



NFA Partnership

# Automatic Tablet & Capsule Inspection Machine

SELMA series

VISION INSPECTION SYSTEM



**NFA Co., Ltd.**

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# Company History

- 2000.07 1<sup>st</sup> Generation  
Empty capsule inspection machine
- 2003.12 Developed  
Image processing board & IT DSP chip
- 2005.12 Developed  
BLU screen inspection machine
- 2006.09 Developed  
FPCB external inspection machine
- 2007.04 2<sup>nd</sup> Generation  
Tablet inspection machine
- 2009.07 3<sup>rd</sup> Generation  
Tablet inspection machine
- 2012.01 4<sup>th</sup> Generation  
Tablet & Capsule inspection machine
- 2016.04 5<sup>th</sup> Generation  
Tablet & Capsule inspection machine
- 2018.01 6<sup>th</sup> Generation  
Tablet & Capsule inspection machine
- 2019.02 7<sup>th</sup> Generation  
Tablet & Capsule inspection machine

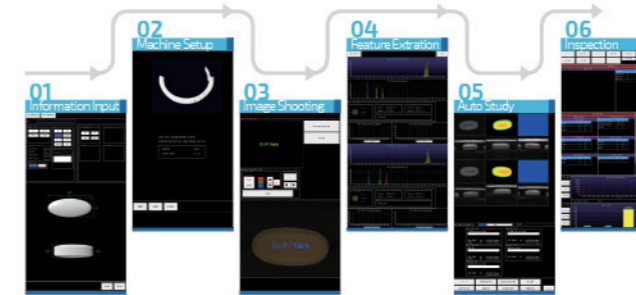
# Company Patents



# USER FRIENDLY INTERFACE DESIGN

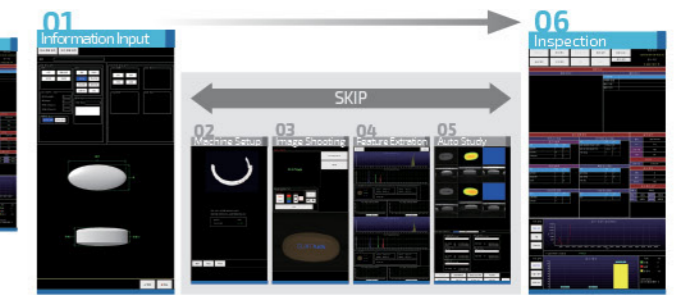
## New Tablet (Capsule)

Setup : 30 mins



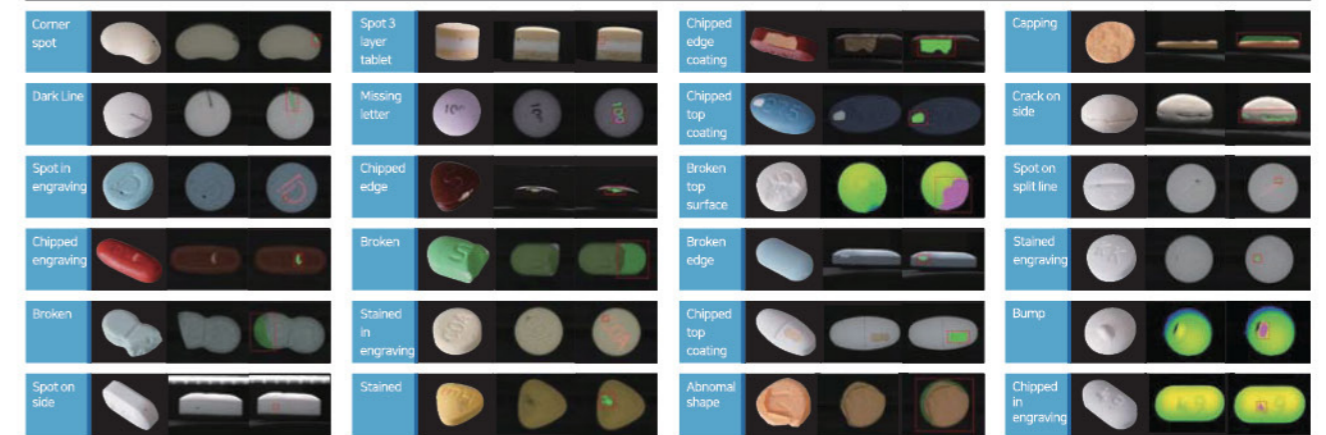
## Registered Tablet (Capsule)

Setup : 5 mins

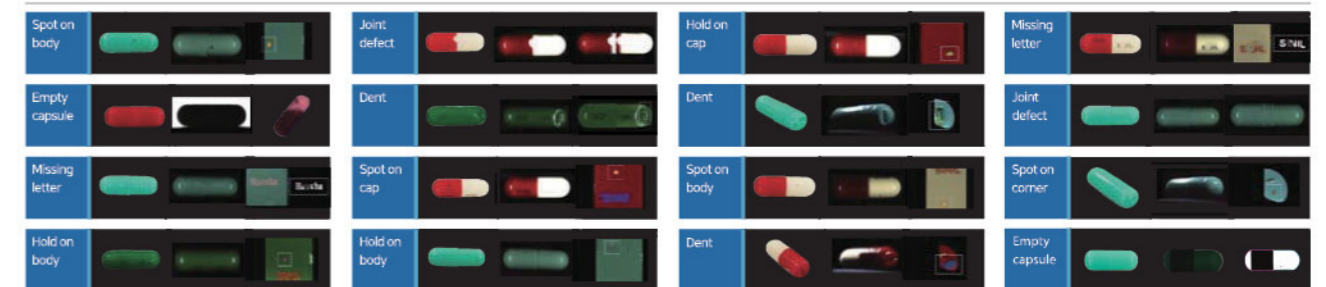


# DEFECT INSPECTION RANGE

## Tablet



## Capsule



# Global Partnership

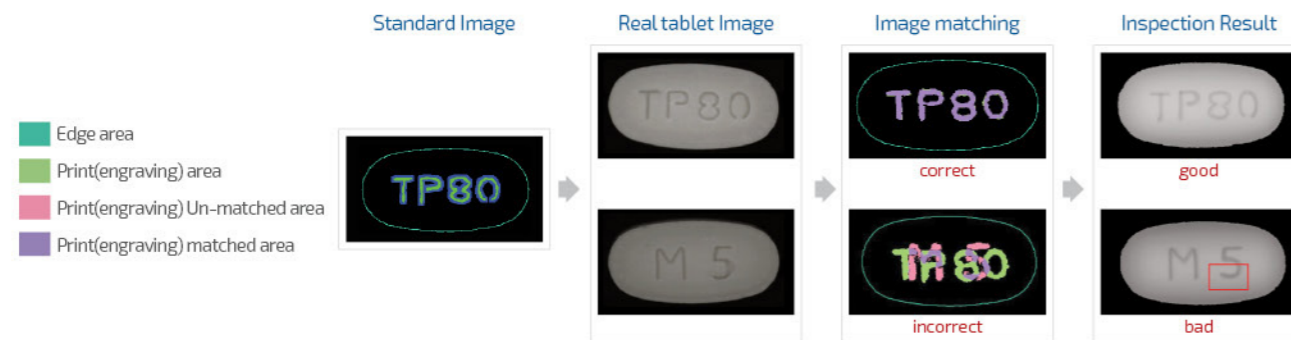
- Korea, Japan, China, Thailand, Myanmar, Singapore, Malaysia, Indonesia, Australia, New Zealand, Bangladesh, India, Pakistan, Sri Lanka, Jordan, Saudi Arabia, Arab Emirates, Iran, Egypt, USA, Mexico, Argentina, Uruguay



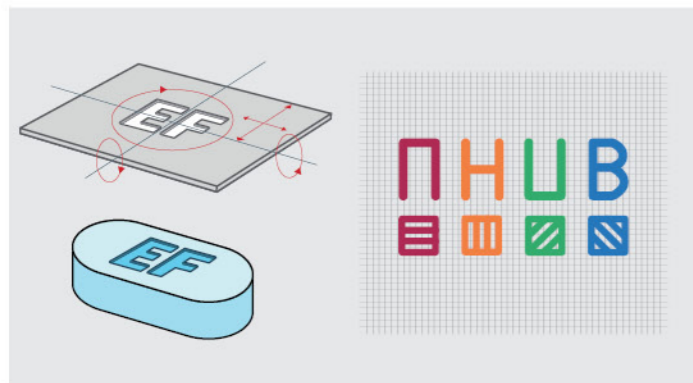
# INSPECTION TECHNOLOGY

**Step 1** Set a standard image with tablet(capsule) features such as size, shape, print, engraving, color and etc.

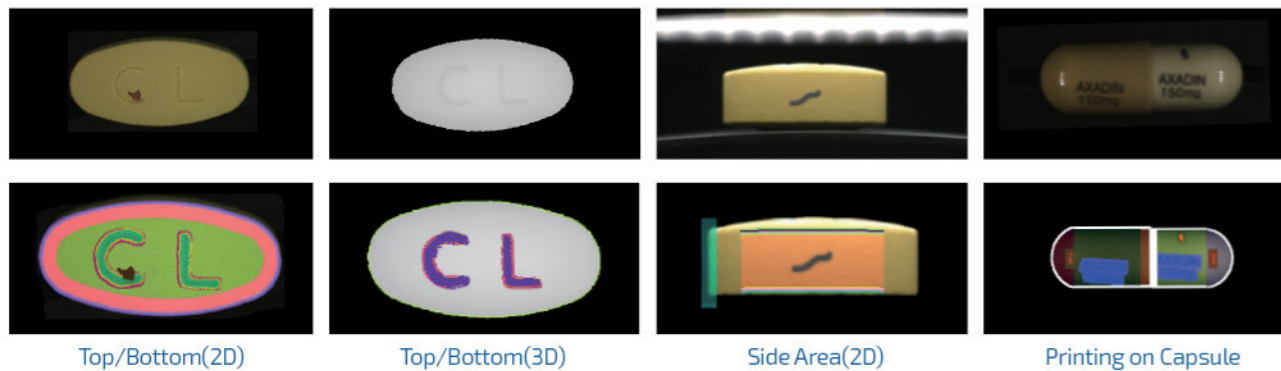
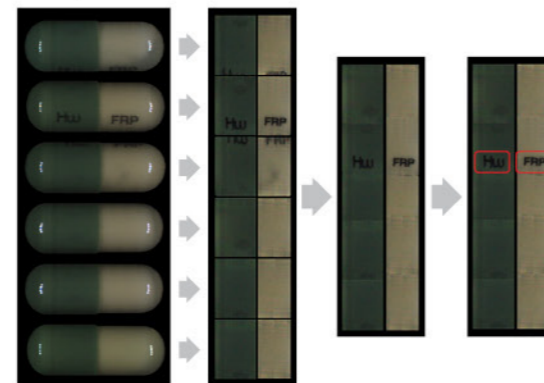
**Step 2** Compare the standard image with real tablet(capsule) capture image to pick out defects



**Tablet**  
Recognize the engraving as "shape" not pixel size

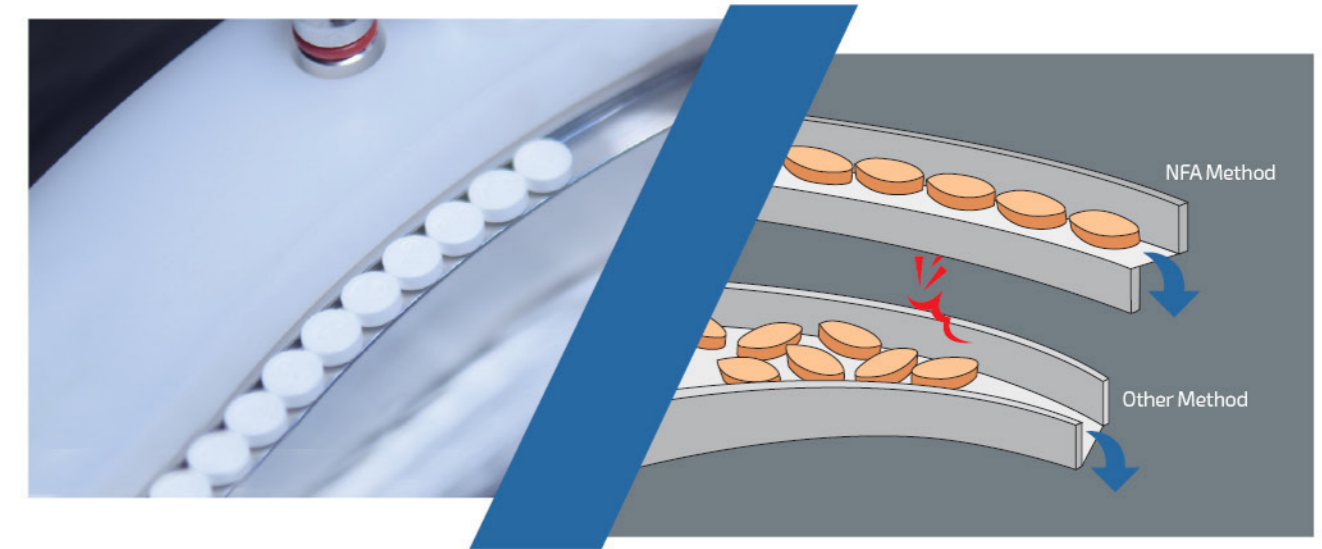


**Capsule**  
Arrange capsule images into one image (body & Cap each)



# INSPECT TABLET & CAPSULE IN A SINGLE MACHINE

## Anti-jamming Design



## Inspect variety of Tablet & Capsule (Change Part)



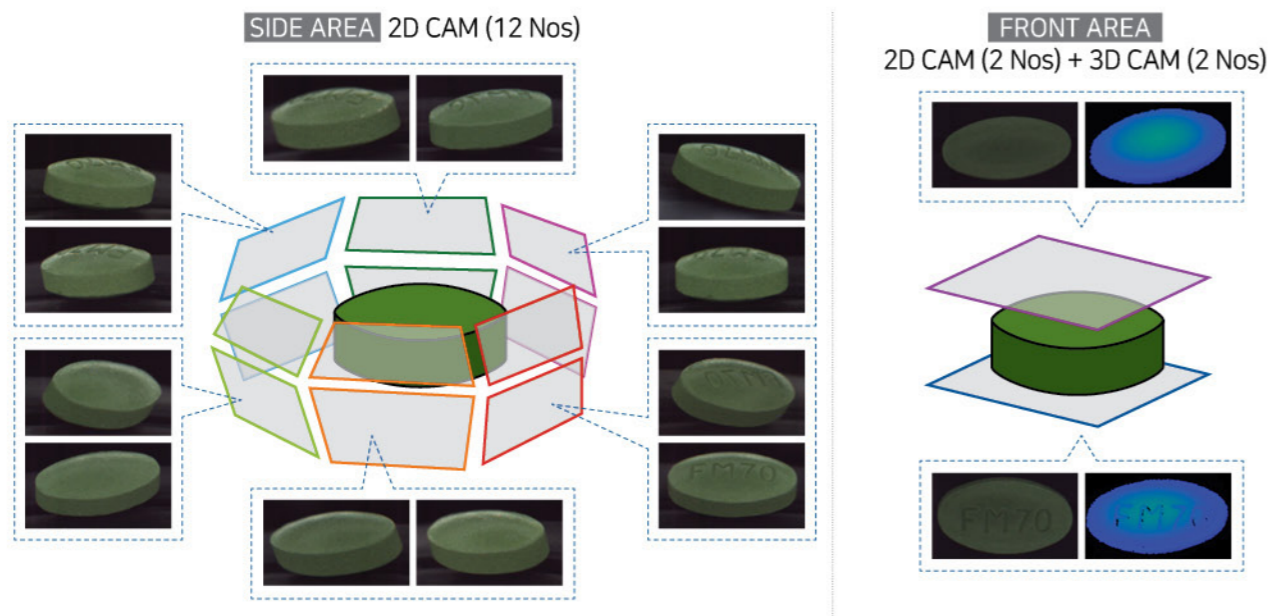
**Same Diameter(Width) = Same Change Part**

Do NOT need to replace change parts for same diameter(width) of tablet & capsule.  
Replace only 3 pieces, when diameter (width) is changed.

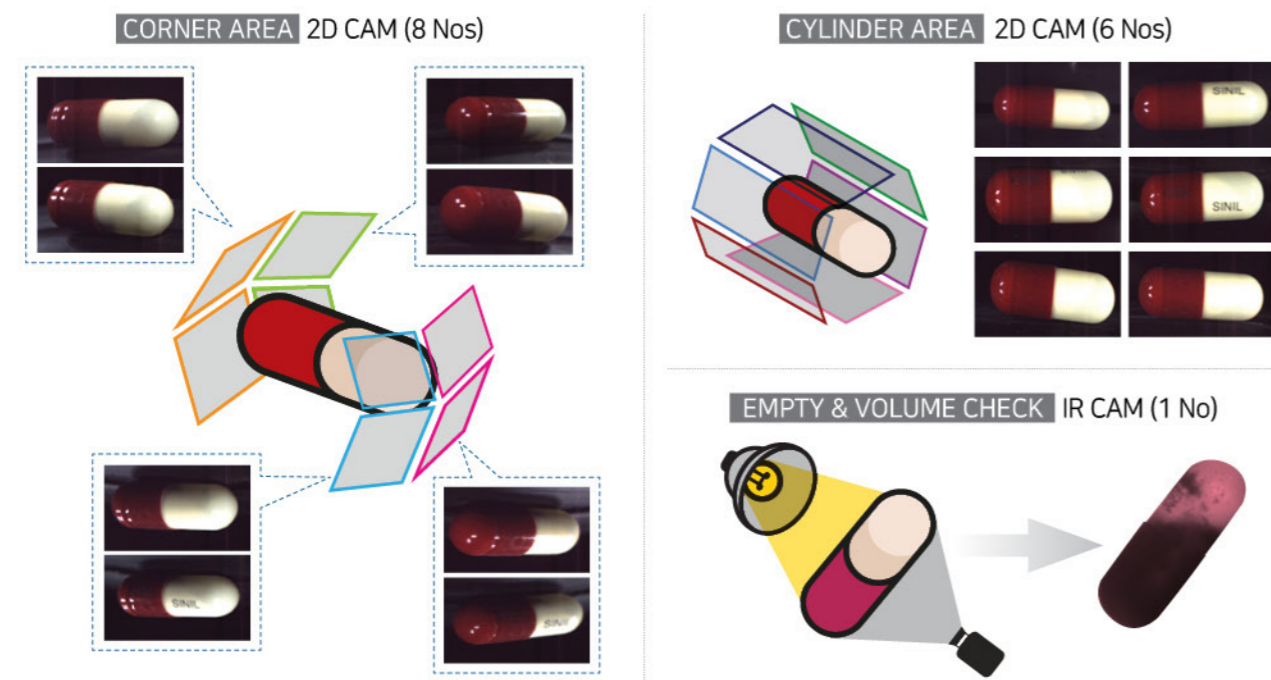


# SELMA200 (7<sup>th</sup> GENERATION)

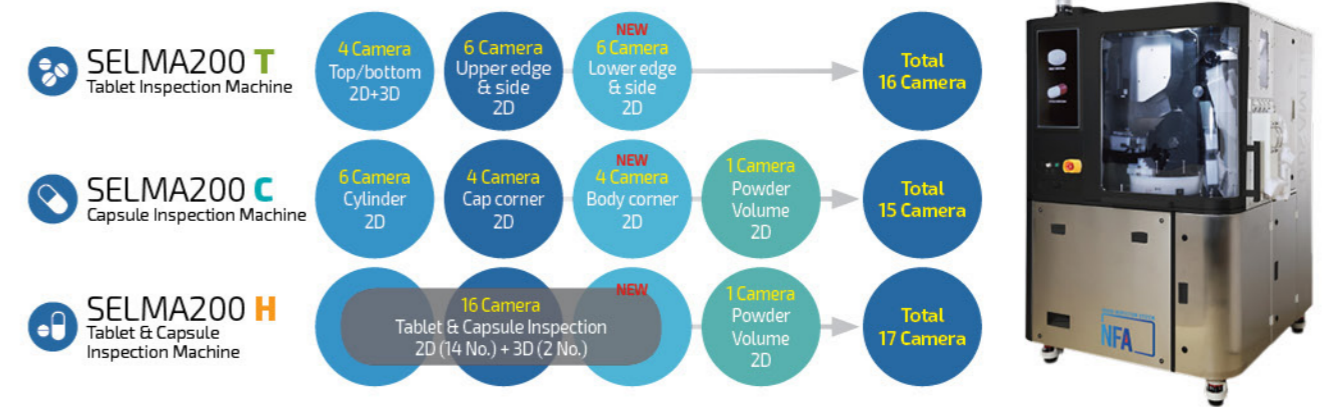
## Tablet Camera position (Total 16 camera)



## Capsule Camera position (Total 15 camera)



## Camera Composition | SELMA200



## Inspect Capacity

Capacity	Tablet(length)				
Size	Round 5mm	Round 8mm	Oval 14mm		
Max (hour)	500,000	400,000	190,000		
Capacity	Capsule(size)				
Size	No.4	No.3	No.2	No.1	No.0
Max (hour)	200,000	185,000	170,000	155,000	145,000

\* The maximum speed can be different depending on the inspection condition of tablet(capsule)

## Environment

Electric Consumption	7kW
Compressed Air (Dry)	5~8 bar
Temperature Humidity	10~30℃/30~70%
Pneumatic Pressure	≥0.35MPa
Material	SUS 304, SUS 316, UPE

## Inspection Range

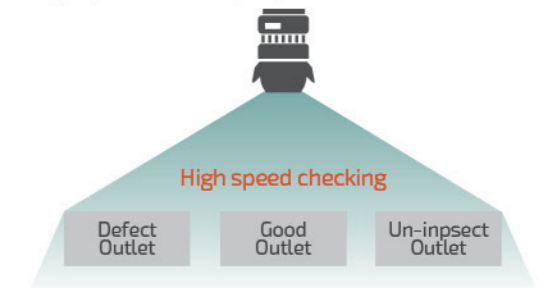
	Tablet	Capsule
Type	Uncoated Film-coated [Option] Sugar-coated	Hard gelatin
Size	Length : 5 ~ 24mm Width(Diameter) : 5~12mm Height(Thickness) : 2~8mm	Size : 0, 1, 2, 3, 4 [Option] Size 00 and Size 5
Camera Resolution	25μm	

\* At least 0.6mm gap between width & height should exist for tablet inspection.

※ The above specifications and capacities can be changed without notification for the reason of technical improvement.

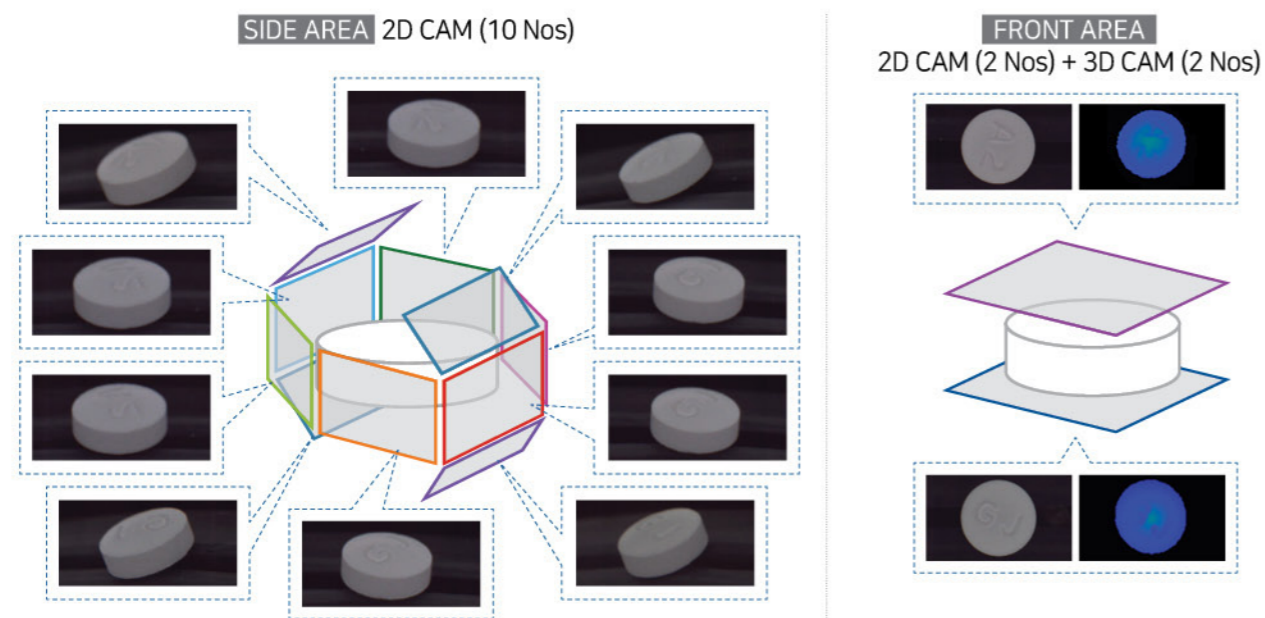
## NEW Option

**Discharge Check Camera**  
Prevent good & defect products mixed-up using high speed camera (1 No)

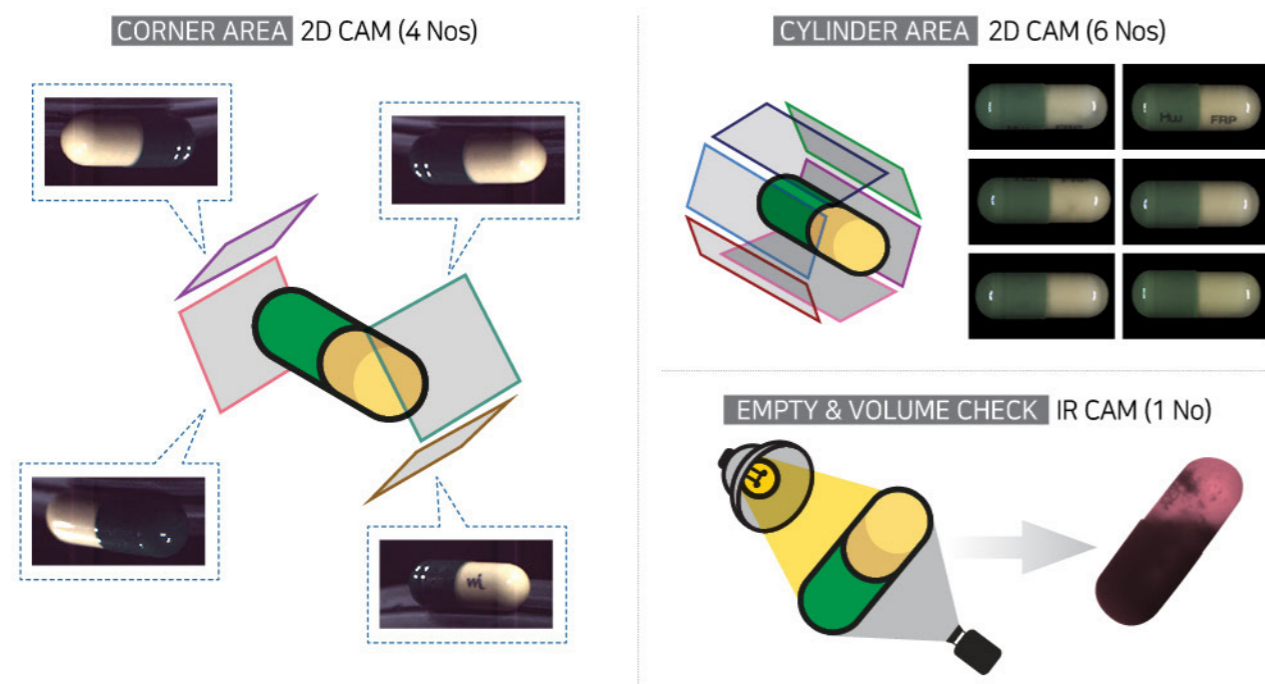


# SELMA150 (6<sup>th</sup> GENERATION)

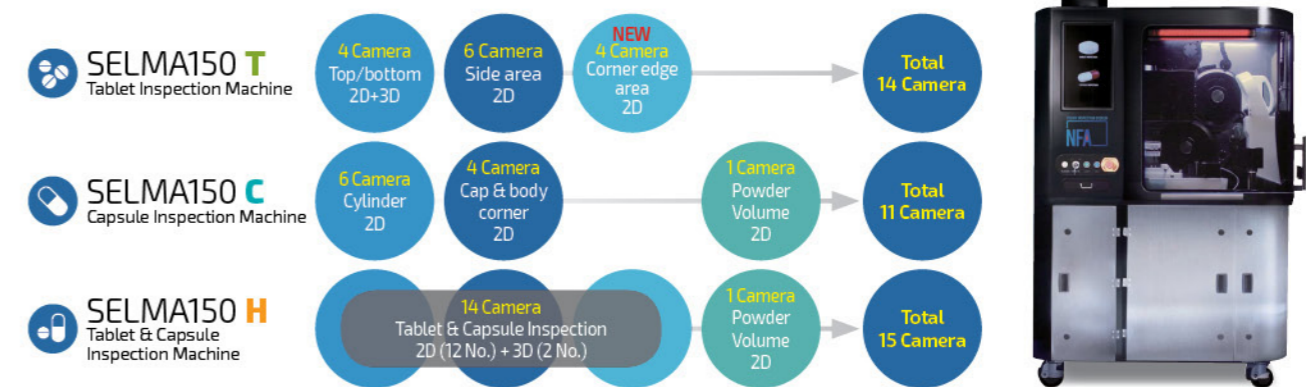
## Tablet Camera position (Total 14 camera)



## Capsule Camera position (Total 11 camera)



## Camera Composition | SELMA150



## Inspect Capacity

Capacity	Tablet(length)				
Size	Round 5mm	Round 8mm	Oval 14mm		
Max (hour)	500,000	400,000	190,000		
Capacity	Capsule(size)				
Size	No.4	No.3	No.2	No.1	No.0
Max (hour)	200,000	185,000	170,000	155,000	145,000

\* The maximum speed can be different depending on the inspection condition of tablet(capsule)

## Inspection Range

	Tablet	Capsule
Type	Uncoated Film-coated [Option] Sugar-coated	Hard gelatin
Size	Length : 5 ~ 24mm Width(Diameter) : 5~12mm Height(Thickness) : 2~8mm	Size : 0, 1, 2, 3, 4 [Option] Size 00 and Size 5
Camera Resolution	40μm	

\* At least 0.6mm gap between width & height should exist for tablet inspection.

※ The above specifications and capacities can be changed without notification for the reason of technical improvement.

## Environment

Electric Consumption	7kW
Compressed Air (Dry)	5~8 bar
Temperature Humidity	10~30℃ / 30~70%
Pneumatic Pressure	≥0.35MPa
Material	SUS 304, SUS 316, UPE

## NEW SELMA150

**Tablet Edge Area Inspection**  
NFA developed a new program for checking corner edge area of tablet.

