TC12080

Bi-telecentric lens for 1/2" detectors, magnification 0.080 x, C-mount

SPECIFICATIONS

Magnification	(×)	0.080
Image circle Ø	(mm)	8.0

Object field of view (8)

with 1/3" detector (4.8 x 3.6 mm)	(mm × mm)	60.00 x 45.00
with 1/2.5" detector (5.70 x 4.28 mm)	(mm × mm)	71.25 x 53.50
with 1/2" detector (6.4 x 4.8 mm)	(mm × mm)	80.00 x 60.00
with 1/1.8" detector (7.13 x 5.37 mm) (7)	(mm × mm)	89.13 x 66.63
with 2/3" - 5 MP detector (8.45 x 7.07 mm)	(mm × mm)	ø = 88.6

Optical specifications

Working distance (1)	(mm)	226.7
wF/# (2)		8
Telecentricity typical (max) (3)	(deg)	< 0.03 (0.08)
Distortion typical (max) (4)	(%)	< 0.04 (0.10)
Field depth (5)	(mm)	104
CTF @ 70 lp/mm	(%)	> 50

Dimensions

Mount		C
Phase Adjustment (9)		
Length (6)	(mm)	271.5
Diameter	(mm)	116
Mass	(g)	1560

116 mm

271.5 mm
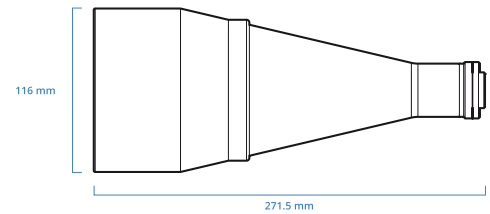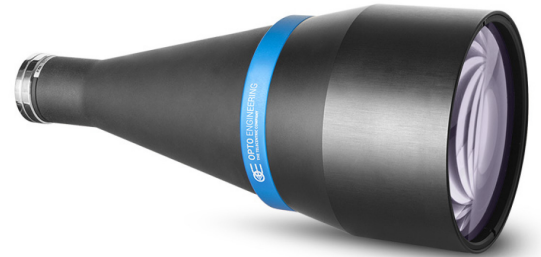
NOTES

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 (higher 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" (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.

9. Indicates the availability of an integrated camera phase adjustment feature. If missing, it can be supplied upon request (except for TC23004, TC23007,TC23009, TC23012).

COMPATIBLE PRODUCTS

Despite the efforts made to generate an error-free compatibility list, we always recommend to consult the Opto Engineering® technical support department before purchasing a compatible product. Opto Engineering® shall not be liable for any damage or malfunctioning caused by the incorrect selection of a compatible product.

LTCLHP series

High-performance telecentric illuminators

LTCLHP080-R	Telecentric HP illuminator, beam diameter 100 mm, red

LTCLHP080-G	Telecentric HP illuminator, beam diameter 100 mm, green
LTCLHP080-B	Telecentric HP illuminator, beam diameter 100 mm, blue
LTCLHP080-W	Telecentric HP illuminator, beam diameter 100 mm, white

LTCLHP CORE series

Ultra compact telecentric illuminators

LTCLCR080-R	Telecentric CORE illuminator, beam dimensions Ø = 98; x = 90, red
LTCLCR080-G	Telecentric CORE illuminator, beam dimensions Ø = 98; x = 90, green
LTCLCR080-W	Telecentric CORE illuminator, beam dimensions Ø = 98; x = 90, white

LTLADC series

Continuous LED low angle direct ringlights

LTZZO170-75-3-W24V	LED low angle ringlight, 3 LED rows, outer diameter 175 mm, 75°, white, 24V
LTZZO170-75-3-R-24V	LED low angle ringlight, 3 LED rows, outer diameter 175 mm, 75°, red, 24V
LTZZO170-75-3-G-24V	LED low angle ringlight, 3 LED rows, outer diameter 175 mm, 75°, green, 24V
LTZZO170-75-3-B-24V	LED low angle ringlight, 3 LED rows, outer diameter 175 mm, 75°, blue, 24V

LTRNST series

LED ring illuminators - straight type

LTRN080RD	Ring LED illuminator, inner diameter 116 mm, straight type, red 630 nm
LTRN080GR	Ring LED illuminator, inner diameter 116 mm, straight type, green 525 nm
LTRN080BL	Ring LED illuminator, inner diameter 116 mm, straight type, blue 470 nm
LTRN080NW	Ring LED illuminator, inner diameter 116 mm, straight type, white

LTBC series

Continuos LED backlight

LTBC114114-W	Continuos LED backlight, 114x114 illumination area, white
LTBC114114-G	Continuos LED backlight, 114x114 illumination area, green

LTBRDC series

Continuous LED bar lights

LTZPFL120-00-6-W-24V	LED bar light, 6 LED rows, 120X26.3 illumination area, white, 24V
LTZPFL120-00-6-R-24V	LED bar light, 6 LED rows, 120X26.3 illumination area, red, 24V
LTZPFL120-00-6-G-24V	LED bar light, 6 LED rows, 120X26.3 illumination area, green, 24V
LTZPFL120-00-6-B-24V	LED bar light, 6 LED rows, 120X26.3 illumination area, blue, 24V

LTCXC series

Continuous LED coaxial lights

LT2QOG100-00-X-W-24V	LED coaxial light, 100x100 mm light emitting area, white, 24V
LT2QOG100-00-X-R-24V	LED coaxial light, 100x100 mm light emitting area, red, 24V
LT2QOG100-00-X-G-24V	LED coaxial light, 100x100 mm light emitting area, green, 24V
LT2QOG100-00-X-B-24V	LED coaxial light, 100x100 mm light emitting area, blue, 24V

CMBS series

45° beam splitters

CMBS080	45° beam splitter with mount for 116 mm clamping diameter optics

CMMR series

45° first surface mirrors

CMMR080	45° first surface mirror for 116 mm clamping diameter optics

WI series

Protective windows

WI080	Protective window for 116 mm clamping diameter optics

CMHO series

Clamping mechanics

CMHO080	Clamping mechanics for TCxx072, TCxx080, LTCLHP080-X illuminators and PCxx030XS

PTTC, PTCP series

Accurate calibration patterns for machine vision systems

PT064-096	Calibration pattern
PT064-096-C	Calibration pattern for telecentric lenses with a certificate of conformity

Accessories

Accessories and add-ons to make the most of Opto Engineering lenses.

TCFILTER	Filter mount for telecentric lenses
RT-mvBC-X104iC	CMOS camera GIGE, 2064 x 1544 color, 1/1.8", 37 Hz, IR cut, C-mount, I/O
RT-mvBC-X105bC	CMOS camera GIGE, 2464 x 2056 Colour sensor, 2/3", 23.5 Hz, IR cut, C-mount, I/O

CMT series

Precision alignment mechanics

CMTH080	Precision alignment mechanics for telecentric optics 080

LTPR series

LED patterns projectors

LTPRHP3W-W	LED pattern projector 3W, HP, white
LTPRHP3W-R	LED pattern projector 3W, HP, red
LTPRHP3W-G	LED pattern projector 3W, HP, green
LTPRHP3W-B	LED pattern projector 3W, HP, blue
LTPRUP-W	90W strobed LED pattern projector white
LTPRUP-R	90W strobed LED pattern projector red
LTPRUP-G	90W strobed LED pattern projector green
LTPRUP-B	90W strobed LED pattern projector blue

COE-G series

GenICam® PoE cameras

COE-050-M-POE-023-IR-C	Area Scan camera MT9P031, CMOS, Rolling shutter, 2592 x 1944, 5 MP, 2.2 pix, 1/2.5", Gray, 14 fps, GigE, POE, C - mount, Glass filter
COE-013-M-POE-030-IR-C	Area Scan camera PYTHON 1300, CMOS, Global shutter, 1280 x 1024, 1.3 MP, 4.8 pix, 1/2", Gray, 90 fps, GigE, POE, C - mount, Glass filter
COE-013-C-POE-030-IR-C	Area Scan camera PYTHON 1300, CMOS, Global shutter, 1280 x 1024, 1.3 MP, 4.8 pix, 1/2", Color, 90 fps, GigE, POE, C - mount, Infrared cut filter
COE-106-M-POE-031-IR-C-2	Area Scan camera MT9J003, CMOS, Rolling shutter, 3840 x 2748, 10.6 MP, 1.67 pix, 1/2.3", Gray, 11 fps, GigE, POE, C - mount, Glass filter
COE-106-C-POE-031-IR-C	Area Scan camera MT9J003, CMOS, Global shutter, 3840 x 2748, 10.6 MP, 1.67 pix, 1/2.3", Color, 7 fps, GigE, POE, C - mount, Infrared cut filter
COE-032-M-POE-040-IR-C	Area Scan camera IMX265, CMOS, Global shutter, 2048 x 1536, 3.1 MP, 3.45 pix, 1/1.8", Gray, 37.5 fps, GigE, POE, C - mount, Glass filter
COE-032-C-POE-040-IR-C	Area Scan camera IMX265, CMOS, Global shutter, 2048 x 1536, 3.1 MP, 3.45 pix, 1/1.8", Color, 37.5 fps, GigE, POE, C - mount, Infrared cut filter
COE-063-M-POE-040-IR-C-B	Area Scan camera IMX178, CMOS, Rolling shutter, 3072 x 2048, 6.3 MP, 2.4 pix, 1/1.8", Gray, 17 fps, GigE, POE, C - mount, Glass filter
COE-063-C-POE-040-IR-C	Area Scan camera IMX178, CMOS, Rolling shutter, 3072 x 2048, 6.3 MP, 2.4 pix, 1/1.8", Color, 17 fps, GigE, POE, C - mount, Infrared cut filter

COE-U series

USB 3.0 GenICam® cameras

COE-016-M-USB-021-IR-C	Area Scan camera IMX273, CMOS, Global shutter, 1440 x 1080, 1.6 MP, 3.45 pix, 1/2.9", Gray, 165 fps, USB 3.0, C - mount, Glass filter
COE-016-C-USB-021-IR-C	Area Scan camera IMX273, CMOS, Global shutter, 1440 x 1080, 1.6 MP, 3.45 pix, 1/2.9", Color, 165 fps, USB 3.0, C - mount, Infrared cut filter
COE-050-C-USB-023-IR-C	Area Scan camera AR0521, CMOS, Rolling shutter, 2592 x 1944, 5 MP, 2.2 pix, 1/2.5", Color, 31 fps, USB 3.0, C - mount, Infrared cut filter
COE-013-M-USB-030-IR-C	Area Scan camera PYTHON 1300, CMOS, Global shutter, 1280 x 1024, 1.3 MP, 4.8 pix, 1/2", Gray, 170 fps, USB 3.0, C - mount, Glass filter
COE-013-C-USB-030-IR-C	Area Scan camera PYTHON 1300, CMOS, Global shutter, 1280 x 1024, 1.3 MP, 4.8 pix, 1/2", Color, 90 fps, USB 3.0, C - mount, Infrared cut filter
COE-063-M-USB-040-IR-C	Area Scan camera IMX178, CMOS, Rolling shutter, 3072 x 2048, 6.3 MP, 2.4 pix, 1/1.8", Gray, 42 fps, USB 3.0, C - mount, Glass filter
COE-063-C-USB-040-IR-C	Area Scan camera IMX178, CMOS, Rolling shutter, 3072 x 2048, 6.3 MP, 2.4 pix, 1/1.8", Color, 42 fps, USB 3.0, C - mount, Infrared cut filter

mvBlueFOX3-2 series

USB3 vision camera with Sony Pregius CMOS sensors

RT-mvBF3-2004	Usb3 vision camera with sony pregius cmos sensor imx287
RT-mvBF3-2016	Usb3 vision camera with sony pregius cmos sensor imx273
RT-mvBF3-2032a	USB3 Vision camera with Sony Pregius CMOS sensor IMX265
RT-mvBF3-2032	USB3 Vision camera with Sony Pregius CMOS sensor IMX252
RT-mvBF3-2064	Usb3 vision camera with sony pregius cmos sensor imx178

mvBlueCOUGAR series

GigE & Dual GigE Vision cameras

RT-mvBC-X100f	Camera with interface GigE (1GB/s), sensor size 1/2.9", mpixel 0.4, resolution 728 x 544, sensor name IMX287, sensor type CMOS
RT-mvBC-X102f	Camera with interface GigE (1GB/s), sensor size 1/2.9", mpixel 1.58, resolution 1456 x 1088, sensor name IMX273, sensor type CMOS
RT-mvBC-XD102f	Camera with interface Dual GigE (2GB/s), sensor size 1/2.9", mpixel 1.58, resolution 1456 x 1088, sensor name IMX273, sensor type CMOS
RT-mvBC-X105	Camera with interface GigE (1GB/s), sensor size 1/2.5", mpixel 5.04, resolution 2592 x 1944, sensor name MT9P031, sensor type CMOS
RT-mvBC-X1010	Camera with interface GigE (1GB/s), sensor size 1/2.3", mpixel 10.66, resolution 3856 x 2764, sensor name MT9J003, sensor type CMOS
RT-mvBC-X104i	Camera with interface GigE (1GB/s), sensor size 1/1.8", mpixel 3.19, resolution 2064 x 1544, sensor name IMX265, sensor type CMOS
RT-mvBC-XD104h	Camera with interface Dual GigE (2GB/s), sensor size 1/1.8", mpixel 3.19, resolution 2064 x 1544, sensor name IMX252, sensor type CMOS