

## Beam Delivery Components and Accessories

A laser beam delivery system is designed to safely deliver the laser beam to the workpiece with precision, accuracy, and stability in an industrial environment.

Haas, Inc.'s modular components feature a carefully considered design as well as a robust finish.

The standard components of the 19 mm aperture series are suitable for a maximum laser power of 500 W.

### Beam Expander and Collimator BEC Series

- Used to either expand or reduce the laser beam diameter
- Robust construction for industrial environment
- Sealed design with easily removable optics
- Adjustment ring allows for precise control of beam divergence, without rotating the optic or changing the overall length of the expander
- Galilean telescope design insures minimum aberration
- Available for all standard wavelengths:  
355 nm, 592 nm, 1064 nm, 10.6  $\mu$ m
- Standard expansion  
1.5x, 2.0x, 2.5x, 3.0x, 3.5x, 4.0x, 5.0x, 6.0x
- For high power use available as reflective beam expander
- Different max. input apertures 19 to 50 mm



As accessories for beam expanders are special translation mounts available, that allow for translational and angular corrections.

### Circular Polarizer System CPU Series

- Converts laser beam from linearly polarized to circularly polarized
- For CO<sub>2</sub> lasers (10.6  $\mu$ m)
- All mirrors included (Silicon)
- Liquid cooled mirrors - 1/8 BSPT fittings
- Available apertures: 19 mm, 25 mm, 38 mm, 50 mm



### Beam Tubes

- Sealed beam path containment
- Can be easily cut to any length
- High-grade anodized aluminum tubes
- Different couplers available
- For apertures of 19 to 75 mm
- Also telescopic beam tubes and bellow tubes



### Linear Adjustable Mount LAM-Series

- Attached to a process head for fine adjustment of the laser focus spot relative to the workpiece
- Adjustment accuracy: 0.001" (0.025 mm)
- Choice of micrometer style (english, metric)
- Incl. Z-axis crash protection

