

TCCR4M048-F

Telecentric CORE lens for 4/3" detectors, magnification 0.369 x, F-mount

SPECIFICATIONS

Part number	TCCR4M048-F	
Magnification	(x)	0.369
Image shape dimension (8)	(\varnothing , x mm)	$\varnothing=22.1$, x=18.8
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)	30.6 x 19.2
with KAI-2020 14.8 mm diagonal w x h 11.84 x 8.88	(mm x mm)	32.1 x 24.1
with IMX253/IMX304 17.6 mm diag w x h 14.16 x 10.37	(mm x mm)	38.5 x 28.2
with KAI-4022/4021 21.5 mm diagonal w x h 15.2 x 15.2	(mm x mm)	41.2 x 41.2
with KAI-08050 22.6 mm diagonal w x h 18.1 x 13.6	(mm x mm)	49.1 x 36.9

Optical specifications

Working distance (1)	(mm)	133.4
wF/# (2)	16	
Telecentricity typical (max) (3)	(deg)	< 0.08 (0.10)
Distortion typical (max) (4)	(%)	< 0.08 (0.10)
Field depth (5)	(mm)	9.7
CTF@ 50 lp/mm	(%)	> 40

Mechanical specifications

Mount (6)	F	
A	(mm)	77
B	(mm)	118
C	(mm)	163
Mass	(g)	1311

Compatibility

LTCLCR048-x, CMHOCR048, CMPTCR048, LTCLHP048-x

Last update: 2019-05-10

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 " \varnothing = , x = ", where " \varnothing =" 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 " \varnothing =" 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.

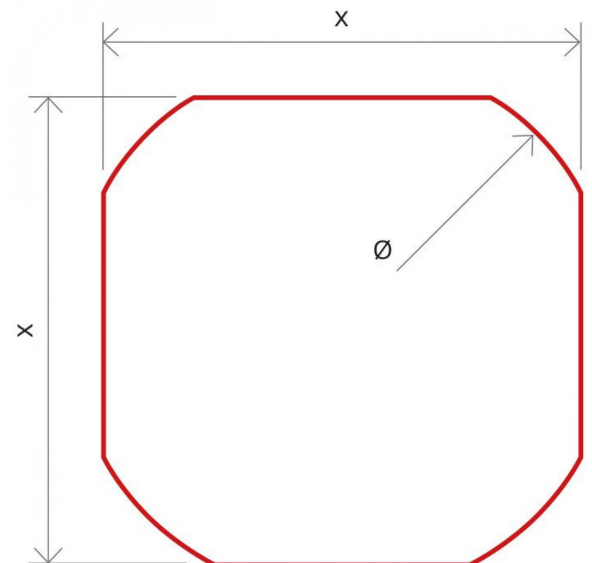
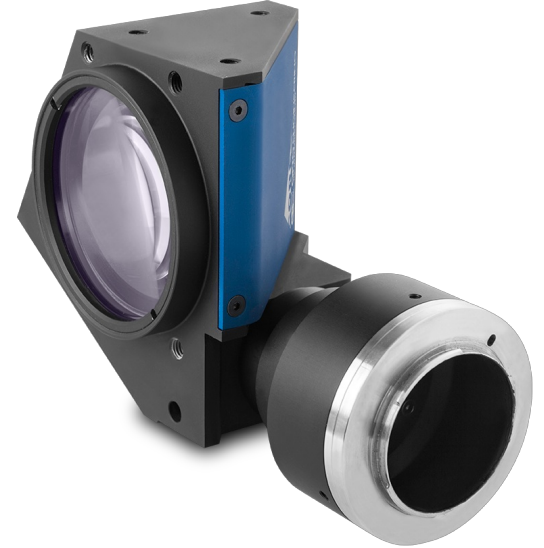


Image shape dimensions (\varnothing , x)

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

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



LTCLHP CORE series

Ultra compact telecentric illuminators

LTCLCR048-R	Telecentric CORE illuminator, beam dimensions $\varnothing = 56$; $x = 50$, red
LTCLCR048-G	Telecentric CORE illuminator, beam dimensions $\varnothing = 56$; $x = 50$, green
LTCLCR048-W	Telecentric CORE illuminator, beam dimensions $\varnothing = 56$; $x = 50$, white



LTBC series

Continuous LED backlight

LTBC11414-W	Continuous LED backlight, 114x114 illumination area, white
LTBC11414-G	Continuous LED backlight, 114x114 illumination area, green



CMHO series

Clamping mechanics

CMHORBCR048	Clamping mechanics robotics
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CMHOCR series

Clamping mechanics CORE series

CMHOCR048	Clamping mechanics for CORE telecentric lenses and illuminators TCCRxx48 and LTCLCR048-x
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CMPTCR series

CORE series mounting plates

CMPTCR048	Mechanical components designed for CORE telecentric lenses and illuminators $\varnothing 48$ mm
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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



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 × 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 × 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 × 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 × 3648, 20.4 MP, 2.4 pix, 1", Color, 14 fps, C - mount, Infrared cut filter
