TC12024

Bi-telecentric lens for 1/2" detectors, magnification 0.255 x, C-mount

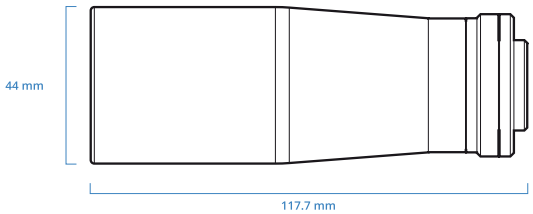
SPECIFICATIONS

Magnification	(×)	0.255
Image circle Ø	(mm)	8.0

Object field of view (8)		
with 1/3" detector (4.8 x 3.6 mm)	(mm × mm)	18.8 x 14.1
with 1/2.5" detector (5.70 x 4.28 mm)	(mm × mm)	22.4 x 16.8
with 1/2" detector (6.4 x 4.8 mm)	(mm × mm)	25.1 x 18.8
with 1/1.8" detector (7.13 x 5.37 mm) (7)	(mm × mm)	28.0 x 21.1
with 2/3" - 5 MP detector (8.45 x 7.07 mm)	(mm × mm)	Ø = 27.7

Optical specifications		
Working distance (1)	(mm)	67.2
wF/# (2)		8
Telecentricity typical (max) (3)	(deg)	< 0.08 (0.10)
Distortion typical (max) (4)	(%)	< 0.04 (0.08)
Field depth (5)	(mm)	10
CTF @ 70 lp/mm	(%)	> 45

Dimensions		
Mount		C
Length (6)	(mm)	117.8
Diameter	(mm)	44
Mass	(g)	370



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

LTCLHP024-R	Telecentric HP illuminator, beam diameter 30 mm, red
LTCLHP024-G	Telecentric HP illuminator, beam diameter 30 mm, green
LTCLHP024-B	Telecentric HP illuminator, beam diameter 30 mm, blue
LTCLHP024-W	Telecentric HP illuminator, beam diameter 30 mm, white

LTRN series
LED ring illuminators

LTRN024RD	Ring LED illuminator, inner diameter 44 mm, straight type, red 630 nm
LTRN024GR	Ring LED illuminator, inner diameter 44 mm, straight type, green 525 nm

LTRN024BL	Ring LED illuminator, inner diameter 44 mm, straight type, blue 470 nm
LTRN024NW	Ring LED illuminator, inner diameter 44 mm, straight type, white

CMHO series
Clamping mechanics

CMHO024	Clamping mechanics for TCxx024 lenses and LTCLHP024-X illuminators

Calibration patterns
Accurate calibration of machine vision systems

PT016-024	Calibration pattern

Optical filters
Lens filters and mounting accessory

TCFILTER	Filter mount for telecentric lenses
COBP470D17.5	Blue (470 nm) bandpass filter, 17.5 mm diameter
COBP525D17.5	Green (525 nm) Bandpass filter, 17.5 mm diameter
COBP635D17.5	Red (635 nm) Bandpass filter. 17.5 mm diameter
COBP850D17.5	IR (850 nm) Bandpass filter,17.5 mm diameter
COBP880D17.5	IR (880 nm) bandpass filter, 17.5 mm diameter
COLP920D17.5	IR (920 nm) Long-pass filter, 17.5 mm diameter
COPR032D17.5	Linear polarizer, 17.5 mm diameter