PCHIL3M-EL | DATASHEET

OPTO ENGINEERING

Hole inspection lens for 1.1" sensors, focusing with liquid lens

KEY ADVANTAGES

High-resolution imaging of holed objects **from the outside.**

Simultaneous view of both the **side walls and the bottom of cavities.**

Variable iris and large aperture.

Wide range of object **diameters and thicknesses.**

Wide viewing angle.

Easy and precise **manual focusing.**

Liquid lens models for fast and remote autofocus.

Opto Engineering® PCHIL series features hole inspection lenses for the inner inspection of cavities and containers in perfect focus.

SPECIFICATIONS

Optical specifications

Image circle	(mm)	10.1
Min sensor size		1.1"
Working distance with minimum object size[1]	(mm)	5
Working distance with maximum object size[1]	(mm)	62
Viewing angle	(°)	82
w*f*/*N*[2]		13

Liquid lens specifications

Liquid lens model		Optotune EL-3-10
Temperature sensor		Yes
Focal power mode		Yes
Response time	(ms)	1
Setting time	(ms)	4
Current range	(mA)	-120 to +120
Lifecycles (10%-90% sinusoidal)		>1,000,000,000
Connector		HR10A-7R-6PB

Mechanical specifications

Focusing		Liquid lens
Mount		C
Length[3]	(mm)	102.6
Outer diameter	(mm)	30.0
Mass	(g)	112

Environment

Operating temperature	(°C)	0 - 40
Storage temperature	(°C)	0 - 50
Operating relative humidity	(%)	20-85, non condensing
Installation		Indoor use only

[1] Working distance: distance between the front end of the mechanics and the object.
[2] Working f-number (w*f*/*N*): the real f-number of a lens in operating conditions.
[3] Measured from the front end of the mechanics to the camera flange.

FIELD OF VIEW

Field of view (diameter x height)

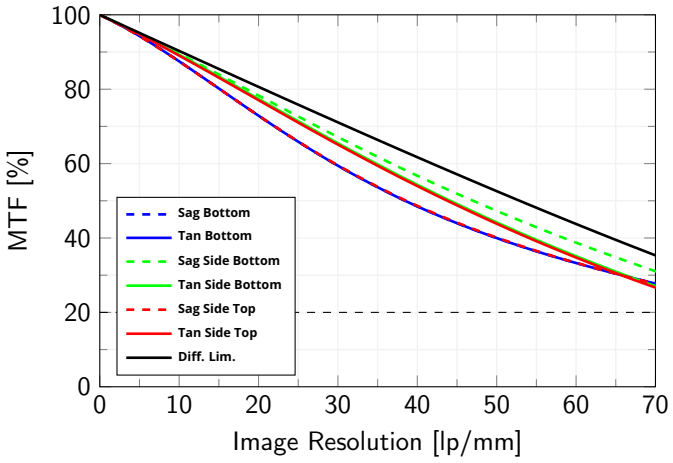
Minimum	(mm x mm)	10.0 x 6.0
Maximum	(mm x mm)	120.0 x 190.0

COMPATIBLE PRODUCTS

Full list of compatible products available *here*.

A wide selection of innovative machine vision components.

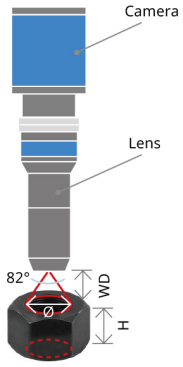
Image Resolution



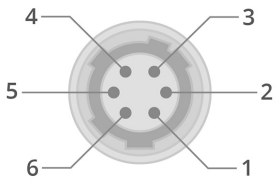
Modulation Transfer Function (MTF) vs. Image Resolution, wavelength range 486 nm - 656 nm, wf/N, of cylindrical object of diameter 30 mm and height of 20 mm

PCHI IMAGING SETUP

PCHIL optics can image cavities whose diameters and thicknesses span over a wide range of values. PCHI series features 82° view angle and can image both the inner walls and the bottom of cavities.



CONNECTOR PINOUT



Device side

Pin	Description
1	Lens + control pin
2	Lens - control pin
3	GND
4	Power
5	I^2C SCL
6	I^2C SDA

ATTENTION: observe precaution for handling.
Electrostatic sensitive device

TEMPERATURE EFFECTS

Temperature changes affects the lens behaviour resulting in a drift of the optical power.
For more information please check the Optotune's datasheet for EL-3-10.