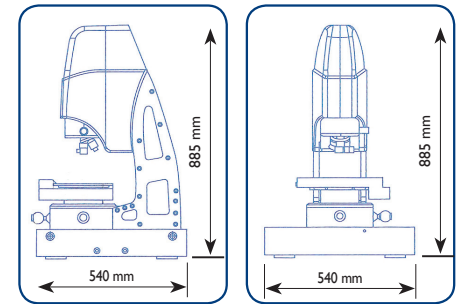


## CCI MP-L / MP specification sheet

System	CCI MP-L	CCI MP
Measurement type	3D non-contact	
Measurement mode	Coherence Correlation Interferometry (CCI)	
Z scanner	Ultra high precision closed loop piezoless scanner	
Objective mount	3 position turret	



Performance	CCI MP-L	CCI MP
Single scan range (Z)	500 micron as standard (closed loop)	2.2 mm as standard (closed loop)
Z-stitching range	Up to 100 mm (closed loop)	
Z-resolution (max)	3.0 nm	0.01 nm
Noise floor (Z) <sup>1</sup>	3 nm [30 Å]	<0.08 nm [0.8 Å]
Repeatability of surface RMS <sup>2</sup>	<0.4 nm [4.0 Å]	<0.1 nm [0.1 Å]
Number of measurement points	1024 × 1024	1024 × 1024
Step height repeatability <sup>3</sup>	<0.06%	<0.06%
Surface reflectivity	<0.3% - 100%	<0.3% - 100%

Software	CCI MP-L	CCI MP
Roughness	Yes	Yes
Step height analysis	Yes	Yes
Super smooth surface analysis	Optional	Yes
Thick film analysis (>1.5 microns)	No	Optional
Films and materials (>50 nm)	No	No
Stitching	Optional	Yes
Multi-site	Optional	Yes
Aspheric analysis	Optional	Optional
Asphero-diffractive analysis	Optional	Optional

Stages	CCI MP-L	CCI MP
Component weight (max)	10 Kg	
Manual Stage	25 mm × 25 mm	
Automated X-Y stage (medium)	125 mm × 75 mm	
Automated X-Y stage (large)	150 mm × 150 mm	
Automated X-Y stage (extra large)	225 mm × 157 mm	
Manual tip/tilt	4 degrees	

System dimensions	CCI MP-L	CCI MP
Full system dimensions (floor space)	540 mm wide × 540 mm deep × 885 mm high	
Temperature (storage)	10°C - 50°C	
Temperature (operating)	10°C - 30°C	
Temperature gradient	< 1°C/hour ( best performance)	
Humidity	< 70% non-condensing	
Internal anti-vibration	Advanced pneumatic anti vibration mounts supplied as standard	
External active anti-vibration	Optional	Optional

<sup>1</sup> As demonstrated by multiple measurements on SiC flat

<sup>2</sup> Standard deviation of 20 Sq (RMS) measurements on SiC flat

<sup>3</sup> Standard deviation of 20 measurements on a 5 µm step height standard

Other configurations are available upon request – please contact your local Taylor Hobson representative. **Specifications subject to change without prior notice.**

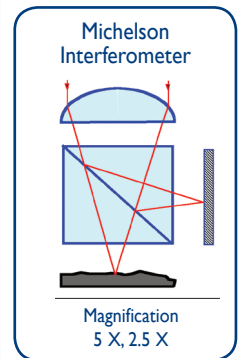
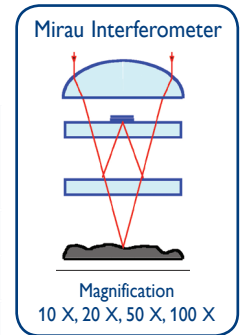
## CCI objective lens specifications

A range of objective lenses are available, the choice of lens will depend on the application. The key parameters are:

- **Field of view** determines the measurement area
- **Optical resolution** defines the smallest features that can be distinguished
- **Slope** is an important consideration for curved and rough samples, a rougher surface will contain steeper slopes.

All objective lenses are supplied with protective storage.

<b>Lens</b>	The names of the lens are traditionally given as a magnification. This can be misleading as the interferometer design will dictate the system performance including features such as field of view and maximum angle. A 5x lens on one system may have a similar field of view as a 10x lens on another.
<b>Field of view</b>	Area of the sample measured by a given objective
<b>Optical resolution</b>	The ability to distinguish adjacent features
<b>Pixel size</b>	Sample resolution, pixel pitch (spatial sampling interval)
<b>Slope</b>	Maximum specular slope is restricted by pixel size and numerical aperture. The fact that maximum measurable slope can be dictated by pixel size means that it needs to be considered when comparing specifications.  Steeper slopes can be measured on non-specular surfaces due to scattering of the light. The actual slope maximum and amount of missing data depends on the type of surface finish. Because of the complex nature of the relationship between surface finish and data quality it is best to test the sample experimentally.
<b>Working distance</b>	Distance between sample and lens
<b>NA</b>	Numerical aperture, expresses the angular aperture of the lens
<b>Design</b>	Type of interferometer used, Michelson or Mirau



### CCI MP-L

Lens	Field of view (mm)	Optical resolution (um)	Pixel size (um)	Slope (max*) (deg)	Working distance (mm)	NA	Design
2.5x	6.92 x 6.92	5.4	6.8	2.2	10.3	0.075	Michelson
5x	3.46 x 3.46	3.1	3.4	4.3	9.3	0.13	Michelson
10x	1.73 x 1.73	1.3	1.7	8.5	7.4	0.3	Mirau
20x	0.865 x 0.865	1.0	0.85	16.1	4.7	0.4	Mirau
50x	0.346 x 0.346	0.4 - 0.6	0.34	27.8	3.4	0.55	Mirau

### CCI MP

Lens	Field of view (mm)	Optical resolution (um)	Pixel size (um)	Slope (max*) (deg)	Working distance (mm)	NA	Design
2.5x	6.92 x 6.92	5.4	6.8	2.2	10.3	0.075	Michelson
2.5x LWD	6.92 x 6.92	5.4	6.8	2.2	31	0.075	Michelson
5x	3.46 x 3.46	3.1	3.4	4.3	9.3	0.13	Michelson
5x LWD	3.46 x 3.46	3.1	3.4	4.3	26	0.13	Michelson
10x	1.73 x 1.73	1.3	1.7	8.5	7.4	0.3	Mirau
20x	0.865 x 0.865	1.0	0.85	16.1	4.7	0.4	Mirau
50x	0.346 x 0.346	0.4 - 0.6	0.34	27.8	3.4	0.55	Mirau
100x	0.173 x 0.173	0.3 - 0.5	0.17	37.4	2	0.7	Mirau
111x	0.16 x 0.16	0.3 - 0.5	0.15	45.2	0.7	0.8	Mirau

\* Data shown is for specular surfaces. Rough surfaces with much steeper slopes (up to 89 degrees) can be measured but the nature of the roughness will affect the maximum angle and the data quality.

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Other objective lenses are available upon request – please contact your local Taylor Hobson representative.  
**Specifications subject to change without prior notice.**