## Pre-Analysis: An Industry-Leading Innovation

Determining appropriate inputs for any beam propagation algorithm can be challenging. BPS's groundbreaking Pre-Analysis feature automatically recommends analysis settings based
on your lens system and delivers an accurate answer in the shortest time possible.

Pre-Analysis performs a fast scan of your system using a subset of probe beamlets and provides recommended values for key inputs, including:

- Input field sampling
- Resampling surfaces
- Clip checking surfaces
- Output grid location, size, and sampling

Pre-Analysis also estimates the analysis execution time based on the recommended values. Use of this feature is optional but highly recommended.



Figure 2: BSP's Pre-Analysis feature recommends analysis parameters that are customized for your lens system

## Flexible Input and Output Options

The input optical field can be a plane wave, a uniform spherical wave, or an elliptical Gaussian beam. BSP supports general complex field input, which gives you flexibility to customize the input beam description by providing detailed maps of the beam's intensity and phase. For example, complex optical field data can be imported from external software programs that model waveguides. This feature also allows the definition and propagation of higher-order laser modes.

The output can represent a variety of quantities associated with the field at different surfaces, including amplitude, phase, intensity, and irradiance. The output can be saved in a Macro-PLUS® worksheet buffer, or any of various graphical or tabular formats:
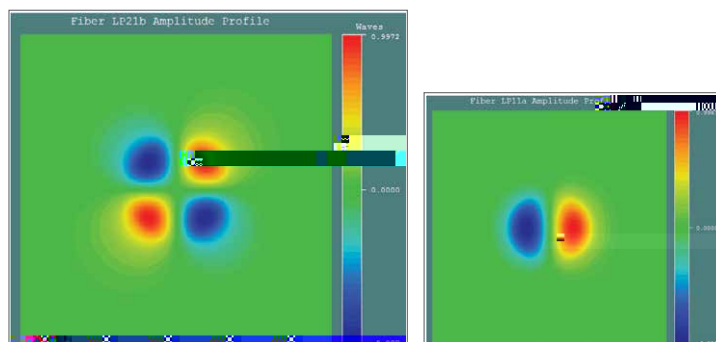


Figure 3: General complex field output