

# TC23048

Bi-telecentric lens for 2/3" detectors, magnification 0.184 x, C-mount

## SPECIFICATIONS

Magnification	(x)	0.184
Image circle Ø	(mm)	11.0

### Object field of view (8)

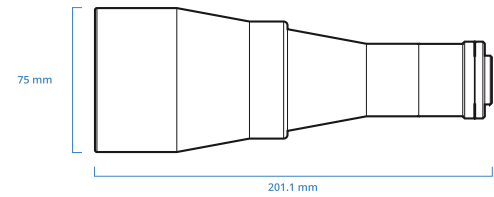
with 1/3" detector (4.8 x 3.6 mm)	(mm × mm)	26.1 x 19.6
with 1/2.5" detector (5.70 x 4.28 mm)	(mm × mm)	31.0 x 23.3
with 1/2" detector (6.4 x 4.8 mm)	(mm × mm)	34.8 x 26.1
with 1/1.8" detector (7.13 x 5.37 mm) (7)	(mm × mm)	38.8 x 29.2
with 2/3" - 5 MP detector (8.45 x 7.07 mm)	(mm × mm)	46.0 x 38.4

### Optical specifications

Working distance (1)	(mm)	132.9
wF/# (2)		8
Telecentricity typical (max) (3)	(deg)	< 0.08 (0.10)
Distortion typical (max) (4)	(%)	< 0.05 (0.10)
Field depth (5)	(mm)	20
CTF @ 70 lp/mm	(%)	> 40

### Dimensions

Mount		C
Length (6)	(mm)	201.0
Diameter	(mm)	75
Mass	(g)	750



## 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



LTCLHP series  
High-performance telecentric illuminators







LTCLHP048-R	Telecentric HP illuminator, beam diameter 60 mm, red
LTCLHP048-G	Telecentric HP illuminator, beam diameter 60 mm, green
LTCLHP048-B	Telecentric HP illuminator, beam diameter 60 mm, blue
LTCLHP048-W	Telecentric HP illuminator, beam diameter 60 mm, white



LTRN series  
LED ring illuminators

LTRN048RD	Ring LED illuminator, inner diameter 75 mm, straight type, red 630 nm
LTRN048GR	Ring LED illuminator, inner diameter 75 mm, straight type, green 525 nm

All product specifications and data are subject to change without notice to improve reliability, functionality, design or other. Photos and pictures are for illustration purposes only.

<a href="#">LTRN048BL</a>	Ring LED illuminator, inner diameter 75 mm, straight type, blue 470 nm
<a href="#">LTRN048NW</a>	Ring LED illuminator, inner diameter 75 mm, straight type, white
	CMBS series 45° beam splitters
<a href="#">CMBS048</a>	45° beam splitter with mount for 75 mm clamping diameter optics
	CMMR series 45° first surface mirrors
<a href="#">CMMR048</a>	45° first surface mirror for 75 mm clamping diameter optics
	WI series Protective windows
<a href="#">WI048</a>	Protective window for 75 mm clamping diameter optics
	CMHO series Clamping mechanics
<a href="#">CMHO048</a>	Clamping mechanics for TCxx048 lenses and LTCLHP048-X illuminators
	Calibration patterns Accurate calibration of machine vision systems
<a href="#">PT036-056</a>	Calibration pattern
	Optical filters Lens filters and mounting accessory
<a href="#">TCFILTER</a>	Filter mount for telecentric lenses
<a href="#">COBP470D17.5</a>	Blue (470 nm) bandpass filter, 17.5 mm diameter
<a href="#">COBP525D17.5</a>	Green (525 nm) Bandpass filter, 17.5 mm diameter
<a href="#">COBP635D17.5</a>	Red (635 nm) Bandpass filter. 17.5 mm diameter
<a href="#">COBP850D17.5</a>	IR (850 nm) Bandpass filter, 17.5 mm diameter
<a href="#">COBP880D17.5</a>	IR (880 nm) bandpass filter, 17.5 mm diameter
<a href="#">COLP920D17.5</a>	IR (920 nm) Long-pass filter, 17.5 mm diameter
<a href="#">COPR032D17.5</a>	Linear polarizer, 17.5 mm diameter