Increasingly, med-tech companies are using machine vision to inspect for visible characteristics, analyze results and record findings using cameras, illumination, and optics. Many of the applications that utilize machine vision or deep learning based industrial image analysis require color measurement as well. In addition to providing the hardware to obtain the image, JADAK also offers several software solutions to measure color, process the data and make decisions based on the information.

As a leader in medical machine vision for OEMs, JADAK’s expertise and resources help customers to solve problems and engineer a solution using the right technology and software. Following are three JADAK software applications that, among other functionality, can help to measure color:

- **Clarity®** is JADAK’s machine vision software that has recently been updated to include color measurement and image pre-processing. The latest version of the Clarity software package also offers blob detection, shape detection, counting, distance measurement, barcode detection and reading, and more. Clarity’s easy to use functionality and graphic user interface can detect single or multiple objects within an image, as well as presence/absence detection, pattern matching of specific learned features, new decoder configurability options, custom shape detection, configurable output options, and multiple machine vision scripts within a single device. Clarity can be used to detect anomalies and defects by learning the normal appearance of an object and comparing to subsequent images. Clarity is used with JADAK’s smart cameras but can be adapted for use with 3rd party cameras upon request.

JADAK provided the Clarity solution to a customer in China recently for cap color detection. The customer needed a machine vision solution that would train and match colors using a set of standards/criteria. The customer needed JADAK’s expertise in getting their machine vision project started, but they wanted to participate in the development process in order to have more control and ability to make future modifications. JADAK performed the up front system engineering for the machine vision application, then delivered a test fixture and camera that was set up specifically for the customer’s continued use. The test fixture, coupled with Clarity software, allowed the customer to complete the project development using their in house engineering staff who had no previous machine vision expertise.
- **VideoWin®** is JADAK’s PC based color measurement software for color critical applications. VideoWin provides a high quality measurement of display images for quality control purposes. The latest version of VideoWin includes MURA functionality that can be used to look for defects in the display. An image of the display is taken at a fixed distance, and then MURA measures the luminance and color variability across the display and provides a measurement resulting score. The customer is able to set a specific pass/fail threshold based on their unique application criteria. VideoWin is used in connection with high quality cameras and photometers. Additional functionality includes measurement of dimensions and color consistency across two-dimensional arrays, when a highly accurate measurement is required.

An example of a VideoWin application is identifying color accuracy on a NDS surgical display or monitor, where color accuracy is patient critical.

- **SpectraWin®** is JADAK’s PC based spectral measurement software, which measures a single point for color and illumination. Connected to a high quality spectrometer, SpectraWin provides luminance and color values with extreme accuracy.

An example of an application that might benefit from SpectraWin is an in-vitro diagnostic sample that, when exposed to a light source, will give indication of chemical composition within the visible light spectrum.

Although used for different applications, each one of JADAK’s color measurement and vision software solutions uses a set of algorithms that has been field-tested and optimized. Our reliable software solutions allow customers to detect, inspect, classify and analyze color in images.