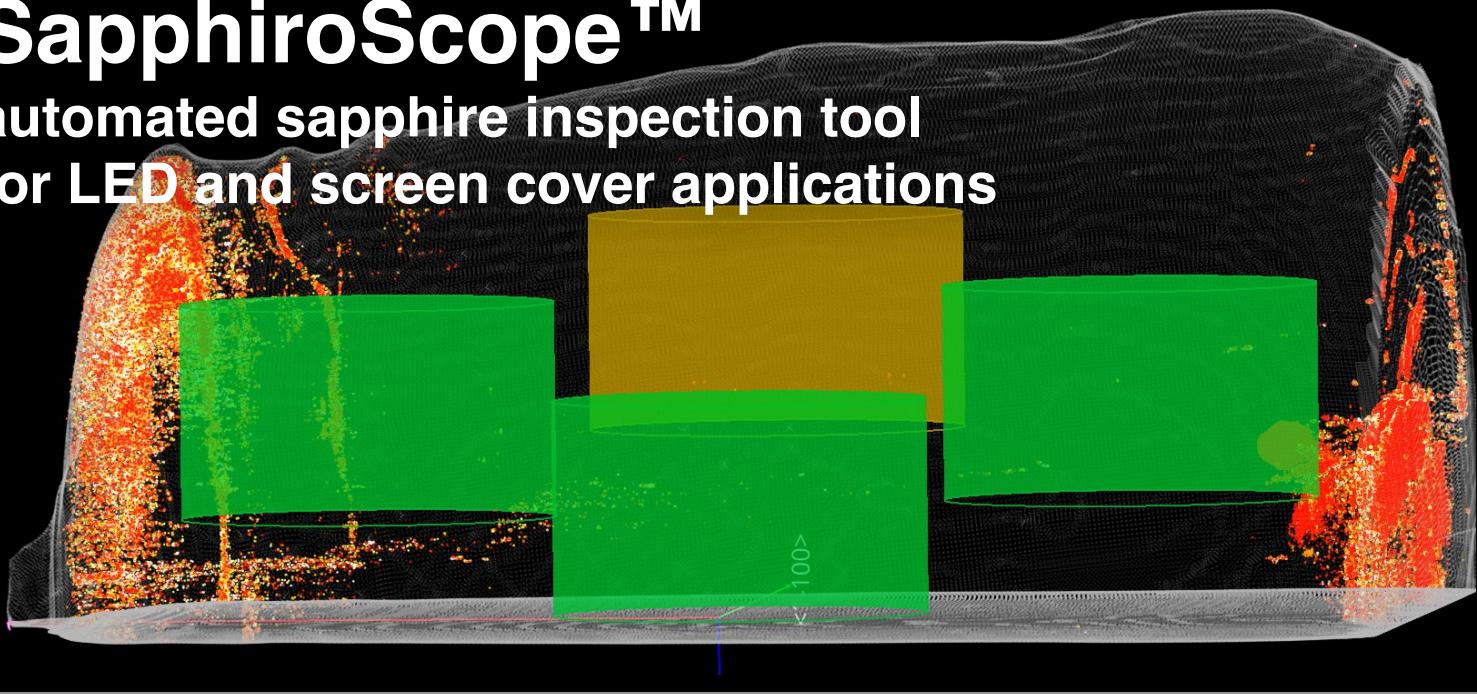


SapphiroScope™

automated sapphire inspection tool for LED and screen cover applications



Operator can rotate 3D model, measure defects and optimise coring.

Check video at
<https://scientificvisual.ch/KY260>

Who benefits?

- sapphire manufacturers
- process engineers
- suppliers of sapphire furnaces
- end users

Specifications

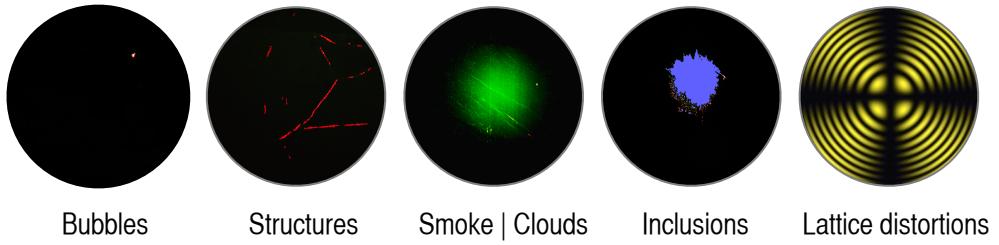
Material	Raw crystals 'as is' or blocks
Shape	Any
Size	2"– 4"– 6"– 8" or customized
Cycle time	8 min per 10 cm ingot height

Remove the guesswork from sapphire production.
Reveal defects in ingots before wafering.

SapphiroScope™ automatically inspects and assesses the quality of raw crystals and wafered ingots used in the LED and smartphone industry. SapphiroScope™ is a new technology that 3D models defects in sapphire **without need for polishing or opening a window**. SapphiroScope™ provides a 3D view of material defects allowing the operator to sort incoming material and optimise it for the most efficient processing method.

- Automated mapping of bubbles, structures and clouds prior to wafering
- Measurement and classification of defects: XYZ, size, morphology
- Analysis in polarized light to detect twins, lattice defects and LABs.

What is detected ?



Key benefits

- Automated quality inspection improves the yield of useable material
- Early defect detection ensures only the best material is processed
- Fast and objective feedback can be given to the sapphire producer
- Tracks the influence of growth process parameters on production quality
- Objective, standardised and repeatable grading of sapphire products improves customer relations.

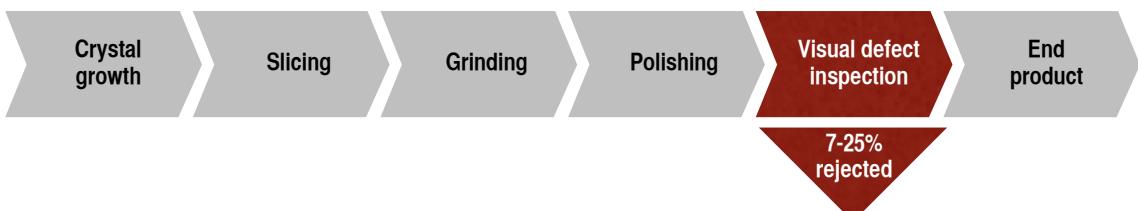
Automated Sapphire Inspection Solutions



Scientific Visual supplies workstations to **visualise defects in non-polished sapphire** such as HEM and KY crystals, ingots and watch covers. Performing quality control at the start of manufacturing process ensures that only the best quality material enters the costly processing stream.

Traditional sapphire production

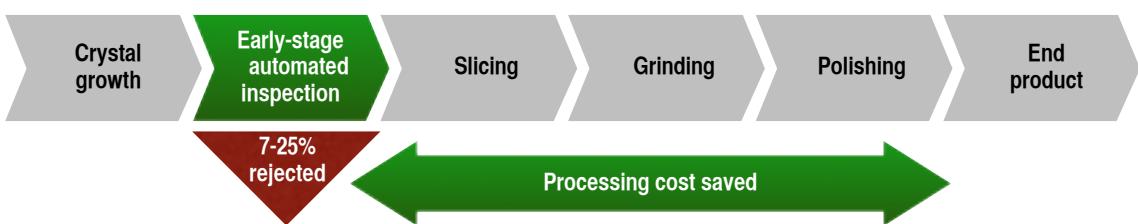
Typical sapphire factory spends half a day per week machining initially defective junks.



Traditionally quality control relies on visual observation by a human expert after the full processing i.e. slicing, grinding and polishing. From 7 to 25% of the sapphire pieces are rejected due to internal material flaws, such as cracks or bubbles, which become trapped during the crystal growth stage.

Production with Scientific Visual tools

Automated tools detects >96% of internal flaws and ensure that only quality material enters production chain.



With Scientific Visual stations the defect inspection process is automated and takes place prior to coring, slicing or polishing, therefore only quality sapphire goes to processing. Unlike human ocular inspection, the instrumental quality control sets an objective standard and ensures quick diagnostic feedback to the crystal growing unit.