
KWALITY have 11 types of Image Analysis Software for different path of fields

Email- kwalitymicro@live.com



[KWALITY Micro Measurement Software](#)

IMAGE EDITING

- Cut, Copy, and Paste.
- Selected copy by free hand AOL controlled by four arrow keys available on keyboard or mouse with zoom preview.
- Crop, duplicate, restore
- Resize
- Compression
- Conversion to other format BMP, JPG, TIF, PNG, GIF & PSD
- Flood fill or spray with selected color at selected portion.
- Grid creation; 5X5, 10X10 & 100X100 lines.
- Drawing tool curve, line, square, and circle with node control and provision to change color & thickness of the

line

- Write text in any color or font.
- Pointer to place on an object in four directions with provision to change its color & thickness.
- Eraser works only on line, arrow or on any drawing tool. (not on original image)
- Camera Lucida
- Montage feature to merge stored image together. Useful to Merge different focuses of same image.
- Image stitching.
- Highlighter.
- Pixel by Pixel Correction by key board.
- Multiple image folder with Search facility.
- Filter application on selected area.

VIEW

- Zoom in/out
- Zoomed preview
- Rotation at 90, 180, 270 or custom
- Image flipping; horizontal or vertical axis
- Intensity histogram.
- Image Information
- Redo/Undo on all operations.
- Ruler in Various units.
- Slide show.

IMAGE PROCESSING

- Background subtraction and contrast enhancement of color or monochrome images
- Arithmetic image functions (Boolean Math; Add, AND, OR, XOR, DIFF, MIN, MAX, +, -, /, *, And Simple).

ROUTINE FILTERS

- Invert, Brightness, Contrast, Hue, Saturation, Blur, Noise

Remove, Emboss, Engrave, Gamma R, Gamma G, Gamma B, Yellow, Magenta, Cyan, Mosaic, Smooth, Desaturation, Pseudo Color, Colorize, Oilify, Despeckle, Postarize.

SPECIAL FILTERS & KARNELS

- High Boost, High Spatial, Low Pass Spatial, Ranking (Max, Med, Min), Point detection, Line detection, Homogeneity

EDGE DETECTION

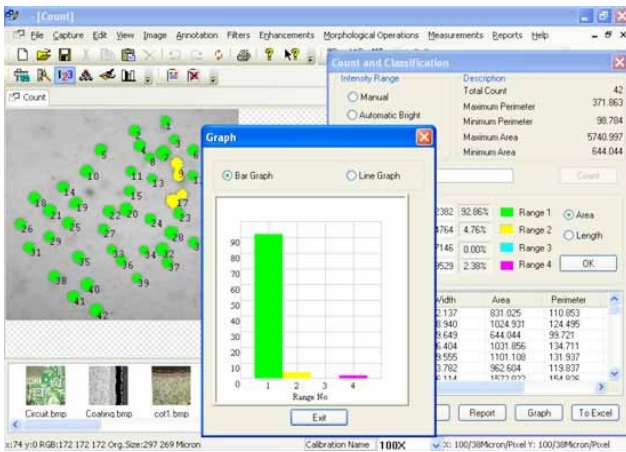
- Laplacing, Sobel, Kirsch, Prewitt Gradient, Shift & Difference, Combine, Contrast Base, Quick, Range And Variance.

MORPHOMETRY

- Skelotizing, Pruning, SKIZ, Histogram Equalization, Histogram Smoothing, Histogram Peak, Histogram Valley, Segmentation by Over/Under and Quantized, Contouring, Dilation / Erosion on Binary, Gray & colored Images, Opening/ Closing on Gray & Binary Images, Special Opening/Closing, Split/Combine Of RGB, YUV, YIQ, XYZ, & HSL, Changing any Image to 1, 4, 8 & 24 Bits, Medial Axis. Transformation, Halftone.
- Image Addition, Image Average, Image Subtraction, Image Multiplication.

MEASUREMENT

- Spartial calibration
- Line measurements for Distance, Length, Width, Perimeter, Angle, Three Point Radius.
- Area by enclosed line controlled by four arrow keys available on keyboard arrows with zoomed preview.
- **REPORT**
- Three options: Direct printout with original image processed Image & Tabular results
- Export to MS Office or Excel for further modification.



[KWALITY Medical Software](#)

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COUNT AND CLASSIFICATION

- Identification of objects in an image, count them, obtain several features measurements. Objects identification by user or automatically. User defined classification on basis of size or intensity.

THRESHOLD PARTICLE MEASUREMENT

- Manual, Auto bright and Auto dark methods to identity intensity range defined object to be measured. Various calculation & measurements available for selected Particle are; Dimensions, Area, Perimeter, Ferrite Length, Min/Max Radius, Thread Length, Thread Width, Fiber Length, Fiber Width.

MORPHOMETRY

- Roundness, Shape, Orientation, Elongation, Equal Circular Diameter, Equal Sphere Volume.

LOCATIONAL

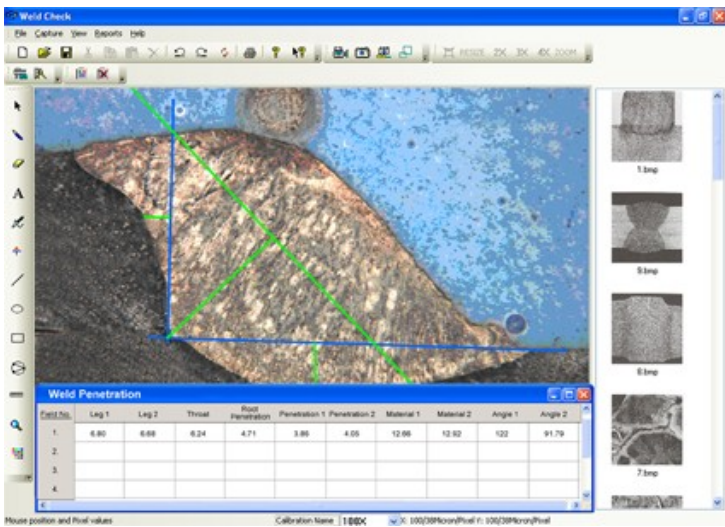
- Centroid X, Centroid Y, Major X1, Major Y1, Minor X1, Minor Y1, Major X2, Major Y, Major X2, Minor Y2, Box X1, Box X2, Box Y, Box Y2 & Box Area.

SEGMENTATION

- Measure area fraction & volume fraction. Identify multiple phases within Microstructure. Also delineate phases from the histogram.

REPORT

- Three options: Direct printout with original image processed Image & Tabular results
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[KWALITY Weld Penetration Software](#)

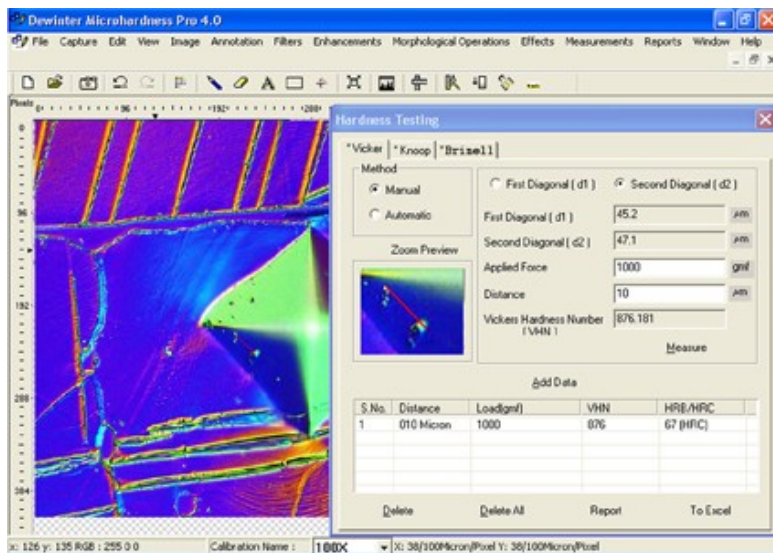
KWALITY Weld Check software is a powerful easy-to-use tool that enhances your ability to quickly and efficiently handle your most critical welding measurement and documentation software needs. Your workflow and productivity are greatly improved. Weld Check has been designed with your welding cross-section measurement needs in mind. Weld Checks measurement module allows you to quickly measure such items as your fillet welds, throat, leg lengths and penetration.

Use Weld Check Measurement Tolerance indicator to improve performance by having the software automatically tell you if a measurement is out of the tolerance range.

The following report concerns the analysis of a fillet weld, a weld of approximately triangular cross section joining two surfaces at approximately right angles to each other. Important measurements made by the distance from the root if the fillet to the center of the face (or throat), the distance from the root of the joint to the junction between the exposed surface of the weld and the base metal (or leg), the angles and the root penetration. Measurements that could have been done with the same ease or similar sample are among others : depth of HAZ (heat affected zone), area of HAZ, joint penetration, phase counting, etc.

The measurement remain unaffected if the image is zoomed for better accuracy. The magnifier tool is also available which can be switched on any part of image. The tool zooms only the region surrounding the cursor allowing to increase the drawing precision while still seeing the whole sample.

Image analysis system can measure a sequence of specific characteristics or welded parts. The system brings the good tool with the good color when its the time for the operator to use it.



[KWALITY Hardness Software](#)

Microhardness testing applied in areas including metallography, precision mechanics, electroplating, material testing and material science. In order to determine microhardness, different shaped indents are pressed into flat material samples with a defined force. Three methods available are :

BRINELL HARDNESS

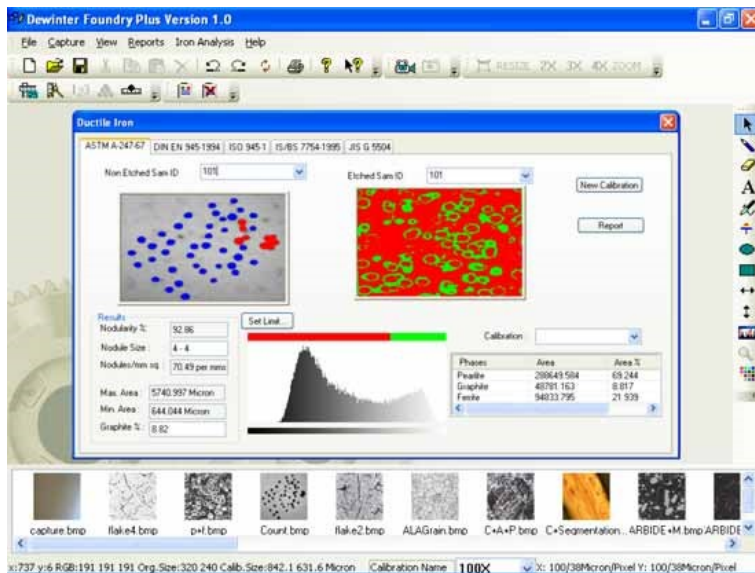
In Brinell hardness test, an indentation hardness test in which a hardmetal ball is forced into the surface of a test piece, mean diameter of the indentation is left on the surface after removal of the test force is measured. The Brinell hardness HBW is obtained by software.

VICKERS HARDNESS

The Vickers hardness test, measure length of the diagonals of indentation left in the surface in which a Square-based diamond pyramid, having an angle of 136 degree between the opposite faces at the vertex, is forced. The Vickers hardness is obtained by dividing the test force by the area of the sloping faces of the indentation. The Vickers hardness HV is displayed by software.

KNOOP HARDNESS

The Knoop hardness test is an indentation hardness test in which a rhombic-based diamond pyramid, having an included longitudinal edge angle of 172.5 degree and an included transverse edge angle of 130 degree, is forced into the surface of a test piece. The length of the long diagonal of the indentation left in the surface after removal of the test force. The Knoop hardness HK is calculated by software



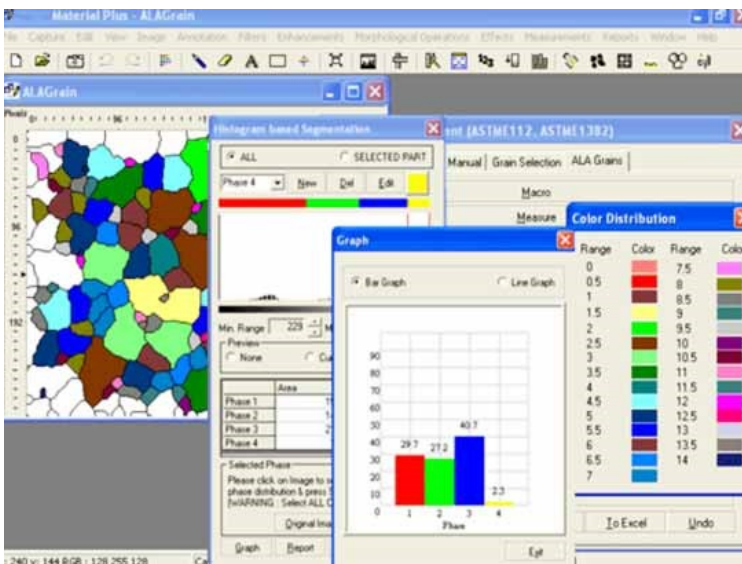
KWALITY Cast Iron Analysis Software

The software is totally automatic and provides very accurate analysis about non-Nodules / Nodules, Flakes Matrix percentage of Graphite, Pearleite, Ferrite & Corbide. Two separate module for SG Iron & Cast Iron further simplified the software working. Flakes are reported according to ASTM size no. 1 to 8 & type distribution percentage A, B, C, D, E is calculated automatically.

Specifications

- The software is totally automatic and provides complete analysis of micro structure of cast Iron.
- ASTM 247-67, ISO 945-1, IS 945-1, DIN EN945, JIS G 5504 standards.

- Separate modules for Gray cast iron & SG/Ductile iron
- Nodules are separated from Non-Nodules on predefined spheroidicity.
- The Module form IV, Distribution (designated by capital letter A to E) and size (Designated by Arabic No 1 to 8) is reported.
- The Flakes occurring in cast iron is reported by form I, distribution (designated by capital letter A to E) and size designated by Arabic no 1 to 8).
- The percentage of PEARLITE is calculated by excluding the GRAPHITE area. The matrix of PEARLITE, FERRITE, GRAPHITE & CARBIDE are reported in etched sample.
- Report is generated with specific International standard. F% is reported in JIS Method.



QUALITY Metallurgical Software

Application Program are set in the simplest way without compromising accuracy so that inexperienced operator can also make analysis with a minimum of training. Our current portfolio of metallurgy solutions are Nodules analysis, Coating Thickness Measurement, Depth of Width Measurement of Decarburization, Phase percentage with display by colored overlays, Grain Size No., Porosity Analysis, Graphite Flakes Measurement, Non-Metallic Inclusion Rating, Particle Size and Volume Percentage with lot make software complete. Generated reports can be saved or printed with images, Histogram, Data Overlays colors and various other related information.

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MORPHOMETRY

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MORPHOMETRY

- Roundness, Shape, Orientation, Elongation, Equal Circular Diameter, Equal Sphere Volume.

LOCATIONAL

- Centroid X, Centroid Y, Major X1, Major Y1, Minor X1, Minor Y1, Major X2, Major Y, Major X2, Minor Y2, Box X1, Box X2, Box Y, Box Y2 & Box Area.

PHASE

- Measure area fraction & volume fraction. Identify multiple phases within Microstructure. Also delineate phases from the histogram as per ASTM Standard E562 & E1245.

NODULES

- MEASURE Nodularity as per ASTM 247 standard. The Nodules & Flakes are separated on the basis of its shape and aspect ratio.
- The detail measurement of each microstructure is available for further analysis.
- The processed image displays non-Nodules in different color.
- The Nodules can be classify by its range on the basis of its size & shape.

POROSITY

- They are recognized on the basis of its intensity as per ASTM B-276 standard. The measurement of each pore is displayed. The processed image displays pores in Red color.

COATING THICKNESS

- This application rapidly measures the thickness or width of a coating at multiple positions along a sample as per ASTM B487 standard.
- Tabulated results available for min/max and mean of width measured at various points of sample cross section.

DECARBURISATION

- Measured depth or width of decarburisation occurs as per ASTM 1077 standard.

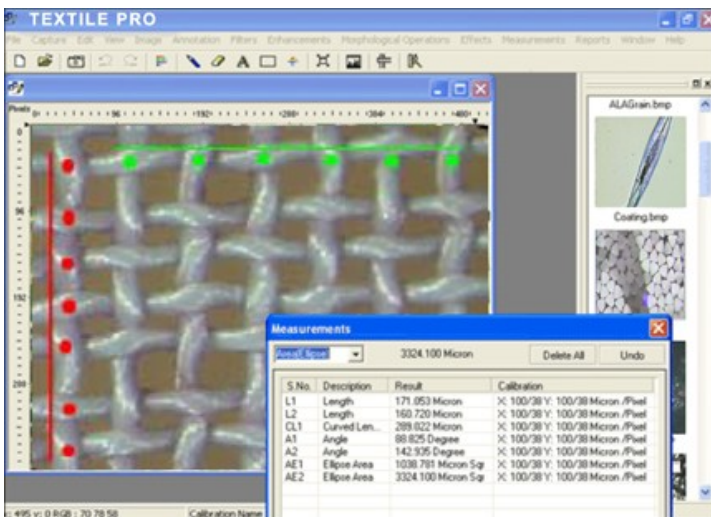
GRAIN SIZE

- The module analyse Grain image and measure the Grain no. & Grain size using ASTM E 112 method.
- The options for measurement available are 1. Manual Trace, 2. Popular Comparison Method, 3. Quick single Grain measurement, 4. ALA method, 5. Interception method.
- Various filters to make user defined templates. Grain boundary repair mathematical function.

- Non-Metallic Inclusion
Measure inclusions and report ASTM E-45, E-1245 numbers, cumulative length, width ratio.
- Graphite Flakes
Graphite Flakes length, width, distribution and percentage as per ASTM A-247-67

REPORT

- Three options: Direct printout with original image processed Image & Tabular results
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[KWALITY Textile Software](http://www.kwalitey.com)

This new program with our polarizing microscope is very useful for quality control or textile testing laboratories for the analysis, micro-measurement of fiber, yarn, threads, textile Material, non-woven fabrics etc.

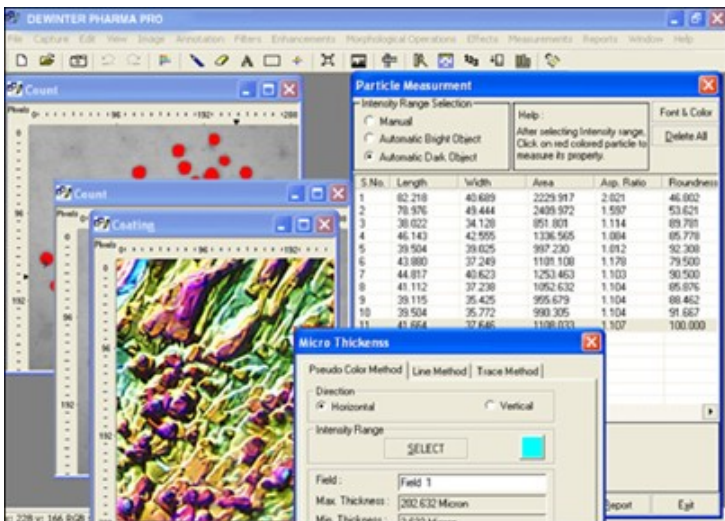
The real full screen display of image, acquisition, annotations, enhancement with hundred of filters, measurements, statistical processing of measure data are few of the capability of Textile Pro.

Photographs of all Fibers view are pre loaded in the software to identify fibers without prior knowledge in the same. The library can be created & retrieved within the same programme.

Few of common usage of Textile Pro are:

- Micro analysis of yarns and fiber sections.
- Measurements of length, surfaces, perimeters, angles, distance between two points or lines or objects.

- Fast and easy way the fineness analysis of single fibers.
- Check the purchased material can be identify the type of fiber, comparing it with the fiber pictures stored in the Data bank with the longitudinal and the sectional views.
- Check and measure the quality and shape of Lycra or synthetic Multifilament single threads.
- Analyse the compactness of non-woven Fabrics.
- Analyse the Yarn structure and detect possible defects.
- Detect, identify and measure possible impurities contained in textile materials.
- Analyse the compactness of non-woven fabrics.
- Measure section surfaces and perimeters.
- Analyse mechanical parts like needle points spinnerets etc.
- Macro analysis of a yarn section.
- Reduce the fabric warp and weft density to a cm or inch.



KWALITY Particle Size / Pharma Software

It is useful to measure & analyse particle size, particles shape, particle count, foreign particle detection, particle structure

The use of microscopic image analysis system is the most reliable technique to characterize particle shape and to characterize a particle size and volume distribution. Tradition method, such as laser diffraction, although efficient, gives limited information on particle shape. The particle size, distribution and shape of the particles can effect bulk properties, product performance, process ability, stability and appearance of the end product in Pharma industry.

The software is useful to measure and analyse the particle size, particles shape, particle count, foreign particle detection, particle structure, homogeneity, surface coatings thickness. For spherical particles (which are rarely uncounted in pharmaceutical powders) the diameters are sufficient to describe the particle size. For non-spherical particles, feret's diameter, Particle orientation, Particle shape, elongation, convexity, circularity, circle equivalent diameter are measured.

This software is also useful to study the polarizing effects which study the cross section through pharmaceutical tablets by preparing thin-sections on slide with UV curing adhesive for final polishing. The cross section reveal the spatial distribution of components in the tablets so that any post compression change (eg polymorph conversions or change in the hydration state of components) can be investigated.