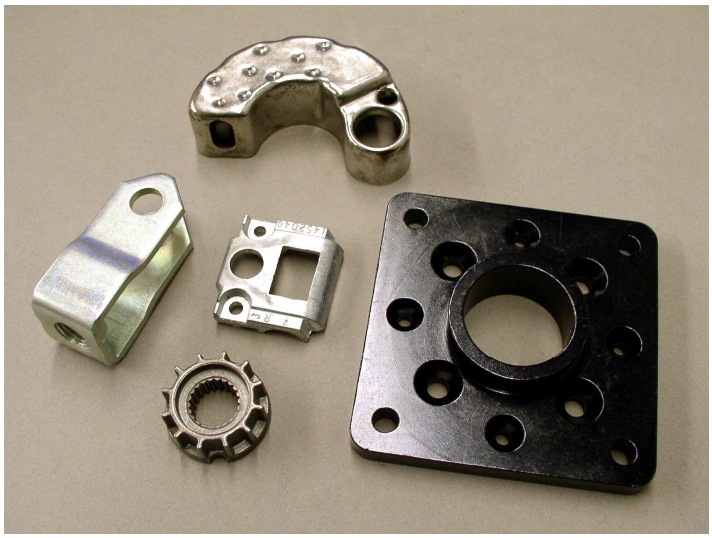
FyrEye-3225 Ultra-Accurate Automatic Gauging Systems

The FyrEye–3225 family combines ultra-accurate gauging with full automation of the inspection process. This family includes the full gauging station, with all vision equipment pre-mounted and pre-tested as an integral system.

Many advertisements give and imply “accuracy” figures based on the imaging array resolution coupled with sub-pixeling algorithms in the software. By these standards, the high resolution imaging of the FyrEye-3225 family combined with the powerful sub-pixeling algorithms in our software engines offer these figures in the range of +/- .00006” to +/- .00000007”. In reality, these figures reflect only the contribution of display granularity to the total error/accuracy. Actual accuracy is the limit of the combination of all errors including those induced by:

- Imaging array granularity
- Chromatic distortion
- Optical distortion
- Edge blur
- Parallax
- Diffraction limiting
- Array distortion

FSI’s scope of engineering, scientific and machine vision expertise combined with the strength of our hardware and software building blocks comprehensively addresses, minimizes and quantifies all of the above for applications, resulting in accuracy which is both high and credibly assured. Accuracy is dependent on the application specification. Under vision application specification (VAS) #VAS-3225-02, (copy available) our 3.14” dia. field of view unit/solution (#FyrEye-3225-02) holds an overall accuracy of +/- 100 millionths of an inch. Narrower field of view 3225-family units similarly accomplish accuracies of +/- 1 millionth of an inch.



On the referenced application specification, the FyrEye-3225-02 acquires the image and takes and provides 87 measurements of wide-ranging types in well under 1/4th of a second. These measurement types include point-to-point, concentricity, radius, paralellness, straightness and angular dimensions, thread profile analysis, plus a range of others. Includes determination of pass/fail for each dimension (with settable dimensions and tolerances for each) consolidation of the results into a global pass/fail, and 16 discrete pass/fail outputs. Includes capability for automatic spreadsheet storage of results locally or remotely. Automated unconditional or conditional image storage is available with a storage capacity of at least 100,000 images. A common use of conditional image storage is to store images only of failed parts.

The FyrEye-3225-02 includes high accuracy telecentric optics and a telecentric lighting solution, high resolution imaging, powerful and friendly machine vision software, with global and individual dimension calibration capabilities. As they process only parallel rays, telecentric optics assure the exact perimeter of objects is measured, vs. small occlusions by other points on the

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object which occurs with standard lenses. It includes a configurable display showing the desired selection of images, measurements and gauging graphics, statistical results and any other desired data.

Our FyrEye-3225-02 includes the complete inspection station, including a “stage” or fixture for placement and removal of the product by a human or robot. Alternatively, a version without a stage of fixture may be used where the product is held for the inspection by a robot. Most 3225 system stations are designed for placement on a table or bench, but free-standing or floor mount versions are available.

The powerful and friendly software engine allows taking total ownership, including the ability to quickly and economically make changes as new products and missions are introduced over the years.

The FyrEye-3225 is a family of systems and solutions. FSI is ready to go to work on your application, including proposing a FyrEye-3225 family unit with a design that is focused on and confirmed for your application, providing an Assured Path to Success™ for fully meeting your requirements in a cost-effective manner.