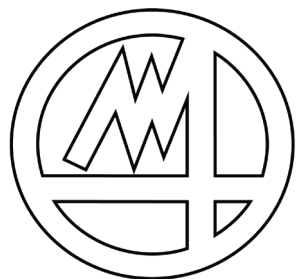


# CHROMATIC CONFOCAL CAMERA

**MARPOSS**  
STIL

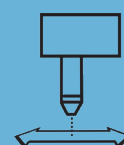




**MARPOSS**

**MC2**

## **CHROMATIC CONFOCAL CAMERA**



ChromaVision Camera

MC2 Chromaline Camera is a line camera based on Chromatic Confocal technology. It delivers high resolution microscopic images with tremendous Field of View (FoV) lengths and 100x the Depth of Focus (DoF - also called Depth of Field) than same magnification microscopes. Such images can then be used to measure 2D features, to detect and measure defects.

**STIL**

MC2

# THE PRODUCT LINE

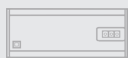
## ChromaPoint Controllers



## ChromaPoint Sensor Heads



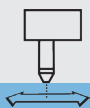
## ChromaLine Controllers



## ChromaLine Sensor Heads



## ChromaVision Camera



## Accessories



## MC2

The MC2 ChromaVision Camera is a game-changer for microscopy, quality inspection & 2D measurements in various industries. Based on Chromatic Confocal technology & optics, it offers 100x the Depth of Focus (DoF - also called Depth of Field) of similar microscopic magnifications, extended Field of View (FoV) with still high level lateral resolutions. Then, imaging with MC2 camera will require lower motion specifications and avoid auto-focus, saving valuable time.

MC2 line varies from 1.34 mm up to 12.5 mm and lateral resolution from 0.43  $\mu\text{m}$  up to 4.1  $\mu\text{m}$ .

This high speed 4K camera connectable with standard or private image treatment software is the ideal device for inline or near line quality controls for semiconductor wafers, consumer electronics and micromechanics components ...

## Benefits

- Industrial microscopy :
- Thanks to MC2 large Depth of Focus (DoF - also called Depth of Field), imaging will accept lower flatness specification of motion tables and limit the number focusing / auto-focus
- its large Field of View (FoV) will avoid stitching and stitching correction within a band, thus saving valuable acquisition time
- Up to  $\approx 200$  Klines /sec (199,000 lines/second exactly) with this high speed 4K line camera
- 2D pattern measurements : Microscopic 2D pattern measurements can be performed using any 3rd party available
- Software Microscopic Defect Detection can be performed in association to any 3rd party software available

## Application fields

Modular Inspections for patterned and unpatterned wafers Broken pattern front and back ; Scratch, cracks, chipping or burrs on edges

Designed for multi applications as:

- Wafer dimensions 2D control
- Wafer warpage & Edge 2D inspection
- Bumps and micro-bumps inspection
- Micro-Channels for cooling fluid
- Solar wafer control & inspection
- Wire bonding inspection
- & many others (LED, CD, TSV, MEMS...)

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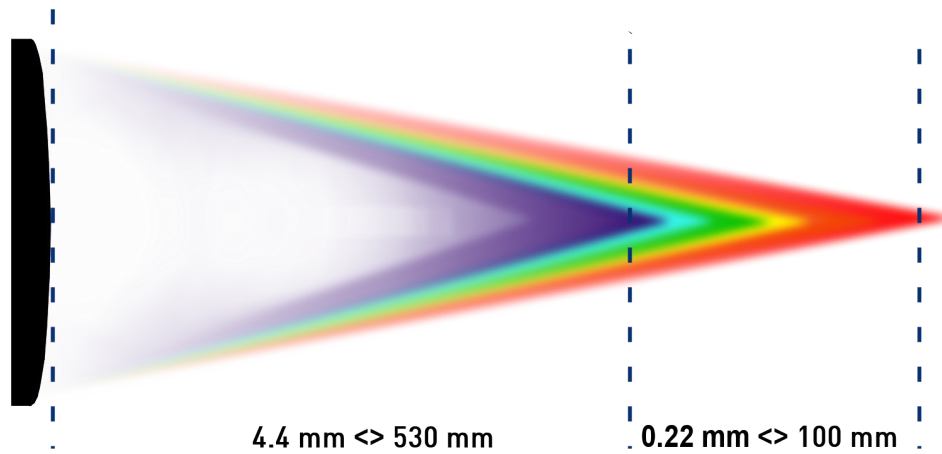
MC2

# THE PRODUCT LINE

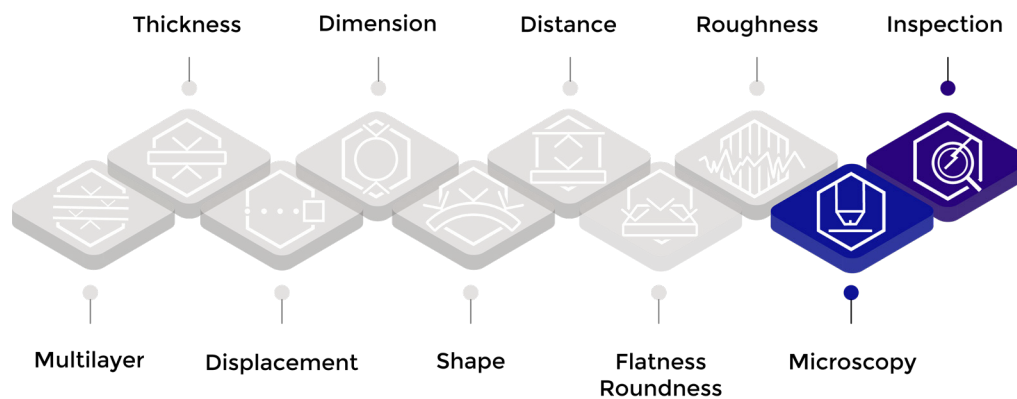


**Working  
Distance**

**DoF  
(Depth of Focus  
Depth of Field)**



**Perfect** for



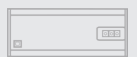
ChromaPoint  
Controllers



ChromaPoint  
Sensor Heads



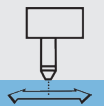
ChromaLine  
Controllers



ChromaLine  
Sensor Heads



ChromaVision  
Camera



Accessories



STIL

MC2

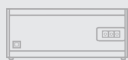
## ChromaPoint Controllers



## ChromaPoint Sensor Heads



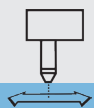
## ChromaLine Controllers



## ChromaLine Sensor Heads



## ChromaVision Camera



## Accessories



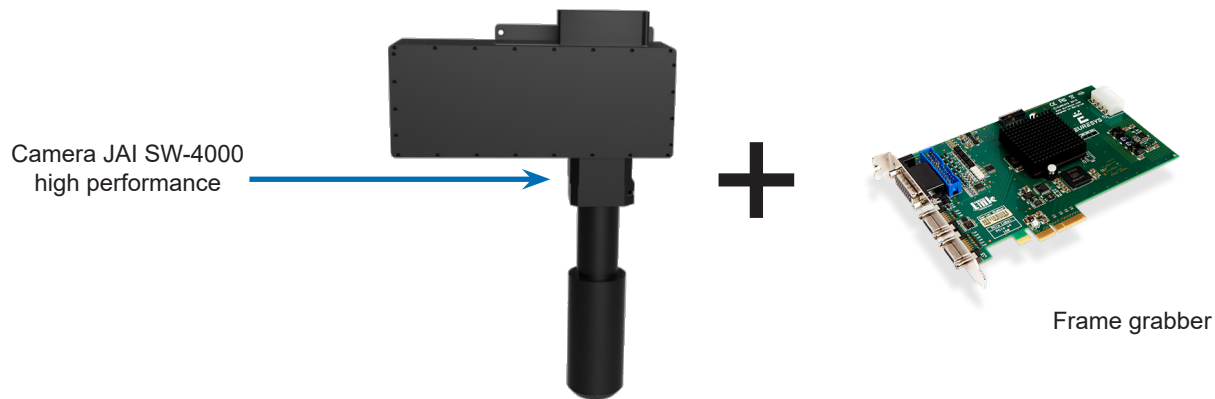
## Technical specifications

Controller		MC2
Technology		Chromatic Confocal line camera
Source		White LED in external box
Fiber bundle length		5 m
Temperature in use		0 to +65°C
Storage temperature		-30 to +70°C
Relative humidity		5 to 80% RH without condensation
Protection type		IP 20 (ChromaLight) IP50 (Body)
Line Detector	Camera	SW-4000M-PMCL
	Number of pixels	4096
	Number of used pixels	≈ 3100
	Pixel size	7.5 µm
	Line rate	Up to 199.5 kHz
	Control and data	Camera Link (x2)
	Power supply	5-24 VDC
	Power dissipation	5W
Chromalight (LED source)	Power Supply	100-240 VAC
	Maximum/Usual Consumption	100W / 60W
	Dimensions (mm)	235.5 x 184.2 x 255.5
	Weight	4 kg

Product		WireView	MicroView	DeepView	SuperView
Order Code		OPSTM708001	OPSTM704001	OPSTM706002	OPSTM709001
Line Length	mm	1.51	1.8	4.2	12.85
Depth of Field	mm	0.9	0.5	2.6	2.0
Working Distance	mm	7.8	10.1	19.5	11.3
Magnification		15.6	12.9	5.6	1.8
Numerical Aperture		0.75	0.5	0.37	0.33
Max. Sample Slope	°	± 46	± 30	± 20	± 17
Pixel Size on the Sample	µm	0.49	0.58	1.35	4.1
Lenght	mm	468	412.8	408.5	378
Diameter	mm	70	50	60	60
Weight	kg	5.8	5.2	5.85	5.6

## MC2 architecture

Combined camera and optical sensors adapted to the frame grabber of choice



Will suit the Image processing Softwares of your choice

Select a frame grabber
Coaxlink Quad CXP-12
Coaxlink Duo CPX-12
Coaxlink Octo
Coaxlink Quad G3 DF
Coaxlink Quad G3 LH
Coaxlink Quad 3D - LLE
Coaxlink Quad
Coaxlink Quad CXP - 3
Coaxlink Duo
Grablink Full
Grablink DualBase
Grablink Base
Grablink Value
Grablink Avenue
Grablink Express
Domino Melody
Domino Harmony



### Compatible powerful Image processing Softwares

**HALCON**  
a product of MVTec



LabVIEW™

**COGNEX**  
VisionPro  
pc-based vision



**AI STUDIO**  
KONICA MINOLTA

## Component selection

Brand	Model	Download	Supported frame grabber
Coaxlink Quad CXP-12	SW-4000M-PMCL	JAI_SW-4000-PMCL.ZIP	Grablink Duo, Grablink Full, Grablink Full XR

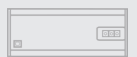
ChromaPoint  
Controllers



ChromaPoint  
Sensor Heads



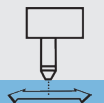
ChromaLine  
Controllers



ChromaLine  
Sensor Heads



ChromaVision  
Camera



Accessories



STIL

MC2

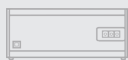
ChromaPoint  
Controllers



ChromaPoint  
Sensor Heads



ChromaLine  
Controllers



ChromaLine  
Sensor Heads



ChromaVision  
Camera

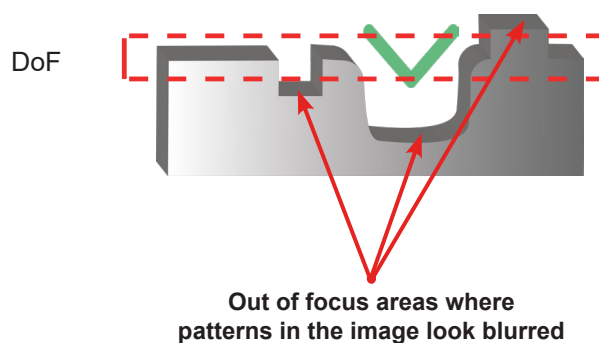


Accessories

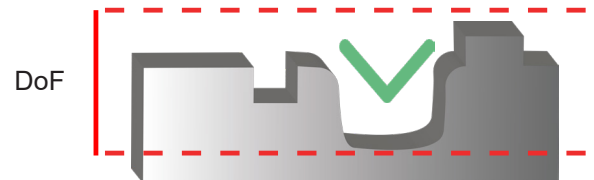


## Permanent focus

### Microscope



### MC2



Depth of Focus, also called Depth of Field or DoF, is defined as the distance (on Z-axis) where all points are well resolved so that image elements are distinguished, understandable & usable.

Any point within the surface and out of the the DoF appears blurred and out of the DoF appears blurred the DoF appears blurred.

MC2 offers 100x the DoF of a microscope for the same magnification maintaining same lateral (X-Y) resolution preventing any focus adjustment

## Example turning insert cutter

### MICROSCOPE

Magnification 50X

### MC2

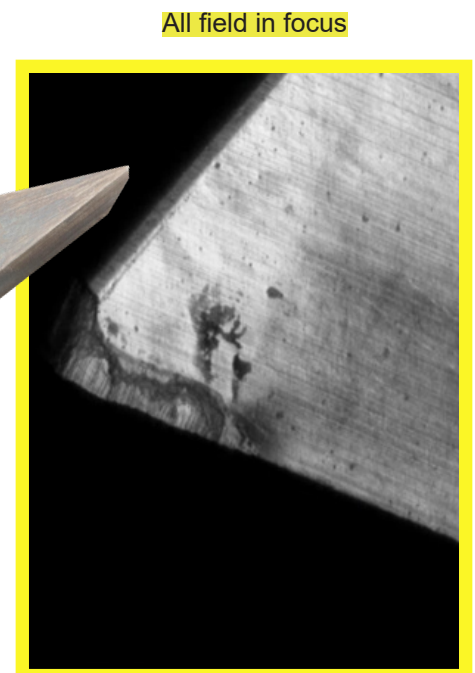
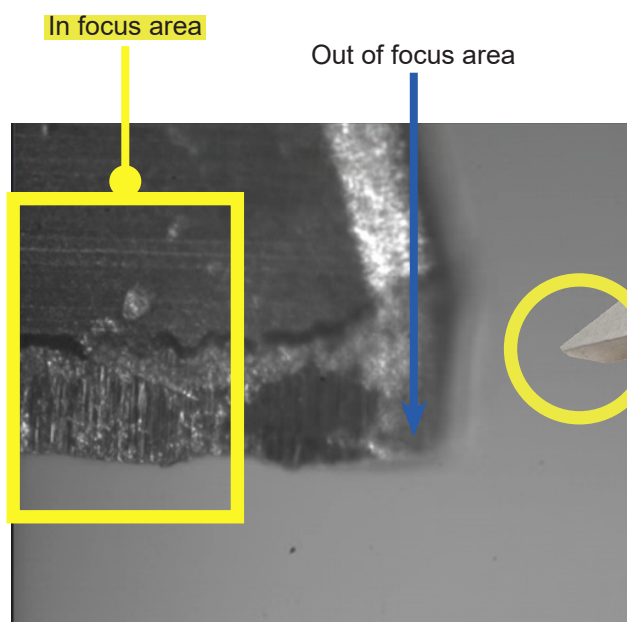


Image X-Y size (µm/mm) Resolution X-Y

Image X-Y size (µm/mm) Resolution X-Y

STIL

MC2



## Application examples



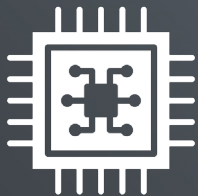
### Micro-mechanics and medical

- Screws inspection
- Pipe, tubes ... defect detection
- Implants defect detection
- Lab-on-chip : pattern measurements & defect detection

### Electrical Vehicles

Whatever the material : Si, SiC, III-V & II-VI, plastics, glass, ceramic, metallic ...

- Defect detections on patterned & Unpatterned wafers, front side, back side and wafer edges : scratches, cracks, chippings, burrs, layer mis-covering ...
- 2D Pattern dimension measurements for :
- Power & RF chips, MEMS, Microfluidics, integrated optics, solar cells ...
- Wafer level connections (Bumps, Pillars, TSV ...) & wire bonding ...



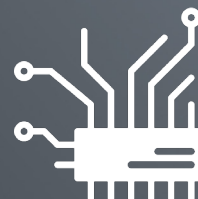
### Semiconductor

Whatever the material : Si, SiC, III-V & II-VI, plastics, glass, ceramic, metallic ...

- Defect detections on patterned & Unpatterned wafers, front side, back side and wafer edges : scratches, cracks, chippings, burrs, layer mis-covering ...
- 2D Pattern dimension measurements for :
  - Power & RF chips, MEMS, Microfluidics, integrated optics, solar cells ...
  - Wafer level connections (Bumps, Pillars, TSV ...) & wire bonding ...

### Consumer electronics

- Wire bonding : missing wire, cut wires, touching wires, welding points size ...
- Misplaced, or missing components on boards or in package
- Lines & vias : dimensions & defects
- Native corrosion
- Phone, tablets ... glass & glass edges inspection for defects & inclusions



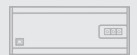
ChromaPoint  
Controllers



ChromaPoint  
Sensor Heads



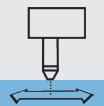
ChromaLine  
Controllers



ChromaLine  
Sensor Heads



ChromaVision  
Camera



Accessories



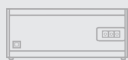
ChromaPoint  
Controllers



ChromaPoint  
Sensor Heads



ChromaLine  
Controllers



ChromaLine  
Sensor Heads



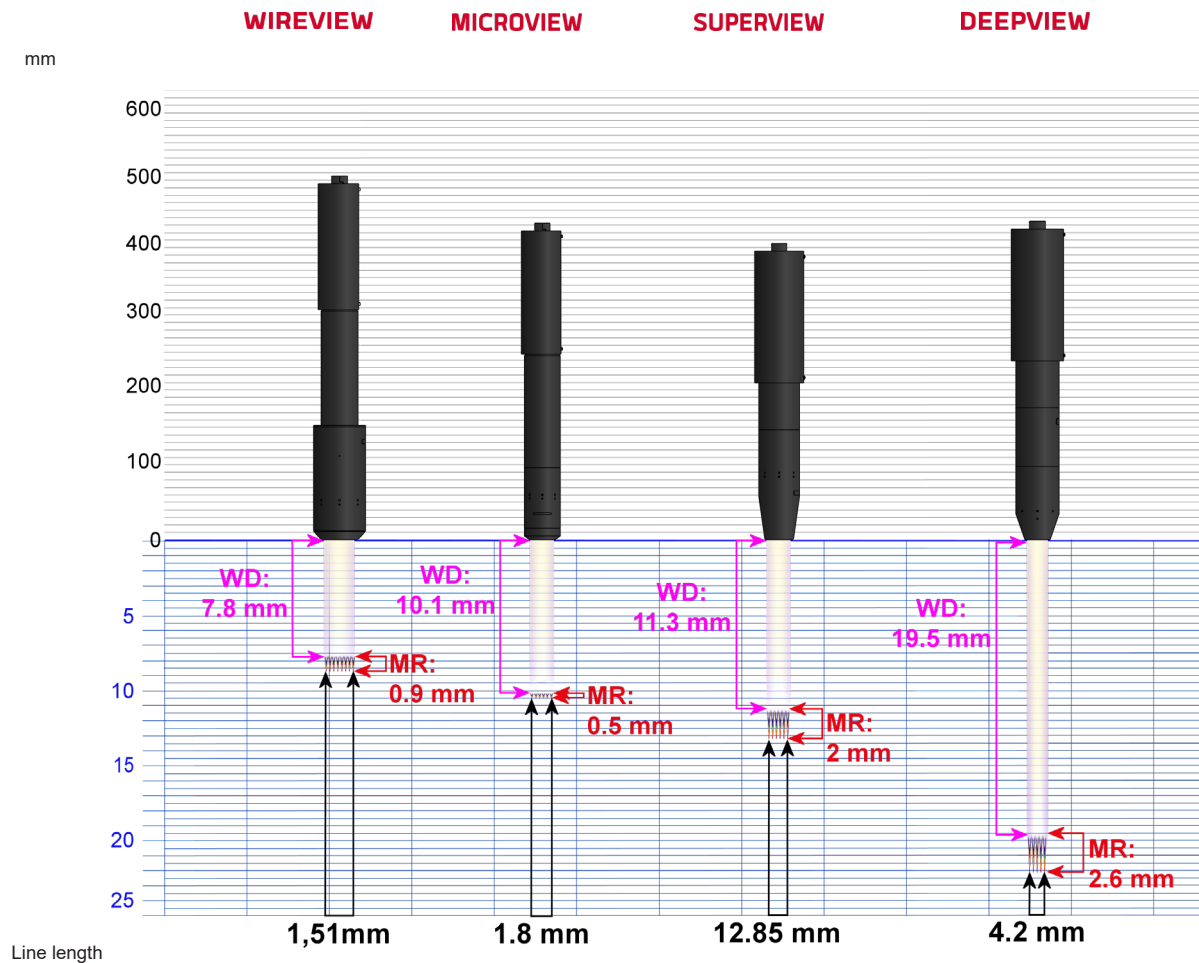
ChromaVision  
Camera






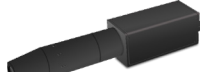
Accessories



## DOF and line length



## Associated sensor heads

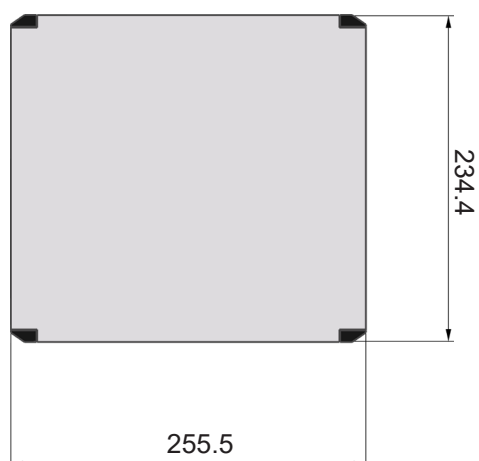
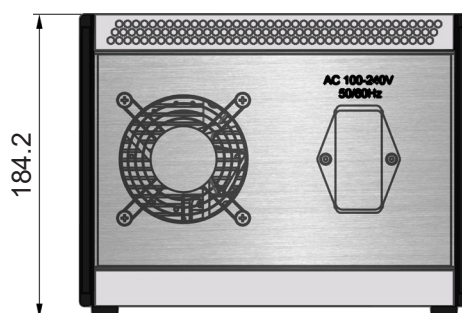
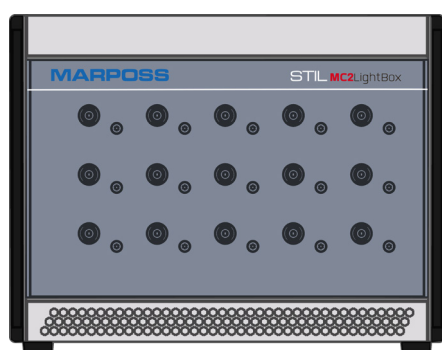
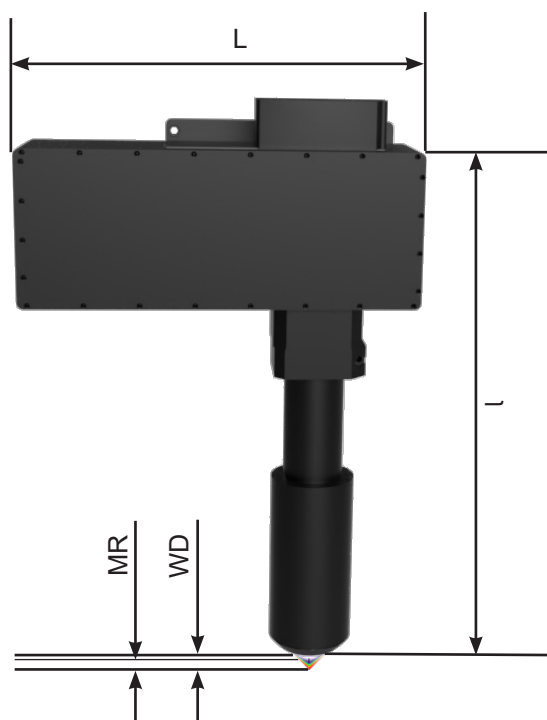
Model	Description
	MICROVIEW™ Chromatic Confocal Line Chromapoint - 1.79 mm Line Length with 3000 points - Sensor Head: DoF 0.5 mm - WD 10.1 mm - Camera-link Interface - lightbox not included, to be ordered separately
	DEEVIEW™ Chromatic Confocal Chromapoint- 4.2 mm Line Length with 3000 points - Sensor Head: DoF 2.6 mm - WD 19.5 mm - Cameralink Interface - lightbox not included, to be ordered separately
	WIREVIEW™ Chromatic Confocal Line Chromapoint - 1.51 mm Line Length with 3000 points - Sensor Head: DoF 0.9 mm - WD 7.8 mm - Cameralink Interface - lightbox not included, to be ordered separately
	SUPERVIEW™ Sensor Head - Diam.: 60mm - MR: 2mm - WD: 11.3mm - 12.85mm Line length with 180 points - Cameralink Interface - lightbox not included, to be ordered separately

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MC2

## Dimensions (mm)

MC2™



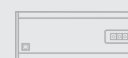
ChromaPoint  
Controllers



ChromaPoint  
Sensor Heads



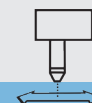
ChromaLine  
Controllers



ChromaLine  
Sensor Heads



ChromaVision  
Camera



Accessories




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**For a full list of address locations, please consult the Marposs official website**  
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