



FIVE COMMON MISCONCEPTIONS ABOUT LOW-COST, PRE-PACKAGED MACHINE VISION SOLUTIONS

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From pixel sensors to vision appliances to vision sensors and systems, vision solutions that are billed as low cost and easy to use abound. In fact, in response to the tremendous demand for these types of solutions, the end user market is faced with such a plethora of machine vision choices that several common misconceptions have emerged about the whole range of offerings.

Misconception #1: All pre-packaged, low-cost machine vision solutions are basically the same.

Within each category, this is true to some extent with respect to standard capabilities and price points; however, each category offers different levels of functionality, ease of use—and, of course, cost.

Pixel sensors: Sometimes called “pixel counters,” these products are a step up from traditional photoelectric sensors. They offer high-speed inspections in such basic, low-cost industrial applications as presence/absence and controlled template matching. Pixel sensors are very easy-to-use, but provide little or no flexibility and have minimal tolerance to normal process variations.

Vision appliances: More sophisticated than pixel sensors, but still very easy to set up and use, vision appliances are geared toward specific inspection problems, like gauging or label inspection, rather than general-purpose machine vision applications. Applications can be set up, accessed and maintained via a web browser.

Vision sensors and vision systems: These products offer more flexibility than the previous solutions, but are also more difficult to setup and deploy. They are ideal products

for experienced users and system integrators who have varying machine vision requirements.

Misconception #2: Anyone can get any of these products up and running in minutes.

While end users generally can set up a pixel sensor or vision appliance without outside assistance, integrated vision sensors and systems nearly always require integrator assistance (unless an end user has extensive experience developing and using machine vision). Because these products offer more flexibility and more extensive inspection capabilities than other low-cost, pre-packaged systems, they also require more customization and up-front design and development for each application.

Misconception #3: Expensive integrated solutions will still always be the best solution to every vision problem.

Absolutely not! The specific requirements of each application, as well as who will be using the machine vision system, should determine the solution. For such basic applications as bar code reading, presence or absence of a particular feature or part or simple gauging, sensors and vision appliances generally incorporate all of the capabilities that an application requires—and purchasing a more complex system would only be a waste of money, time and effort.

Keep in mind also that expecting someone with no vision experience to implement and/or run a complex vision system may only result in that system not being used at all. Starting with a cost-effective, easy-to-use solution to solve part of a complex application can help familiarize the user with vision, address part of the inspection requirement and, eventually, may lead to implementation of a more comprehensive solution.

Misconception #4: All “pre-packaged” solutions are just that—completely pre-packaged—so I don’t have to worry about buying or specifying any of the components.



Some products are completely pre-packaged; however, to provide greater flexibility and better address the requirements of each user's application, some pixel sensors and appliances and most sensors and pre-packaged systems offer a choice of camera/sensor, software packages, lighting, I/O and networking options. Be forewarned: the list price for these products either will not include these extras or it will reflect the lowest-cost configuration.

Misconception #5: All pre-packaged systems have user-friendly interfaces.

Well, all manufactures of these systems SAY this! The machine vision and computer experience, as well as other relevant skills and experience of each user, determines the true level of "user-friendliness" of each system. A product that is user-friendly from an experienced integrator's perspective may well look like Greek to a plant engineer who has no machine vision and very little computer experience. Each user needs to run through machine vision system demos to determine which ones are "user friendly" to him or her.

When properly specified, "low end," pre-packaged machine vision solutions offer numerous benefits to end users, including low cost, ease of use, high speed, rapid implementation time and immediate ROI. However, there is also a time and place for more complex, integrated systems. The key is determining which type of machine vision solution is most appropriate for each application and each user and specifying accordingly.

