M
Metric

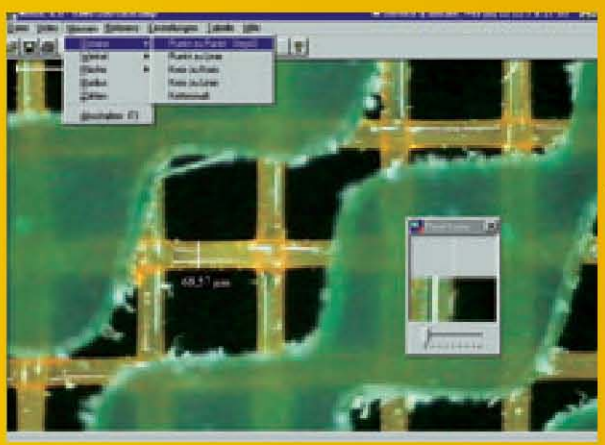
Video measurement technology for the PC

With this software package on CD ROM, you obtain a comprehensive program which, particularly when combined with our powerful Cellcheck video system, permits measurements of all kinds in a video live image. Following the easy installation on your PC or laptop, you can select the language you require: German, English, French, Italian, Spanish, Portuguese and Dutch. A more detailed description of how the Metric software works is given on the following pages. "Optional Modules" extending the measurement possibilities and "Special Solutions" are helping to solve everyday measurement problems.

How Metric works

Before the first measurement can be made, the system has to be calibrated. To do so, align the CCD camera system on the calibration disk and focus it (Fig. 1). Now count the number of lines. Click the mouse on the menu item "Calibration" and a window opens in which you enter the number. As this figure is determined by the magnification power of the microscope, it's advisible to store it in a calibration list, noting the degree of magnification it has been derived from. All objectives used can be stored in this list, together with the accompanying calibration (Fig. 10). This means that you do not have to make a new adjustment every time you change

(Fig. 1) Calibration: Focus the calibration disk and measure the greatest distance on the scale. Enter the value determined in the "Calibrate measurement" window.



(Fig. 2) Point-to-Point: The software calculates the distance between two points selected by mouse clicks. The value appears in the image and in a table if desired.

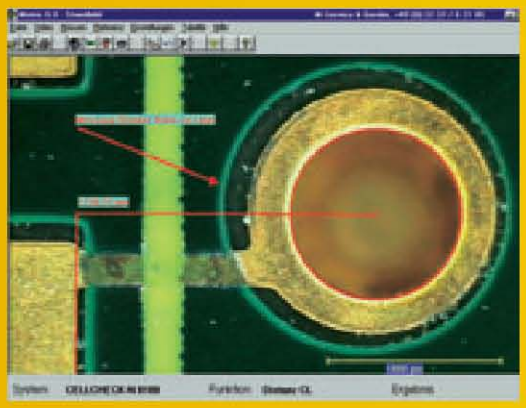
from one lens to another. Simply select the calibration corresponding to the lens from the list.
After the target measurement area has been focussed under the microscope of our Cellcheck system, the menu item "Measure" in sub-item "Distances" opens the following measurement options:

The "Point-to-Point" option (Fig. 2) can be used to measure a distance between two points selected by mouse click. A line indicates the distance measured and the figure is displayed. For a more exact positioning of the measurement points a so-called pixel lens can be activated in all measurement options, which magnifies a section of the measurement area. This only works, however, if the image has been stored.

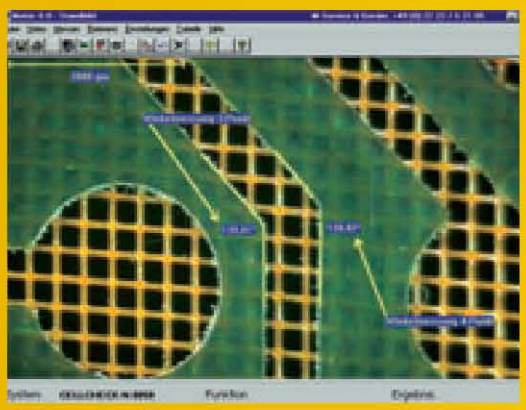
With the "Point-to-Line" option the PC always calculates the distance of the selected point at a right angle to a pre-defined line.
The "Circle centre-to-Circle centre" option (Fig. 3) permits, for example, measurement of the centre-to-centre distance between two drill holes. To define the whole circle, just click three points on the circumference of the each drill hole. After the two circles have been defined, the system calculates the distance between the centre and displays this by means of a line on the image.

Using the same procedure, the "Circle-to-Line" option (Fig. 4) is used for measuring the distance at a right angle between the centre of the hole and a line selected by mouse click. With the sub-item "Angle" (Fig. 5), angles can be measured by the three or four-point method. To do so, you simply place the measuring points re-

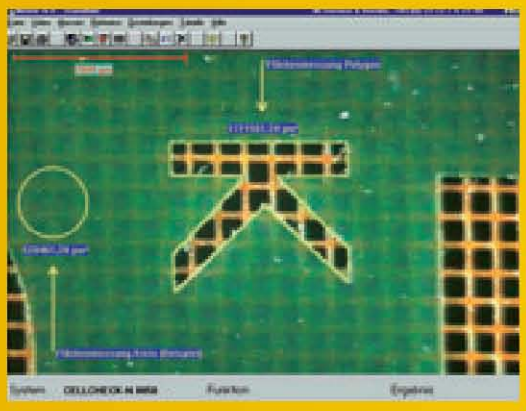
(Fig. 3)
Hole-to-Hole: After the circles have been defined by clicking three points on the circumference, the system calculates the distance between the centres. The value appears on the image as well.



(Fig. 4)
Distance from the centre of a circle to a line: Click three points on the circumference and the software calculates the distance to the line, likewise pre-selected by two mouse clicks, at a 90° angle.



(Fig. 5)
Angle measurement: Metric calculates the angle between two selected lines. Either the three or the four-point measurement method can be used. To calculate the angle, the lines in the image do not even have to touch.



(Fig. 6)
Area measurement by drawing a polygon. Trace around the irregular area to be measured with the mouse, and click at each turning point (The "K" has an area of 1.7 mm^2).