

# CHROCODILE CLS 2.0

Quality control via optical inspection

The chromatic confocal line sensor CHRocodile CLS 2.0 is the ideal tool for precise 3D inline quality control in harsh industrial environments. It is highly suitable for applications in consumer electronics and semiconductor industries, such as inspecting the topography of smartphone housings or semiconductor chips, as well as measuring and inspecting solder bumps or detecting die cracks.

The 3D structure of your sample is determined in a very short time through fast line scanning at up to 18300 lines per second – ideal for inline applications where cycle time is critical.

The chromatic confocal measurement technology provides data with an extremely high lateral and axial resolution, enables measurement of any kind of material, and functions without shadowing effects – even for complex geometries.

Furthermore, the easily exchangeable optical probes offer a high degree of flexibility in adapting the sensor's specifications to your requirements. You can select a long line of up to 12 mm for fast inspection of large parts or a shorter line with an outstanding numerical aperture for measuring highly angled surfaces, e.g. the chamfer of smartphone or watch display glasses.



DISTANCE

THICKNESS

TOPOGRAPHY

## EFFICIENT

- ▶ High measuring speed
- ▶ Ultraprecise
- ▶ Non-contact

## VERSATILE

- ▶ Maintenance free
- ▶ Measurement on all surfaces
- ▶ No shadowing effect

## USER-FRIENDLY & SAFE

- ▶ Easy to integrate into production lines
- ▶ Instantaneous inline profile measurement with interchangeable optical probes



## TECHNICAL SPECIFICATIONS OF CHROCODILE CLS 2.0

Measured value	distance
Measuring rate [lines per second] (full measuring range)	7930
Measuring rate [lines per second] (reduced measuring range)	18300
Measuring rate [lines per second] (high speed mode, reduced measuring range)	36000 <sup>1)</sup>
Number of points / line	1200
Synchronization with external devices	trigger input, synchronizing output, 5 encoder inputs
Interface	Ethernet, RS-422 <sup>2)</sup>
Light source	Laser Diodes
Operating temperature	+5°C up to +35°C
Dimension (w x h x d)	346 mm x 185 mm x 135 mm
Weight	6.2 kg
Supply voltage	24 V DC ± 10%
Rated power	< 50 W
Item number	5101795

## TECHNICAL SPECIFICATIONS OF OPTICAL PROBE

	probe 0.6 mm	probe 2.5 mm	probe 10 mm
Measuring range	0.68 mm	2.5 mm	10.6 mm
Line length	2.36 mm ± 0.05 mm	4.4 mm ± 0.1 mm	11.9 mm ± 0.3 mm
Pitch	1.97 µm ± 0.04 µm	3.69 µm ± 0.08 µm	9.9 µm ± 0.2 µm
Working distance <sup>3)</sup>	9.2 mm ± 0.4 mm	27.0 mm ± 0.6 mm	36.6 mm ± 1.0 mm
Axial resolution	0.05 µm	0.2 µm	0.8 µm
Linearity <sup>4)</sup>	0.5 µm	2 µm	8 µm
Numerical Aperture	0.77	0.55	0.22
Measurement angle to surface <sup>5)</sup>	90° ± 50°	90° ± 33°	90° ± 13°
Dimensions [mm] Length	l = 155 mm,	l = 160 mm,	l = 118 mm,
Diameter	d = 90 mm	d = 90 mm	d = 90 mm
Item number	5102255	5101794	5102470

<sup>1)</sup> Reduced number of points | <sup>2)</sup> Service Port | <sup>3)</sup> Bottom of optical probe to middle of measuring range | <sup>4)</sup> Perpendicular measurement on mirror at 20 °C |

<sup>5)</sup> Decreasing accuracy for large incident angles

The given data was generated for a typical application and may be different given other circumstances. Furthermore misprints, changes and/or innovations may lead to differences in the listed measurements, technical data and features. Therefore all information is non-binding and technical data, measurements as well as features are not guaranteed.

**Precitec 3D Metrology - measure more precisely with light.**