ryf ag

Wir machen Qualität sichtbar
Nous rendons la qualité visible
Making quality visible

ryfag.ch

OMNI 3

DIGITAL MICROSCOPE AND MEASUREMENT SYSTEM

ASH

OMNI 3

DIGITAL MICROSCOPE AND MEASUREMENT SYSTEM

See what you need to see.

Leverage advanced technology to move to hyper speed, super-precision, inspection. Omni 3 has been engineered to deliver one of the most advanced and intuitive digital microscope experiences.

Powerful, embedded software can process complex imaging tasks without a PC. Custom designed to deliver maximum power.

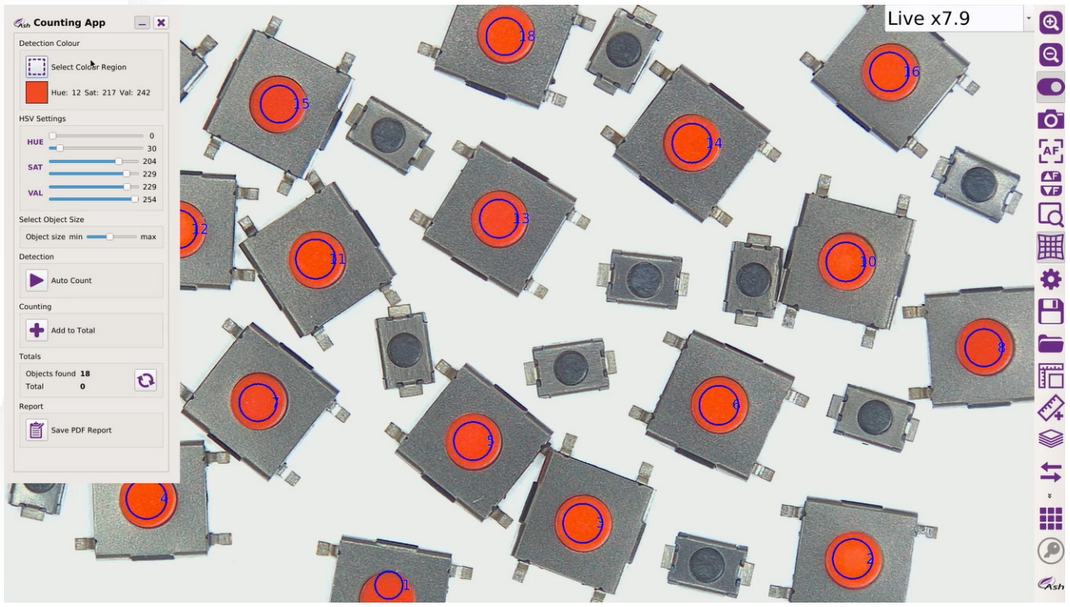
OMNI 3

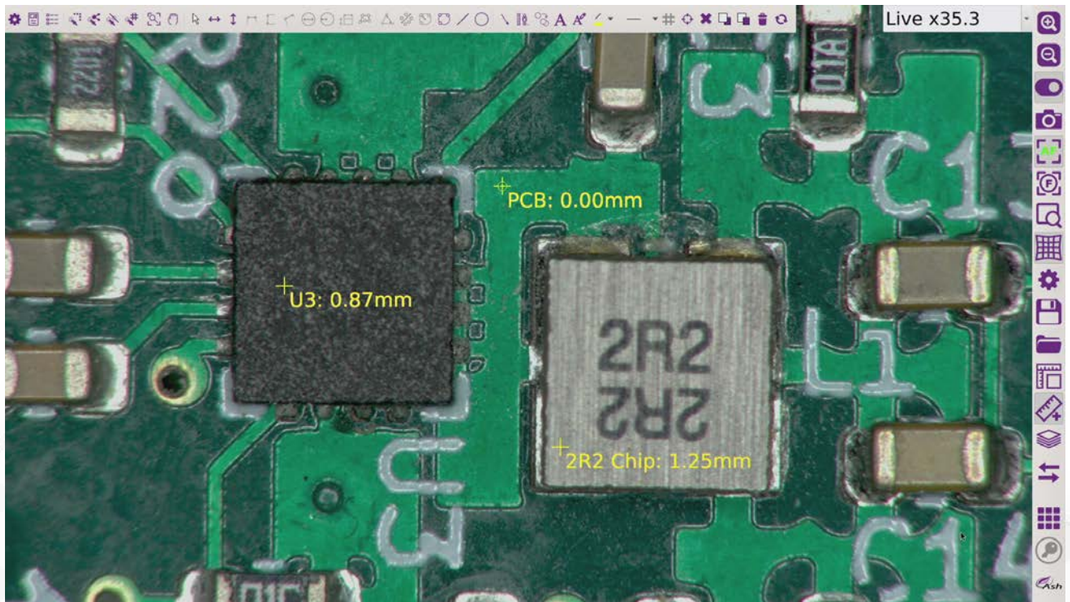
Build your unique Omni solution.

Tailor the Omni 3 by choosing the apps that meet your specific requirements.

Our apps range from advanced measurement tools to help meet critical manufacturing tolerances to comparison tools ensuring the highest production quality.

Evaluate the apps free of charge to determine which best meet your needs with our 30 free trial click of each app.





Colour Analysis App

Advanced algorithms automatically calculate the colour value of any sample.

Identify contaminants or foreign objects within your sample. Eliminate human error and improve yield by up to 50%.

Reports can be generated for easy documentation and traceability.

Object Counting App

Automatically identify and count the number of objects within your region of interest.

Increase efficiency by 70% whilst eliminating human error.

Significantly reduce the time spent manually counting parts while reducing costly overheads. Report generation is quick and simple for easy documentation and traceability.

Z Height Measurement App

Measure in 3D on the new Omni 3.

Now you can measure in the Z axis, in addition to the X and Y axes, bringing the Omni 3 capability to a whole new dimension.

Rapidly inspect your parts up to five times quicker when compared to outdated manual inspection methods.

APPS

2D Measurement & Graticules

Intuitive on screen full 2D patented measurement application. Point to point, diameter, angle, adjustable X-Y grid, shapes and annotation features to accommodate a multitude of samples specifications.

Graticule creation allows samples to be analysed against on-screen digital templates with set tolerance limits. It also enables quick go/no-go defect analysis.

DXF Import & Export

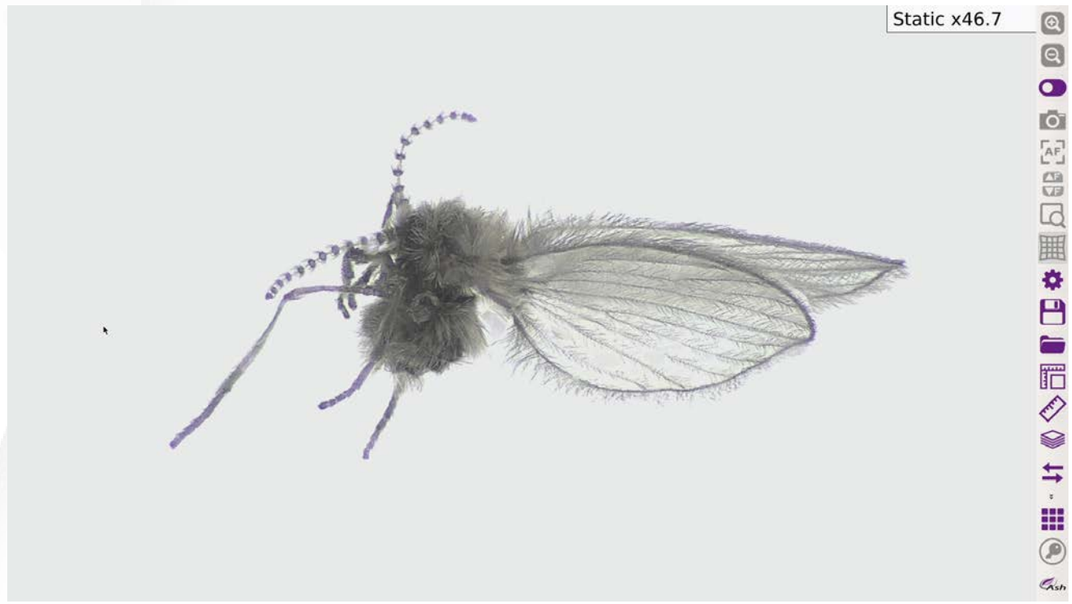
Import a range of DXF files to create graticules for overlay comparison with parts.

Imported DXF files can be edited and annotated on the Omni 3 system.

Image Stitching

Stitch multiple images together, increasing your field of view at high magnification.

Perform full measurements on the full image. Document and annotate for traceability.



APPS

Image Stacking

View a sample with different layers all in focus at the same time. Omni 3 automatically captures several images from 2 to 12 at different focal depths and creates an image based on the sharpest regions from each of these separate captures.

Image Comparator Side by Side

Visually compare your live sample image to a stored master image in the form of a split screen. Add notes through annotation and save the comparison image for documentation and traceability. Enables rapid identification of differences between gold sample and test samples.

Image Comparator Overlay

Create an image overlay of a master image to identify defects by overlaying and flashing the live sample image against the stored master image.

Enables rapid identification of differences between gold sample and test samples.

FEATURES & BENEFITS

Super Fast Auto-Focus™

Place the sample under the Omni 3 and it will immediately focus on your part throughout the inspection process Inspect your parts up to three times faster. Quickly and seamlessly inspect your part without having to adjust manual focus or change the height of the part.

SpotFocus™

Quickly focus on the area of interest by simply using the mouse pointer. Increase speed, improve accuracy and reduce human error with the capabilities of SpotFocus™. *

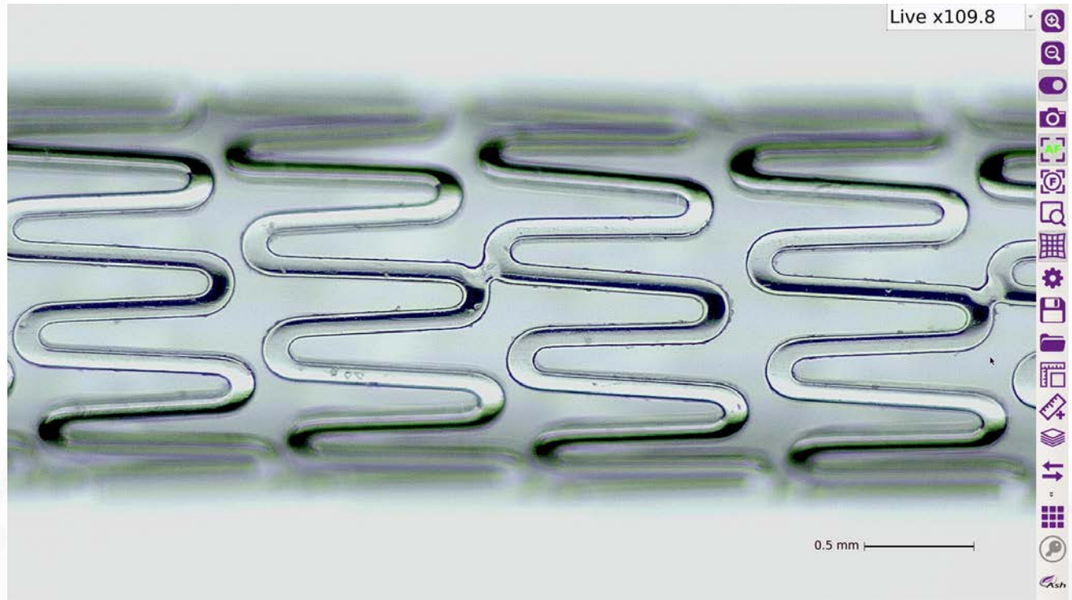
Manual Rocker Focus™

Use Manual Rocker Focus™ to accurately adjust the focus level to your region of interest. Save time by quickly adjusting the focus level using the rocker icon to inspect specific regions on an object when in manual focus mode.

Advanced Camera Settings

The new Advanced Camera Settings gives the user more power and control to enhance the image for a wide range of inspection and measurement capabilities.

Ensure image quality exceeds your needs. Unlock the full potential of Omni 3 by fine-tuning sharpness, contrast, saturation and camera shutter speed to suit your specific requirements.



FEATURES & BENEFITS

Superb Image Quality

Experience unrivalled Full HD video imaging never seen before in an ASH system. AshCam+™ enables vibrant image quality ensuring true representation of your sample.

Omni 3 offers an enhanced, crystal clear image for even the most demanding inspection applications.

AshTruColour™ - True Colour Reproduction

View true colour reproduction of your sample with Omni 3. AshCam+™ brings next generation colour reproduction to Omni 3.

Replicate real and accurate colours as seen with the naked eye for true colour representation. *

Zero Video Latency

There is zero delay between movement under Omni 3 and what you see on the screen, resulting in a more efficient inspection process. Omni 3 is 3x times faster than our previous systems.

View parts in real time with no video lag, allowing you to comfortably inspect, rework, modify or assemble anything.

Improved DoF

The Omni 3 has improved depth of field, making inspection much faster and more efficient without the need for changing focus positions or adjusting camera height.

FEATURES & BENEFITS

AshCal™

Omni 3 is factory calibrated before shipping. No time is wasted performing recalibrations between changing magnifications.

RTLDC™

Real-Time Lens Distortion Correction™*. Lens distortion is inherent in all microscopes. Image distortion at the outer edges of large samples is automatically corrected by the Omni 3. *

User Privileges

User privilege settings enables operational control and traceability. Assign multiple users with access to different settings and features, improving security and streamlining the inspection process.

Interchangeable Lighting

Multiple types of interchangeable lighting available, including Ring Light, DomeLight, Polarised Light and UV Light to address any inspection application.

Email

Save time by emailing directly from Omni 3.

Save to Network

Networking enables direct saving to the server or cloud for increased workflow efficiency.

On Screen Preset Buttons

On Screen Preset Buttons allow quick access to pre-configured part-specific system settings.

Image Stamping

Image Stamping with time, date, user and magnification level. Easy documentation & traceability for accurate quality control records using image capture to USB key.

* Patent pending

WHAT OUR CUSTOMERS SAY

30x faster inspection increases production throughput

Pfizer

Challenge

To ensure the safety of pharmaceutical packaging, Pfizer required a sophisticated solution that was reliable and fast. The production process requires inspection and measurement of all pharmaceutical packaging to identify defects or anomalies. This process must be quick and accurate to ensure production levels are maintained. To date, this process was performed on an outdated machine which could not save or share images or reports detailing any findings or defects. In addition, the machine was stored in a facility outside of their department and could not be moved. This unnecessarily created additional operator time for each sample. The old system also took thirty minutes to start up.

Solution

Omni was the ideal solution for Pfizer. It provided a digitised, capable solution within their department for quick accessibility. This allowed for rapid inspection and measurement of defects. Reports are automatically generated and stored within Omni or an external USB, streamlining reporting for documentation and traceability. The Ash solution has also complimented their ability to work with international departments through live sharing results from the Omni via video meetings.

Result

Originally, Pfizer's process, from start to finish, took thirty minutes, it's now down to less than one minute. And all aspect of the process are improved – better identification, capture, reporting and sharing. The footprint of the new solution is minimal relevant to the previous, and is sited alongside the production line.

11X faster. 3X accuracy. Sweet!

British Sugar

Challenge

To ensure quality and food safety requirements are met British Sugar continually complete a lab test where they count live and dead yeast cells. To date this process has been done manually. A laborious process, that, by its nature is prone to human error. The operator, using a microscope, manually counting the white and blue cells on screen, manually inputting the data into spreadsheets, and applying some calculations. For some time British Sugar had been looking for a way to improve this process.

Solution

Paul Wrathmall from British Sugar presented Jamie Greatrix our Technical Sales Manager in the UK with their cell counting challenge. Jamie collaborated with our R&D department to explore possible solutions. British Sugar provided test samples and we set about built a working model in-house to solve the problem. We used our Acumen AI system, a customised App, and a custom mechanical jig to ensure lighting consistency. With a camera to automatically count white and blue cells. The system automatically applied the required algorithms, automatically saved the data, and automatically created a PDF report. We presented the solution to British Sugar, they were surprised and delighted with the speed, accuracy and completeness of the system and implemented it immediately.

Result

Our solution, so far, has reduced average task time from 17 minutes to 90 seconds. As the AI bot gets smarter task time will further reduce. With the task largely automated the possibility for human error was greatly reduced. The solution also streamlined the cell counting documentation and reporting process for British Sugar.

Included System Components

LENSES

+5 Lens

LIGHTS

LED Ring Light

OTHERS

Wireless Keyboard and Mouse

USB Memory Stick

HDMI Cable

Optional System Components

LENSES

+5 Lens
AI 280-150

+10 Plan 1x Lens
AI 100-055

+25 Lens
AI 100-053

Ash 360 Rotating Viewer
AI 801-422

Polarising Lens (Analyser)
AI 100-041

Sub-Stage Polarising Film & Analyser
AI 801-835

Sub-Stage Polarising Film
AI 801-836

Polarised Ringlight & Analyser (58mm)
AI 801-423

LIGHTS

Diffused LED Dome Light
AI 100-045

UV Ring Light 367nm
AI 801-421

Polarised Ringlight & Analyser (58mm)
AI 801-423

CONTROLLERS

KPII External Keypad
FI 806-002

KIII External Keypad
FI806-003

OTHERS

Ash PC Capture
AI 100-052

24" Monitor
AI 801-416

Hard Carry Case
AI 801-563

STANDS & STAGES

XY Stage for Uplight
AI 100-011

XY Stage
AI 100-010

Large XY Stage
AI 100-057

Oblique Tilting Stage
AI 801-414

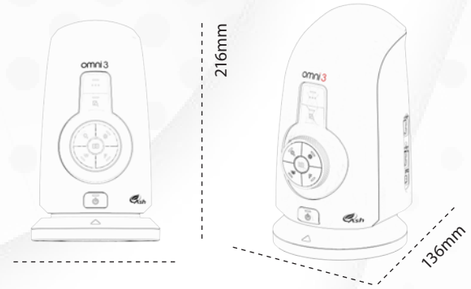
Illuminated Track Stand
AI 100-036

Track Stand
AI 100-037

Articulated Arm Stand
AI 100-039

Dual Arm Boom Stand
AI 100-038

Technical Specifications



Camera Specifications

	Lens Type	+5	+10 Plan 1x	+25	+50
Optical	Magnification Range (X)	2.5 - 68	4.8 - 136	54.7 - 336	109.4 – 673
	X-axis FOV (mm)	200 - 7.5	76 - 3.8	9.3 - 1.5	4.6 - 0.76
	Y-axis FOV (mm)	112 - 4.2	59.5 - 2.1	5.4 - 0.85	2.6- 0.43
Digital	Magnification Range (X)	69d - 136.5d	137d - 272d	337d - 673.3d	674d – 1346d
	X-axis FOV (mm)	7.5 x 3.75	3.8 x 1.9	1.5 x 0.75	0.76 – 0.37
	Y-axis FOV (mm)	4.2 x 2.1	2.1 x 1.1	0.85 x 0.425	0.43 – 0.22
	Working Distance (mm)	195	78	36	34
	Depth of Field (mm)	80 (min. zoom) / 0.5 (max. optical)	35 (min. zoom) / 0.1 (max. optical)	0.3 (min. zoom) / 0.1(max. optical)	0.1 (min. zoom) / 0.05 (max. optical)
	Video Latency (milli seconds)	20/17	20/17	20/17	20/17

2-D Measurement Accuracy

Lens Type	+5	+10 Plan 1x	+25	+50
Accuracy (%)	+/- 1	+/- 1	+/- 1	+/- 1

Z Height Range & Accuracy

Lens Type	Range	Accuracy
+5	0 - 25mm	100 µm
+10 Plan 1x	0 - 6mm	100 µm

Technical Specifications

	OMNI 3
Magnification Range (with supplied +5 Lens)	2.5 - 68 (Optical) 69d - 136.5d (Digital)
Camera Resolution	1920 x 1080 Pixels
Monitor Connections	HDMI / DVI
Monitor Requirements	HD Ready / Full HD (Recommended)
Input / Output	HDMI Output USB 2.0 (x4 Ports) Mini USB Port General Purpose IO (x3 Ports) DC Power Jack 24V
Internal Storage	16GB
Image Capture	Internal Storage Removable USB Image Storage USB on the Go (PC Connectivity)
Power	24W
Dimensions	216mm x 125mm x 136mm
Weight	1.5kg
Operating Temperature	Storage 10°C to 60°C Operating 5°C to 40°C

MICROSCOPY ✪ METROLOGY SERVICES
Suisse made

ryf ag

We show quality
Nous rendons la qualité visible
Wir machen Qualität sichtbar

Bettlachstrasse 2 | 2540 Grenchen | Switzerland
phone +41 32 654 21 00 | +41 22 776 82 28
ryfag@ryfag.ch I www.ryfag.ch