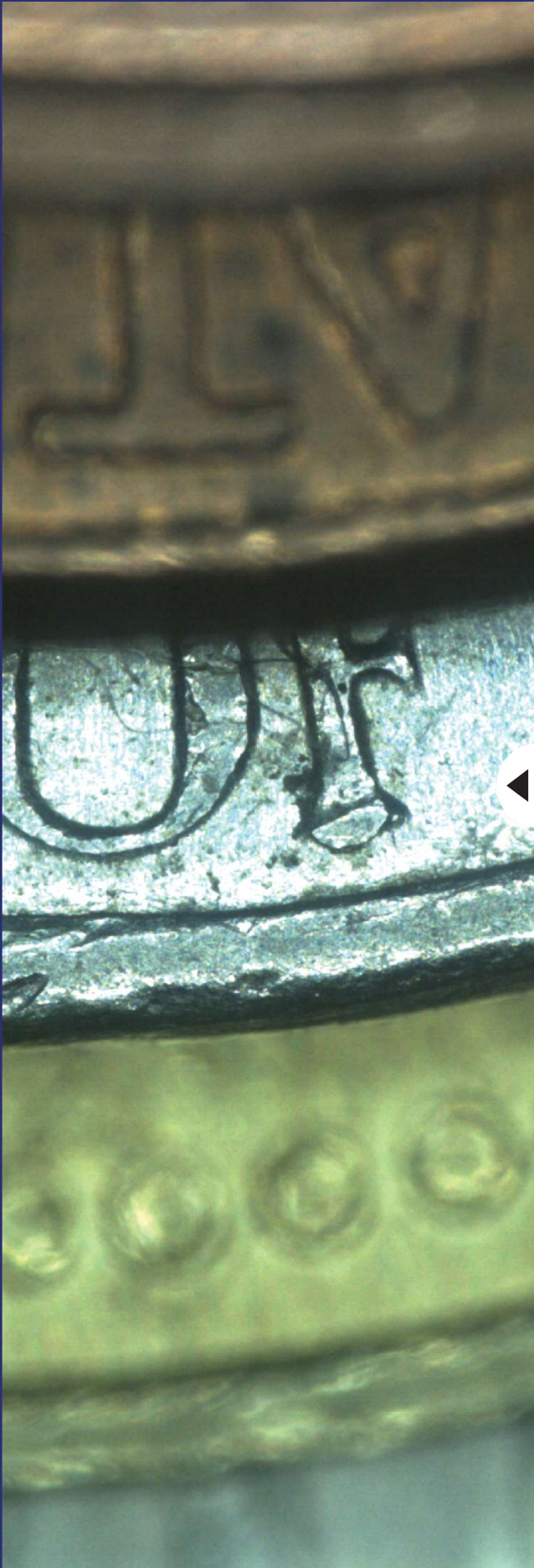


# Wise Topo

Technology by MALS™

The World's First Real-time

All-in-Focus Optical Module



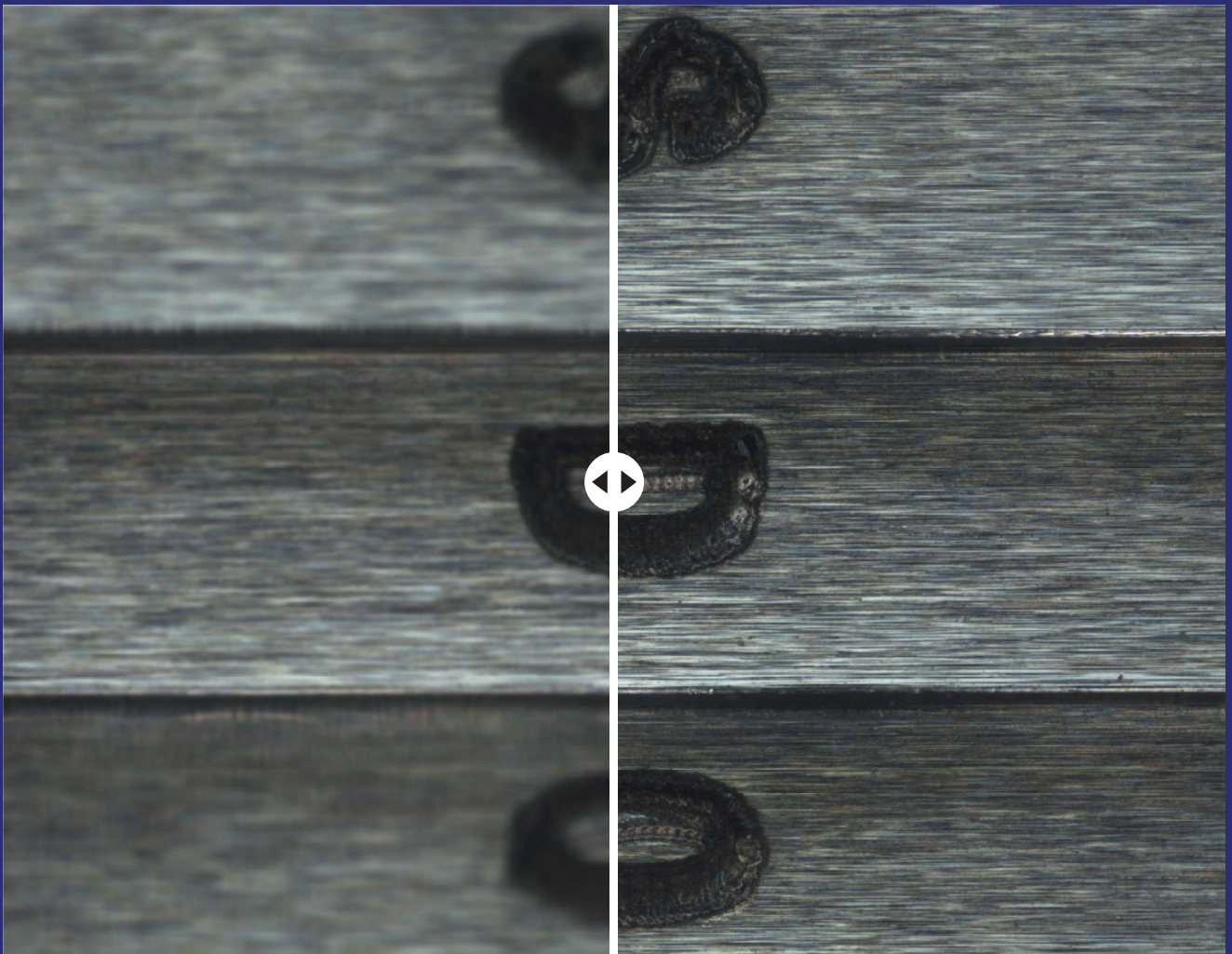
Imaging with Conventional  
Microscope



Imaging with Microscope  
+  
WiseTopo



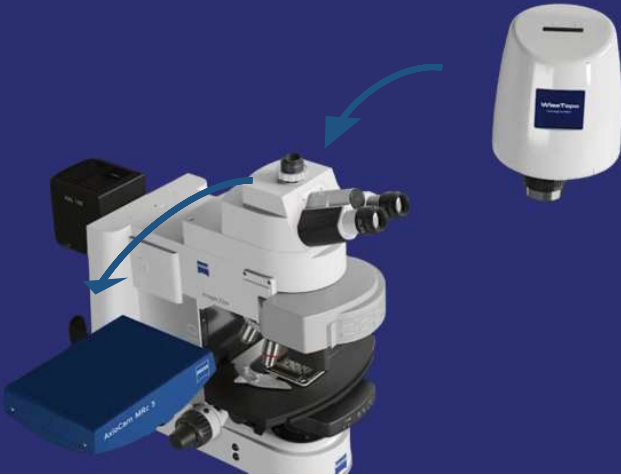
# THE MOMENT INVISIBLE BECOMES **VISIBLE**



Imaging with Conventional  
Microscope

Imaging with Microscope  
+  
**WiseTopo**

# Our Wise Way to See the World in Focus



## Replace

WiseTopo 는 간단한 Plug-in 설치를 통해 기존의 2D 현미경을 All-in-Focus 현미경으로 진화시켜줍니다

## Install

WiseTopo에 탑재된 소프트웨어는 데이터 취득, 심층분석, 다양한 데이터 시각화 기능을 제공합니다



## View

WiseTopo 로 취득한 실시간 All-in-Focus 이미지 대상체를 직관적으로 이해하도록 돕고 분석에 깊이를 더합니다

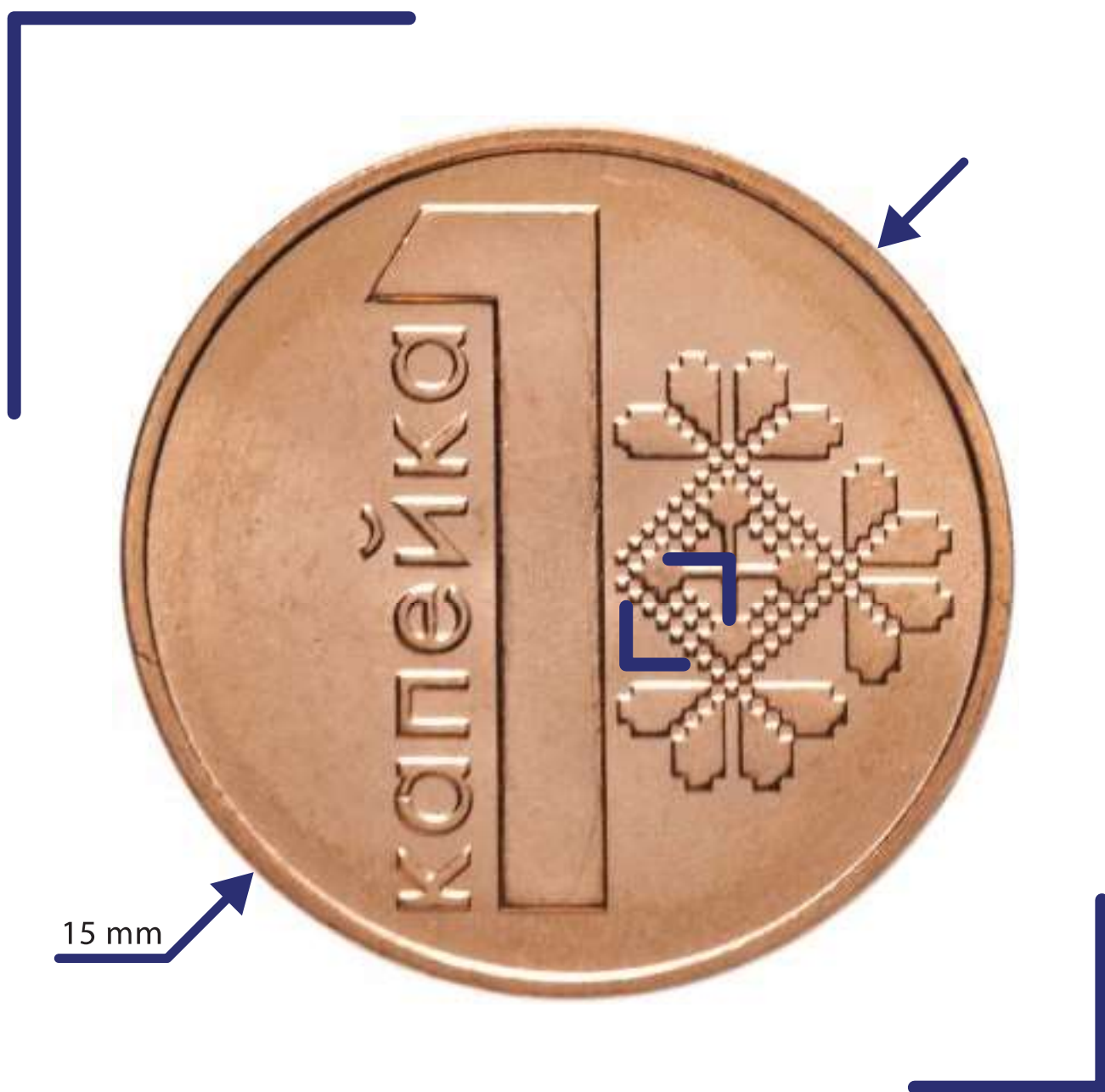


**WiseTopo**는 MALS™ 기술을 사용하여 실시간 All-in-Focus 검사나 데이터 처리가 가능합니다. 기존 사용하는 현미경에 새롭고 세계유일의 기능을 구현하게 합니다.



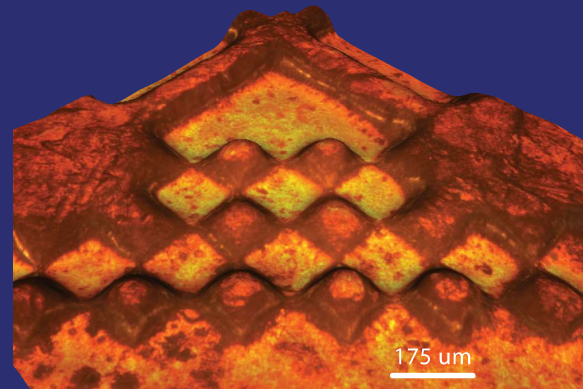
WiseTopo

# Easily Reveal Details in the Region of Interest



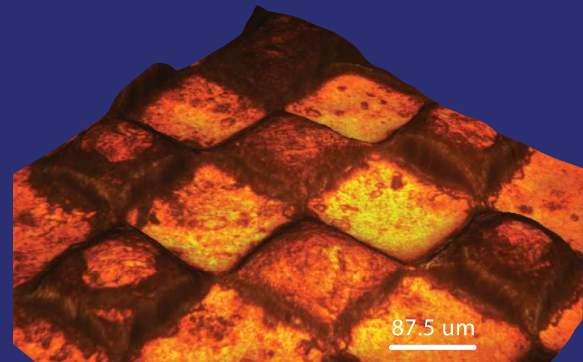
## 5x optical magnification

샘플의 ROI를 설정하여 세부적인 부분을  
검사하고, 실시간 All-in-Focus/3D  
이미지로 샘플을 분석하세요



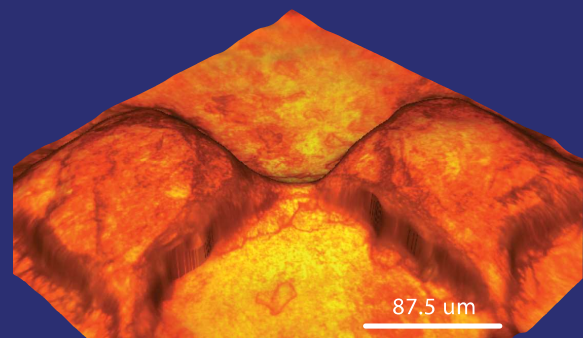
## 10x optical magnification

높은 배율에서 더 면밀한 검사가  
가능합니다



## 20x optical magnification

고배율 검사로 정확도를 높일 수 있습니다







# Compatible Conventional

One Fits to







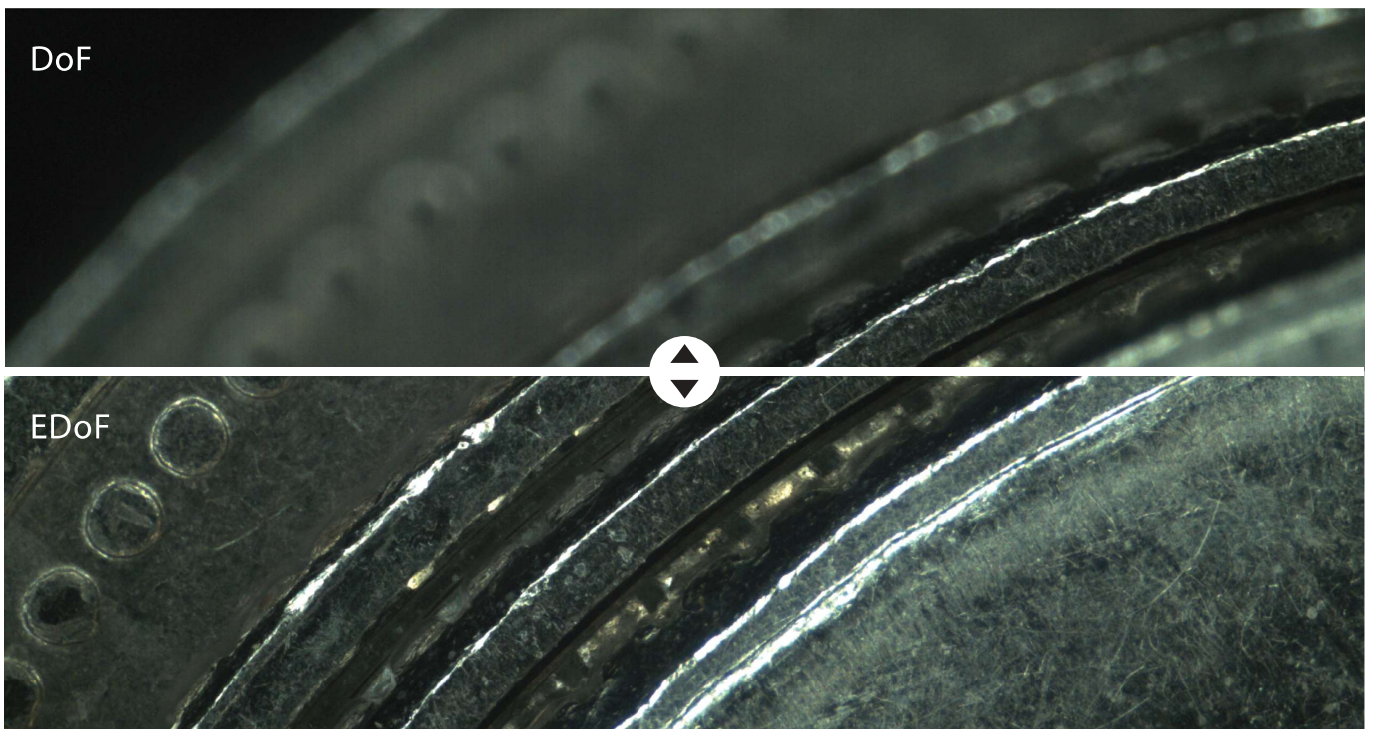
# Compatible with Microscopes

of Any Type



# Perfect Partner to Solve the Unsolved

Extended Depth of Field with no Mechanical Adjustment



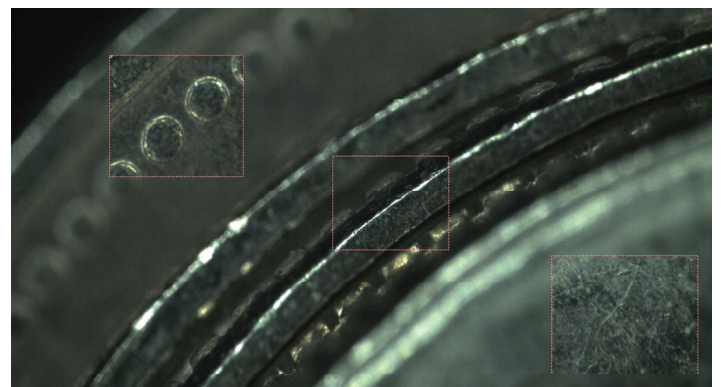
초고속 가변 렌즈인 MALS™ 기반 Extended Depth of Field (EDoF)의 특징은:

기존의 대물렌즈 심도의 40x 까지 확장 가능하며 정확도를 높이고 더 넓은 범위에서 자유롭게 포커스를 조정 가능합니다.

Multi-ROI Imaging with Individual AF/ EDoF / 3D

WiseTopo의 Multi-ROI는

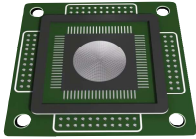
- AutoFocus (지정, 실시간)
- EDoF (범위, 정확도, 품질 향상)
- 직관적 3D Data 획득



# Driven by MALS™ Technology

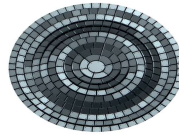
## MALS™

반도체 Wafer를 이용해 제작된  
Reflective type의 렌즈



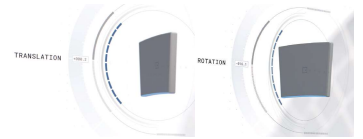
## Micro-mirror Array

수천개 100um 사이즈의 Micromirror  
Array로 구성



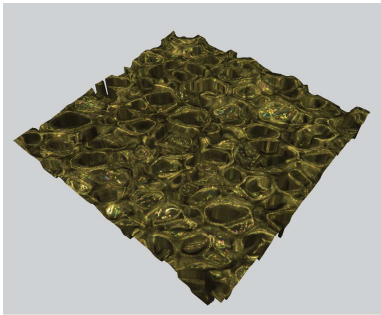
## Micro-mirror

총 3축으로 미세제어  
(Actuating) 가능



더 많은 정보를 원하시면 [www.sdoptics.com](http://www.sdoptics.com) 를 방문해 확인할 수 있습니다.

## Intuitive 3D Image Display



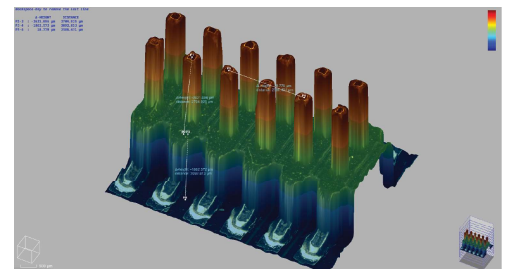
WiseTopo를 통한 데이터 취득과 처리는 그 속도가 매우  
빨라 실시간 3D 시각화가 가능합니다.

일반 PC 스크린뿐 아니라 AR/VR 글라스에서도 시각화가  
가능하고, AR/VR을 통해 실제처럼 느끼고 관찰할 수  
있습니다.

3D representation of the surface roughness

## 2D/3D Data Acquisition

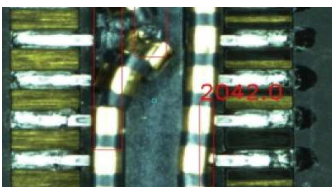
WiseTopo 소프트웨어는 정교한 분석을 위한 다양한  
편리 기능을 제공합니다.



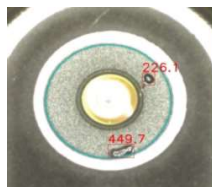
Results of the 3D measurements on  
3D microscopic structure in real time

## Failure Analysis\*

\*Customization needed. Develop upon request



Damage on Connector



Chipping on Barrel

WiseTopo 소프트웨어는 불량 보고를 위한 다양한  
솔루션을 제공하고, 적용 예로는:

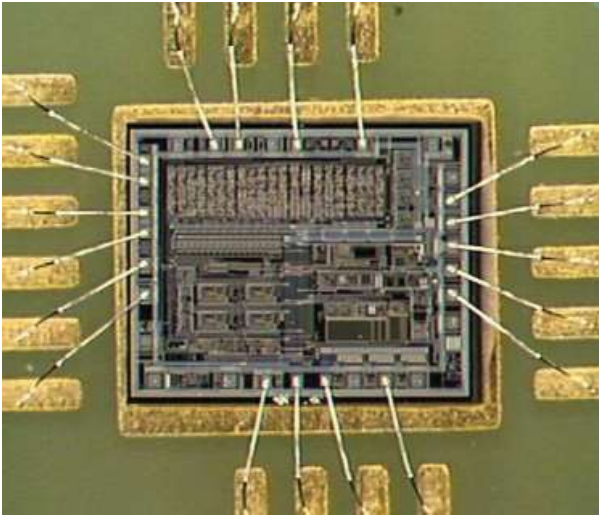
- 커넥터 불량 확인
- 렌즈 베럴의 Chipping 확인
- 와이어 검사 등이 있습니다.

# WiseTopo at Line

WiseTopo는 속도가 빠르고 검사 정확도가 높아 최신식 실험실에서의 심도 높은 분석뿐만 아니라 제조 공정 라인에서의 품질 검사 부문에서 활용도가 높습니다.

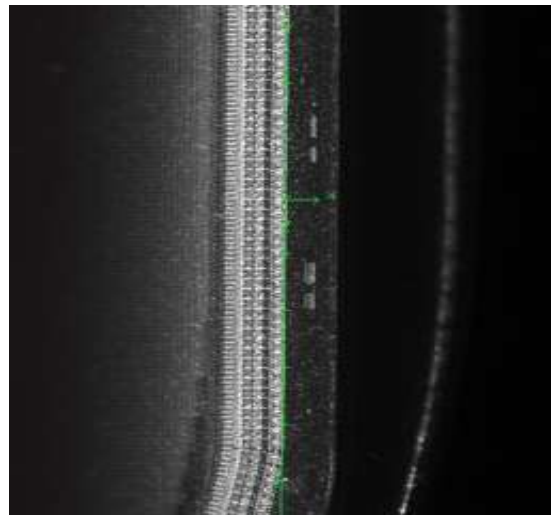
WiseTopo의 기능은 다양한 산업에 적용이 가능하고, 작업 생산성을 높이는 데 기여합니다.

## Inspection



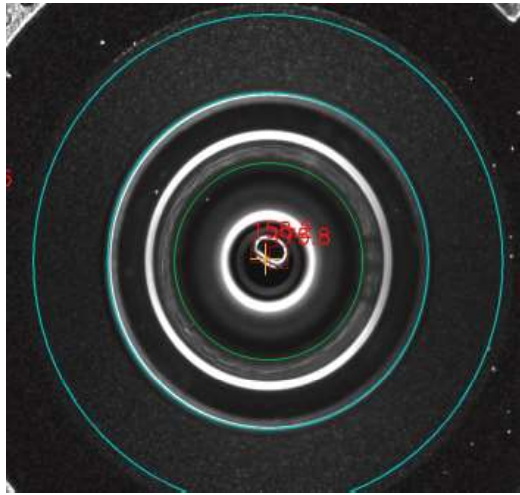
Wire - bonding Inspection

Display Panel Inspection





## Major Process in Production



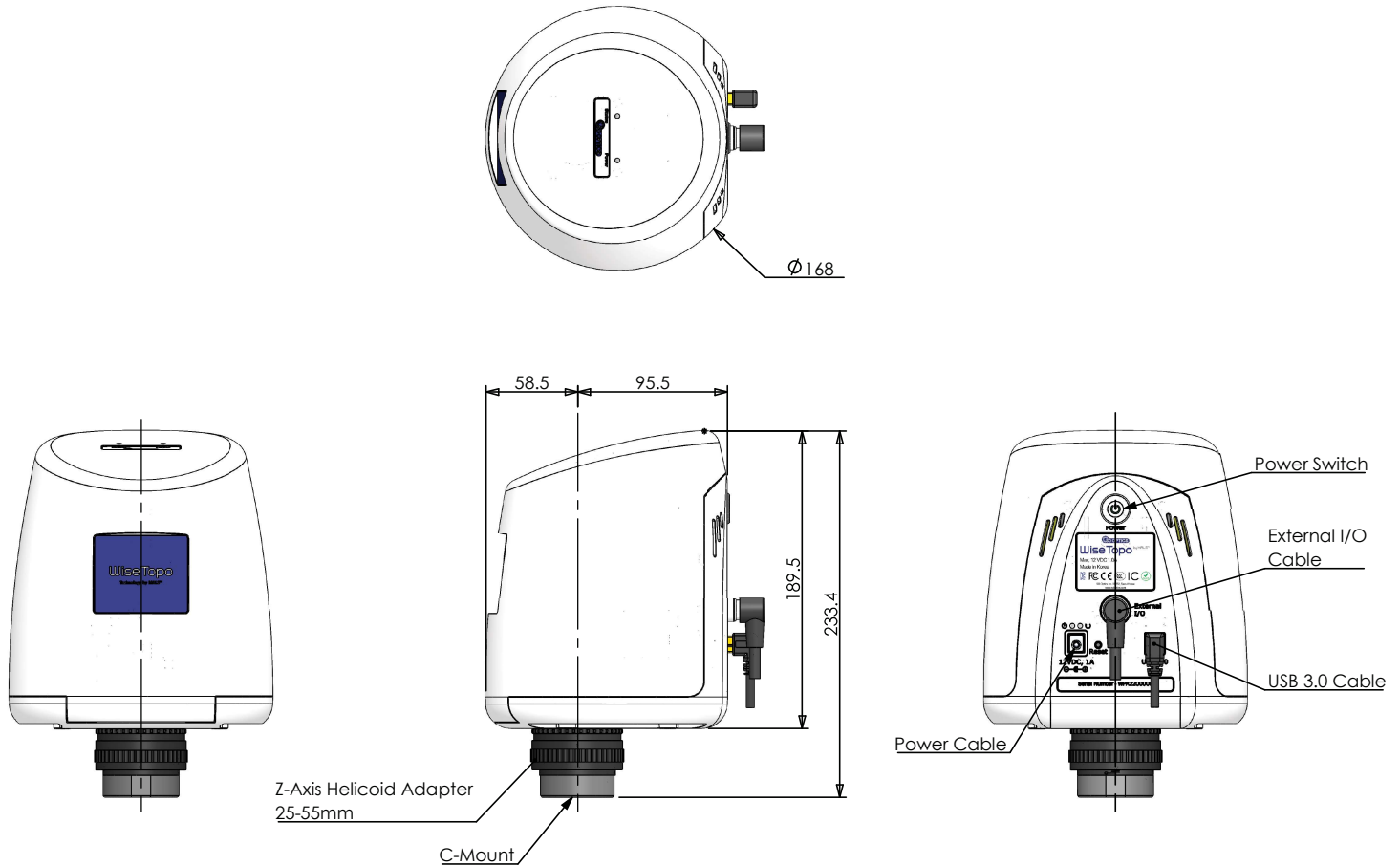
Camera Module Production

## Alignment

Multi-chip Packaging



# Specification



## Mechanical Interface Parameters

Model	WiseTopo
Dimension [mm]	$\varnothing 168 \times 238$
Weight [kg]	< 3
Mount	C-Mount

## Image Sensor Parameters

Sensor Size	2/3" (8.41 mm x 7.06 mm)
Resolution [px]	2448 x 2049 (5 MP)
Pixel Size [um]	3.45

## Magnification-dependent Imaging Parameters\*

Objective Magnification	5x	10x	20x	40x
Objective NA <sup>1</sup>	0.13	0.25	0.5	0.65
Field of View [mm]	1.68 x 1.40	0.84 x 0.70	0.42 x 0.35	0.21 x 0.18
Depth of Field <sup>2</sup> [um]	32.5	8.8	2.2	1.3
Extended Depth of Field <sup>3</sup> [um]	614.8	153.7	38.4	9.6

<sup>1</sup>Objective NA: Typical sample values at each magnification to calculate Depth of Field.

<sup>2</sup>Depth of Field: Convert from NA values.

<sup>3</sup>Extended Depth of Field: Design Value.

\*Note that parameters could be different depending on microscope system configurations.

Resolution differs relative to the objective parameter.

## Electrical Interface Parameters

Mains Voltage	12V DC	PC Requirements	CPU: > Intel Core I5 RAM: > 16 GB Disk Storage: >1GB Port: USB 3.0 Windows 10 64-bit
Power Consumption	MAX 1A (<12W)		
External I/O Port	Isolated: Trigger1, Trigger2, Scenario End Non-Isolated: Strobe Out		
Data Interface	USB 3.0 (USB 3.2 Gen 1x1)		
Operation Temperature	15°C ~ 30°C		
Operation Humidity	RH ≤ 90% non-condensing		
Conformity	CE FCC IC CCC VCCI RoHS		

Subject to change in design and scope of delivery and as a result of ongoing technical development.  
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[www.sdoptics.com](http://www.sdoptics.com)

[www.wisetopo.com](http://www.wisetopo.com)



Website



Youtube 