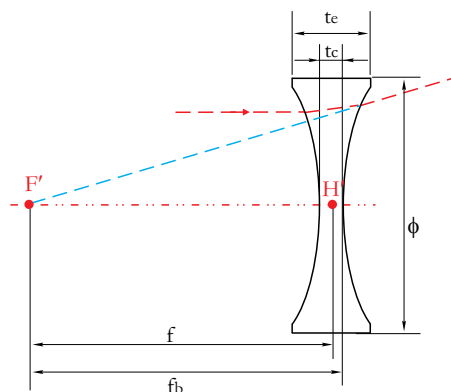


# Double-Concave Lens

## Applications:

- Beam Expanders
- Projection Optics Systems
- Optical Viewers
- Optical Character Readers



## Capability

| Attribute                         | Commercial  | High Precision             |
|-----------------------------------|---|----------------------------|
| Typical Material                  | BK7, Fused Silica, Silicon  | BK7, Fused Silica, Silicon |
| Typical Dimension $\phi$ (mm)     | 10, 15, 20, 25.4  | 10, 15, 20, 25.4           |
| Diameter Tolerance (mm)           | +0.00/-0.2  | +0.00/-0.05                |
| Focus Length Tolerance (mm)       | Typical +/-2% @633nm  | Typical +/-2% @633nm       |
| Centration (arc min.)             | Typical <3  | Typical <3                 |
| Surface Figure (per 25mm@632.8nm) | 1/4   | $\lambda/10$               |
| Surface Quality (scratch/dig)     | 60-40   | 10-5                       |
| Bevel (face width x 45° mm)       | 0.2~0.5   | 0.05~0.2                   |
| Coating                           | Wavelength: customer specified, Reference to pages 65-75<br>Single wavelength AR: $R \leq 0.25\%$ per surface<br>Broadband AR: $R \leq 0.5\%$ per surface |                            |

