TC13036

Bi-telecentric lens for 1/3" detectors, magnification 0.133 x, C-mount

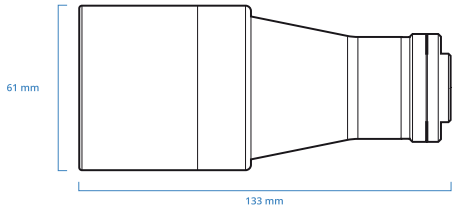
SPECIFICATIONS

Magnification	(×)	0.133
Image circle Ø	(mm)	6.0

Object field of view (8)		
with 1/3" detector (4.8 x 3.6 mm)	(mm × mm)	36.0 x 27.0
with 1/2.5" detector (5.70 x 4.28 mm)	(mm × mm)	Ø = 32.0
with 1/2" detector (6.4 x 4.8 mm)	(mm × mm)	Ø = 36.0
with 1/1.8" detector (7.13 x 5.37 mm) (7)	(mm × mm)	Ø = 40.2
with 2/3" - 5 MP detector (8.45 x 7.07 mm)	(mm × mm)	-

Optical specifications		
Working distance (1)	(mm)	102.5
wF/# (2)		8
Telecentricity typical (max) (3)	(deg)	< 0.04 (0.08)
Distortion typical (max) (4)	(%)	< 0.03 (0.08)
Field depth (5)	(mm)	38
CTF @ 70 lp/mm	(%)	> 50

Dimensions		
Mount		C
Length (6)	(mm)	133.0
Diameter	(mm)	61
Mass	(g)	460



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

LTCLHP036-R	Telecentric HP illuminator, beam diameter 45 mm, red
LTCLHP036-G	Telecentric HP illuminator, beam diameter 45 mm, green
LTCLHP036-B	Telecentric HP illuminator, beam diameter 45 mm, blue
LTCLHP036-W	Telecentric HP illuminator, beam diameter 45 mm, white

LTLAIC series
Continuous LED low angle diffused ringlights

RT-DLR2-60-100-2-W-24V-FL	Continuous LED low angle diffused ringlight, inner diameter 68 mm, 60°, white
RT-DLR2-60-100-2-R-24V-FL	Continuous LED low angle diffused ringlight, inner diameter 68 mm, 60°, red
RT-DLR2-60-100-2-G-24V-FL	Continuous LED low angle diffused ringlight, inner diameter 68 mm, 60°, green
RT-DLR2-60-100-2-B-24V-FL	Continuous LED low angle diffused ringlight, inner diameter 68 mm, 60°, blue

LTLADC series
Continuous LED low angle direct ringlights

RT-LLA-75-130-3-W-24V-FL	Continuous LED low angle direct ringlights, inner diameter 94 mm, 75°, white
RT-LLA-75-130-3-R-24V-FL	Continuous LED low angle direct ringlights, inner diameter 94 mm, 75°, red
RT-LLA-75-130-3-G-24V-FL	Continuous LED low angle direct ringlights, inner diameter 94 mm, 75°, green
RT-LLA-75-130-3-B-24V-FL	Continuous LED low angle direct ringlights, inner diameter 94 mm, 75°, blue

LTRNST series
LED ring illuminators - straight type

LTRN036RD	Ring LED illuminator, inner diameter 61 mm, straight type, red 630 nm
LTRN036GR	Ring LED illuminator, inner diameter 61 mm, straight type, green 525 nm
LTRN036BL	Ring LED illuminator, inner diameter 61 mm, straight type, blue 470 nm
LTRN036NW	Ring LED illuminator, inner diameter 61 mm, straight type, white

LTBC series
Continuos LED backlight

LTBC054054-W	Continuos LED backlight, 54x54 illumination area, white
LTBC054054-G	Continuos LED backlight, 54x54 illumination area, green

LTBFC series
Continuous flat side-emitting LED backlights

RT-BHD-00-070-1-W-24V-FL	Continuous flat side-emitting LED backlight, 70X70 illumination area, white
RT-BHD-00-070-1-R-24V-FL	Continuous flat side-emitting LED backlight, 70X70 illumination area, red
RT-BHD-00-070-1-G-24V-FL	Continuous flat side-emitting LED backlight, 70X70 illumination area, green
RT-BHD-00-070-1-B-24V-FL	Continuous flat side-emitting LED backlight, 70X70 illumination area, blue
RT-BHDS-00-070-1-W-24V-FL	Continuous flat side-emitting LED backlight, one side edge to edge type, 70X70 illumination area, white
RT-BHDS-00-070-1-R-24V-FL	Continuous flat side-emitting LED backlight, one side edge to edge type, 70X70 illumination area, red
RT-BHDS-00-070-1-G-24V-FL	Continuous flat side-emitting LED backlight, one side edge to edge type, 70X70 illumination area, green
RT-BHDS-00-070-1-B-24V-FL	Continuous flat side-emitting LED backlight, one side edge to edge type, 70X70 illumination area, blue

LTBRDC series
Continuous LED bar lights

RT-LBRX-00-080-6-W-24V-FL	Continuous LED bar light, 80X26.3 illumination area, white
RT-LBRX-00-080-6-R-24V-FL	Continuous LED bar light, 80X26.3 illumination area, red
RT-LBRX-00-080-6-G-24V-FL	Continuous LED bar light, 80X26.3 illumination area, green
RT-LBRX-00-080-6-B-24V-FL	Continuous LED bar light, 80X26.3 illumination area, blue

LTCXC series
Continuous LED coaxial lights

RT-CAS2-00-040-X-W-24V-FL	Continuous LED coaxial light, 48x48 active area, white
RT-CAS2-00-040-X-R-24V-FL	Continuous LED coaxial light, 48x48 active area, red
RT-CAS2-00-040-X-G-24V-FL	Continuous LED coaxial light, 48x48 active area, green
RT-CAS2-00-040-X-B-24V-FL	Continuous LED coaxial light, 48x48 active area, blue

CMBS series
45° beam splitters

CMBS036	45° beam splitter with mount for 61 mm clamping diameter optics

CMMR series
45° first surface mirrors

CMMR036	45° first surface mirror for 61 mm clamping diameter optics

WI series
Protective windows

WI036	Protective window for 61 mm clamping diameter optics

CMHO series
Clamping mechanics

CMHO036	Clamping mechanics for TCxx036 lenses and LTCLHP036-X illuminators

Calibration patterns
Accurate calibration of machine vision systems

PT036-056	Calibration pattern