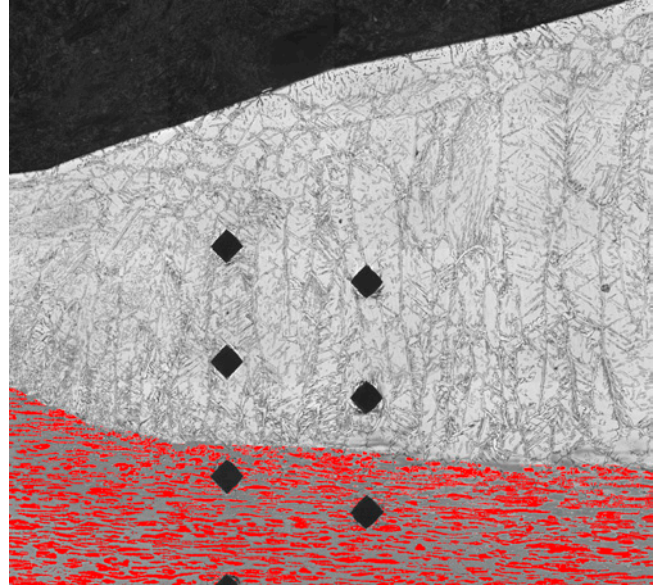


## Product Information

### Vision Lite Image Analysis Software



ZHVµ-A Micro Vickers hardness tester



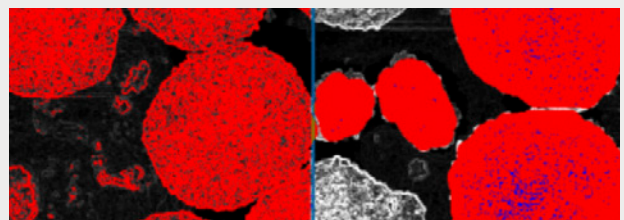
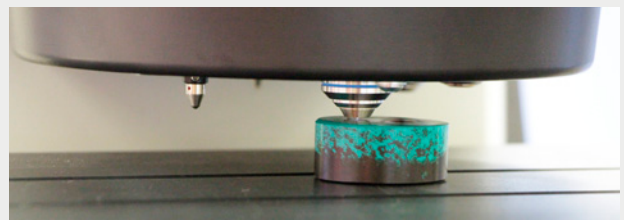
Weld hardness test and phase analysis

### Turn your hardness tester into a microscope

Vision Lite enables a Vickers hardness tester (list of testers see last page) to provide automatic metallographic analysis and to maximise the value of your hardness tester optics. No dedicated microscope is required.

#### Routine analysis in 3 easy steps

- Step 1: Capture Images**  
 Use the optics of your hardness tester (digital camera). Analyze your images using a live feed or save high resolution images for further analysis.
- Step 2: Quantify Images**  
 Writing an analysis routine is just a click away, no programming required. Simply establish a list of actions taken from the Toolbox and your Routine writes itself. For frequently used analyses there are pre-built Routines available.
- Step 3: Manage Results**  
 Validate your results easily within the Data Browser where each measurement is directly linked to its corresponding feature on the image. Customize printable reports to your specifications and save them in Excel or text format.



|                     |      |
|---------------------|------|
| Normal Particles    | 52.2 |
| Normal Particles    | 56.2 |
| Elongated Particles | 65.1 |
| Rough Particles     | 53.9 |
| Elongated Particles | 53.7 |
| Normal Particles    | 53.3 |
| Normal Particles    | 51.9 |
| Normal Particles    | 51.5 |
| Normal Particles    | 50.8 |
| Normal Particles    | 50.6 |
| Normal Particles    | 49.6 |

## Product Information

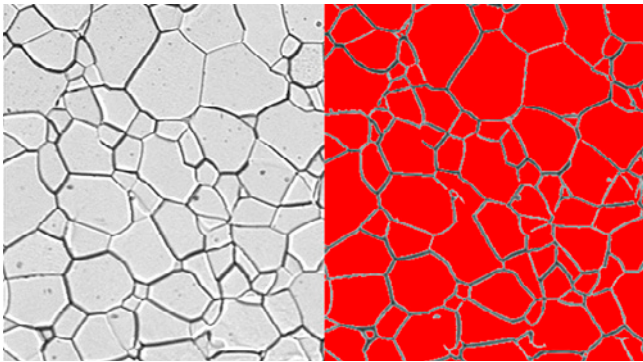
### Vision Lite Image Analysis Software

#### Applications

Vision Lite is ideally suited to repetitive applications which can be easily analyzed with the optional application modules. Together with these pre-built routines, Vision Lite offers the tools you need to analyze, measure and produce standardized reports. It presents a competitive option for labs seeking a simplified yet automated solution.

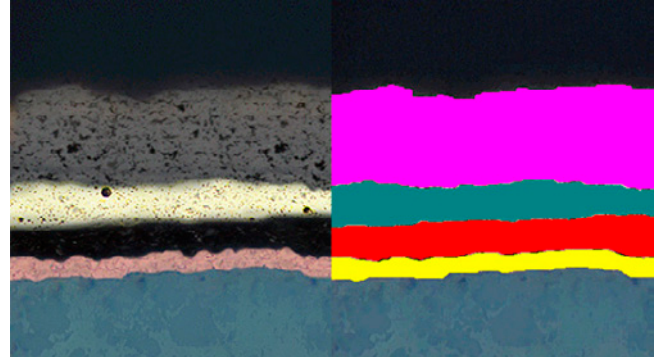
#### Application Module: Grain Size

Allows users to measure grain intercept, intercept counts, intersection counts, grain boundary length, and grain areas in accordance with ASTM E 112, ASTM E 930, and ASTM E 1382 methods, with validation using the Heyn method.



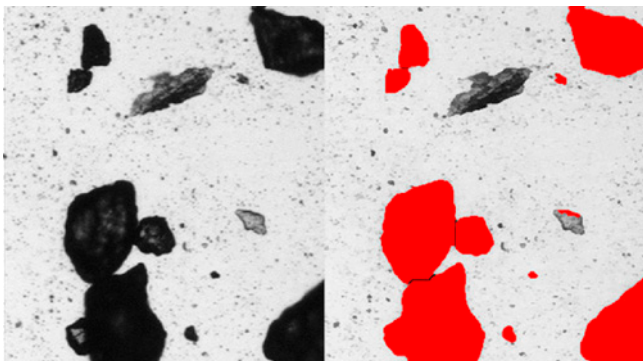
#### Application Module: Layer Thickness

Allows users to measure the thickness of thin surface layers on metals, alloys, carbides, and oxides (ASTM B 487). There is a range of different routines, from one layer of porous coating to multiple layers of different types of coating.



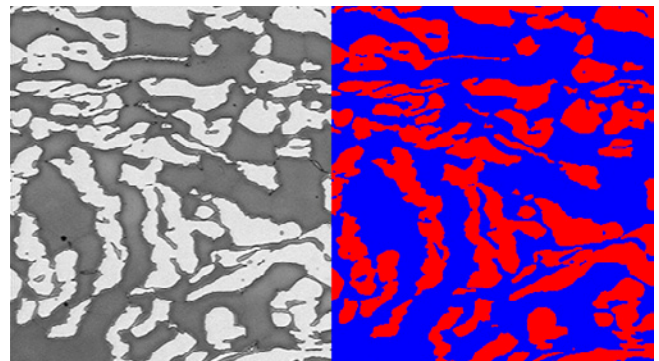
#### Application Module: Particle Size

Allows users to reliably assess the size and shape of particles as small as 0.5 micron. By using optical microscopy this package offers statistical and individual data on a large sample of particles. This module contains eight different routines with examples and tutorials.



#### Application Module: Phase Analysis

Allows users to count any number of clearly distinguishable constituents or phases within a microstructure, providing a statistical estimation of the volume fraction of different phases. Each module contains a range of different routines, from two phases in black & white to up to five phases in color.

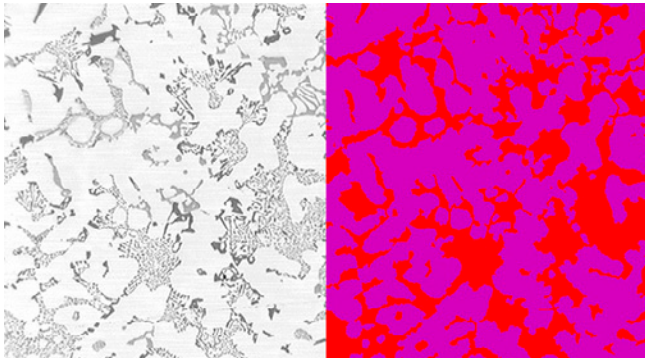


## Product Information

### Vision Lite Image Analysis Software

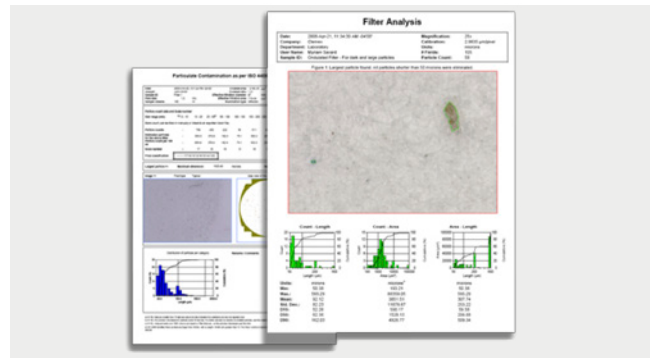
#### Application Module: DAS

Allows users to measure the distance between adjacent secondary arms of a dendrite. It is needed for materials with dendritic structure like cast aluminum alloys.



#### Professional-Looking Reports

Reports are generated automatically after each analysis and can be customized to suit your needs. You can add a company logo, images taken during analysis, graphs and charts, statistics and results.



| Part No.  | Description   | Standard                           |
|---|---|------------------------------------|
| <b>Grain Size Analysis Software</b>                       |   |                                    |
| 2111350   | Vision Lite for Image Analysis  |                                    |
| 2112446   | Vision Lite for Image Analysis Special Offer Package<br>(Supplied with 2111352, 2111353, 2111354 and 2111355) | ASTM E112, ASTM E563,<br>ASTM B487 |
| <b>Application Packages (Analysis and Routine)</b>        |   |                                    |
| 2111351   | Report generator module   |                                    |
| 2111352   | Grain and cell size   | ASTM E112                          |
| 2111353   | Multiphase volume and area fraction analysis (porosity)   | ASTM E563                          |
| 2111354   | Particle size   |                                    |
| 2111355   | Coating thickness   | ASTM B487                          |
| 2111356   | Dendritic Arm Spacing (DAS)   |                                    |
| <b>Templates and Routines (report generator included)</b> |   |                                    |
| 2111357   | Cast Iron for nodules   | ASTM A247 & ISO 945                |
| 2111358   | Cast Iron flakes/size/manual distribution/phases  | ASTM FVII & ISO 945                |
| 2111359   | Inclusions ratings. Methods A and D   | ASTM E45                           |
| 2111360   | Inclusions ratings for the Rail Industry  | ASTM E1245                         |
| 2111361   | Welding   |                                    |

#### Vision Lite can be operated with the following Zwick Roell hardness testers:

- ZHV $\mu$ -S
- ZHV $\mu$ -A
- ZHV30-S
- ZHV30-A
- ZHU250CL-S
- ZHU250CL-A