

Ronar-Smith® Beam Expander

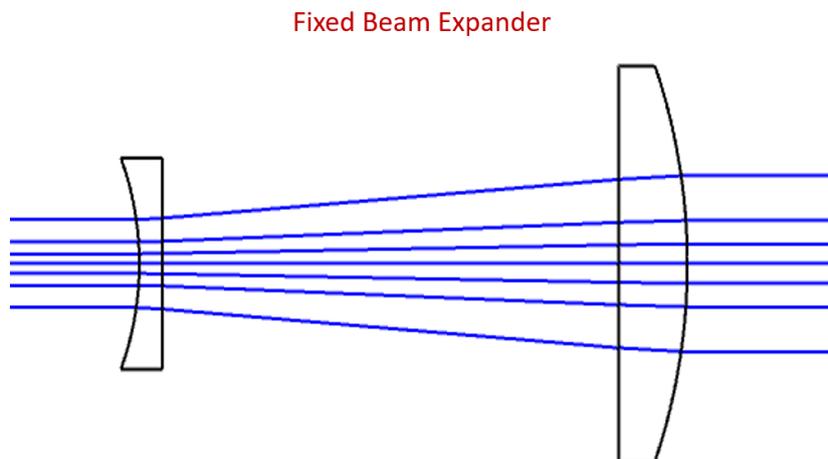
Ronar-Smith® Beam Expander demands for the highest quality in beam broadening and collimation without compromising on the expanded beam quality. We value safety as much as we do on the quality, and you can be assured that all our beam expanders are subjected to rigorous testing prior to market sales. All our beam expanders are telescopic by nature and requires a collimated beam input while delivering an expanded collimated beam at the output.

What makes our beam expander products unique is the broad wavelength input that we carry and our customisation services that we provide for customers who need specific requirements in their industrial and production line. The parameters that we are able to provide customisation include wavelength-specific filtering, anti-reflection coating, magnification factor selection, input/output clear aperture, and maximum beam intensity.

We provide ready-stock Ronar-Smith® beam expanders in three configurations: fixed (BEX series), zoom (BXZ series) and motorised zoom (BXZ-MOT series).

Working Principles

Fixed Beam Expander (BEX Series)

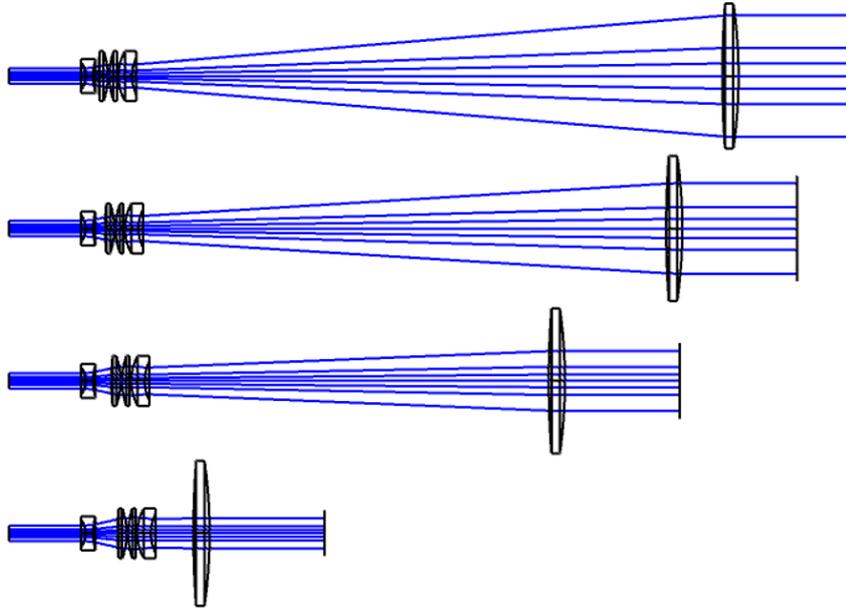


Beam expander in laser system development are utilised for calibrating various elements. The diameter of the laser beam at the laser system output is adapted to the required diameter at the input of the objective lens. Beam expander is also primarily used in laser-material processes.

Fixed beam expanders are also designed for specific beam expansion applications such as laser engraving. They also feature anti-reflection coatings and high transmissivity to maximise the efficiency of the beam expansion and reduce losses. The disadvantage lies in the fixed magnification factor and applications that require tuning of the output beam size is unable to perform.

Zoom Beam Expander (BXZ and BXZ-MOT Series)

Zoom Beam Expander



Zoom beam expander accounts for the short-fall of fixed beam expander by allowing the user to tune either manually or automatically (motorised) to the required magnification factor, depending on various processes that is required. These beam expanders are also designed for high power applications where magnification adjustments may be required.

The concept of zoom beam expander works on the internal translation stages and focusing mechanisms to adjust and account for the changes in magnification continuously. It also takes laser divergence into consideration and performs relative adjustments without affecting the overall housing length.