

TC4K060-F

Telecentric lens for 4k linescan cameras, magnification 0.478x, F-mount

SPECIFICATIONS

Magnification	(x)	0.478
Image width	(mm)	28.7
Object field of view		
with 2k x 10 µm detector 20.48	(mm)	42.8
with 4k x 7 µm detector 28.67	(mm)	60.0
Optical specifications		
Working distance (1)	(mm)	174.0
wF/# (2)		16
Telecentricity typical (max) (3)	(deg)	0.06 (0.10)
Distortion typical (max) (4)	(%)	0.05 (0.08)
Field depth (5)	(mm)	7.3
CTF @ 50 lp/mm	(%)	>30
Mechanical specifications		
Mount		F
Flange distance		46.5
Length (6)	(mm)	319.2
Width	(mm)	83
Height	(mm)	64
Mass	(g)	1443

Last update: 2015-04-01

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 7 µm.
- Indicates the availability of an integrated camera phase adjustment feature.
- Measured from the front end of the mechanics to the camera flange.

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.



LTCL4K series

Flat telecentric illuminators for linescan cameras

LTCL4K060-G Telecentric illuminator for linescan cameras, line width 60 mm, green

LTCL4K060-W Telecentric illuminator for linescan cameras, line width 60 mm, white



LTLA series

High-power strobed LED low angle diffused ringlights



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.

LTLAC1-W	Diffusive strobed low angle ring light illuminator - large size medium power white
LTLAC2-R	Diffusive strobed low angle ring light illuminator - large size high power red
LTLAC2-G	Diffusive strobed low angle ring light illuminator - large size high power green
LTLAC2-W	Diffusive strobed low angle ring light illuminator - large size high power white



LTBRDC series

Continuous LED bar lights

LTZPFL080-00-6-W-24V	LED bar light, 6 LED rows, 80X26.3 illumination area, white, 24V
LTZPFL080-00-6-R-24V	LED bar light, 6 LED rows, 80X26.3 illumination area, red, 24V
LTZPFL080-00-6-G-24V	LED bar light, 6 LED rows, 80X26.3 illumination area, green, 24V
LTZPFL080-00-6-B-24V	LED bar light, 6 LED rows, 80X26.3 illumination area, blue, 24V



LTLNC series

Continuous LED line lights

LTLNC100-W	LED line light 100 mm, white
LTLNC100-R	LED line light 100 mm, red
LTLNC100-G	LED line light 100 mm, green
LTLNC100-B	LED line light 100 mm, blue
LTLNC100-IR850	LED line light 100 mm, IR 850 nm
LTLNC150-W	LED line light 150 mm, white
LTLNC150-R	LED line light 150 mm, red
LTLNC150-G	LED line light 150 mm, green
LTLNC150-B	LED line light 150 mm, blue
LTLNC150-IR850	LED line light 150 mm, IR 850 nm
LTLNC200-W	LED line light 200 mm, white
LTLNC200-R	LED line light 200 mm, red
LTLNC200-G	LED line light 200 mm, green
LTLNC200-B	LED line light 200 mm, blue
LTLNC200-IR850	LED line light 200 mm, IR 850 nm
LTLNC300-W	LED line light 300 mm, white
LTLNC300-R	LED line light 300 mm, red
LTLNC300-G	LED line light 300 mm, green
LTLNC300-B	LED line light 300 mm, white
LTLNC300-IR850	LED line light 300 mm, IR 850 nm



LTCXC series

Continuous LED coaxial lights

LT2QOG070-00-X-W-24V	LED coaxial light, 70x70 mm light emitting area, white, 24V
LT2QOG070-00-X-R-24V	LED coaxial light, 70x70 mm light emitting area, red, 24V
LT2QOG070-00-X-G-24V	LED coaxial light, 70x70 mm light emitting area, green, 24V
LT2QOG070-00-X-B-24V	LED coaxial light, 70x70 mm light emitting area, blue, 24V



LTLNM series

Flicker free high power focused modular LED line lights

LTLNM-0200-N-FC-W	Modular LED line light, 200mm length, near field focusing, fan cooling, white
LTLNM-0200-N-D-FC-W	Modular LED line light, 200mm length, near field focusing, diffuser, fan cooling, white
LTLNM-0200-F-FC-W	Modular LED line light, 200mm length, far field focusing, fan cooling, white
LTLNM-0200-F-D-FC-W	Modular LED line light, 200mm length, far field focusing, diffuser, fan cooling, white
LTLNM-0200-C-FC-W	Modular LED line light, 200mm length, collimated, fan cooling, white
LTLNM-0200-C-D-FC-W	Modular LED line light, 200mm length, collimated, diffuser, fan cooling, white
LTLNM-0400-N-FC-W	Modular LED line light, 400mm length, near field focusing, fan cooling, white
LTLNM-0400-N-D-FC-W	Modular LED line light, 400mm length, near field focusing, diffuser, fan cooling, white
LTLNM-0400-F-FC-W	Modular LED line light, 400mm length, far field focusing, fan cooling, white

LTLNM-2000-F-D-FC-W	Modular LED line light, 2000mm length, far field focusing, diffuser, fan cooling, white
LTLNM-2000-C-FC-W	Modular LED line light, 2000mm length, collimated, fan cooling, white
LTLNM-2000-C-D-FC-W	Modular LED line light, 2000mm length, collimated, diffuser, fan cooling, white



LTLNE series

High power enhanced LED line lights

LTLNE-300-N-PC-W	LED line light, direct, 300mm length, near field focusing, passive cooling, white
LTLNE-300-N-FC-W	LED line light, direct, 300mm length, near field focusing, fan cooling, white
LTLNE-300-N-D-PC-W	LED line light, direct, 300mm length, near field focusing, diffuser, passive cooling, white
LTLNE-300-N-D-FC-W	LED line light, direct, 300mm length, near field focusing, diffuser, fan cooling, white
LTLNE-300-F-PC-W	LED line light, direct, 300mm length, far field focusing, passive cooling, white
LTLNE-300-F-FC-W	LED line light, direct, 300mm length, far field focusing, fan cooling, white
LTLNE-300-F-D-PC-W	LED line light, direct, 300mm length, far field focusing, diffuser, passive cooling, white
LTLNE-300-F-D-FC-W	LED line light, direct, 300mm length, far field focusing, diffuser, fan cooling, white
LTLNE-300-C-PC-W	LED line light, direct, 300mm length, collimated, passive cooling, white
LTLNE-300-C-FC-W	LED line light, direct, 300mm length, collimated, fan cooling, white
LTLNE-300-C-D-PC-W	LED line light, direct, 300mm length, collimated, diffuser, passive cooling, white
LTLNE-300-C-D-FC-W	LED line light, direct, 300mm length, collimated, diffuser, fan cooling, white
LTLNE-300-CX-N-PC-W	LED line light, coaxial, 300mm length, near field focusing, passive cooling, white
LTLNE-300-CX-N-FC-W	LED line light, coaxial, 300mm length, near field focusing, fan cooling, white
LTLNE-300-CX-N-D-PC-W	LED line light, coaxial, 300mm length, near field focusing, diffuser, passive cooling, white
LTLNE-300-CX-N-D-FC-W	LED line light, coaxial, 300mm length, near field focusing, diffuser, fan cooling, white
LTLNE-300-CX-F-PC-W	LED line light, coaxial, 300mm length, far field focusing, passive cooling, white
LTLNE-300-CX-F-FC-W	LED line light, coaxial, 300mm length, far field focusing, fan cooling, white
LTLNE-300-CX-F-D-PC-W	LED line light, coaxial, 300mm length, far field focusing, diffuser, passive cooling, white
LTLNE-300-CX-F-D-FC-W	LED line light, coaxial, 300mm length, far field focusing, diffuser, fan cooling, white
LTLNE-300-CX-C-PC-W	LED line light, coaxial, 300mm length, collimated, passive cooling, white
LTLNE-300-CX-C-FC-W	LED line light, coaxial, 300mm length, collimated, fan cooling, white
LTLNE-300-CX-C-D-PC-W	LED line light, coaxial, 300mm length, collimated, diffuser, passive cooling, white
LTLNE-300-CX-C-D-FC-W	LED line light, coaxial, 300mm length, collimated, diffuser, fan cooling, white
LTLNE-300-MR-N-PC-W	LED line light, 45° mirror, 300mm length, near field focusing, passive cooling, white
LTLNE-300-MR-N-FC-W	LED line light, 45° mirror, 300mm length, near field focusing, fan cooling, white
LTLNE-300-MR-N-D-PC-W	LED line light, 45° mirror, 300mm length, near field focusing, diffuser, passive cooling, white
LTLNE-300-MR-F-PC-W	LED line light, 45° mirror, 300mm length, far field focusing, passive cooling, white
LTLNE-300-MR-F-FC-W	LED line light, 45° mirror, 300mm length, far field focusing, fan cooling, white
LTLNE-300-MR-F-D-PC-W	LED line light, 45° mirror, 300mm length, far field focusing, diffuser, passive cooling, white
LTLNE-300-MR-F-D-FC-W	LED line light, 45° mirror, 300mm length, far field focusing, diffuser, fan cooling, white
LTLNE-300-MR-C-PC-W	LED line light, 45° mirror, 300mm length, collimated, passive cooling, white
LTLNE-300-MR-C-FC-W	LED line light, 45° mirror, 300mm length, collimated, fan cooling, white
LTLNE-300-MR-C-D-PC-W	LED line light, 45° mirror, 300mm length, collimated, diffuser, passive cooling, white
LTLNE-300-MR-C-D-FC-W	LED line light, 45° mirror, 300mm length, collimated, diffuser, fan cooling, white



CMMR series

45° first surface mirrors

[CMMR4K060-V](#) 45° adjustable first surface mirror, clamping size 83x38.5 mm, right angle vertical bend

[CMMR4K060-L](#) 45° adjustable first surface mirror, clamping size 83x38.5mm, right angle lateral bend
