HCSI013 | DATASHEET

OPTO ENGINEERING

Hypercentric Lens For Side & Bottom Inspection for 1/3" sensors

KEY ADVANTAGES

Perfect focusing of hollow objects with just one camera
For precise and high-resolution simultaneous imaging of the inner walls and bottom of cavities

Cavity inspection from the outside
No need to put an optical probe into the hole

Very high field depth and flexibility
Cavities featuring different shapes and dimensions can be easily imaged by the same lens

Wide viewing angle, manual focus adjustment and variable iris

Ideal for the **inspection of bottles and hollow objects**

REACH DOSSIER PATENTED

HC series features hypercentric lenses for sensors up to 1.1" designed for the simultaneous inspection of the inner sides and bottom surfaces of hollow cylindrical samples, such as bottles, cans, vials, threaded holes and tubes.

SPECIFICATIONS

Optical specifications

Image circle	(mm)	3.4
Min sensor size		1/3"
Working distance with minimum object size[1]	(mm)	58.1
Working distance with medium object size[1]	(mm)	92.6
Working distance with maximum object size[1]	(mm)	143.8
Convergence point distance [2]	(mm)	50
Viewing angle	(°)	60
w*f*/*N*[1]		1.6 - 22

Mechanical specifications

Mount		C
Length[3]	(mm)	320.2
Front diameter	(mm)	84.0
Mass	(g)	1326

[1] Working distance: distance between the front end of the mechanics and the object.
[2] Distance between the front end of the mechanics and the point where all the optical rays coming from the object converge (entrance pupil).
[3] Measured from the front end of the mechanics to the camera flange.

FIELD OF VIEW

Field of view (diameter x height)

Minimum	(mm x mm)	10.0 x 30.0
Medium	(mm x mm)	50.0 x 150.0
Maximum	(mm x mm)	110.0 x 330.0

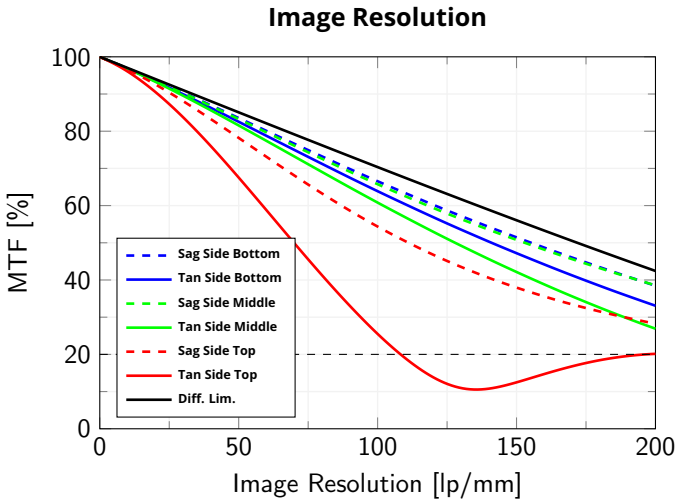
ADDITIONAL NOTE

The minimum field of view can be achieved by using about 2 mm of back focal spacers betweem the camera and the objective. Even smaller field of views can be achieved by using extension tubes.

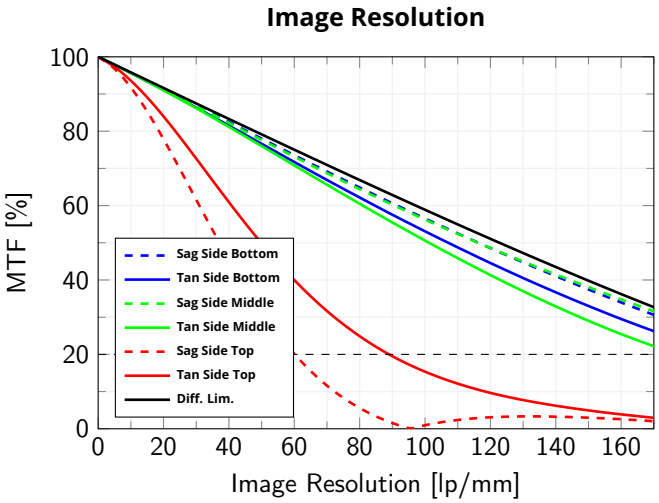
COMPATIBLE PRODUCTS

Full list of compatible products available *here*.

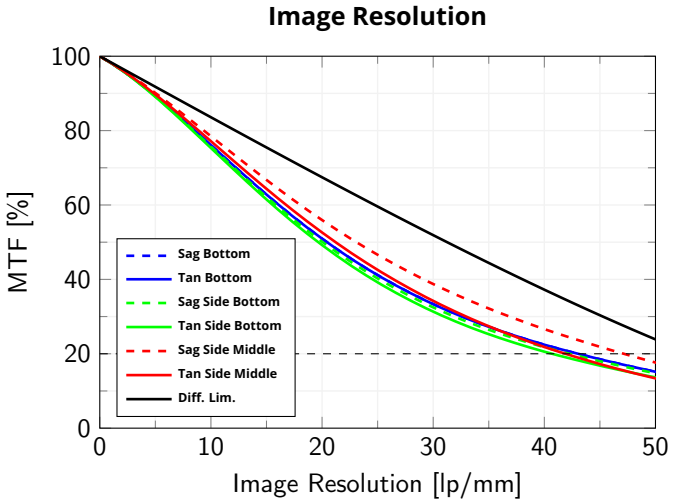
A wide selection of innovative machine vision components.



Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm of cylindrical object of diameter 110 mm and height of 330 mm at wf/N= 4



Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm of cylindrical object of diameter 50 mm and height of 150 mm at wf/N= 5.6



Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm of cylindrical object of diameter 10 mm and height of 30 mm at wf/N= 22

HCSI IMAGING SETUP