

TEL301 Telescope

User notes



Overview

The TEL301 is a direct view telescope, used to provide a well-defined field of view for the measurement of radiance and radiant intensity.



This device images the measurement plane onto an aperture; light incident on the aperture is output for measurement, the remainder of the view is reflected up to an eye-piece. In this manner, the user views a scene with a black spot corresponding to the area being measured.

The solid angle of measurement is defined by the diameter of the entrance lens (50mm) and the distance to the source.

Mechanical

The TEL301 may be mounted directly to any Bentham monochromator via an adaptor plate, or light may be transported via a fibre bundle which adapts to the telescope output. A 1/4" threaded hole is provided to the base of the telescope for mounting on a tripod.

Lenses

The following lenses are available for use with the TEL301.

Lens	Wavelength range	Working distance
TL1	300nm - 3µm	1m - infinity
TL1(ACH)	350nm - 1200nm	1m - infinity
TL1(Q)	200nm - 3µm	1m - infinity
TLCaF2	200nm - 10µm	1m - infinity
TL2	300nm - 3µm	150mm
TL2(ACH)	350nm - 1200nm	150mm
TL2(Q)	200nm - 3µm	150mm
TL3	Visible	15mm
TL-MACRO	300 - 3µm	25mm

All but the macro lens is mounted in a lens barrel on the end of a helical to adjust the lens position to achieve focus on the measurement plane. The position of the lens in the lens barrel can be adjusted depending on the working range used; closer to the aperture working towards the longer distances, further away from the aperture for closer work.

Field of View

A selection of four interchangeable apertures are provided to define the measurement field of view. These provide FOVs of ~6', 20', 1° and 2°, however the actual field of view (full angle) in radians is equal to the ratio of the aperture diameter to the distance between entrance lens and aperture.

The TEL301 provides linear coverage at a distance D of $2d \tan(\text{FOV}/2)$.

The apertures are simply installed, with the inclined face of the aperture facing the source under measurement.

WEEE statement:

Bentham are fully WEEE compliant, registration number is WEE/CB0003ZR. Should you need to dispose of our equipment please telephone 0113 385 4352 or 4356, quoting account number 135419.

