



Sensofar S Onix

慶璇實業有限公司

SENSOFAR

**Vision
Industries**
慶璇實業有限公司

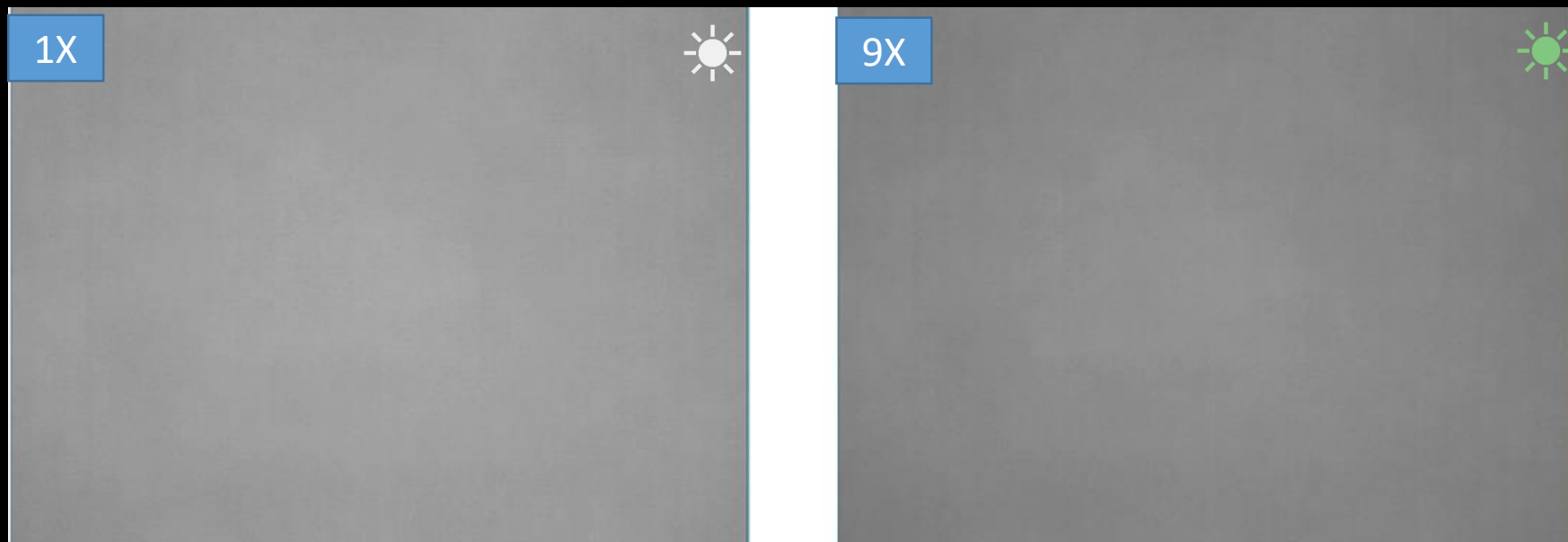
> S Onix 前所未有的快...



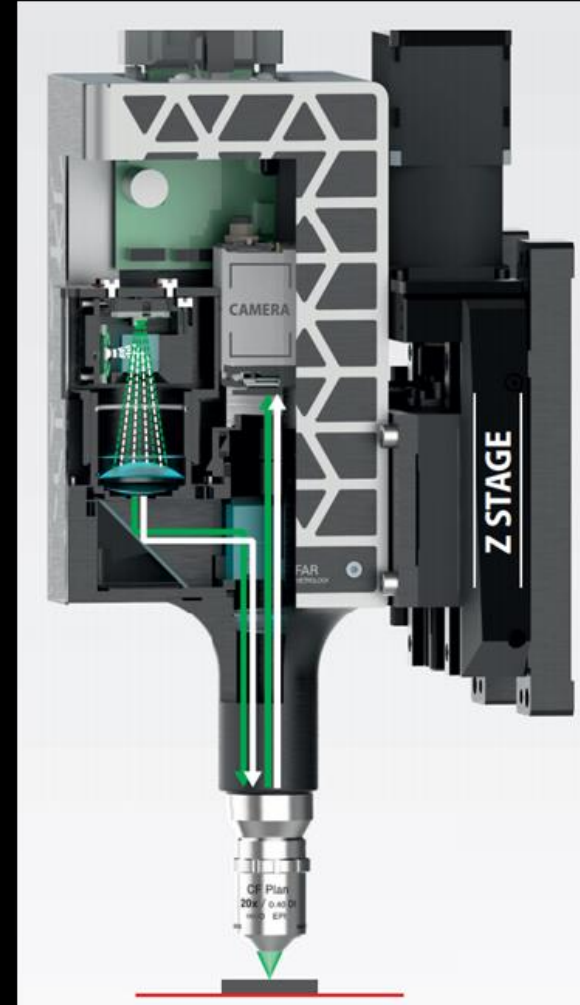
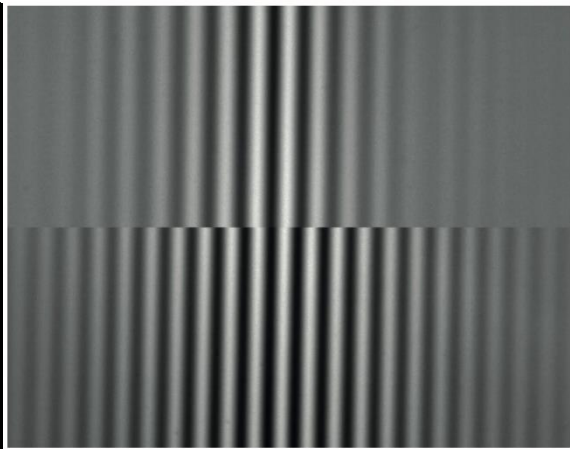
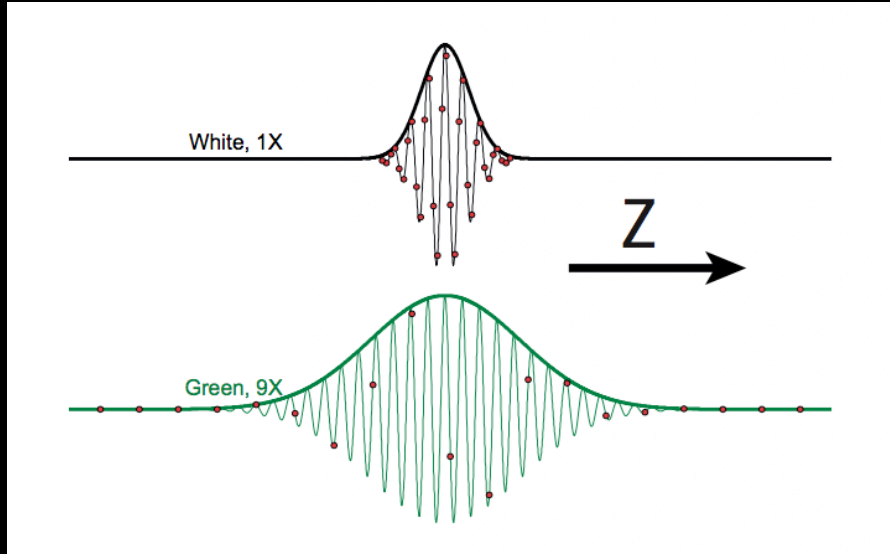
> S onix 提供了高負荷工業測量所需的速度；憑藉其高速相機及優化的光路、電子、機械設計，使它提高了9倍的測量速度。

Speed Comparison

VGA resolution, 350 fps, 500 μ m scan



> 特殊光學設計—使用白光光源為1X；
高速模式改成綠光增加干涉條紋頻寬，
成就9X速度干涉測量



> S Onix 與 S Neox 之測量比較

Speed Comparison
VGA resolution, 350
fps, 500 μm scan

	S onix	S neox
SPEED	9X	5X
SCANNING SPEED	225 $\mu\text{m}/\text{s}$	62.5 $\mu\text{m}/\text{s}$
SCANNING TIME	2.2 s	8 s
SCANNING PROCESS	1 s	3.5 s
MEASUREMENT TIME	< 3 s	< 10 s

> S Onix可減少對振動對干涉測量的干擾

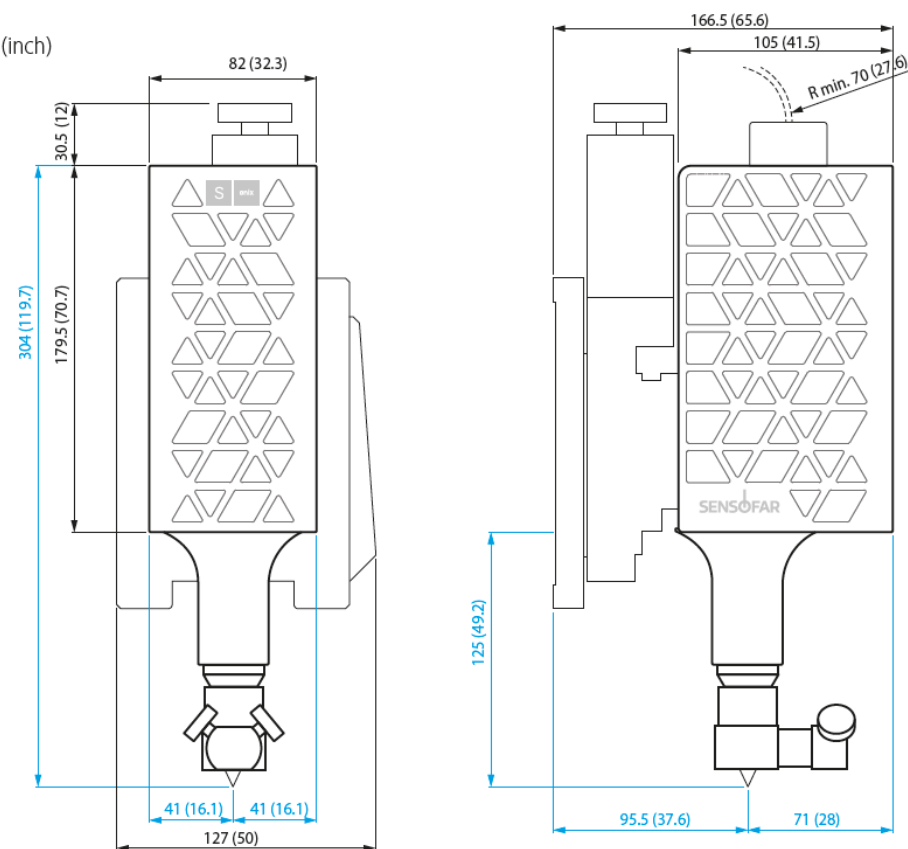


> 緊湊型設計讓掃描頭只有82 mm寬度
，連Z軸基座算入也只有寬127 mm、長
166.5 mm，重量只有3.6 kg



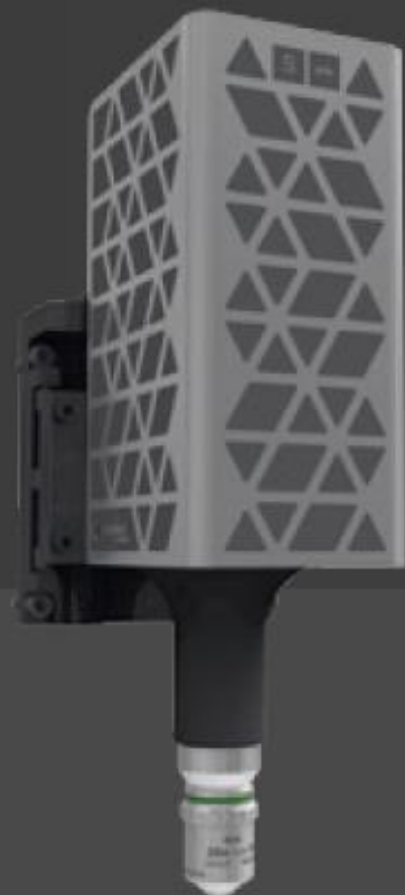
Dimensions mm (inch)

Weight 3.6 kg (7.9 lbs)



Head dimensions
Working distances

S Onix功能規格



Technologies



FOV (single shot)

Up to 5.0 x 3.8 mm¹

Speed acq.

1 s²

Optical Resolution

Down to 190 nm³

Measurement noise

Down to 1 nm⁴

Weight

3.6 kg

Cable length

5, 15 or 20 m

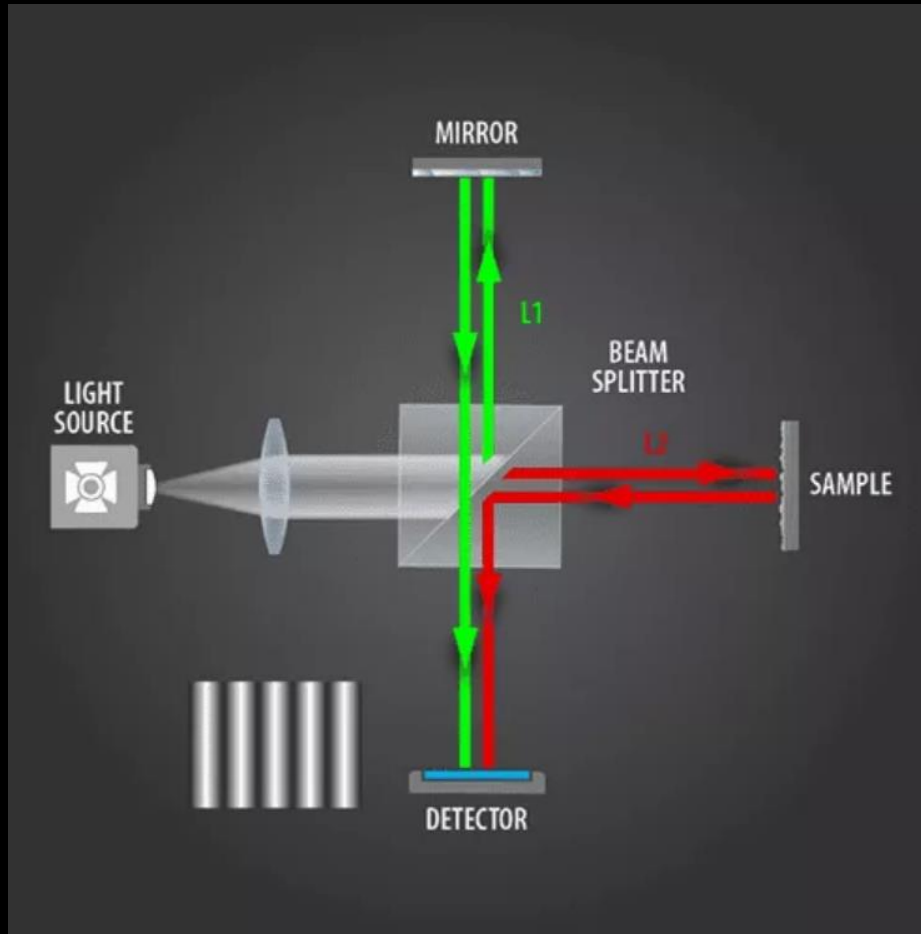
Computer

External

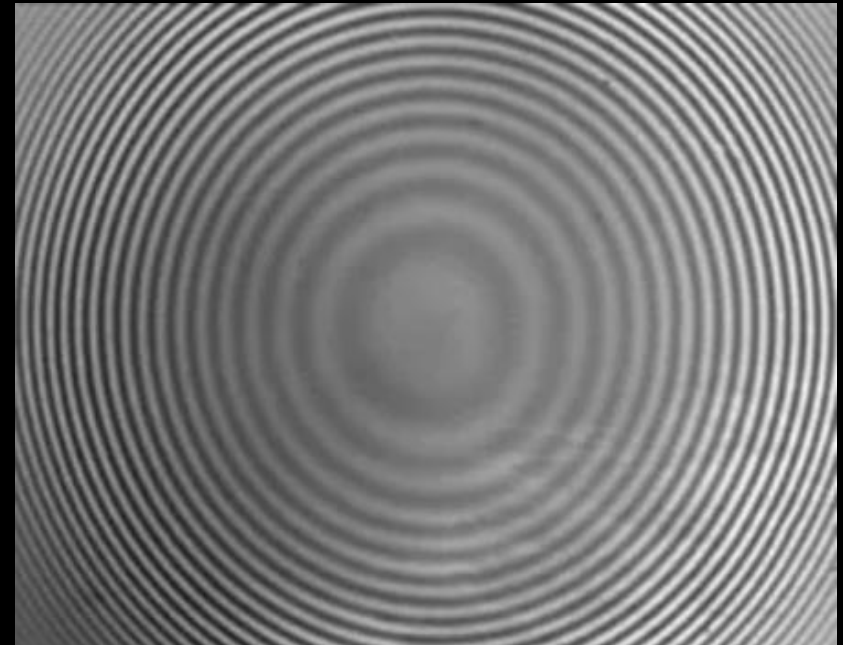
Range of magnifications

5XTI – 100XDI

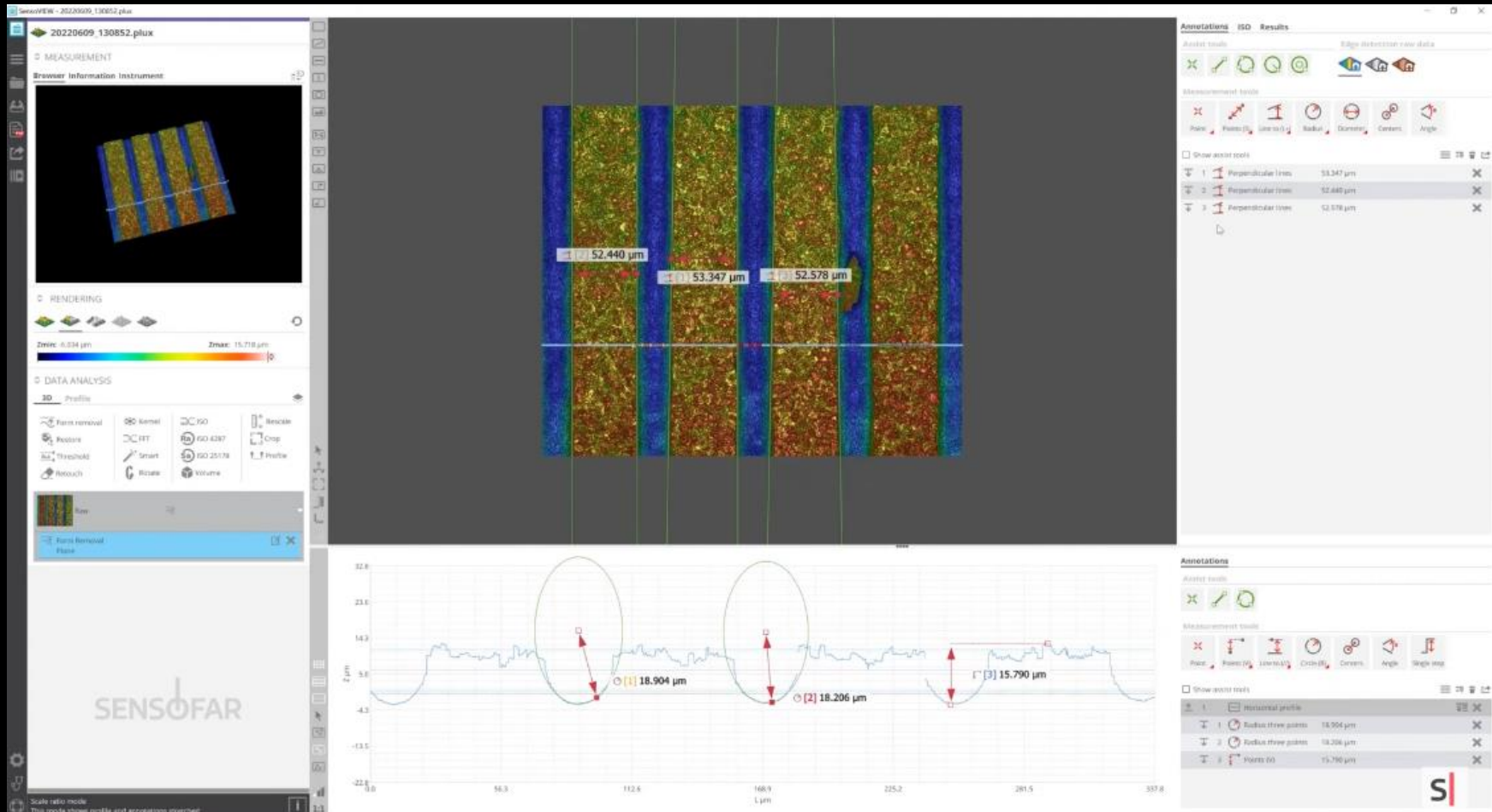
> 干涉光學原理



干涉技術的光學原理是：將光分成兩個方向不同的兩道光束，然後再將其合併，從而產生干涉效應；干涉物鏡於對焦準確的工作距離內，可觀察到干涉條紋。

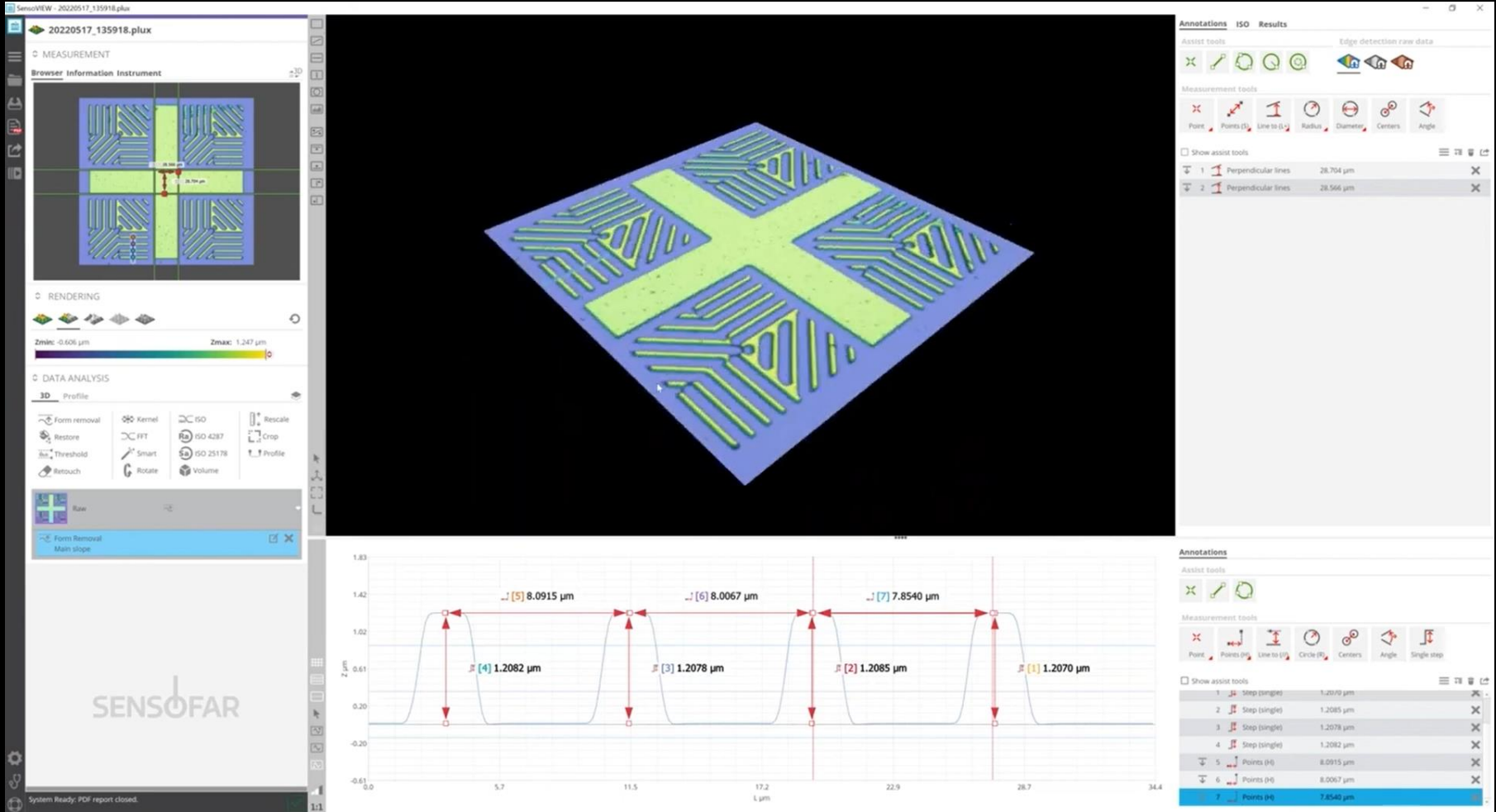


> 相干掃描干涉測量[Coherence Scanning Interferometry (CSI)] 使用白光干涉掃描平滑或粗糙的表面，在不同倍率的干涉物鏡之下，皆能夠達到1 nm的高度分辨率。



Ref.: <https://www.youtube.com/watch?v=v9vC5emcrks&t=1s>

> 擴展相移干涉[Extended Phase Shifting Interferometry (ePSI)]配合Z軸陶瓷電壓裝置可針對光滑表面在數百微米的高度範圍內實現0.1 nm的測量噪點



Ref: https://www.youtube.com/watch?v=NPHKPETP_2M

> 相移干涉測量[Phase Shift Interferometry (PSI)]配合Z軸陶瓷電壓裝置和特定波長光源，對於非常光滑和連續的表面能夠以亞埃($1\text{\AA}=0.1\text{ nm}$)的高度分辨率進行測量

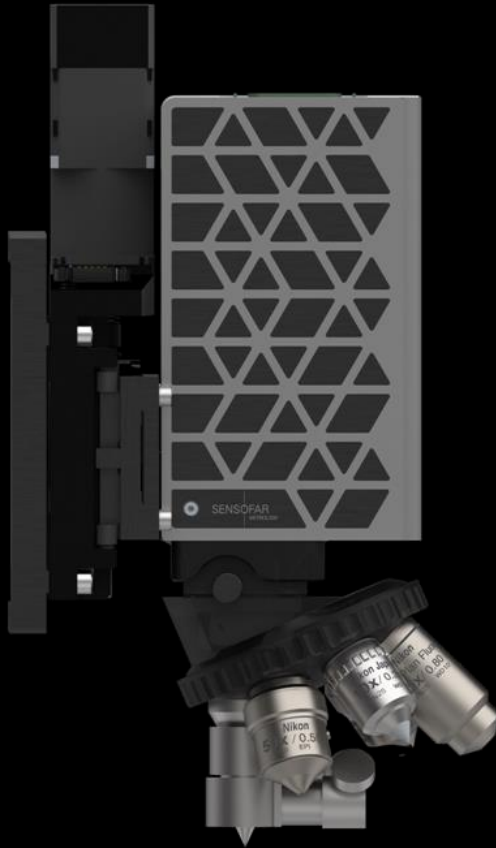


The screenshot displays the Sensofar software interface. The central area shows a 3D surface scan of a diamond-shaped object. The left sidebar contains several panels: 'MEASUREMENT' with 'Browser Information Instrument', 'RENDERING' with a color scale from -31.474 nm to 12.955 nm, and 'DATA ANALYSIS' with various processing tools like 'Form removal', 'Kernel', 'ISO', 'Rescale', etc. The bottom of the sidebar shows 'ISO Filter: 25178' and 'Roughness surface (S-L): 0.25 mm L-Filter cut-off'. The right side of the interface features a 'Results' table with various ISO 25178 parameters.

Annotations		ISO Results	
ISO 25178 / Functional		ISO 25178 / Funct. Volume	
Sk	2.2720 mm	Vmc (10%-80%)	0.7985 $\mu\text{m}^3/\text{mm}^2$
Smc (10%)	1.2693 mm	Vmp (10%)	0.1249 $\mu\text{m}^3/\text{mm}^2$
Smr (Mean Plane)	47.2233 %	Vv (10%)	1.3550 $\mu\text{m}^3/\text{mm}^2$
Smr1	12.1809 %	Vvc (10%-80%)	1.2127 $\mu\text{m}^3/\text{mm}^2$
Smr2	90.6610 %	Vvv (90%)	0.1462 $\mu\text{m}^3/\text{mm}^2$
Spk	2.2658 mm		
Srk	1.8650 mm		
Srp (2.5%-50%)	2.8879 mm		
ISO 25178 / Height		ISO 25178 / Hybrid	
Sa	0.8558 mm	Sdq	0.0005
Sku	26.0791 mm	Sdr	8.631e-6 %
Smean	-0.0881 mm	Sratio	1.0000
Sq	12.043 mm		
Sr	1.3630 mm		
Ssk	0.3308		
Sv	31.385 mm		
Sz	44.428 mm		
ISO 25178 / Spatial			
Saf	39.025 μm		
Sdl	118.2000 °		
Sfr	0.4335		

Ref.: https://www.youtube.com/watch?v=ghna_PJx0Zs

>S Onix若選配手動6孔鼻輪，可安裝Nikon
5X TI、10X DI、20X DI、50X DI、100X DI



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