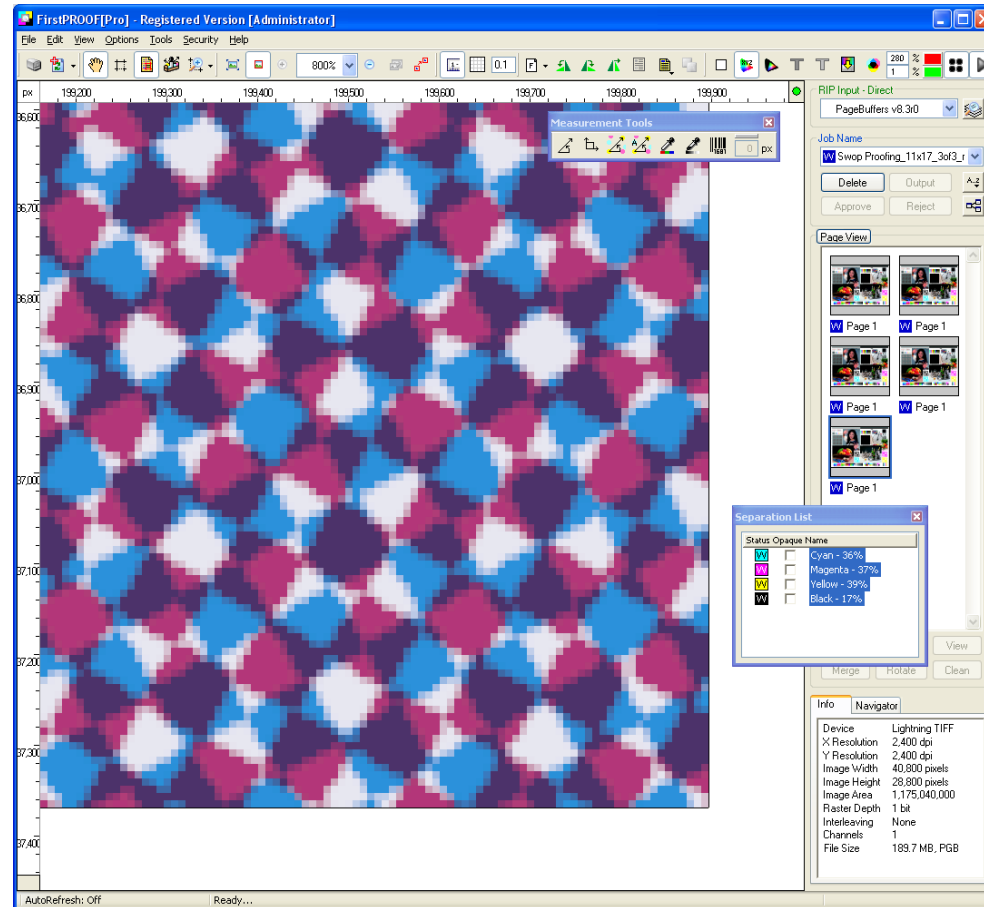
- 2 corners, per 28 pixels, 7.14% of area

- 4 corners, per 40 pixels, 10.0% of area

Difference of 0% before gain over any given area, 2-3% (?) after gain

Flat tints (AM)

Consistent overlaps



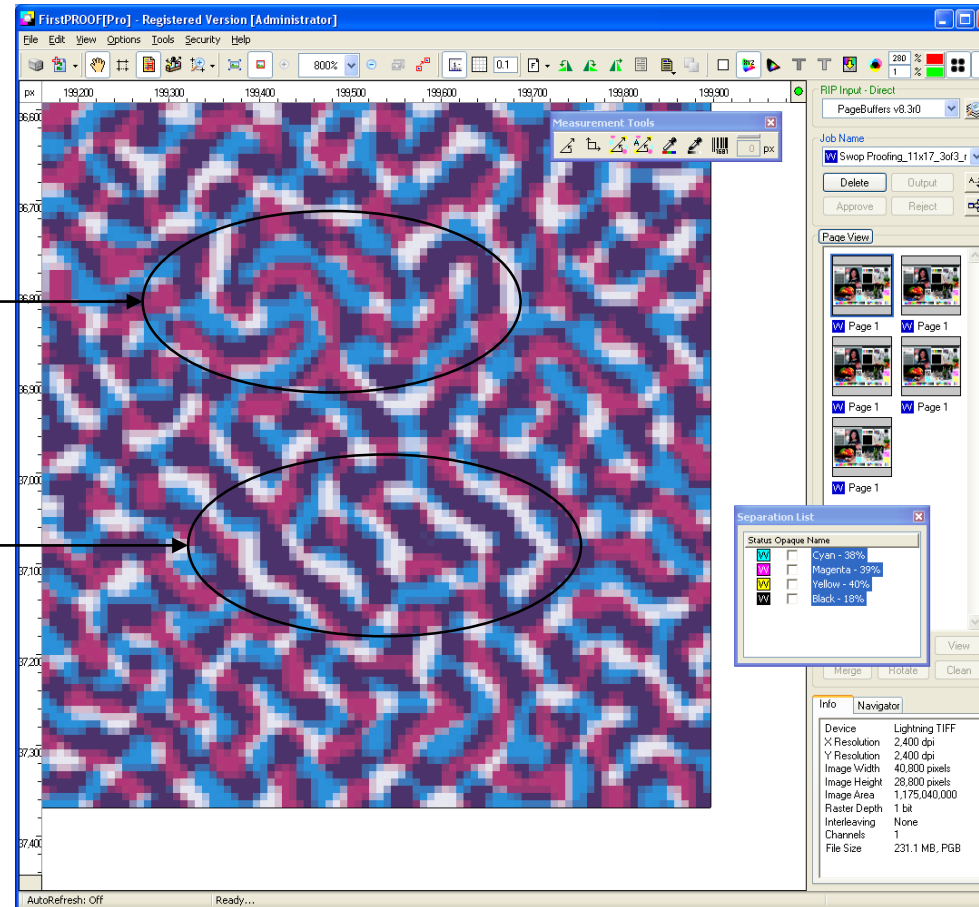
Flat tints (FM)

[HDS / Staccato / Randot X / Satin¹]

Dark (cyan/magenta)

Inconsistent overlaps

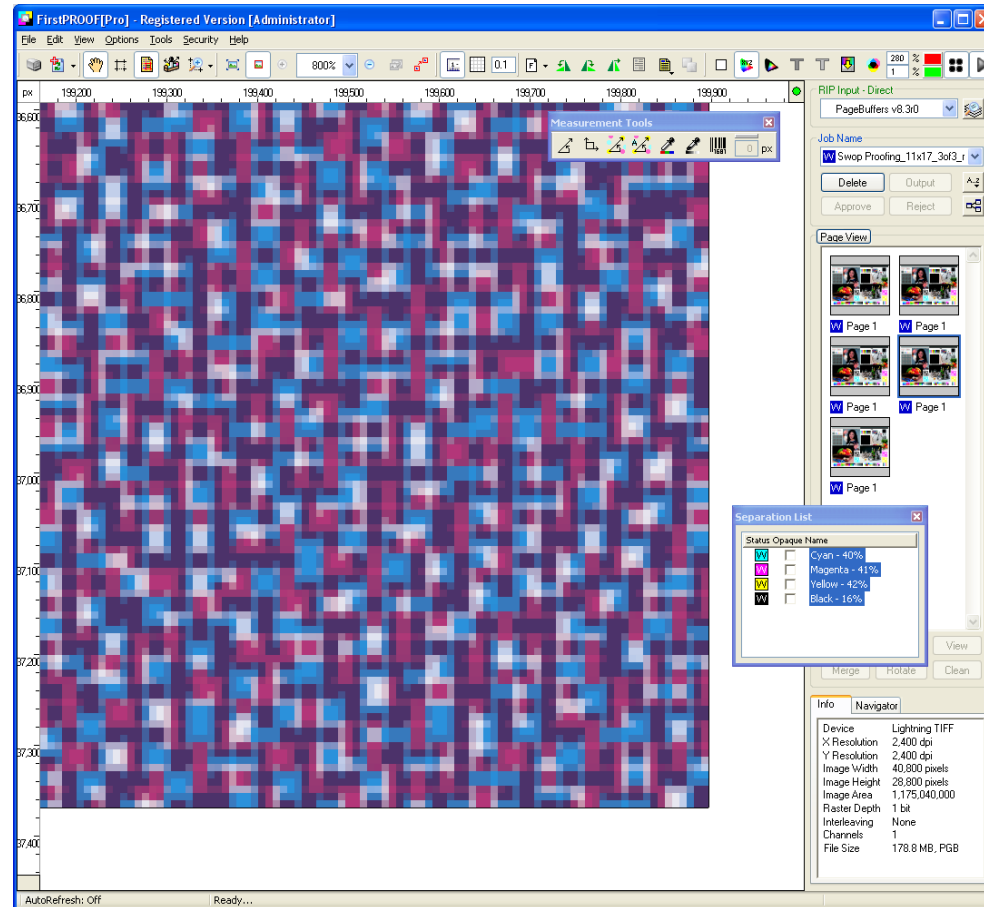
Light (purple/white)



1. HDS is a trademark of Global Graphics, Staccato is a trademark of Creo / Kodak, Randot X is a trademark of Screen, Satin is a trademark of Heidelberg.

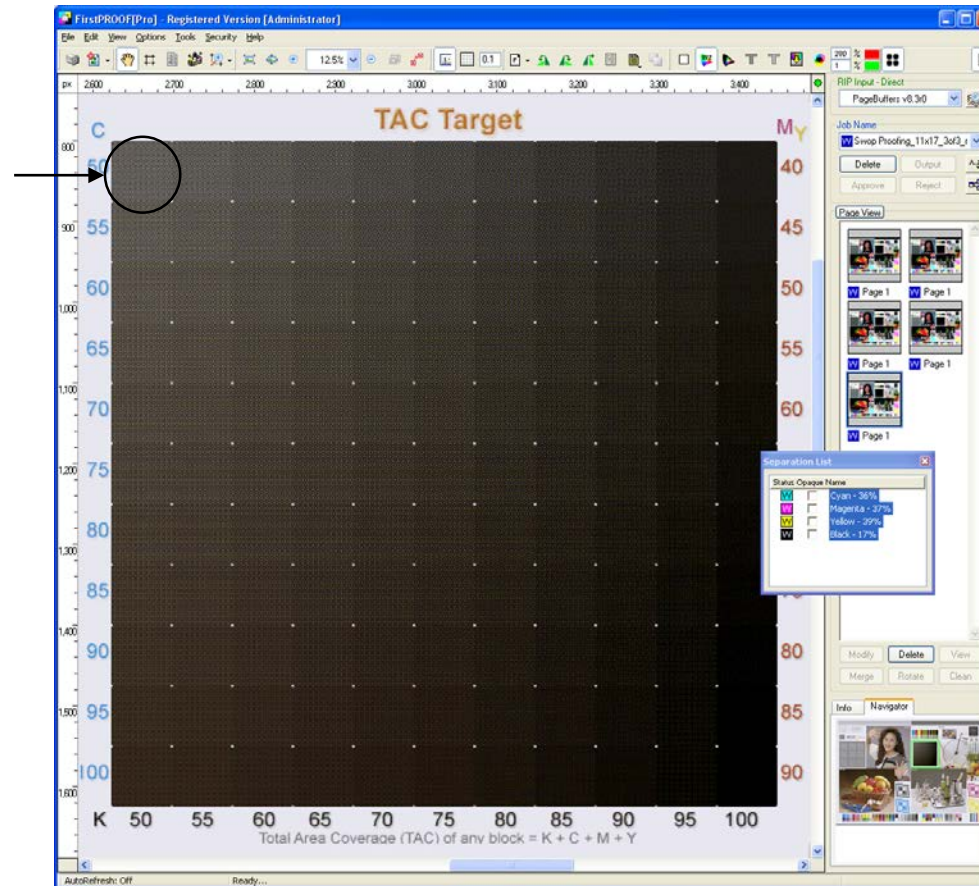
Flat tints (DM)

Consistent
overlaps



Flat tints (AM)

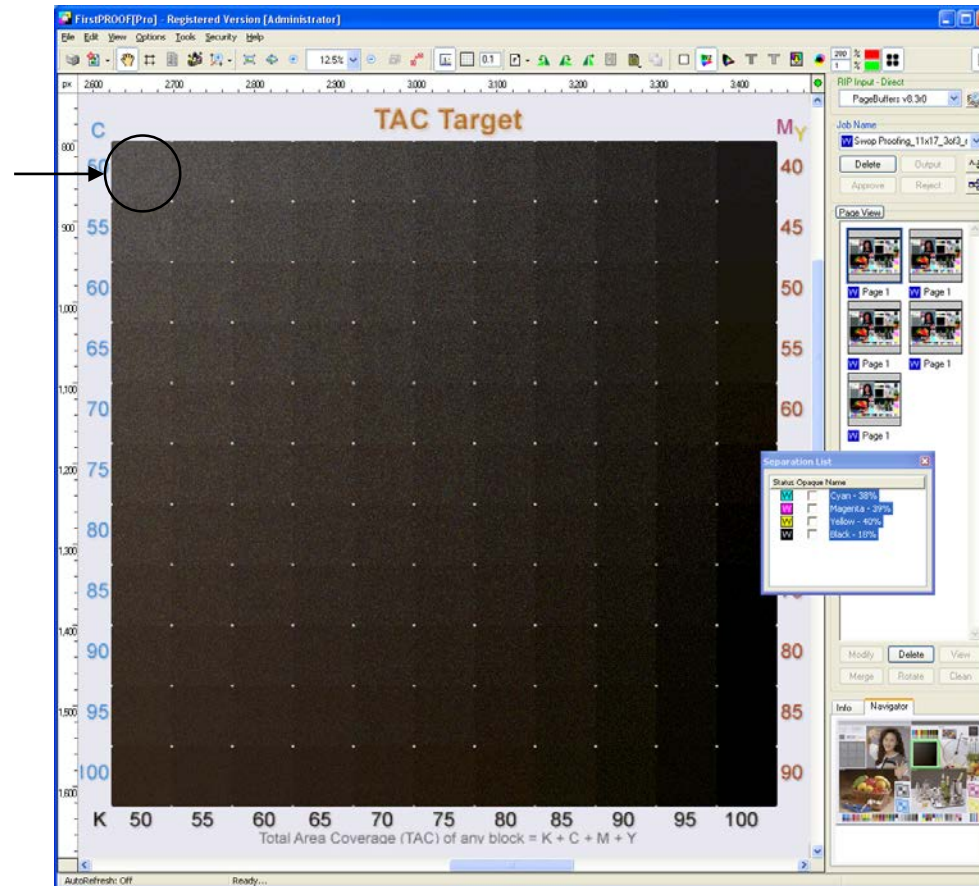
Moiré



Flat tints (FM)

[HDS / Staccato / Randot X / Satin¹]

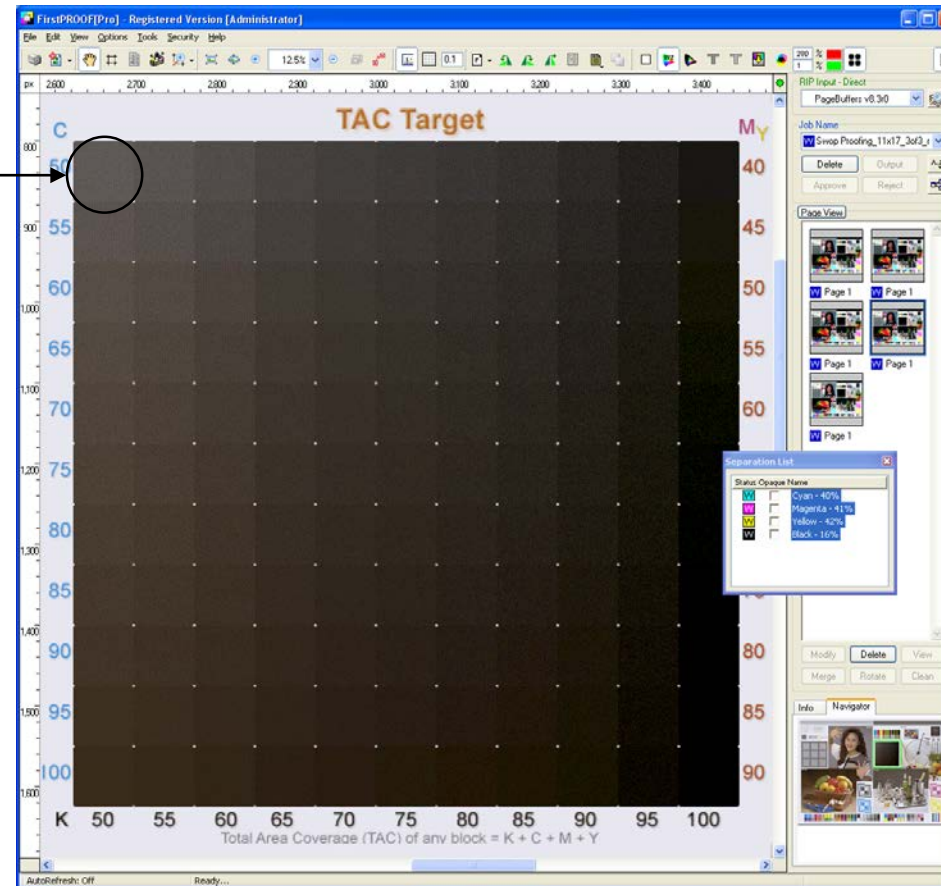
Noisy



1. HDS is a trademark of Global Graphics, Staccato is a trademark of Creo / Kodak, Randot X is a trademark of Screen, Satin is a trademark of Heidelberg.

Flat tints (DM)

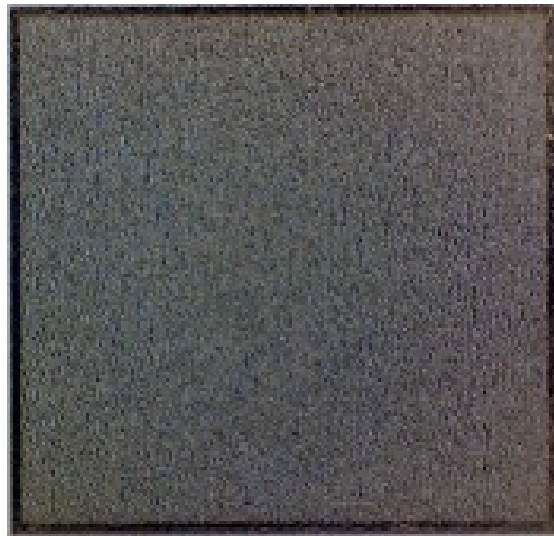
Smooth



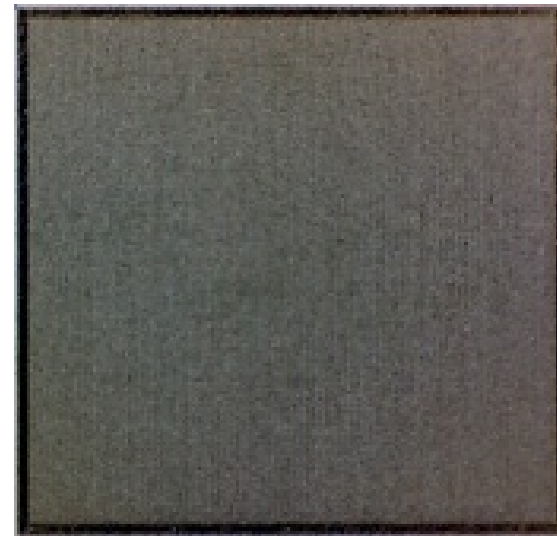
Flat tints (DM vs FM)

[Auraia 6 vs HDS / Staccato / Randot X / Satin¹]

Actual prints
100x magnification



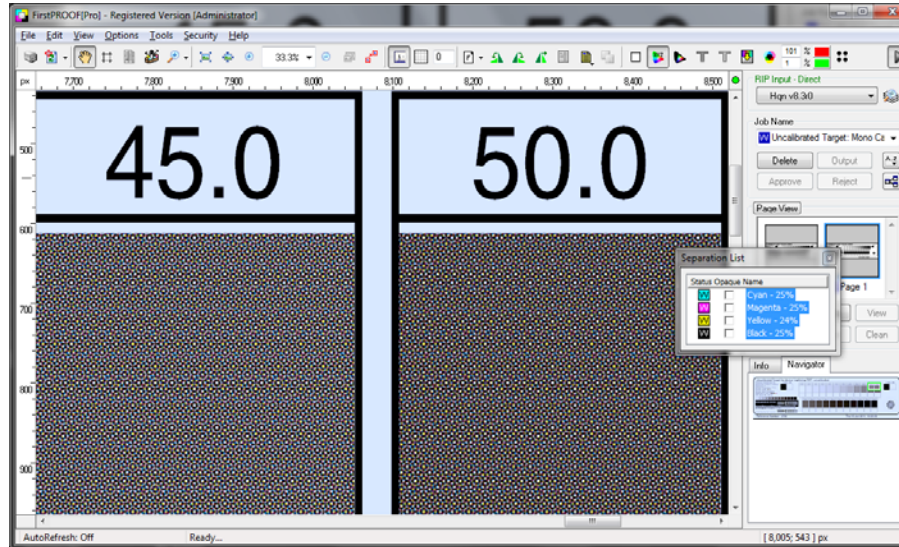
FM 50% patch



DM 50% patch

1. HDS is a trademark of Global Graphics, Staccato is a trademark of Creo / Kodak, Randot X is a trademark of Screen, Satin is a trademark of Heidelberg.

Noise / color shifts (AM)

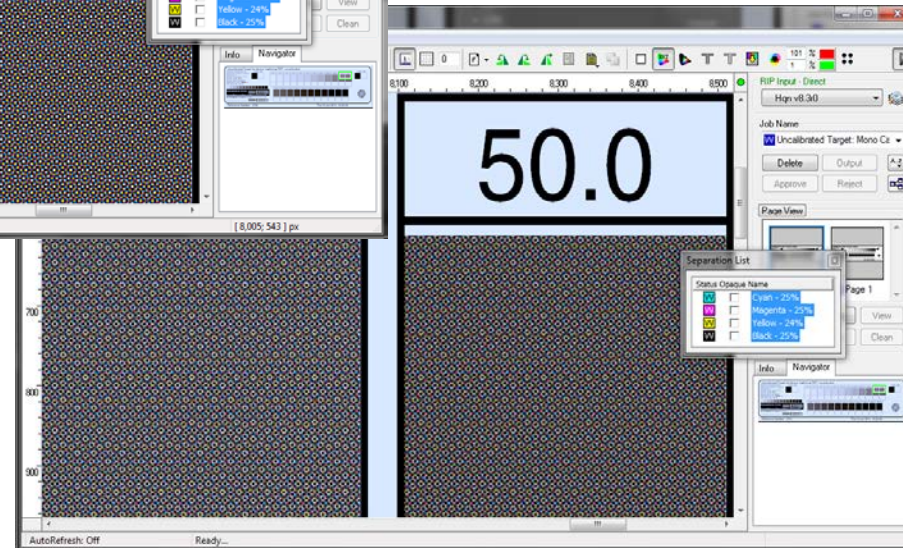


Mis-registered

- (a) dot center rosette
- (b) Darker (less white)

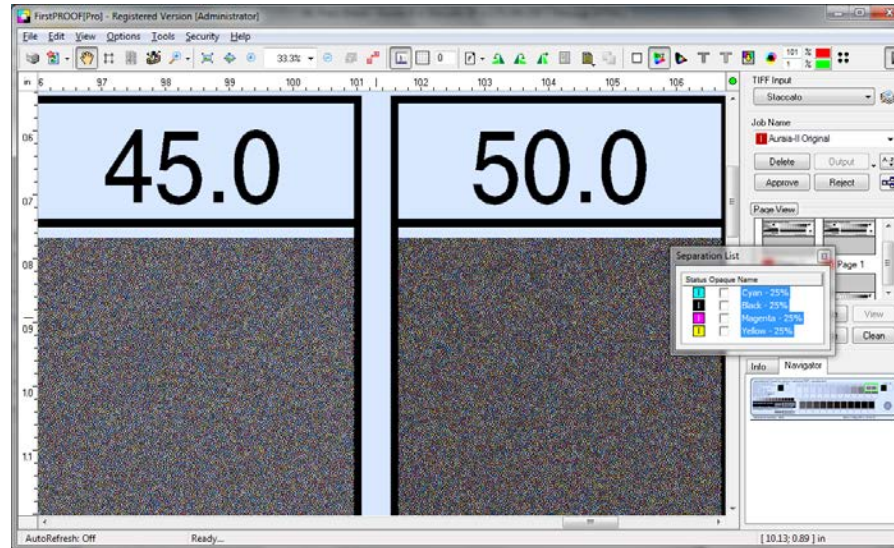
Registered:

- (a) clear center rosette
- (b) lighter (more white)



Noise / color shifts (FM)

[HDS / Staccato / Randot X / Satin¹]

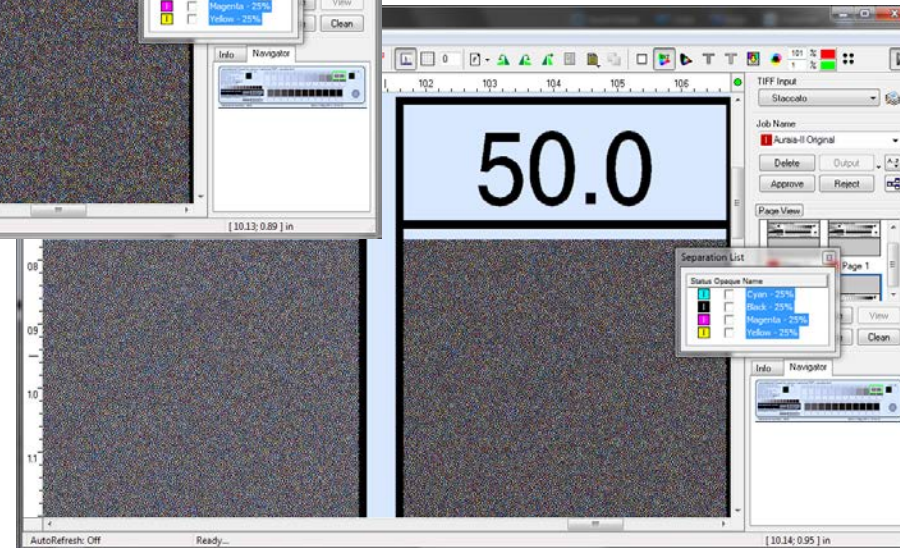


Mis-registered

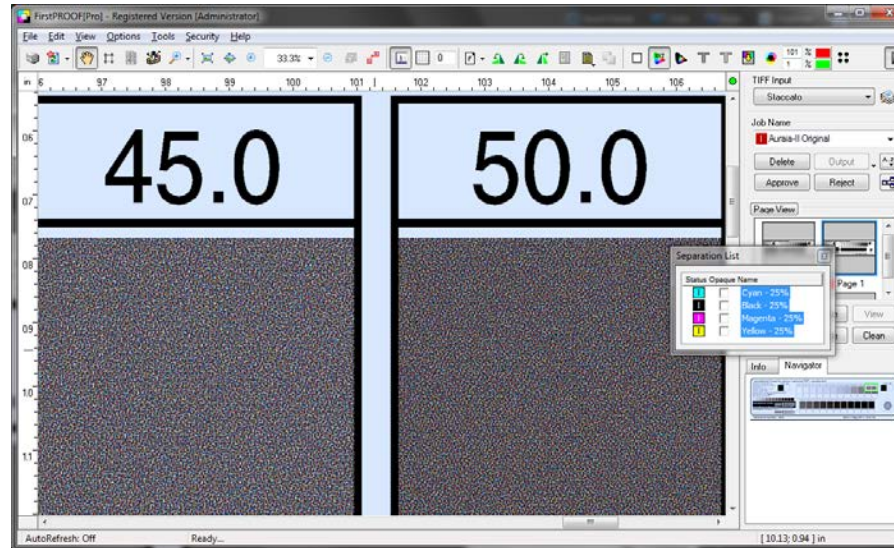
- (a) Smoother
- (b) lighter

Registered:

- (a) Noiser
- (b) darker



Noise / color shifts (DM)



Mis-registered

- (a) same smoothness
- (b) same color

Registered:

- (a) same smoothness
- (b) same color

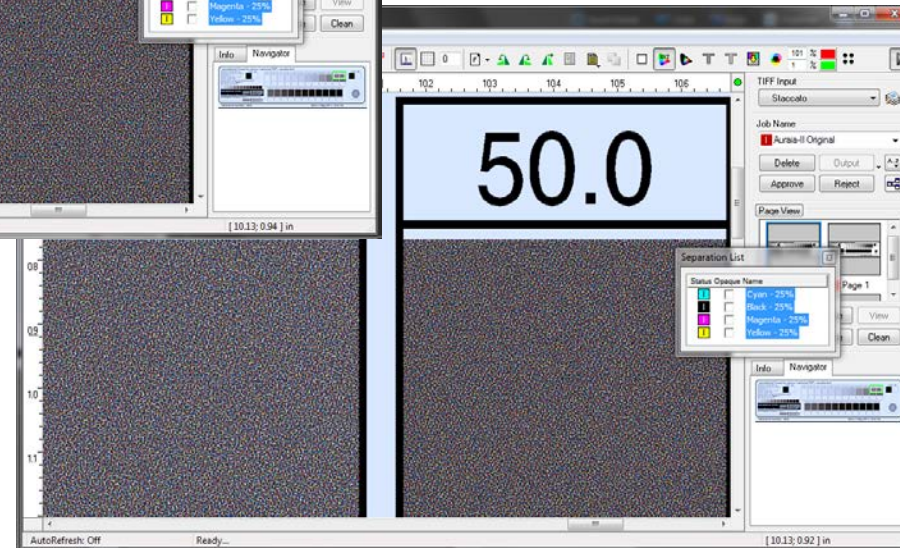


Image detail (AM)

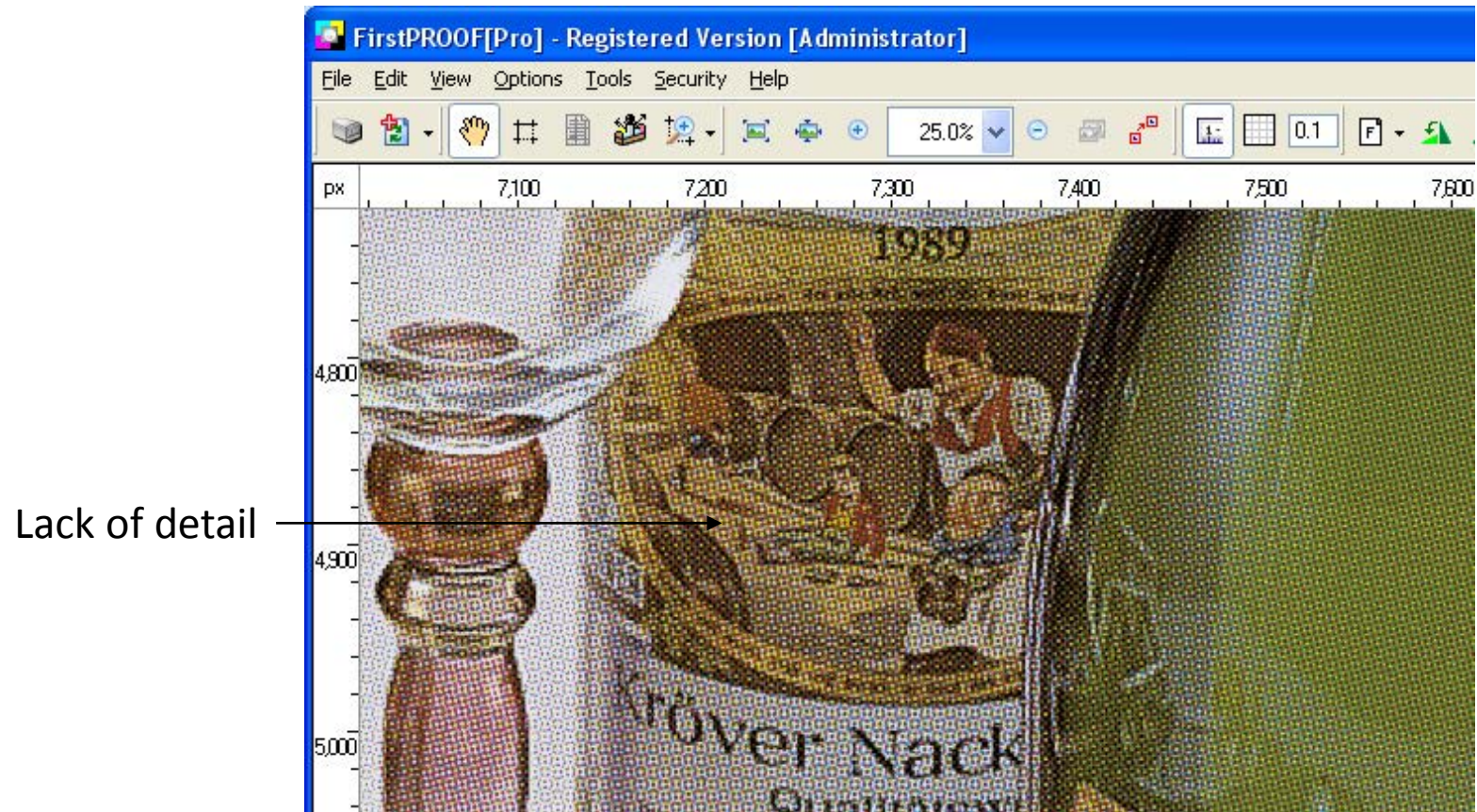
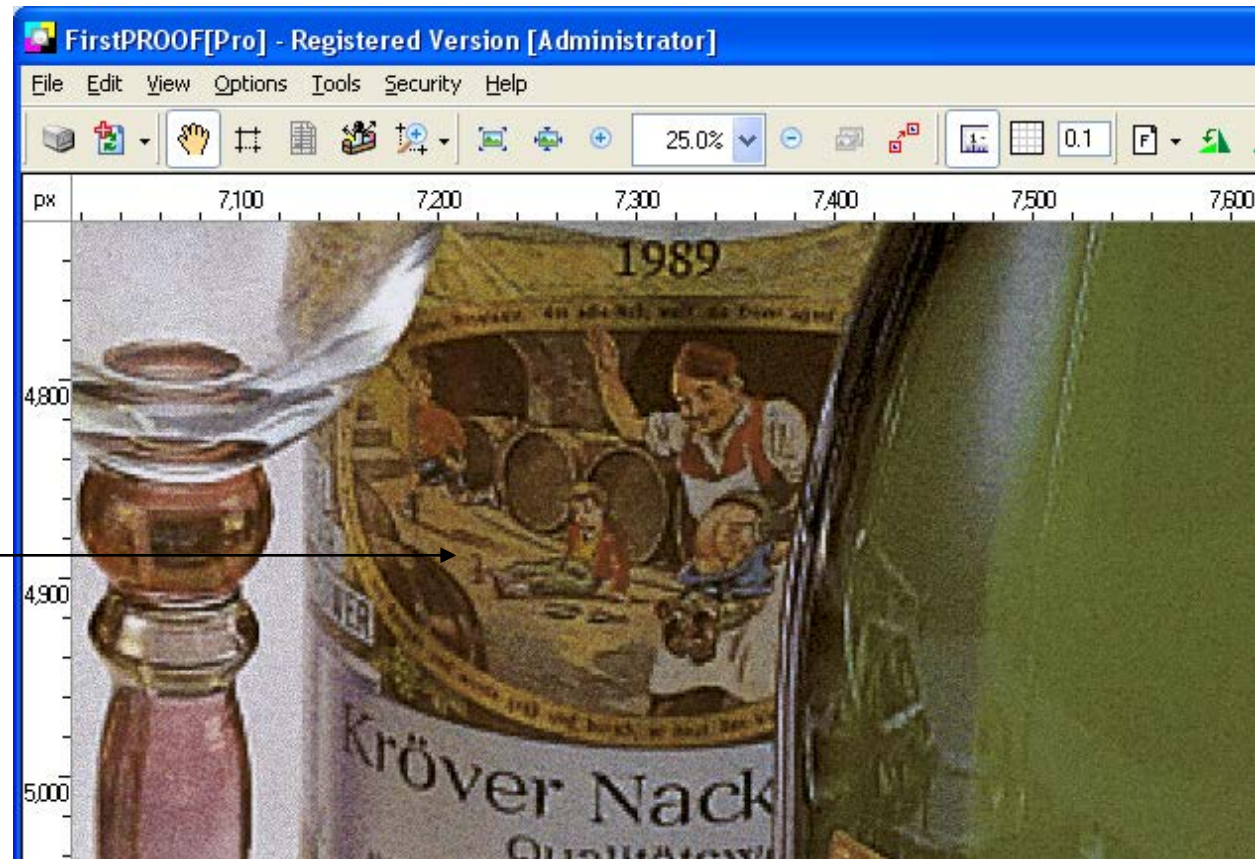


Image detail (FM)

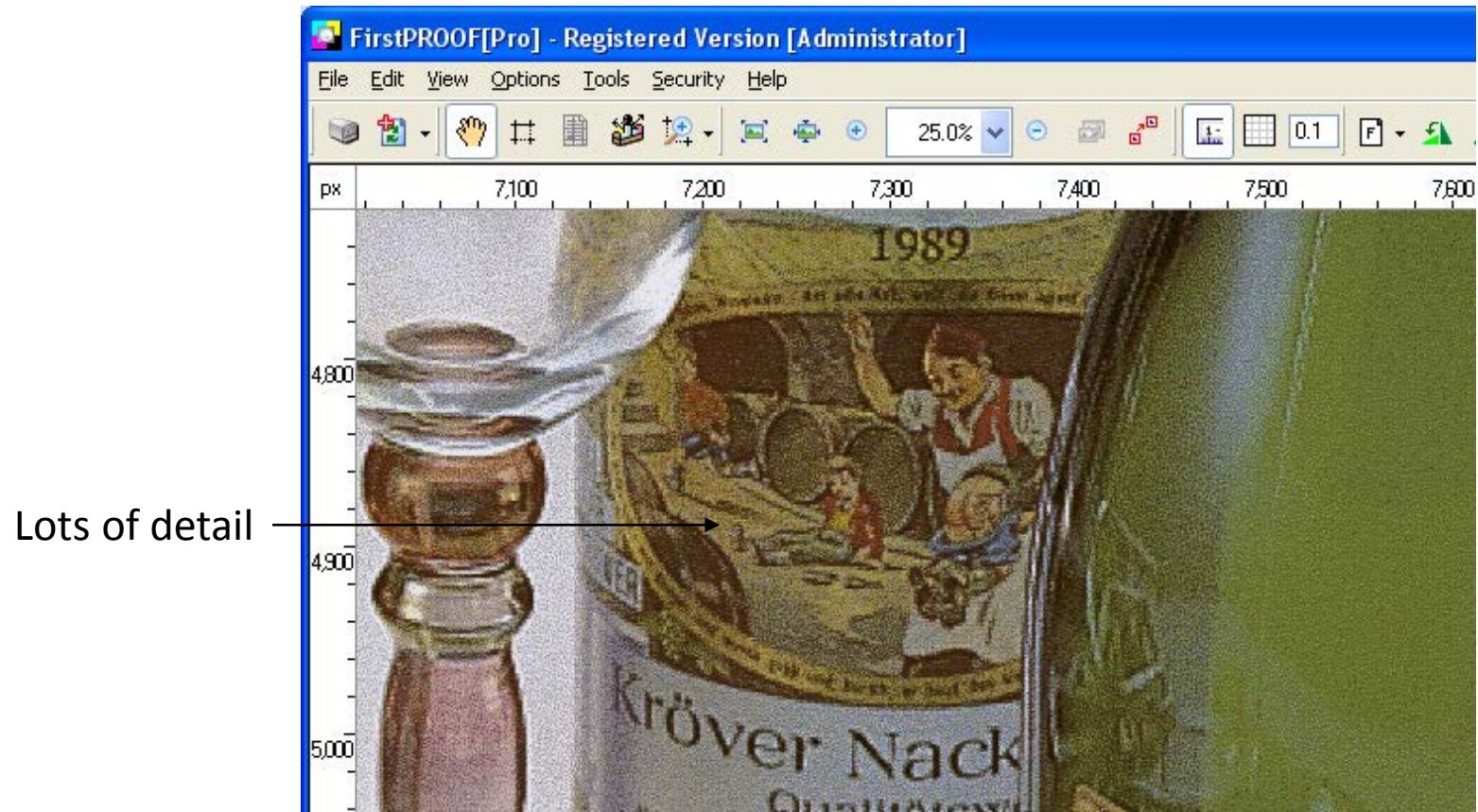
[HDS / Staccato / Randot X / Satin¹]

Lots of detail



1. HDS is a trademark of Global Graphics, Staccato is a trademark of Creo / Kodak, Randot X is a trademark of Screen, Satin is a trademark of Heidelberg.

Image detail (DM)



Calibration (AM)

Some gain
(harder to control)

Edit uncalibrated target for Printing Press

Warning Criteria

Press:

☐ Resolution: Vertical: Horizontal:

☐ Dot shape:

☐ Screen freq: ·

☐ Exposure: ☒ Use for Pos & Neg

Name: Channel:

Measurements as: ☐ Negative media

☒ Force solid colours

K100	K95	K90	K85	K80	K70	K60	K50	K40	K30	K20	K15
100.00	99.10	96.50	93.30	89.70	82.30	74.20	66.90	56.60	44.60	32.20	25.70
K10	K8	K6	K4	K2	K0						
18.90	16.00	13.10	9.90	6.50	0.00						

Calibration (AM)

Little gain
(easier to control)

Edit uncalibrated target for Printing Press

Warning Criteria

Press:

☐ Resolution: Vertical: Horizontal:

☐ Dot shape:

☐ Screen freq:

☐ Exposure: ☒ Use for Pos & Neg

Name: Channel:

Measurements as: ☐ Negative media

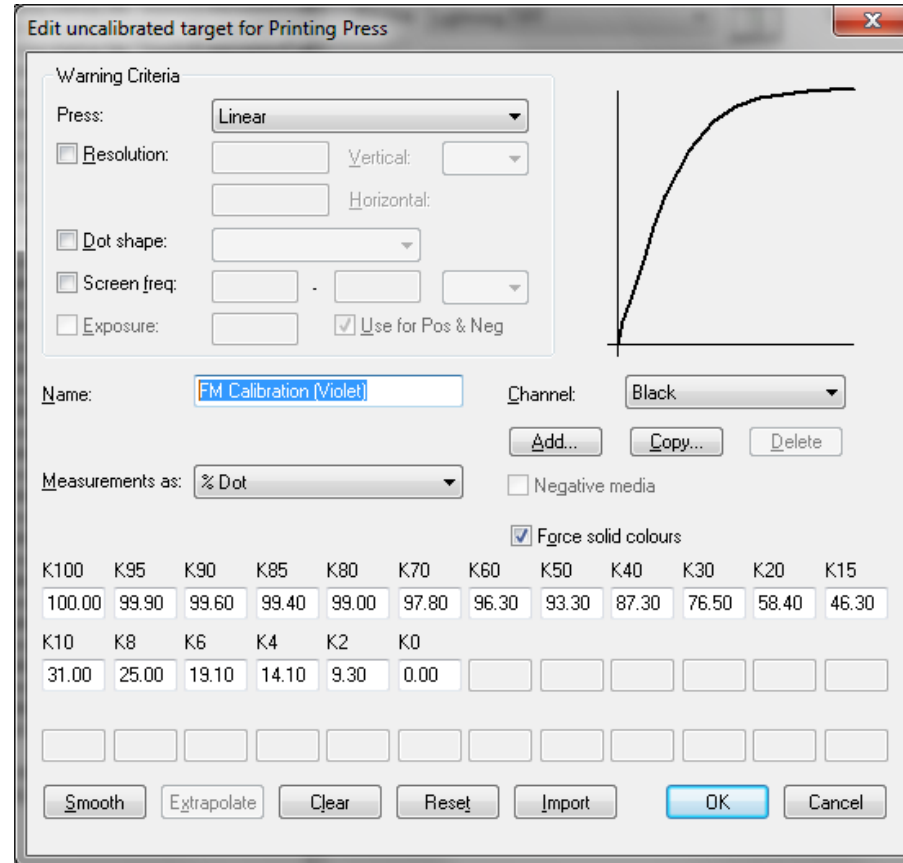
☒ Force solid colours

K100	K95	K90	K85	K80	K70	K60	K50	K40	K30	K20	K15
100.00	97.25	93.30	89.00	84.70	75.70	66.60	57.80	46.80	36.00	24.90	19.20
K10	K8	K6	K4	K2	K0						
13.50	11.10	8.70	6.20	3.60	0.00						

Calibration (FM)

[HDS / Staccato / Randot X / Satin¹]

Extreme gain
(impossible to control)



1. HDS is a trademark of Global Graphics, Staccato is a trademark of Creo / Kodak, Randot X is a trademark of Screen, Satin is a trademark of Heidelberg.

Calibration (FM)

[HDS / Staccato / Randot X / Satin¹]

Significant gain
(hard to control)

Warning Criteria

Press: **Linear**

☐ Resolution: Vertical: Horizontal:

☐ Dot shape:

☐ Screen freq: .

☐ Exposure: ☒ Use for Pos & Neg

Name: **FM Calibration (Thermal)** Channel: **Black**

Measurements as: **% Dot** ☐ Negative media

☒ Force solid colours

K100	K95	K90	K85	K80	K70	K60	K50	K40	K30	K20	K15
100.00	98.25	96.00	94.10	91.60	85.80	79.20	70.80	60.50	48.00	33.90	26.00
K10	K8	K6	K4	K2	K0						
17.30	13.90	10.50	7.50	4.30	0.00						

1. HDS is a trademark of Global Graphics, Staccato is a trademark of Creo / Kodak, Randot X is a trademark of Screen, Satin is a trademark of Heidelberg.

Calibration (DM)

Moderate gain
(easy to control)

Edit uncalibrated target for Printing Press

Warning Criteria

Press: Linear

☐ Resolution: Vertical: Horizontal:

☐ Dot shape:

☐ Screen freq: .

☐ Exposure: ☒ Use for Pos & Neg

Name: DM Calibration Channel: Black

Measurements as: % Dot ☐ Negative media

☒ Force solid colours

K100	K95	K90	K85	K80	K70	K60	K50	K40	K30	K20	K15
100.00	96.20	92.60	90.11	85.95	79.14	71.41	62.13	51.56	40.25	27.81	19.77
K10	K8	K6	K4	K2	K0						
14.22	12.40	9.02	5.88	3.20	0.00						

Ink Saving (AM)

Magenta ink filters green wavelengths from white light

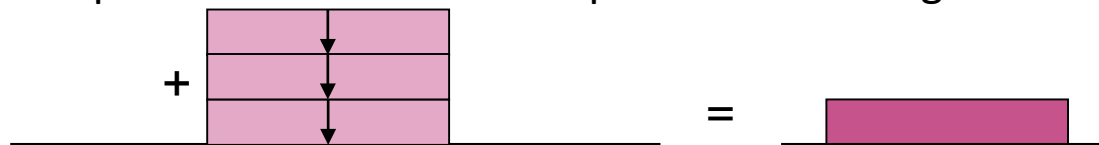
Filters 30% of light, aka 30% Magenta



Filters 30% of (remaining 70% of light), aka 51% Magenta



Requires >2.0 units of ink to produce 60% Magenta



Ink Saving (FM)

[HDS / Staccato / Randot X / Satin¹]

Magenta ink filters green wavelengths from white light

Filters 30% of red light, aka 30% Magenta



Between DM and AM, aka 55% Magenta



Requires >2.0 units of ink to produce 60% Magenta



Ink Saving (DM)

Magenta ink filters green wavelengths from white light

Filters 30% of light, aka 30% Magenta



Filters 30% of light, twice, aka 60% Magenta



Requires 2.0 units of ink to produce 60% Magenta



“We have noticed that since we started using Auraia, our monthly ink costs have decreased noticeably while our sales and production have increased. In less than 6 months this product has already paid for itself!”

Roger Holmes, President, Star Press

“It is awesome screening and we recently won a job 20% higher in price than our opposition, quality off the press [with Auraia] is a big part of that”

Trevor Hannam, Group Prepress Manager, Horton Media

“Economy here is tough. All newspapers are decreasing circulation. Within this environment our printing plant is growing with more customers.”

José Ángel Cabezón Rico, Subdirector Técnico, La Voz de Galicia

“Our advertisers and advertising sales people love the photographic quality we’re getting on press. Our press people are amazed that they can deliver this **level of quality so easily on a daily basis”**

Kurt Kudor, Production Manager, Times Colonist

Auraia DMS | Summary

- Up to 20% ink savings
- Extended tone range of 0.01% to 99.99%
- Smooth flat tints
- No screen moiré, content moiré
- No color shifts
- Image detail of approx. 400-500 lpi
- Easy to plate, calibrate & print, using a min. 20µ dot
- Use on any job
- The future for printers

For further information, contact:
auraia@hamillroad.com