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PHOTONICS INNOVATIONS

# ZOOM BEAM EXPANDERS

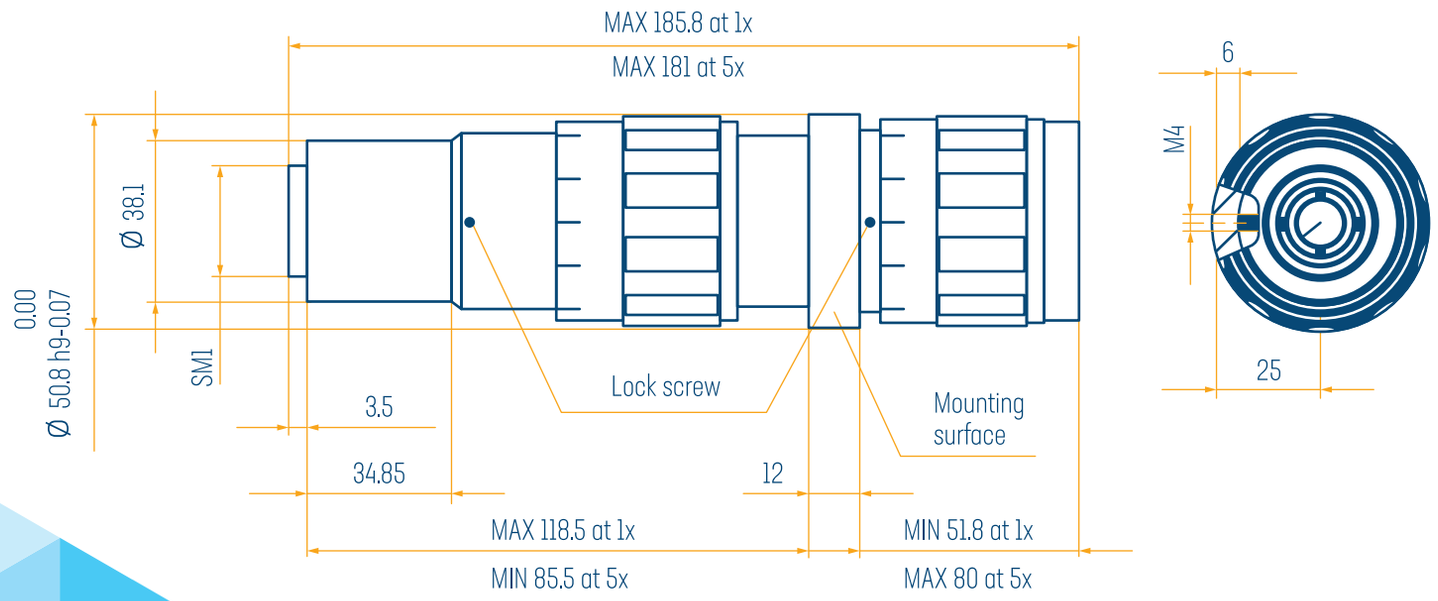
## Magnification 1x-5x

## Designed for 515-532 nm + 1030-1064 nm

## Sliding lens design

- Designed for high power laser applications:
  IBS-coated UVFS thin lenses:
  LDT>80 J/cm² at 10 ns, 100 Hz, 1064 nm and >0.5 J/cm² at 200 fs, 1 kHz, 1030 nm
  High total transmission: >98.5%
  Low GDD: relative pulse broadening <21% at 1030 nm
- Dual band AR-coated for: 1030/1064 nm + 515/532 nm
- Diffraction limited design for continuous magnification from 1X to 5X
- Divergence adjustment: non-rotating optics, sliding lens design

| Code | Design wavelength | Expansion | Input Aperture | Max Input Beam | Output Aperture | Price |
|---|---|---|---|---|---|---|
| 166-1X5X-1H2H | 515-532 + 1030-1064 nm | 1X-5X | 11.0 mm | 11.0 mm | 36.0 mm | 2100 € |




Technical drawing of 166-1X5X-1H2H

## SPECIFICATIONS:

| Parameter | Value | | | | |
|---|---|---|---|---|---|
| Magnification | 1x-5x | | | | |
| Wavelength (nm) | 515-532 + 1030+1064 | | | | |
| Difraction-limited input beam diameter @ **515-532 nm** (by design) (mm) | **1x** | **2x** | **3x** | **4x** | **5x** |
| | 9 | 11 | 10 | 9 | 7 |
| Difraction-limited input beam diameter @ **1030-1064 nm** (by design) (mm) | **1x** | **2x** | **3x** | **4x** | **5x** |
| | 10 | 11 | 11 | 9 | 7 |
| Output beam diameter (mm) | 9 (1x) - 35 (5x) | | | | |
| Input clear aperture diameter (mm) | 11 | | | | |
| Output clear aperture diameter (mm) | 36 | | | | |
| Total lens thickness (mm) | 8.75 | | | | |
| GVD ($fs^2$) | **515** | | **1030** | | |
| | 601 | | 166 | | |
| Input impulse duration (fs) | 26 | | 26 | | |
| Output impulse duration (fs) | 69.2 | | 31.5 | | |
| Relative pulse broadening (%) | 266 | | 21 | | |
| Wavefront distortion @ 633nm | λ/4 | | | | |
| AR coating, single surface | AR<0.2% @ 505-535+1000-1070nm<br>+ AR<5% @ 633nm, AOI 0-8 deg.<br>AR<0.5% @ 505-535+1000-1070nm<br>+ AR<5% @ 633nm, AOI 9-20 deg. | | | | |
| Typical transmission | >98.5% | | | | |
| Coating LIDT | >0.5 $J/cm^2$ @ 1030 nm, 200 fs, 1 kHz<br>>80 $J/cm^2$ @ 1064 nm, 10 ns, 100 Hz | | | | |
| Reverse usage | No | | | | |
| **Mounting** | | | | | |
| Input thread | SM1 external | | | | |
| Mounting options | SM1 external, Ø38.1 mm, Ø50.8 mm, M4 | | | | |

## SPECIFICATIONS:

- Divergence adjustable design
- No back reflection focusing outside
- Can not be used as beam reducer

## MOUNTING SUGGESTIONS:

**Mounting on 5-axis platform**

**Mounting in 5-axis kinematic holder**

**Mounting on M6 thread**