

# TC12144

Bi-telecentric lens for 1/2" detectors, magnification 0.044 x, C-mount

## SPECIFICATIONS

Magnification	(x)	0.044
Image circle Ø	(mm)	8.0

### Object field of view (8)

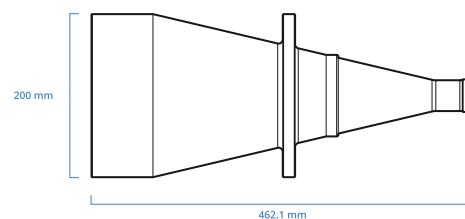
with 1/3" detector (4.8 x 3.6 mm)	(mm x mm)	107.9 x 80.9
with 1/2.5" detector (5.70 x 4.28 mm)	(mm x mm)	128.2 x 96.2
with 1/2" detector (6.4 x 4.8 mm)	(mm x mm)	143.9 x 107.9
with 1/1.8" detector (7.13 x 5.37 mm) (7)	(mm x mm)	160.3 x 120.7
with 2/3" - 5 MP detector (8.45 x 7.07 mm)	(mm x mm)	Ø = 158.9

### Optical specifications

Working distance (1)	(mm)	396.0
wF/# (2)		8
Telecentricity typical (max) (3)	(deg)	< 0.05 (0.08)
Distortion typical (max) (4)	(%)	< 0.05 (0.08)
Field depth (5)	(mm)	339
CTF @ 70 lp/mm	(%)	> 35

### Dimensions

Mount		C
Length (6)	(mm)	462.1
Diameter	(mm)	200
Mass	(g)	6500



## NOTES

- Working distance: distance between the front end of the mechanics and the object. Set this distance within +/- 3% of the nominal value for maximum resolution and minimum distortion.
- Working F-number (wF/#): the real F-number of a lens when used as a macro. Lenses with smaller apertures can be supplied on request.
- Maximum slope of chief rays inside the lens: when converted to millirad, it gives the maximum measurement error for any millimeter of object displacement. Typical (average production) values and maximum (guaranteed) values are listed.
- Percent deviation of the real image compared to an ideal, undistorted image: typical (average production) values and maximum (guaranteed) values are listed.
- At the borders of the field depth the image can be still used for measurement but, to get a very sharp image, only half of the nominal field depth should be considered. Pixel size used for calculation is 5.5 µm.
- Measured from the front end of the mechanics to the camera flange.
- With 1/1.8" (9 mm diagonal) detectors, the FOV of TC12yyy lenses may show some vignetting at the image corners, as these lenses are optimized for 1/2" detectors (8 mm diagonal).
- For the fields with the indication "Ø =", the image of a circular object of such diameter is fully inscribed into the detector.

## COMPATIBLE PRODUCTS

LTCLHP144-G	Telecentric HP illuminator, beam diameter 180 mm, green
CMHO144	Clamping mechanics for TCxx130, TCxx144 lenses and LTCLHP144-X illuminators
LTRN144NW	Ring LED illuminator, inner diameter 200 mm, straight type, white
Optical filters	Lens filters and mounting accessory