TC23004

Bi-telecentric lens for 2/3" detectors, magnification 2.000 ×, C-mount

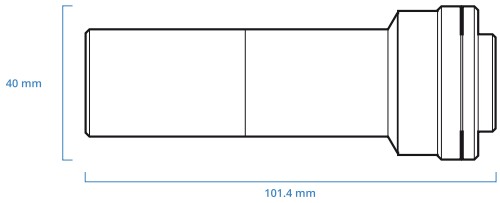
SPECIFICATIONS

Magnification	(×)	2.000
Image circle Ø	(mm)	11.0

Object field of view (8)		
with 1/3" detector (4.8 x 3.6 mm)	(mm × mm)	2.40 x 1.80
with 1/2.5" detector (5.70 x 4.28 mm)	(mm × mm)	2.85 x 2.14
with 1/2" detector (6.4 x 4.8 mm)	(mm × mm)	3.20 x 2.40
with 1/1.8" detector (7.13 x 5.37 mm) (7)	(mm × mm)	3.56 x 2.68
with 2/3" - 5 MP detector (8.45 x 7.07 mm)	(mm × mm)	4.22 x 3.55

Optical specifications		
Working distance (1)	(mm)	56.0
wF/# (2)		11
Telecentricity typical (max) (3)	(deg)	< 0.08 (0.10)
Distortion typical (max) (4)	(%)	< 0.04 (0.08)
Field depth (5)	(mm)	0.23
CTF @ 70 lp/mm	(%)	> 30

Dimensions		
Mount		C
Length (6)	(mm)	101.4
Diameter	(mm)	28
Mass	(g)	148



NOTES

1. 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.
2. 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.
3. 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.
4. Percent deviation of the real image compared to an ideal, undistorted image: typical (average production) values and maximum (guaranteed) values are listed.
5. 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.
6. Measured from the front end of the mechanics to the camera flange.
7. 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).
8. For the fields with the indication "Ø =", the image of a circular object of such diameter is fully inscribed into the detector.

COMPATIBLE PRODUCTS

LTCLHP series
High-performance telecentric illuminators

LTCLHP023-R	Telecentric HP illuminator, beam diameter 16 mm, red
LTCLHP023-G	Telecentric HP illuminator, beam diameter 16 mm, green
LTCLHP023-B	Telecentric HP illuminator, beam diameter 16 mm, blue
LTCLHP023-W	Telecentric HP illuminator, beam diameter 16 mm, white

LTRN series
LED ring illuminators

LTRN023RD	Ring LED illuminator, inner diameter 28 mm, straight type, red 630 nm
LTRN023GR	Ring LED illuminator, inner diameter 28 mm, straight type, green 525 nm

LTRN023BL	Ring LED illuminator, inner diameter 28 mm, straight type, blue 470 nm
LTRN023NW	Ring LED illuminator, inner diameter 28 mm, straight type, white
LTRN075R45	Ring LED illuminator, inner diameter 28 mm, oblique type, red 630 nm
LTRN075G45	Ring LED illuminator, inner diameter 28 mm, oblique type, green 525 nm
LTRN075B45	Ring LED illuminator, inner diameter 28 mm, oblique type, blue 470 nm
LTRN075W45	Ring LED illuminator, inner diameter 28 mm, oblique type, white

CMHO series
Clamping mechanics

CMHO023	Clamping mechanics for TCxx004, 007, 009, 012 and LTCLHP023-X

Calibration patterns
Accurate calibration of machine vision systems

PT004-009	Calibration pattern