



Nutfield Technology

Photonics in Motion®

3XB 3-Axis Scan Heads

For Marking, Cutting & Welding
Large Fields with Smaller Spot Sizes



- ◆ **Fast, Flexible, Compact 3-Axis Scan Head**
- ◆ **Adjustable Range of Field Sizes From 100 - 2000mm**
- ◆ **Available in 10, 15, 20, 30 and 45mm Apertures**
- ◆ **Available In Open Kit Form**
- ◆ **Available for Fiber Lasers**
- ◆ **Patent Pending Focus & Field Size Adjustment Design**
- ◆ **Achieves Smaller Spot Sizes Than F-Theta Lenses**
- ◆ **Achieves Larger Field Sizes Than F-Theta Lenses**
- ◆ **Configurable For Any Wavelength**

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Nutfield's 3XB 3-Axis Scan Heads offer laser system designers smaller spot sizes and larger scan field sizes than can be achieved with f-theta lenses. Our integrated design leverages the best of NTI's galvo technology to offer superior bandwidth, accuracy and flexibility in 3-axis technology.

The 3XB is the only 3-Axis Scan Head, which offers different field and spot size combinations by simply turning a knob to adjust the spacing between the translator and objective lens (patent pending).

The lens translator houses an expander lens, which accepts a beam from the laser source. The beam expands, then travels through an objective lens, which lies in front of the X/Y scan mirrors in a "post objective scanning" configuration.

The expander lens moves linearly along the axis of the beam to correct for focus, in real-time, as a function of an X/Y position within the scan field.

Lens sets are custom selected for your laser to accommodate for different laser beam apertures and wavelengths and to optimize spot size and field size requirements.

Contact NTI to discuss configuring a 3XB System for your application.

Suitable For Laser Based:
Cutting Drilling
Marking 3D Surfaces
Large Field Size Requirements

**TAKING THE LEAD
IN PERFORMANCE**

3XB 3-Axis Scan Head

Specifications

LASER>>>	Nd:YAG (Tripled)	Nd:YAG (Doubled)	Nd:YAG	CO ₂
Wavelength (nm)	355	532	1064	10,600
Minimum Field Size (mm)	100 x 100	100 x 100	100 x 100	100 x 100
Spot diameter (μm) TEM ₀₀ At Minimum Field ^{1,2}	~ 4	~ 6	~ 11	~ 80
Example Field Size (mm)	1000 x 1000	1000 x 1000	1000 x 1000	1000 x 1000
Spot diameter (μm) TEM ₀₀ At Maximum Field*	~ 31	~ 47	~ 80	~ 560

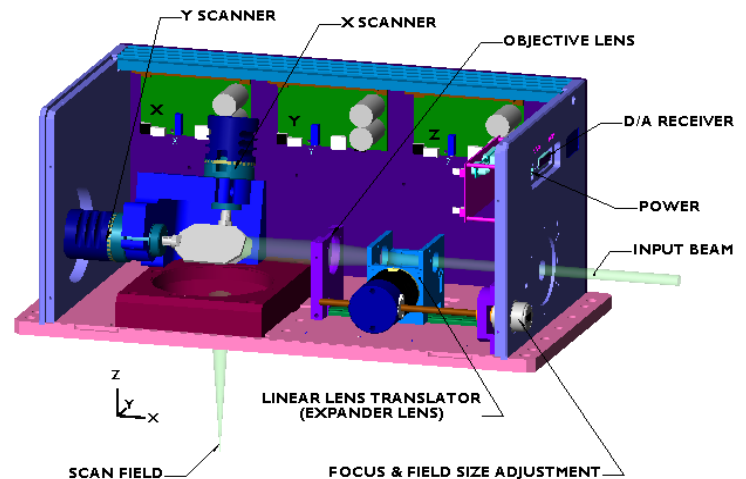
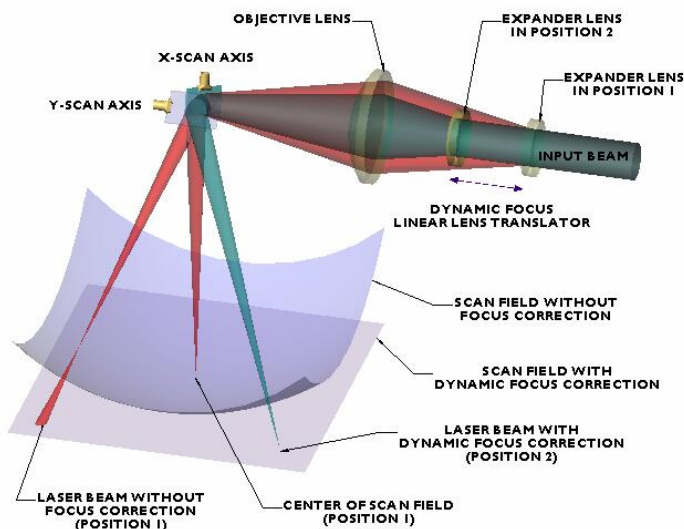
¹Spot sizes listed above are for 30mm aperture Scan Heads with TEM₀₀ lasers beams.

²CO₂ spot size listed above is for a 45mm aperture Scan Head with TEM₀₀ lasers beams.

3XB Scan Heads are available with 10, 15, 20, 30 and 45mm beam apertures.

For smaller aperture scan heads, spot sizes will grow as the aperture size shrinks.

Custom wavelengths and configurations available upon request. Contact NTI.



For Outline Drawings and Mounting Details Contact Nutfield Technology or Go On-Line.

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Specifications subject to change without notice. 2003