PRODUCT DATASHEET

TC3MHR120-C

High resolution telecentric lens for 1.1" detectors, magnification 0.118x, C-mount

OPTO ENGINEERING

SPECIFICATIONS

Magnification	(x)	0.118
Image circle Ø	(mm)	17.6

Object field of view 8	(mm x mm or Ø)
with IMX174/IMX249 13.3 mm diag w x h 11.35 x 7.13	96.14 x 60.39
with IMX255/IMX267 16.1 mm diag w x h 14.19 x 7.51	120.25 x 63.64
with IMX253/IMX304 17.6 mm diag w x h 14.16 x 10.37	119.99 x 87.89
with KAI-4022/4021 21.5 mm diagonal w x h 15.2 x 15.2	Ø = 128.43
with KAI-08050 22.6 mm diagonal w x h 18.1 x 13.6 (7)	Ø = 115.22

Optical specifications		
Working distance (1)	(mm)	334.6
wF/# (2)		8
Telecentricity typical (max) (3)	(deg)	<0.08 (0.10)
Distortion typical (max) (4)	(%)	<0.08 (0.10)
Field depth (5)	(mm)	43.1
CTF@ 50 lp/mm	(%)	> 55

Mechanical specifications		
Mount		C
Phase adjustment(9)		Yes
Length (6)	(mm)	440.4
Diameter	(mm)	180
Mass	(g)	4714

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 (wF/#): the real F-number of a lens when used as a macro. Lenses with smaller apertures (higher wF#) can be supplied on request.
3. 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.
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 perfectly 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 KAI-08050 (22.6 mm diagonal) detectors, the FOV of TC4MHRyyy-x lenses may show some vignetting at the image corners.
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