VISCOM
vision technology

# X8060

## Universal
## 2D/3D X-ray inspection


MXI+µCT

# X-ray inspection for larger inspection objects

## Semi-automatic X-ray inspection in 2D and 3D Modes

**2D and 3D inspection without mechanical conversion**

**Designed for larger, heavier inspection objects**

**Precision manipulator with up to 8 CNC-capable axes**

**High magnification with angled radiation**

**Convenient, direct positioning by clicking on optical overview image**

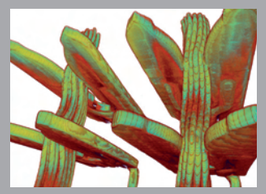
**Fast, accurate 2D measurement process independent of magnification**

**Microfocus computed tomography (µCT) for volume reconstruction**

**Independent, real-time image processing with Viscom analysis tools**

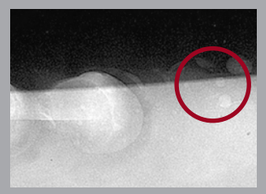
**Realistic 3D volume model with measurement in all spatial directions**

**Excellent image quality through high-contrast resolution**

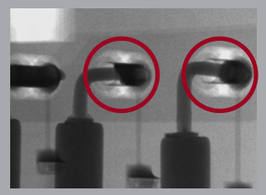


**Clamping joints, 3D volume reconstruction**


**Clamping joints, 3D slice reconstruction with distance measurement**



**Defective aluminium weld seam**



**Defective THT solder joints**

*X-ray inspection delivers information about the interior of a 3D inspection object. Even in 2D mode, quick, highly magnified views of the third dimension are possible. But with the help of modern computed tomography, the 3D mode allows the reconstruction of complete volumetric models, allowing non-destructive slices to be made or measurements taken in any direction.*

*This flexibility makes the X8060 a valuable inspection tool for various industrial applications. Typical defects recognized by this non-destructive process are tears, bridges, pores, voids, foreign bodies, form deviations, incorrect positioning, misalignment, or inhomogeneous material transitions.*

## X8060 – the flexible µCT-system

The X8060 was developed for **destruction-free inspection** in industrial and scientific settings. The **typical application areas** of the X8060 are characterized by the system's ability to handle not only large or heavy inspection objects, but also to inspect the smallest parts, with the highest magnification.

Optional **microfocus computed tomography (µCT)** enables 3D inspection and visualization of the inspection object. Along with the spatial assignment of production defects and material flaws, individual slices or section images can also be visualized with this process. Due to its exceptional spatial display capabilities, the µCT improves defect localization and enables direct measurement within the volumetric model.

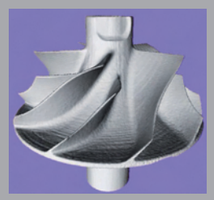
The system's **8-axis manipulator** opens up entirely new possibilities for angled radiation with high magnification. The structure of hidden solder joints in electronic assemblies, such as with BGAs, is revealed, and larger inspection objects can be inspected with the same system. These multiple application possibilities save costs and increase system utilization. A **real-time image processing system** provides all image refinements without time lag, allowing the operator to concentrate fully on the inspection task.

The core of the X-ray technology is a high-capacity, open **microfocus X-ray tube**, designed to provide highest flexibility, outstanding image quality and stable in-line operation. Its user-friendly design guarantees a practically unlimited service life and quick, easy maintenance, minimizing costs.

Viscom specializes in automatic inspection. A wide selection of **Viscom's own analysis tools** are also available for the X8060.

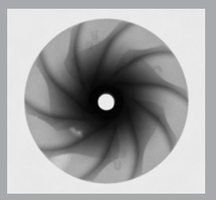
**µCT: Microfocus computed tomography of a turbine rotor**

**Optical view**



**3D volume reconstruction**

**Non-destructive 3D slice through a casting defect**



**2D X-ray image, casting defects**

# Technical Specifications

| | X8060-16 | X8060-20 | X8060-22 | X8060-25 |
|---|---|---|---|---|

## X-ray technology

| | | | | |
|---|---|---|---|---|
| X-ray tube | Open all-metal Viscom tube, series XT9000 with reflection or transmission target | | | |
| High voltage | 10 - 160 kV | 10 - 200 kV | 10 - 225 kV | 10 - 250 kV |
| Tube current | 5 - 1000 µA or 5 - 3000 µA | | | |
| Target load | Max. 40 W/500 W | | | |
| Detail recognition | < 2 µm/< 1 µm | | | |
| Magnification | Direct geometric magnification without collimator > 4000 x | | | |
| Image intensifier | High-resolution digital flat panel detectors (12/14/16 bit) | | | |
| Option | 0 - 60° angled view with digital flat panel detector | | | |
| X-ray cabinet | In compliance with the German X-Ray Regulations (RöV) regarding fully protected devices. Leakage radiation < 1µSv/h | | | |

## Software

| | |
|---|---|
| User interface | Viscom XMC |
| Option | BGA analysis BGA-S<br>Pore analysis software (void calculation) ACA-S<br>THT analysis software THT-S<br>Wire sweep analysis software WSA-S<br>µCT module for all available detectors listed above |

## System computer

| | |
|---|---|
| Operating system | Windows® |
| Processor | Intel® Core™ i7 |

## Sample handling

| | |
|---|---|
| Manipulator | 4 axes (X, Y, Z and rotation n x 360°) |
| Horizontal X/Y-axis | Travel range: 610 x 460 mm (24.0" x 18.1") |
| Vertical Z-axis | Travel range: 800 mm (31.5") |
| Detector axis (option) | 60° pivoting, variable detector distance, travel range: 700 mm (27.6") |
| Tilt axis | ± 60° option |
| Max. sample size X/Y | 660 x 510 mm (26.0" x 20.1") (L x W) |
| Max. sample weight | 30 kg (66 lbs), with option tilt axis 10 kg (22 lbs) |
| Test piece change | Pneumatic front window |
| Option | Pneumatic front slide door |
| CT axis | Standard |

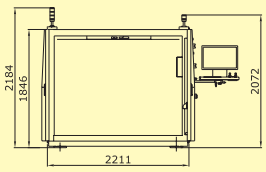
## Inspection speed

| | |
|---|---|
| | Variable |

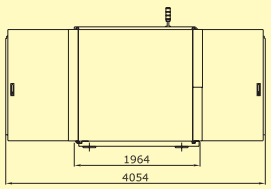
## Other system data

| | |
|---|---|
| Power requirements | 400 V (other voltages on request), 3P/N/PE, 8 A |
| System dimensions | 2211 x 1846 x 1964 mm (87.0" x 72.7" x 77.3") (W x H x D) |
| Weight | Approx. 4000 kg (8818 lbs) |

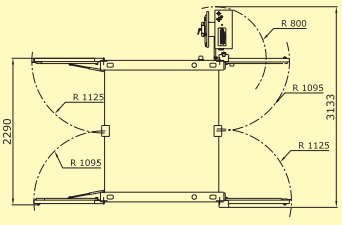
Front view




Side view




Top view




Dimensions in mm

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