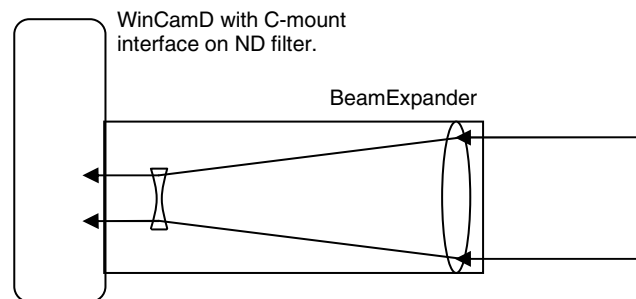


Beam Expanders for Viewing Larger Beams

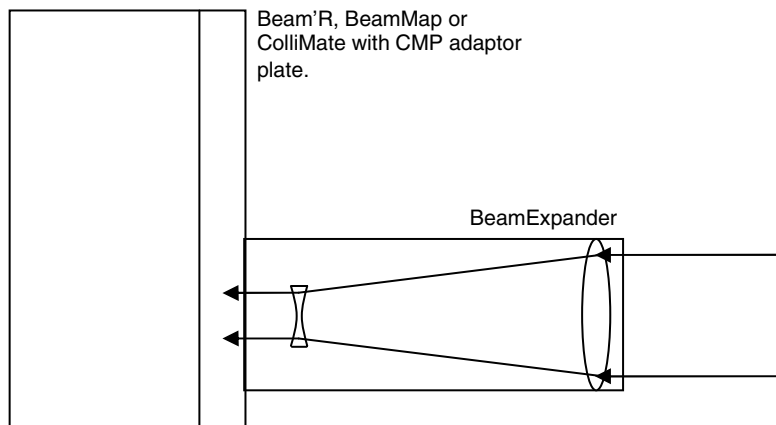
For viewing and measurement of larger beams, beam expanders may be conveniently mounted on a WinCamD or Beam'R, BeamMap and ColliMate heads. This increases the effective measured area for the head and increases the angular sensitivity beam pointing and divergence for BeamMap and ColliMate units for the measurement of.

Schematically this is done as follows:



- 1) **WinCamD** attached to C-mount fixed focus beam expander with magnification **M**.

Effective imaged area is $[4.8 \times 6.3 \text{ mm}] \times \mathbf{M}$



- 2) **Beam'R, BeamMap, ColliMate** + **CMP** plate attached to C-mount fixed focus beam expander.

Effective profiled area is $[3 \text{ mm}] \times \mathbf{M}$

Effective angular sensitivity increases by a factor **M**.

Important issues:

- 1) Inexpensive beam expanders will distort the beam. Go to reputable companies such as CVI Laser, Opto Sigma, Melles Griot, Thor Labs. You get what you pay for in this field.
- 2) You want a fixed focus unit, not a variable focus unit. The fixed focus will give you a fixed magnification.
- 3) Specify to the supplier that you need a C-mount interface, in case an adaptor is required.
- 4) **WinCamD**: Change the PMF (Pixel multiply factor) to adjust the readout for the beam expander magnification.
Beam'R, BeamMap, ColliMate products, use the **Enter M factor for LensPlate** in the Setup pull-down menu.