

TCCR4M120-E

Telecentric CORE lens for 1" detectors, magnification 0.143 x, M42x1 FD 16

SPECIFICATIONS

Part number	TCCR4M120-E	
Magnification	(x)	0.143
Image shape dimension (8)	(\emptyset , x mm)	$\emptyset=22.3$, x=18.2
Phase adjustment (7)	Yes	

Object field of view 7

with IMX174/IMX249 13.3 mm diag w x h 11.35 x 7.13	(mm x mm)	79.0 x 49.7
with KAI-2020 14.8 mm diagonal w x h 11.84 x 8.88	(mm x mm)	82.6 x 62.0
with IMX253/IMX304 17.6 mm diag w x h 14.16 x 10.37	(mm x mm)	99.3 x 72.7
with KAI-4022/4021 21.5 mm diagonal w x h 15.2 x 15.2	(mm x mm)	106.3 x 106.3
with KAI-08050 22.6 mm diagonal w x h 18.1 x 13.6	(mm x mm)	126.6 x 95.1

Optical specifications

Working distance (1)	(mm)	334.6
wF/# (2)	16	
Telecentricity typical (max) (3)	(deg)	< 0.06 (0.10)
Distortion typical (max) (4)	(%)	< 0.08 (0.10)
Field depth (5)	(mm)	64.6
CTF@ 50 lp/mm	(%)	> 30

Mechanical specifications

Mount (6)	M42x1 FD16.00	
A	(mm)	182
B	(mm)	220
C	(mm)	280
Mass	(g)	9355

Compatibility

LTCLCR120-x, LTCLHP120-x

Last update: 2019-06-17

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 milliradians, 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 perfectly sharp image, only half of the nominal field depth should be considered. Pixel size used for calculation is 5.5 μ m.
- In case the of vignetting, FOV dimensions are indicated with " \emptyset = , x = ", where " \emptyset =" stands for diameter and "x=" indicates the nominal FOV height and length (see [Tech Info](#) for related drawing).
- Indicates the availability of an integrated camera phase adjustment feature.
- Indicates the dimensions and shape of image, where " \emptyset =" stands for diameter and "x=" indicates the nominal image height and length (see [Tech Info](#) for related drawing)

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.

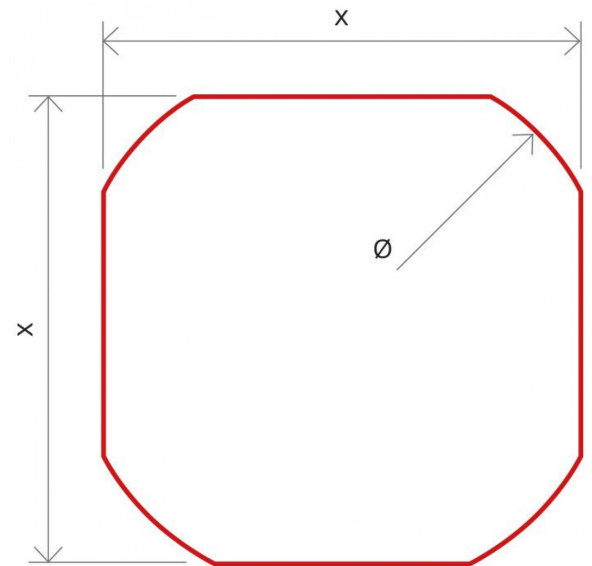
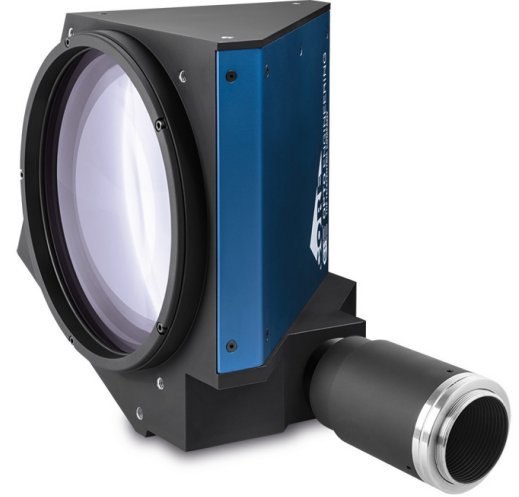


Image shape dimensions (\emptyset , x)

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.



LTCLHP series

High-performance telecentric illuminators

LTCLHP120-R	Telecentric HP illuminator, beam diameter 150 mm, red
LTCLHP120-G	Telecentric HP illuminator, beam diameter 150 mm, green
LTCLHP120-W	Telecentric HP illuminator, beam diameter 150 mm, white



LTCLHP CORE series

Ultra compact telecentric illuminators

LTCLCR120-R	Telecentric CORE illuminator, beam dimensions $\varnothing = 156$, $x = 130$, red, 630 nm
LTCLCR120-G	Telecentric CORE illuminator, beam dimensions $\varnothing = 156$, $x = 130$, green, 520 nm
LTCLCR120-W	Telecentric CORE illuminator, beam dimensions $\varnothing = 156$, $x = 130$, white



LTBC series

Continuous LED backlight

LTBC174174-W	Continuous LED backlight, 174x174 illumination area, white
LTBC174174-G	Continuous LED backlight, 174x174 illumination area, green



mvBlueFOX3-2 series

USB3 vision camera with Sony Pregius CMOS sensors

RT-mvBF3-2089a	USB3 Vision camera with Sony Pregius CMOS sensor IMX267
RT-mvBF3-2089	USB3 Vision camera with Sony Pregius CMOS sensor IMX255
RT-mvBF3-2124a	USB3 Vision camera with Sony Pregius CMOS sensor IMX304
RT-mvBF3-2124	USB3 Vision camera with Sony Pregius CMOS sensor IMX253



mvBlueCOUGAR series

GigE & Dual GigE Vision cameras

RT-mvBC-X109b	Camera with interface GigE (1GB/s), sensor size 1", mpixel 8.95, resolution 4112 x 2176, sensor name IMX267, sensor type CMOS
RT-mvBC-XD109b	Camera with interface Dual GigE (2GB/s), sensor size 1", mpixel 8.95, resolution 4112 X 2176, sensor name IMX267, sensor type CMOS
RT-mvBC-X1012b	Camera with interface GigE (1GB/s), sensor size 1.1", mpixel 12.37, resolution 4112 x 3008, sensor name IMX304, sensor type CMOS
RT-mvBC-XD107	Camera with interface Dual GigE (2GB/s), sensor size 1.1", mpixel 7.1, resolution 3216 x 2208, sensor name IMX420, sensor type CMOS
RT-mvBC-XD1012b	Camera with interface Dual GigE (2GB/s), sensor size 1.1", mpixel 12.37, resolution 4112 x 3008, sensor name IMX304, sensor type CMOS



TCLIB Suite

Software library & stand-alone tools for the optimization of telecentric setups

TCLIB-01	Software library & stand-alone tools for the optimization of telecentric setups
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COE HR AS-X series

20MP, 26MP and 29MP area scan cameras for high-speed applications

COE-200-M-POE-070-IR-C	HR Area Scan camera IMX183, CMOS, Rolling shutter, 5472 x 3648, 20.4 MP, 2.4 pix, 1", Gray, GigE, 6 fps, POE, C - mount, Glass filter
COE-200-C-POE-070-IR-C	HR Area Scan camera IMX183, CMOS, Rolling shutter, 5472 x 3648, 20.4 MP, 2.4 pix, 1", Color, GigE, 6 fps, POE, C - mount, Infrared cut filter
COE-200-M-USB-070-IR-C	HR Area Scan camera IMX183, CMOS, Rolling shutter, 5472 x 3648, 20.4 MP, 2.4 pix, 1", Gray, 14 fps, C - mount, Glass filter
COE-200-C-USB-070-IR-C	HR Area Scan camera IMX183, CMOS, Rolling shutter, 5472 x 3648, 20.4 MP, 2.4 pix, 1", Color, 14 fps, C - mount, Infrared cut filter