

COL1 Collimator

The Bentham collimator has been designed for use monochromators and light sources in situations where a monochromatic and parallel beam of light is required. Applications include transmission measurement through aerosols and detector calibration.

In the former, the collimator is attached to a white light source with a simple condensing arrangement attached to the entrance slit of the monochromator which may be some distance away.

For detector calibration, the COL1 is fitted with an adjustable iris which allows the operator to set beam diameter between 2 and 20mm.



Specification

The **COL1** uses a 2-lens system with interchangeable apertures to allow the user to optimise the throughput/power trade-off.

The first lens produces an image of the source with unity magnification at the plane of the interchangeable aperture. The second lens is positioned at its focal length of 150mm from the aperture.

An iris diaphragm is fitted after the second lens and allows the beam diameter to be varied over the range 2 – 20mm.

A range of 4 apertures gives the following divergence from a perfectly parallel beam:

Aperture size (mm)	Divergence in collimated beam
0.12	0.02
0.35	0.07
1.17	0.22
3.5	0.7

REF-COL

The REF-COL uses only reflection-based optics and is therefore suitable over the widest possible wavelength range (UV to mid-IR). The beam size can be varied up to a maximum diameter of 25mm. The housing is also designed to house a motorised filter wheel, typically used for neutral density filters in detector calibration systems. It attaches directly to the exit slit of a monochromator and the exit face will accept further accessories.

REF-COL shown attached to vacuum chuck based 0°/0° reflection/transmission accessory.

