ENHANCED WAVEFRONT ANALYSIS SOFTWARE IMPROVES USER EXPERINCE AND MEASURMENT CAPABILITIES

Abstract— **Lumetrics, Inc. (Rochester, NY) has developed the next generation of Complete Light Analysis System (CLAS) software within its line of wavefront sensing instruments. The focus has been on several key elements to enhance the existing feature set of the old software. These enhancements have driven the new software, CLAS-NX, towards a simplified single-window interface that is intuitive and easy to use.**

I. Single Window UI

Now known as CLAS-NX, the software is designed to be a single window interface. All features are laid out in an intuitive fashion in a single application window. Instead of having to manage multiple windows with settings spread out across them or buried within multiple submenus, the most important and commonly used functions are organized within a series of tabs and expandable sections. This new layout matches modern user interface standards and provides a similar user experience to common software. The result is a more intuitive software interface.

II. Simplified User Interface

The most commonly used features are front-and-center. For example, light level is now prominently displayed on the main screen, making it easy to determine when the system is in a good operating state. Similarly, acquisition controls are also on the main screen to quickly grab a data snapshot. This simplifies analyzing data and reduces unnecessary mouse clicks and keyboard button presses. Most used features are easily accessible and organized.

III. Reduced Operator training

The updated software has streamlined the measurement process. Processes, such as ensuring that the system is aligned, are now done via a step-by-step wizard interface. A series of user prompts and machine feedback allow even a novice to achieve proper measurement configuration. The wizard-aided
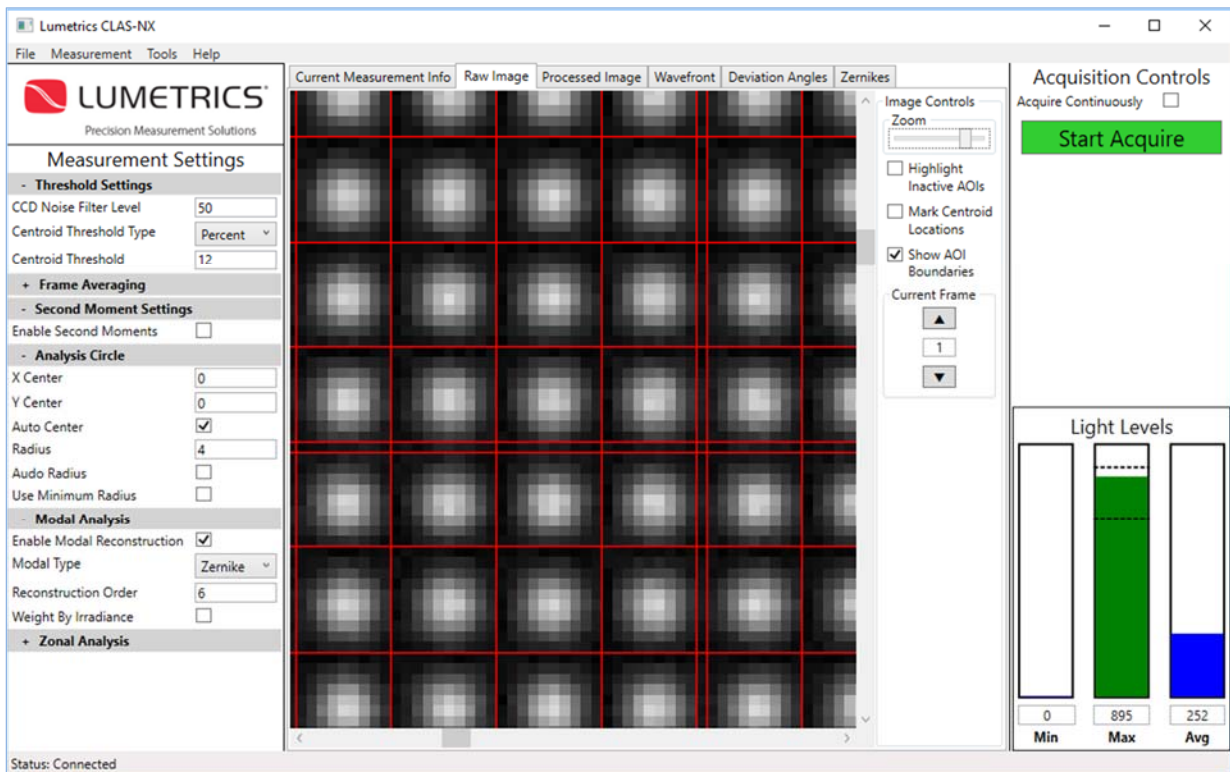

Figure 1: Main CLAS-NX Window

user interface processes include:

- System alignment
- Reference file creation
- Sensor orientation

IV. MASKS

Masks creation is one of the most powerful features of the new CLAS-NX. This feature allows the user to set limiting aperture to the measurement window, as well as block out hotspots and other artifacts. With CLAS-NX, masks creation has been further enhanced.

Mask generation is done through numerical input. For example, a circular mask is defined by a center point and radius. Additionally, a series of preset mask types have been created to make mask generation even quicker. The following pre-set masks are included in the software:

- Circle
- Donut
- Circle with Hotspots
- Square
- Square donut
- Square with Hotspots

In addition, custom mask generation is also available.

V. PERFORMANCE WITHOUT A PRICE

The aforementioned features are developed while keeping performance in mind. Users still have access to the powerful features that made the previous software platform, CLAS-2D, well-known and respected in the scientific community. These features have been reorganized to be more intuitive and easy to find. Using the new API layer, engineers and scientists have great flexibility for developing their own data analysis applications, by taking advantage of the third-party software, such as:

- Python
- Matlab
- Microsoft .NET

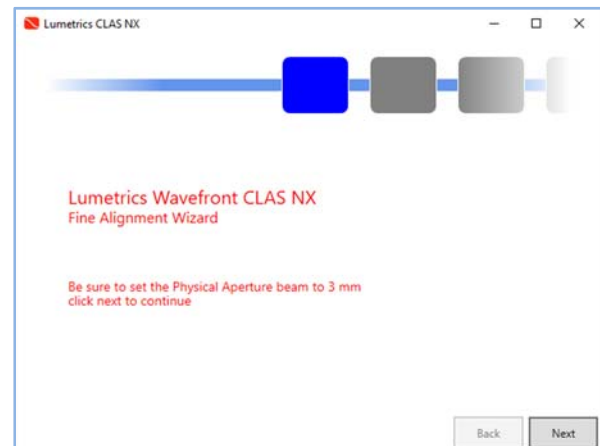When combined with the new API layer, the CLAS-NX software enables the end user with the
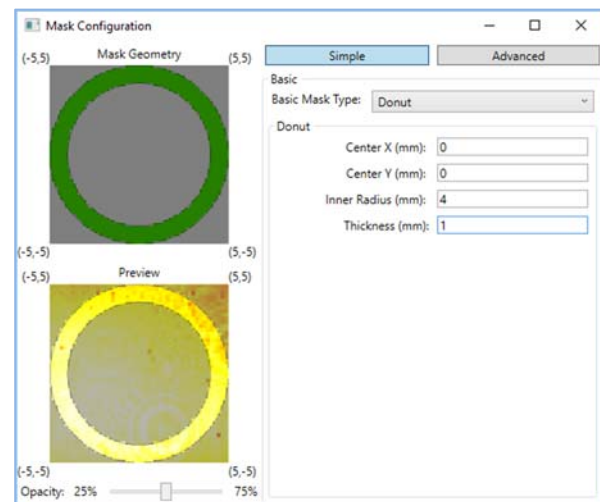

Figure 2: Alignment Wizard

Figure 3: Mask Configuration

unparalleled access to the raw and processed wavefront data, settings, and post processing.

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