



# CHROCODILE CVC

Quality inspection via 2D high resolution imaging



DISTANCE

THICKNESS

TOPOGRAPHY

## HOW YOU BENEFIT

- ▶ No need to autofocus – saving valuable time during quality control
- ▶ Compact and all-in-one design with integrated coaxial illumination
- ▶ Highest depth of field
- ▶ Focus image – no need to autofocus
- ▶ High contrast on all types of material
- ▶ Exchangeable optics
- ▶ Insensitive to vibrations

# CHRcodile

if time matters...



Are you tired of autofocusing your microscope camera?

Precitec's CHRomatic Vision line scan camera uses chromatic optics for 2D imaging. It distinguishes from microscope cameras by highest depth of field. There is no need to autofocus anymore!

Use this technology for quality assurance in inline and offline applications like cosmetic inspection of metal parts, defect inspection on wafers or OLED mask inspection.

The CHRomatic Vision camera uses Camera Link or GigE interface and can easily be integrated in any image processing environment. The all-in-one design with integrated coaxial illumination enables easy integration into your production line.

## EFFICIENT

- ▶ Sharp image on curved, wavy and structured objects
- ▶ Compact and all integrated concept
- ▶ Non-contact

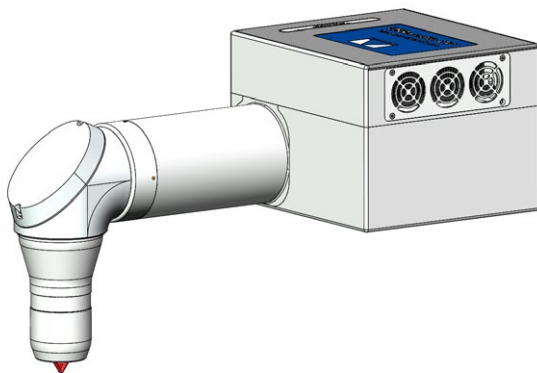
## VERSATILE

- ▶ High-speed area scanning for offline and inline quality control, up to 280 Mpixel/s
- ▶ High contrast on all types of materials
- ▶ Integrated light source for coaxial illumination
- ▶ Exchangeable optics

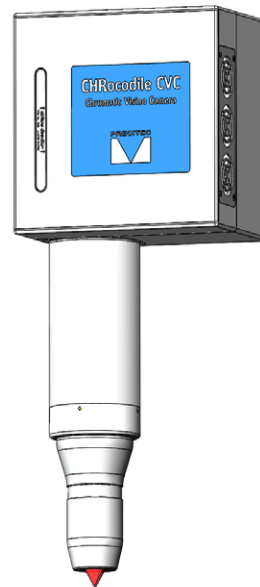
## USER-FRIENDLY & SAFE

- ▶ Maintenance-free
- ▶ Simple to integrate
- ▶ Insensitive to vibrations

## AVAILABLE CONFIGURATIONS



Available configurations: 90° angled  
5010141 (Camera Link); 5010246 (Ethernet NBASE)



Available configurations: straight  
5010019 (Camera Link); 5010245 (Ethernet NBASE)

# HIGH-SPEED AREA SCANNING 280 Mpixel/s, eliminating the need to autofocus

SENSOR	CAMERA WITH CAMERA LINK	CAMERA WITH ETHERNET NBASE
Measuring Principle	Chromatic confocal	
Measured Value	Intensity	
Resolution	2048 pixel	
Max. Measuring Rate	100 kHz	140 kHz
Synchronisation with External Devices	Trigger input/output (TTL): Trigger start/stop and Encoder Trigger function	Trigger input/output (TTL): Trigger start/stop and Encoder Trigger function
Interface	Camera Link ®	NBASE-T communication protocol
SDK	via a DLL, compatibility .NET	
OS	Windows XP, Windows 7, Windows 8, Windows 10	
Camera Supply Voltage	10 - 15 V DC (with separate power supply 100 - 240 V AC, 50 - 60 Hz)	12 - 24 V DC (with separate power supply 100 - 240 V AC, 50 - 60 Hz)
Illumination Supply Voltage	24 - 36 V DC (with separate power supply 100 - 240 V AC, 50 - 60 Hz)	
Rated Power	40 W	
Operating Temperature	+5°C up to + 45°C	
Storage Temperature	-20°C up to +70°C	
Protection Glass	IP 50 (DIN 40050/ IEC 144)	
Weight	2.95 kg	
Dimension (L x W x H)	270 mm x 155 mm x 111 mm	270 mm x 155 mm x 111 mm
Item Number	5010019 (straight); 5010141 (90° angled)	5010245 (straight); 5010246 (90° angled)

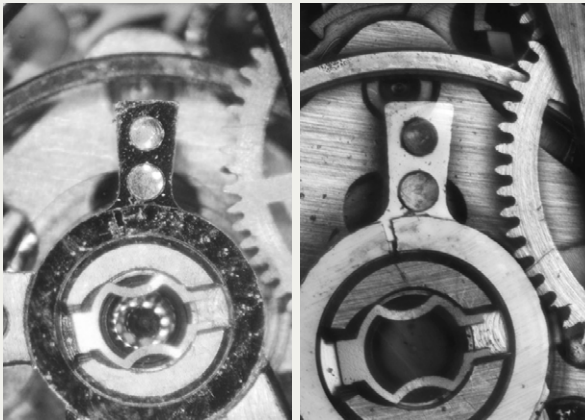
## OPTICAL PROBE

CHRomatic Objective	CVC 0.9 - 150	CVC 1.8 - 150	CVC 0.6 - 160	CVC 0.9 - 400	CVC 1.8 - 400	CVC 5 - 1500	CVC 2.9 - 3000
Depth of Field	150 µm	150 µm	160 µm	400 µm	400 µm	1500 µm	3000 µm
Working Distance [mm]	10.65 ± 0.4	9.85 ± 0.4	5.34 ± 0.3	12 ± 0.4	10.8 ± 0.4	25.4 ± 0.6	36.5 ± 0.8
Line Length [mm]	1.84 ± 0.02	3.69 ± 0.04	1.19 ± 0.02	1.76 ± 0.02	3.69 ± 0.04	10.24 ± 0.10	5.88 ± 0.06
Lateral Resolution	0.9 µm	1.8 µm	0.6 µm	0.9 µm	1.8 µm	5 µm	2.9 µm
Max. Frequency on Mirror [kHz]	40 <sup>1,1)</sup> / 40 <sup>1,2)</sup>	100 <sup>1,1)</sup> / 140 <sup>1,2)</sup>	20 <sup>1,1)</sup> / 20 <sup>1,2)</sup>	25 <sup>1,1)</sup> / 25 <sup>1,2)</sup>	100 <sup>1,1)</sup> / 125 <sup>1,2)</sup>	100 <sup>1,1)</sup> / 140 <sup>1,2)</sup>	100 <sup>1,1)</sup> / 125 <sup>1,2)</sup>
Number of Pixel	2048	2048	2048	2048	2048	2048	2048
Dynamic Range (bit)	8	8	8	8	8	8	8
Measurement Angle to Surface <sup>2)</sup>	90° ± 30°	90° ± 30°	90° ± 44°	90° ± 38°	90° ± 30°	90° ± 12°	90° ± 20°
Numerical Aperture	0.5	0.5	0.7	0.61	0.5	0.22	0.33
Weight without Camera Body	180 g	215 g	195 g	225 g	260 g	190 g	515 g
Dimension							
Length	83.5 mm	84.4 mm	78.4 mm	83 mm	83.4 mm	73.8 mm	129.5 mm
Diameter	55 mm	55 mm	52 mm	52 mm	55 mm	55 mm	58 mm
Item Number	5010020	5010021	5010247	5010248	5010022	15010024	5010023

<sup>1)</sup> Photometric efficiency; perpendicular measurement on mirror at 20°C <sup>1,1)</sup> for CVC Camera Link version | <sup>1,2)</sup> for CVC NBASE-T version | <sup>2)</sup> on specular surface

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 by information in this product information.

## FINE MECHANICS

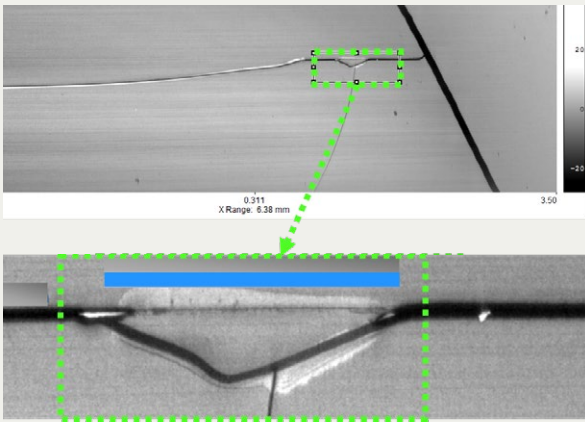


Conventional Microscope

CHromatic Vision Camera

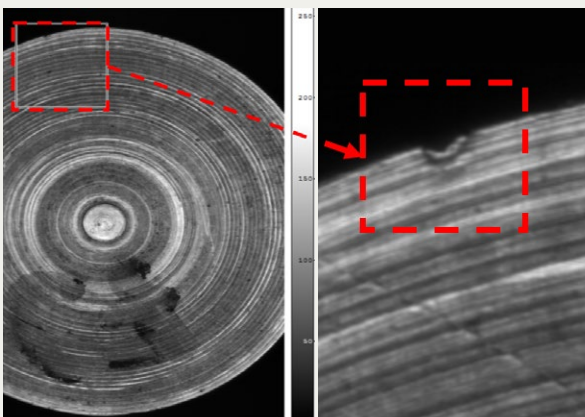
- Confocal Line Scan Camera with High Depth of Field
- Reliable measurement on any surface
- High speed of up to 280,000,000 pixel/s
- No need for refocusing thus saving valuable time during quality control

## COSMETIC INSPECTION CONSUMER ELECTRONICS / SEMICONDUCTOR



- Crack and scratch inspection during wafer dicing
- Contamination inspection
- Cosmetic inspection
- Measurement of cosmetics defects on 3D coverglass
- Positioning and detection of POI

## FINE MECHANICS



- Crack detection on the rim
- Reflected light is converted into a 2D image with a depth of field of 150  $\mu\text{m}$  to 3 mm
- Measurements up to an acceptance angle of 30°

**Precitec Optronik** - the smart way to measure.