

# TCCR4M064-C

Telecentric CORE lens for 4/3" detectors, magnification 0.275 x, C-mount

## SPECIFICATIONS

|                           |                       |                           |
|---------------------------|-----------------------|---------------------------|
| Part number               | TCCR4M064-C           |                           |
| Magnification             | (x)                   | 0.275                     |
| Image shape dimension (8) | ( $\emptyset$ , x mm) | $\emptyset=22.6$ , x=18.7 |
| 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) | 41.1 x 25.8 |
| with KAI-2020 14.8 mm diagonal w x h 11.84 x 8.88     | (mm x mm) | 43.1 x 32.3 |
| with IMX253/IMX304 17.6 mm diag w x h 14.16 x 10.37   | (mm x mm) | 51.6 x 37.8 |
| with KAI-4022/4021 21.5 mm diagonal w x h 15.2 x 15.2 | (mm x mm) | 55.3 x 55.3 |
| with KAI-08050 22.6 mm diagonal w x h 18.1 x 13.6     | (mm x mm) | 65.8 x 49.5 |

### Optical specifications

|                                  |       |               |
|----------------------------------|-------|---------------|
| Working distance (1)             | (mm)  | 181.9         |
| wF/# (2)                         | 16    |               |
| Telecentricity typical (max) (3) | (deg) | < 0.05 (0.10) |
| Distortion typical (max) (4)     | (%)   | < 0.04 (0.10) |
| Field depth (5)                  | (mm)  | 17.5          |
| CTF@ 50 lp/mm                    | (%)   | > 40          |

### Mechanical specifications

|           |      |      |
|-----------|------|------|
| Mount (6) | C    |      |
| A         | (mm) | 101  |
| B         | (mm) | 124  |
| C         | (mm) | 208  |
| Mass      | (g)  | 2061 |

### Compatibility

LTCLCR064-x, CMHOCR064, CMPTCR064, LTCLHP064-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  $\mu$ 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.

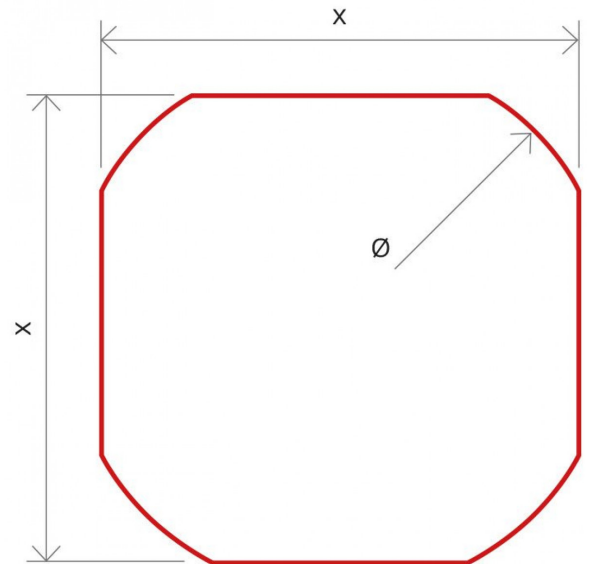


Image shape dimensions ( $\emptyset$ , x)

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

|             |  |
|-------------|--|
| LTCLHP064-R | Telecentric HP illuminator, beam diameter 80 mm, red   |
| LTCLHP064-G | Telecentric HP illuminator, beam diameter 80 mm, green |
| LTCLHP064-B | Telecentric HP illuminator, beam diameter 80 mm, blue  |
| LTCLHP064-W | Telecentric HP illuminator, beam diameter 80 mm, white |



### LTCLHP CORE series

Ultra compact telecentric illuminators

|             |   |
|-------------|---|
| LTCLCR064-R | Telecentric CORE illuminator, beam dimensions $\varnothing = 86$ ; $x = 67$ , red   |
| LTCLCR064-G | Telecentric CORE illuminator, beam dimensions $\varnothing = 86$ ; $x = 67$ , green |
| LTCLCR064-W | Telecentric CORE illuminator, beam dimensions $\varnothing = 86$ ; $x = 67$ , white |



### LTBC series

Continuous LED backlight

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



### CMHOCR series

Clamping mechanics CORE series

|           |  |
|-----------|--|
| CMHOCR064 | Clamping mechanics for CORE telecentric lenses and illuminators TCCRxx64 and LTCLCR064-x |
|-----------|--|



### CMPTCR series

CORE series mounting plates

|           |   |
|-----------|---|
| CMPTCR064 | Mechanical components designed for CORE telecentric lenses and illuminators $\varnothing 64$ mm |
|-----------|---|



### CMT series

Precision alignment mechanics

|           |   |
|-----------|---|
| CMTHCR064 | Precision alignment mechanics for CORE telecentric optics 064 |
|-----------|---|



### 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

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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

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[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

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[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

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[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

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[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

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