

XCaliper™ 6.0

Software Solutions for Machine Vision

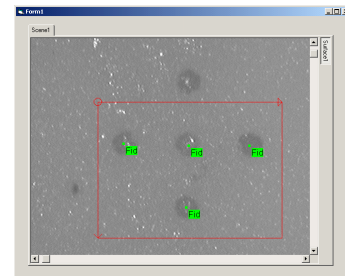
Now With Noisemaster™
Robust Pattern
Recognition
Technology (RPT)

XCaliper 6.0 introduces Noisemaster™

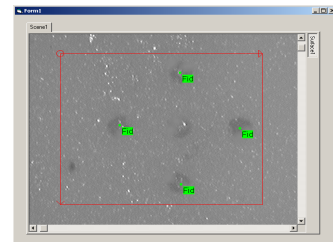
an entirely new type of pattern-recognition software designed specifically to address the limitations of geometric-based pattern tools that have dominated the machine vision industry the last several years.

The new tool, called **Noisemaster™ Robust Pattern Technology, or RPT**, addresses applications where the geometric modeling and edge detection approach of geometric pattern tools have difficulties. These include applications where patterns have weak edges and where images are noisy.

Noisemaster™ tackles these challenging pattern recognition problems from the field of robust statistics. Robust statistical estimation allows the creation of a mathematical description of the pattern that can tolerate weak or unstable edges, while also tolerating variations in illumination, major occlusions and even complete contrast reversal!

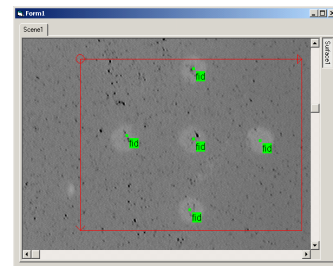


Fiducial Patterns with Weak Noisy Edges



Major Edge Occlusions

(Center occlusion was rejected based on quality assumption <50 %.)



Complete Contrast Reversal

XCaliper 6.0 Major New Tools & Features

Noisemaster™ has been implemented in two new pattern-training tools: RPTTeachPattern and RPTTeachFont. (NFT pattern tools will still have advantages in certain applications.)

The Search Tool has been modified to support both RPT based classifiers and existing NFT based classifiers.

Support for Code 128 Barcodes has been added to the BarDecoder Tool and “stitching” algorithms have been implemented for all barcode types to support successful decoding via combination of partial reads from individual barcode scans.

New or updated framegrabber drivers have been added for Mutech, Imagenation, and Biflow devices. Support for exciting new Opteon USB and Ethernet based digital cameras has been implemented. Support for firewire cameras is under development.

Enhanced support has been added for the use and access of stored images via the “Disk Driver” feature in the Image Manager. This functionality allows developers to more effectively prepare prototype or demonstration applications based purely on saved images.

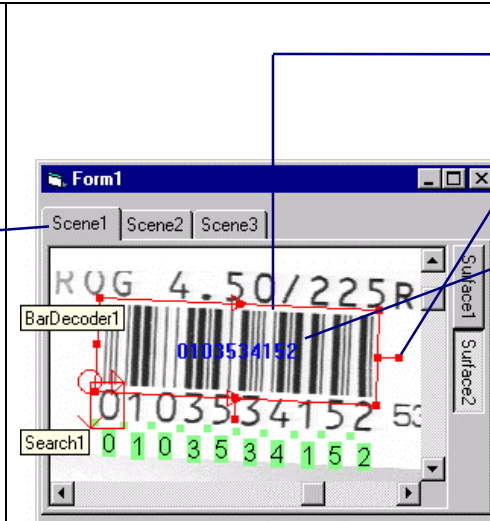
Please contact us for a free fully-functional copy of the
XCaliper 6.0 evaluation CD!

XCaliper 6.0 builds on over 10 years of successful deployment in thousands of installations world-wide!

XCaliper's appeal results from its extremely intuitive interface and ease of use...setting the standard that remains unmatched today.



Click and drag the ImageDevice control directly onto the form. Then use the ImageDevice's property pages to load an image, adjust the zoom level, add more scenes and surfaces, and change nearly any other property or execute nearly any other method.



Click and drag analysis tools directly onto the image at the correct location ...

... and use the viewport handles to adjust the position of any tool graphically.

See results of some tools immediately after you place the tool on the image.

See results of any tool on its property pages – in design mode!

XCaliper's wide range of proven vision tools continue to provide successful results.

Central UI and Display:	
Image Device	Image acquisition control center including disk driver camera simulation for easy development with template images.
Image View	Adds additional views of scenes, surfaces and inspections in the image device.
Image Analysis:	
BlobAnalyzer	Detects and analyzes blobs defined by a wide range of thresholding and segmentation parameters.
ColorIdentifier	Analyzes and identifies color information inside the tool viewport.
ImageCalculator	Performs arithmetic and logical operations on images
ImageProcess	Applies filters or morphological operations to the pixels in the viewport.
LightMeter	Analyzes pixel intensity values in the tool viewport.
Edge Tools:	
LineEdgeLocator	Locates one or more linear edges parallel to the tool start and end sides.
LineCaliper	Locates one or more pairs of parallel linear edges parallel to the tool start and end sides.
ArcEdgeLocator	Locates one or more non-linear edges within an arc shaped tool viewport.
ArcCaliper	Locates one or more non-linear edge pairs within an arc shaped tool viewport.
Pattern Tools:	
Correlation	Trains and finds patterns using Normalized Gray-Scale Correlation algorithm.
TeachPattern	Creates single-pattern classifiers. Optimized for detecting fine differences in features.
TeachFont	Creates multiple-pattern classifiers. Optimized for detecting fine differences in features.
RPTTeachPattern	Creates single-pattern Noisemaster™ classifiers. Optimized for tolerating pattern deficiencies.
RPTTeachFont	Creates multiple-pattern Noisemaster™ classifiers. Optimized for tolerating pattern deficiencies.
Search	Finds patterns in images including rotated, scaled or inversed variants of original patterns.
Symbology Readers:	
BarDecoder	Reads barcodes including Code 39, Interleave 2of5 and Code 128.
MatrixDecoder	Reads DataMatrix symbols.
Other Capabilities:	
IRTools	Analyzes temperature in images from infrared cameras.
IOTool	Provides access and control over any digital I/O board in the computer.
Calibration	Both linear (x,y scaling) and non-linear (distortion) calibration supported for all tools.

Coming Soon!

Circle & Polygon LightMeter	New tools extend parallelogram viewports to circle and polygonal shapes.
Tool Image Map Extraction	Direct access to tool image map results for further processing by developer's code.
Visual Studio.Net Support	Full support of XCaliper under Microsoft Visual Studio.Net.

XCaliper runs on any standard PC with Visual Basic® and Visual C++® under Microsoft® Windows NT®, 2000®, or XP®.