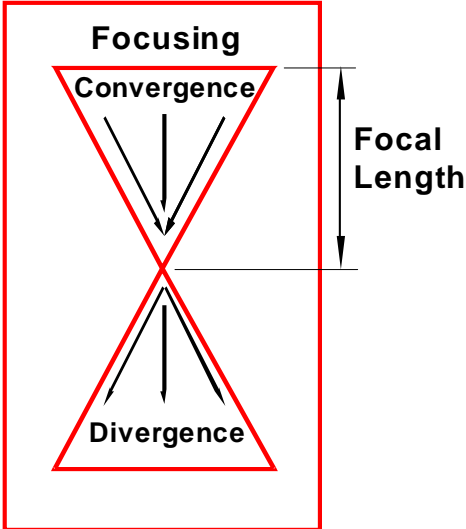
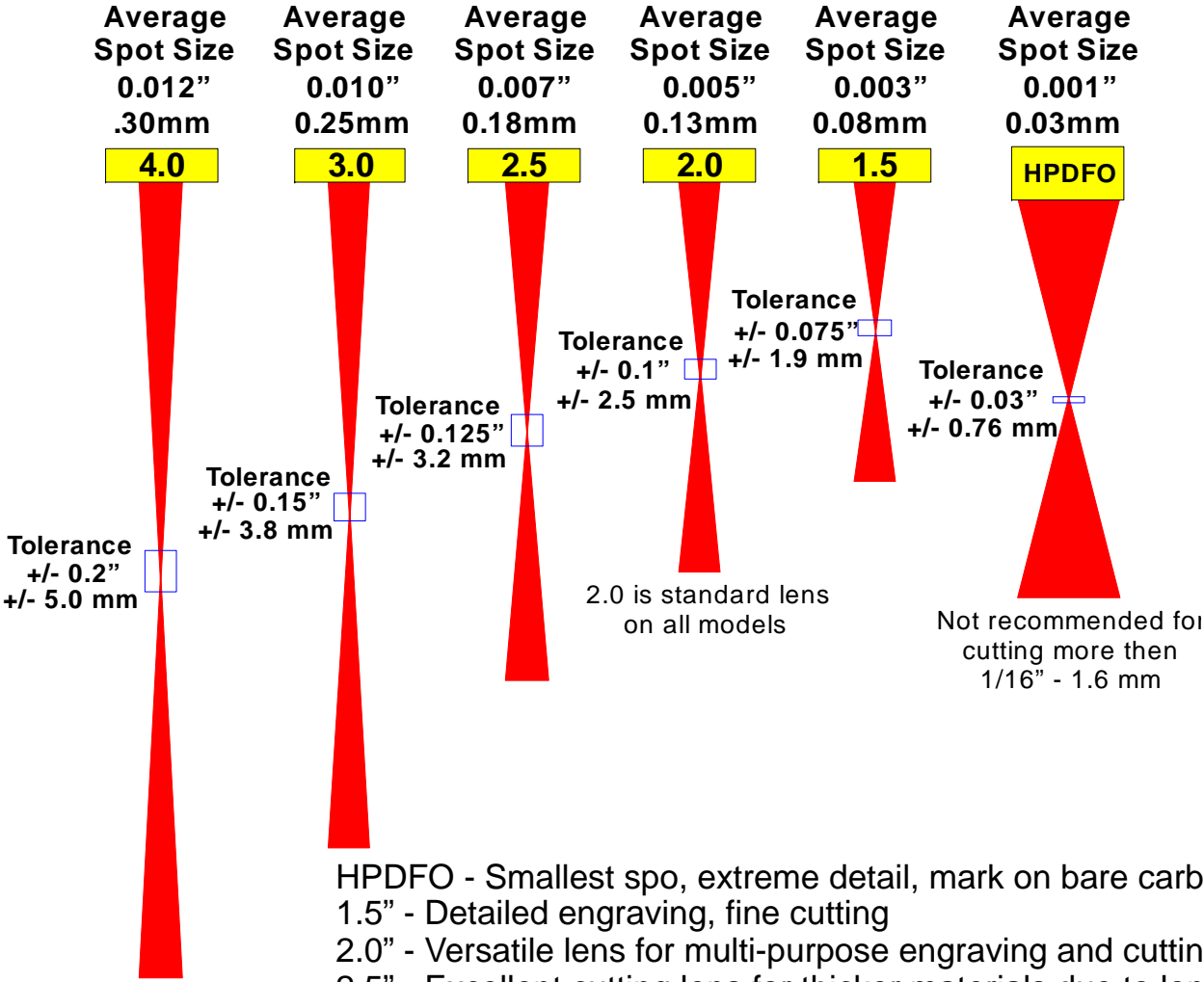




Lens Options



Sharper focus angle produces finer focused spot diameter and greater energy intensity, but reduces focus tolerance.

- HPDFO - Smallest spo, extreme detail, mark on bare carbon-based metals
- 1.5" - Detailed engraving, fine cutting
- 2.0" - Versatile lens for multi-purpose engraving and cutting, majority of applications
- 2.5" - Excellent cutting lens for thicker materials due to longer focus tolerance
- 3.0" - ILS only - For cutting thicker materials or when greater working distance is needed
- 4.0" - PLS/VLS Platform only - For greater working clearance or large spot size is needed

Beam Expander

- Also called a collimator
- Enlarges beam diameter
- Smaller focused spot size
- Greater consistency over the full engraving field.
- In beam window location
- Is 1/2 of patented HPDFO option
- Schematic:



Input laser beam

Expanded output beam



Select the Best Lens

- **HPDFO** – VLS, PLS, ILS, MVX
 - Smallest spot for incredible detail and thinnest kerf
 - Can mark on bare carbon-based metals
 - Not suitable for cutting more than 1/8" materials due to divergence
- **1.5"** – VLS, PLS, MVX
 - For detailed engraving, fine cutting
 - Lower cost than HPDFO
- **2.0"** – VLS, PLS, ILS, MVX
 - Great all-purpose engraving and cutting
 - The "Standard Lens" selection
- **2.5"** – PLS, VLS Platform, MVX
 - Excellent for cutting
 - Longer focus range for thicker materials
- **3.0"** – ILS only
 - Excellent for cutting
 - Longer focus range for thicker materials
- **4.0"** – PLS, VLS Platform, MVX
 - When curvature or clearance is an issue
 - Large focus range and larger spot size