Quality Control Applications

AniCAM™

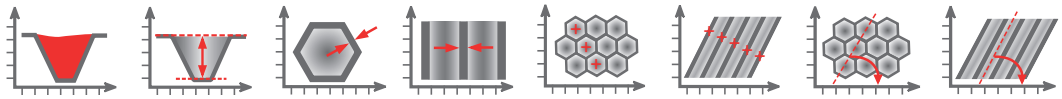
THE STATIONERS' COMPANY · AWARD FOR INNOVATION · 2016

EFIA print awards 2016 — Proud Winner of the 2016 EFIA Print Awards

TROIKA™ TROIKA SYSTEMS LIMITED

AniCAM™ Anilox QC

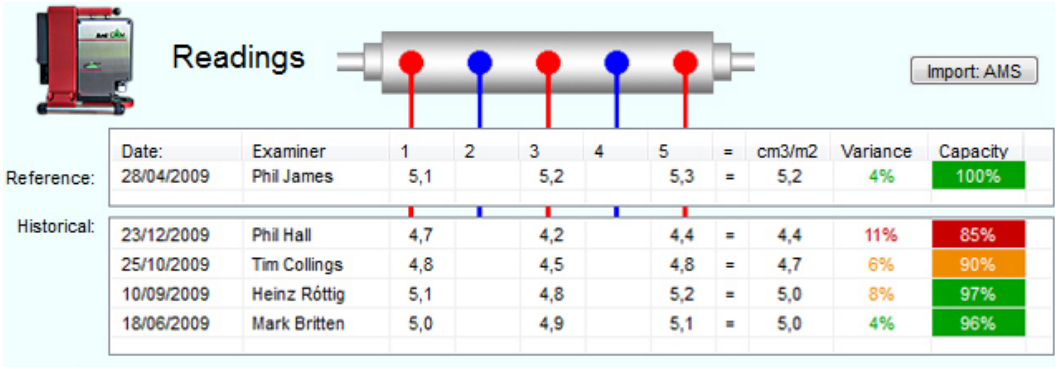
FOR ACCURATE VOLUMETRIC MEASUREMENT



Volume, Depth, Width, Wall, Screen Count, Angles and Consistency of Anilox rolls

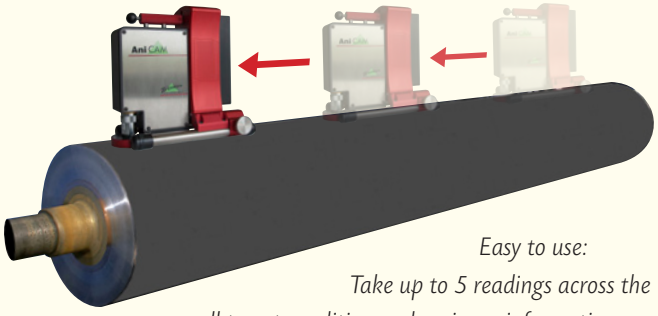
PLUS: Anilox Management System (AMS)

FOR Continuous Control of your Anilox Inventory

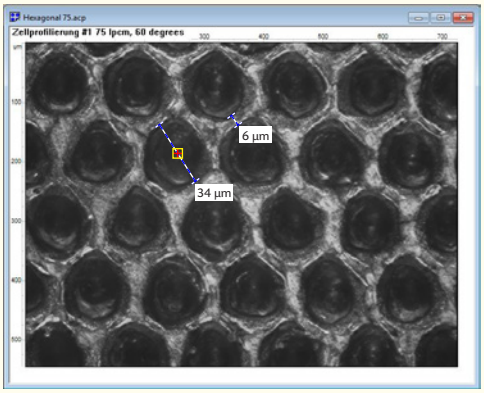


	Date:	Examiner	1	2	3	4	5	=	cm3/m2	Variance	Capacity
Reference:	28/04/2009	Phil James	5,1		5,2		5,3	=	5,2	4%	100%
Historical:	23/12/2009	Phil Hall	4,7		4,2		4,4	=	4,4	11%	85%
	25/10/2009	Tim Collings	4,8		4,5		4,8	=	4,7	6%	90%
	10/09/2009	Heinz Róttig	5,1		4,8		5,2	=	5,0	8%	97%
	18/06/2009	Mark Britten	5,0		4,9		5,1	=	5,0	4%	96%

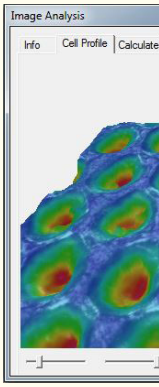
The Anilox QC workflow



Easy to use:
Take up to 5 readings across the roll to get condition and variance information



Just one minute to get an automatic 3D scan



Rotatable 3

Why Anilox Quality Control?

Knowing the condition of the anilox rolls for a printer converter has been proven to save considerable press setup time and reduce waste which inevitably increases profitability.

Historically, to achieve the required densities, the printers are obliged to adjust the ink, when in reality the difference in volume of the anilox's largely influences the imbalanced densities. Until the advent of this easy to use quality control tool, the actual volume of rolls in the anilox inventory was in reality unknown to printers – making it impossible to know if the roll volumes are matched and optimised for press setup.

When discovering that a set of anilox's do not have in reality similar or matched volume capacity – due to either infrequent anilox volume measurement or none at all – many printers realise how much valuable time and cost has been wasted over a period of years; and how quickly they could now make considerable savings for their company by implementing anilox quality control.

Fortunately, due to modern technology the ability to simply and easily measure the volume of aniloxs and archive the inventory information is now viable and practical for flexo printers.

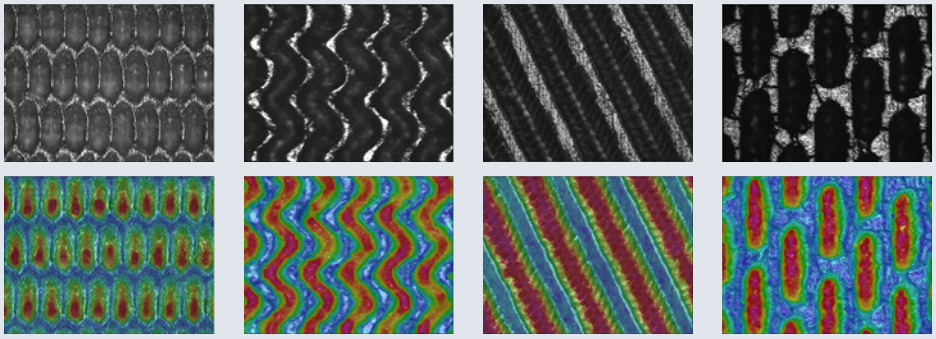
- Measuring the inventory with the Anilox QC application and AniCAM 3D scanning microscope allows users to eliminate or replace rolls that would require unnecessary ink adjustments to be made by ensuring the rolls are of a similar volume capacity – not only between a set of rolls but also along the width of a roll.
- Variation across the width of a roll has been identified as a time consuming and waste generating factor in press set up. The variation can be caused for two reasons, either due to poor cleaning or wear – which is caused by too much pressure on one side with the doctor blade often due to poor cleaning.
- Once the inventory is 'optimised' for matched volume and the cleaning system is proven to be giving a satisfactory result, ongoing monitoring and maintenance of the rolls is required to ensure the inventory is maintained in a satisfactory condition and the refurbishment of rolls can be planned appropriately.

- State-of-the-art 3D scanning technology
- Very high repeatability and accuracy
- Light and portable in a strong carry case
- Electronic knife for enhanced cell profile analysis
- 3D-view to identify plugged or damaged cells
- Export data to AMS or spreadsheet applications

Anilox QC Options

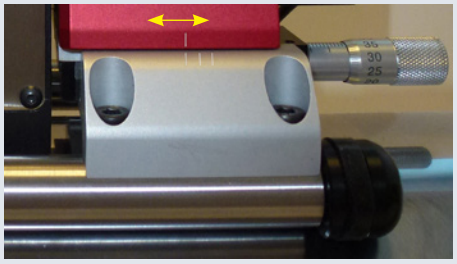
Complex Cells

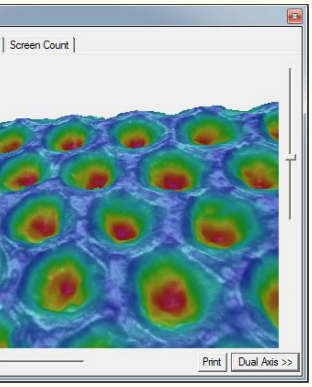
An optional software module for volume and geometric measurement of non-hexagonal cells allows you to measure any type of engraving (for instance tri-helical, wave-form, asymmetric and combinations of different engravings).



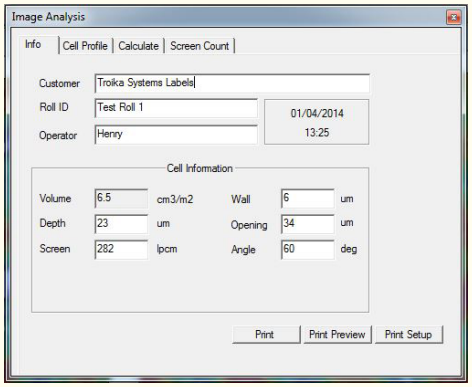
X-axis micro adjustment

This option has been developed to allow users to move the analysis head of the camera laterally up to 10 mm (±5 mm) to assist in finding certain measuring positions.

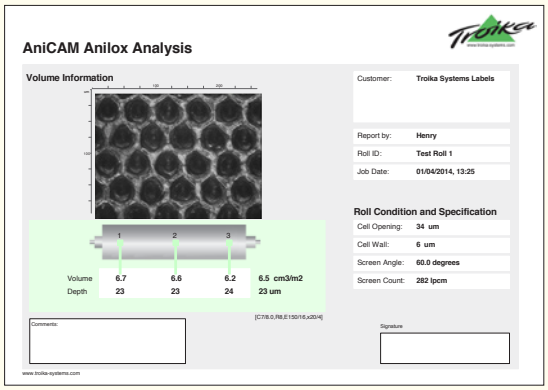




3D View for visual inspection

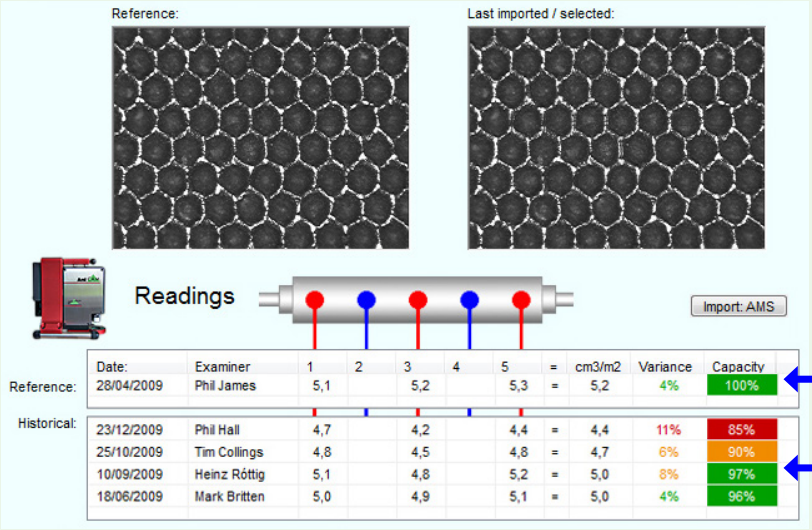


Volume and other results are shown in the Info page



and printed as a report form or exported as.csv

Optional: Anilox Management System (AMS)



Whenever a roll is measured, the AniCAM readings can be transferred into AMS, an optional database application which builds a roll and volume/wear history based on this information. The AMS application should ideally be used to analyse the wear of all Anilox rolls in the printers inventory.

This example shows a cutout of an individual roll report.

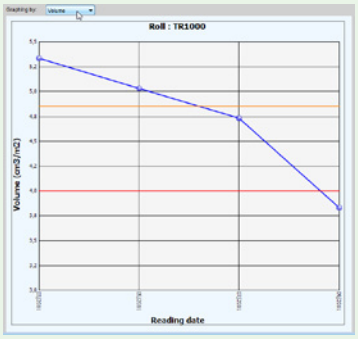
The two pictures show the cells of the reference and the last reading imported.

Roll History

The results of the first (reference) readings across the width are displayed in this area.

All subsequent readings are displayed below the reference reading in reverse order – The most recent reading is always displayed underneath the first (reference-) reading.

- **Technical Roll Condition**
- **Roll Cleanliness**
- **Lateral Volume Comparison**
- **Roll-to-Roll Comparison**
- **Roll Inventory Management**



Roll Wear Graph

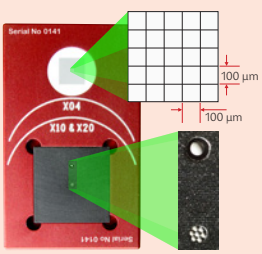
A graphical representation of the volume and depth readings shows the user definable thresholds **Good**, **OK** or **Bad**, so it is known if the Anilox condition is acceptable for the press.

Roll Inventory Reports

The *Anilox Management System* reports provide detailed information on the condition of each roll in the entire Anilox inventory. The rolls are listed with their unique *Roll ID, screen count, date of purchase, manufacturer name, current volume, volume variance across the roll, current capacity in percent compared to the first (reference) reading*. In addition the *volume variance* across the roll width is shown and tracked.

When printers are managing their Anilox inventory they will be able to improve the press set up time through improved ink matching, reduced make-ready and ink/material waste and improved production profitability.

Optional: AniCAM Calibration & Certification Package (ACP)



An accurate X/Y/Z and mathematically proven volumetric measurement system, enabling Troika AniCAM users to test and calibrate their AniCAM systems in-house.

The **AniCAM Certification Package** consists of an application designed to allow users to carry out mechanical, optical and electronic tests and subsequently a full **Calibration & Certification** of their unit that leads to self-certification and address **ISO-requirements**. The package uses a calibration tool for the **X & Y** axis calibration tests and calibrated spheres for **Z-axis** and volume calibration.

PRODUCT SPECIFICATIONS

▼ Media
Ceramic, Titanium and Conventional Chromed Anilox rolls; Minimum diameter: 2.5" / 63mm *(81mm with mounted X- or Y-axis adjuster)*
▼ Cell Evaluation
Analysis range: ***Std:*** x20 lens: 236 - 600 lpcm / 601 - 1500 lpi; ***Std:*** x10 lens: 88 - 235 lpcm / 225 - 600 lpi; ***Std:*** x4 lens: 40 - 87 lpcm / 100 - 224 lpi;
Anilox volume calculation in cm^3/m^2 or BCM
Measurements: • Cell Volume • Cell depth • Cell screen count • Cell opening • Cell wall width • Cell angle • Engraving angle
Geometric measurements
Averaged readings over "**n**" sections across the roll
Integrated Roll Management for easy tracking of roll histories (date and total average volume).
▼ Image Analysis
Images are taken by the camera and transferred via USB to the PC. The image analysis and calculations are done by the dedicated ***Anilox QC Application*** Troika PC software.
Software based Vibration detection and suppression (4 levels)
Digital Zoom range 1:1 up to 6:1
▼ Volume consistency typically:
± 0.1 cm^3/m^2 @ 3.2 cm^3/m^2 ± 0.06 BCM @ 2 BCM
▼ Data archiving
.acp format (incl. 2D/3D info); JPEG and BMP (bitmap export) + 16 Bit linear grayscale TIF
Export of readings (AMS, Spreadsheets, Database applications etc)
▼ Light Source
1 co-axial and 2 x 9 radial white light LEDs (SW-controlled)

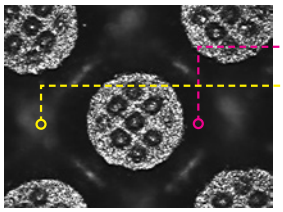
OPTIONS

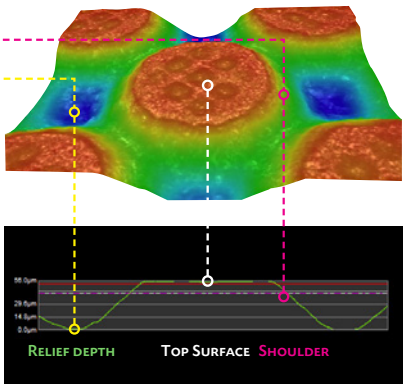
▼ Software Options
AMS Anilox Management System for controlling the total Anilox Inventory regarding Volume, Wear, Variance, Suitability and much more
Complex Cells Analysis for analysing non-hexagonal cells
Special Reports (i.e. Comparison Report)
Foil Strip Analysis (Press-O-Film Analysis)
Additional QC Applications *(separate brochures)*: **FlexoPlate/Sleeve Analysis** and **Gravure Cell Analysis**
▼ Calibration / Maintenance / Service
ACP AniCAM Certification Package for X/Y/Z and Volume calibration
Annual Service Contract | GTM Online Training and Support
▼ Hardware Options
X- axis micro adjuster for improved lateral positioning *(increases the minimum roll diameter to 81mm | 3.2")*
Y- axis micro adjuster for improved rotational positioning *(increases the minimum roll diameter to 81mm | 3.2")*

TECHNICAL SPECIFICATIONS – ANICAM

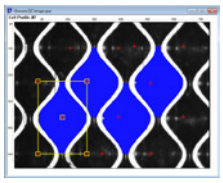
▼ Electronics
Mono CMOS camera with 640 x 480 pixel resolution.
USB2.0 Control via PC
External ac power supply
▼ Lenses
Three lenses (x04, x10 and x20)
▼ Dimensions
AniCAM: 21 x 12.5 x 21 cm (W x D x H)
AniCAM Case: 40 x 30 x 16 cm (W x D x H)
▼ Weight
AniCAM: 2.9 kg / 6.5 lbs
AniCAM with Case: 5.4 kg / 12.0 lbs
▼ Environmental conditions
Temperature: 16° - 32° C / 60° - 90° F
Humidity: 40% - 60%, non-condensing
▼ Minimum PC-requirements
Dual Core *(or better)*, 2.5+ GHz CPU, 4+ GB RAM, 1024 x 768, 24-bit Display, USB2.0, 150+ GB hard disk space
▼ Operating Systems
Windows 7 / Windows 8 / Windows 10 – 64 Bit (recommended)
▼ Warranty
12 months return to base. Software upgrades FOC for 12 months.

ADDITIONAL QC APPLICATIONS





FlexoPlate Analysis for 2D and 3D measurement of flexo plates and sleeves (dot hight, percentage, screen count, profile, angle, distances etc.).



Gravure Analysis for 2D and 3D measurement of Gravure Cylinders (volume, depth, X/Y Opening, wall width, channel, variance, screen count, angle, distances etc.).

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