## **CO2 Laser Optics**

## **Beam Expanders**

A beam expander is a two or more element optical system that changes the beam's size and divergence characteristics. Beam expanders have numerous uses. By expanding a beam prior to focusing, smaller focal spot sizes can be achieved. Beam expanders improve a beam's collimation. They are also used to reduce the beam diameter which may be useful when using acousto- or electro-optic modulators. Using a spatial filter with a beam expander can make an asymmetrical beam profile more symmetric and provide more uniform energy distribution.

## **Features**

- Low insertion loss
- High-power operation
- Visible transmission
- Adjustable focus (on some modules)
- Customizing available
- Minimum beam deviation



| Part Number                    | Input CA | Output CA | Expansion | Housing dimensions |             |
|--------------------------------|----------|-----------|-----------|--------------------|-------------|
|                                | (mm)     | (mm)      |           | Diameter (mm)      | Length (mm) |
| BECZ-10.6-C0.57:4.5-D1.55-FX   | 9        | 14        | 1.55      | 36                 | 47          |
| BECZ-10.6-C0.57:4.5-D1.55-MI   | 9        | 14        | 1.55      | 36                 | 47          |
| BECZ-10.6-C0.57:3.1-D2.1-FX    | 9        | 14        | 2.1       | 36                 | 47          |
| BECZ-10.6-C0.65:2.53-D4-MI     | 11.43    | 17.15     | 4         | 38.1               | 54.75       |
| BECZ-10.6-C0.675:3.79-D2-A1-MI | 11.43    | 17.15     | 2         | 38.1               | 54.86       |
| BECZ-10.6-C0.7:10.0-D1.25-MI   | 11.43    | 17.78     | 1.25      | 30.48              | 57.3        |
| BECZ-10.6-C0.7:2.85-D3-MI      | 11.43    | 17.78     | 3         | 30.48              | 54.76       |
| BECZ-10.6-C0.7:2.5-D4-MI       | 11.43    | 17.78     | 4         | 30.48              | 54.66       |
| BECZ-10.6-C0.7:2.72-D5-MI      | 11.43    | 17.78     | 5         | 30.48              | 61.94       |
| BECZ-10.6-C0.9:5.6-D1.5-MI     | 17.15    | 22.86     | 1.5       | 30.48              | 53.39       |
| BECZ-10.6-C0.9:3.37-D2.5-MI-A  | 11.43    | 22.86     | 2.5       | 36                 | 61.37       |
| BECZ-10.6-C0.9:3.37-D2.5-B     | 11.43    | 22.86     | 2.5       | 36                 | 39.07       |
| BECZ-10.6-C0.9:3.37-D2.5-C     | 17.15    | 22.86     | 2.5       | 36                 | 68.56       |
| BECZ-10.6-C0.9:2.43-D5-MI      | 11.43    | 22.86     | 5         | 30.5               | 56.5        |
| BECZ-10.6-C0.9:2.5-D7.5-MI     | 11.43    | 22.86     | 7.5       | 30.48              | 61.94       |

