

# ***insPECSEAL***

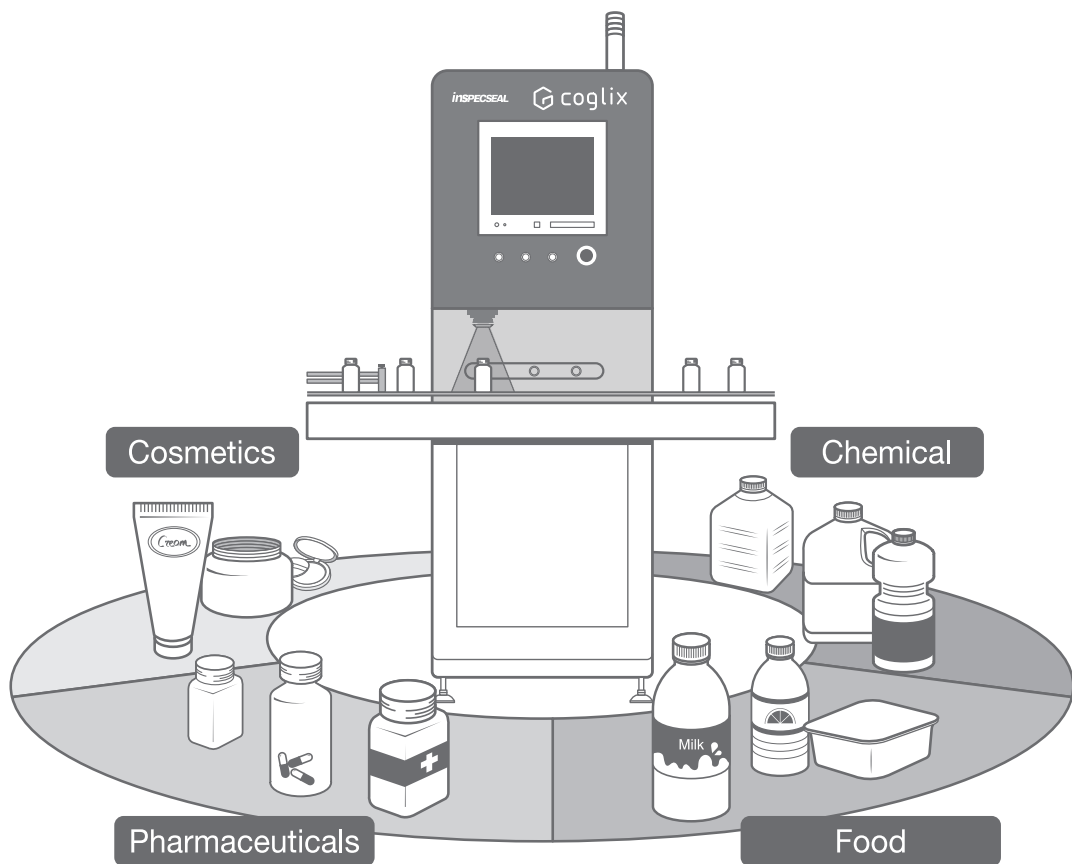
SEALING  
INSPECTION SYSTEM



Coglix introduces the Inspecseal that inspects and analyzes container or package seals using a non-destructive/non-invasive method of thermal vision system.

# REASONS WHY YOU SHOULD CONSIDER *insPECSEAL*

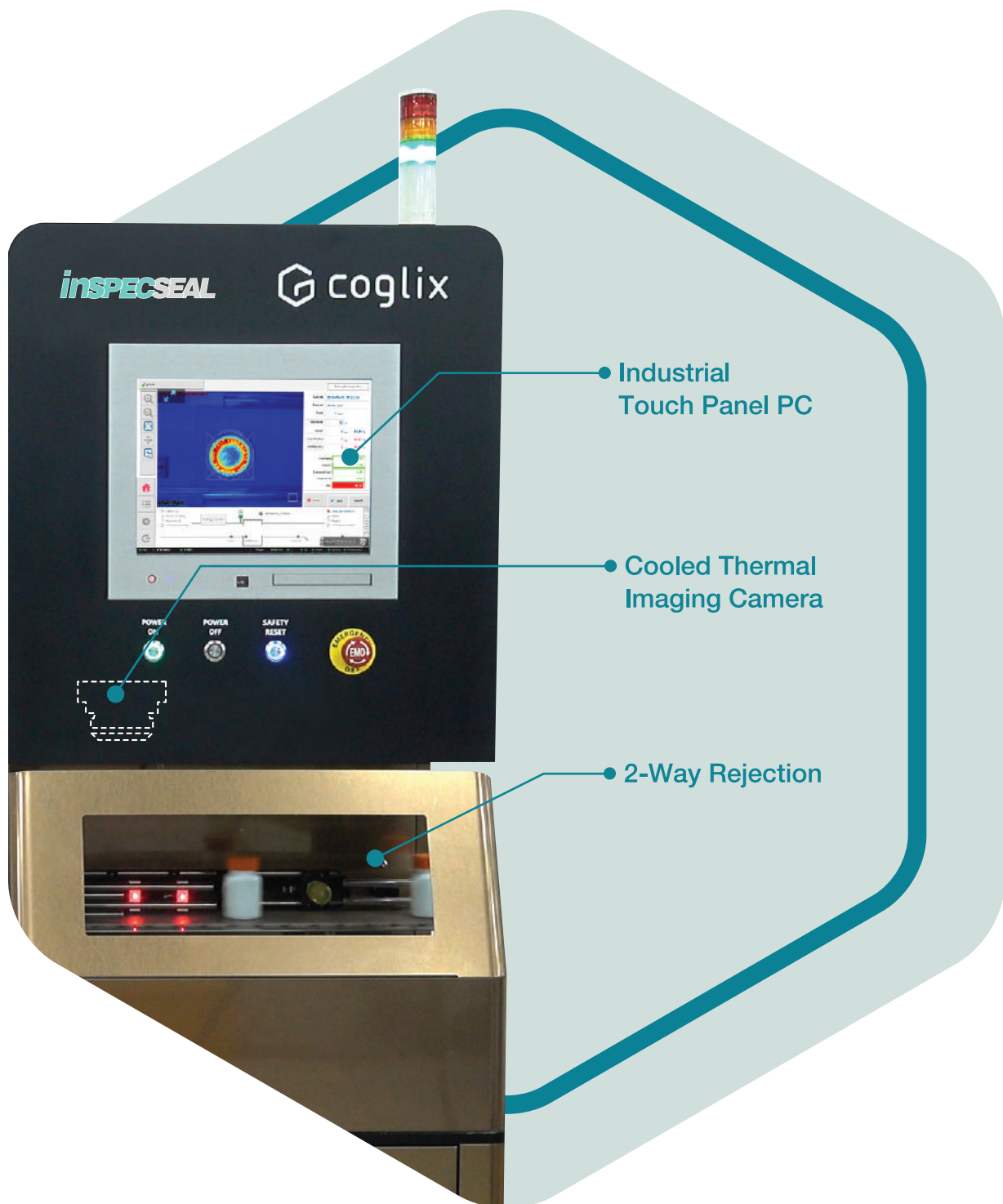
1. Most advanced container seal inspection technology by means of Cooled Thermal Imaging Camera through the closed cap
2. Sealing quality analysis and classification algorithm
3. Without slowing down the packaging line or affecting the product quality
4. Added to or integrated with the current productions



## • Common types of defects



Using *insPECSEAL* technology, a thermal imaging scan analysis of the seal area detecting above listed defects, under or overheated seals, incomplete and missing seals immediately after the package has been sealed.

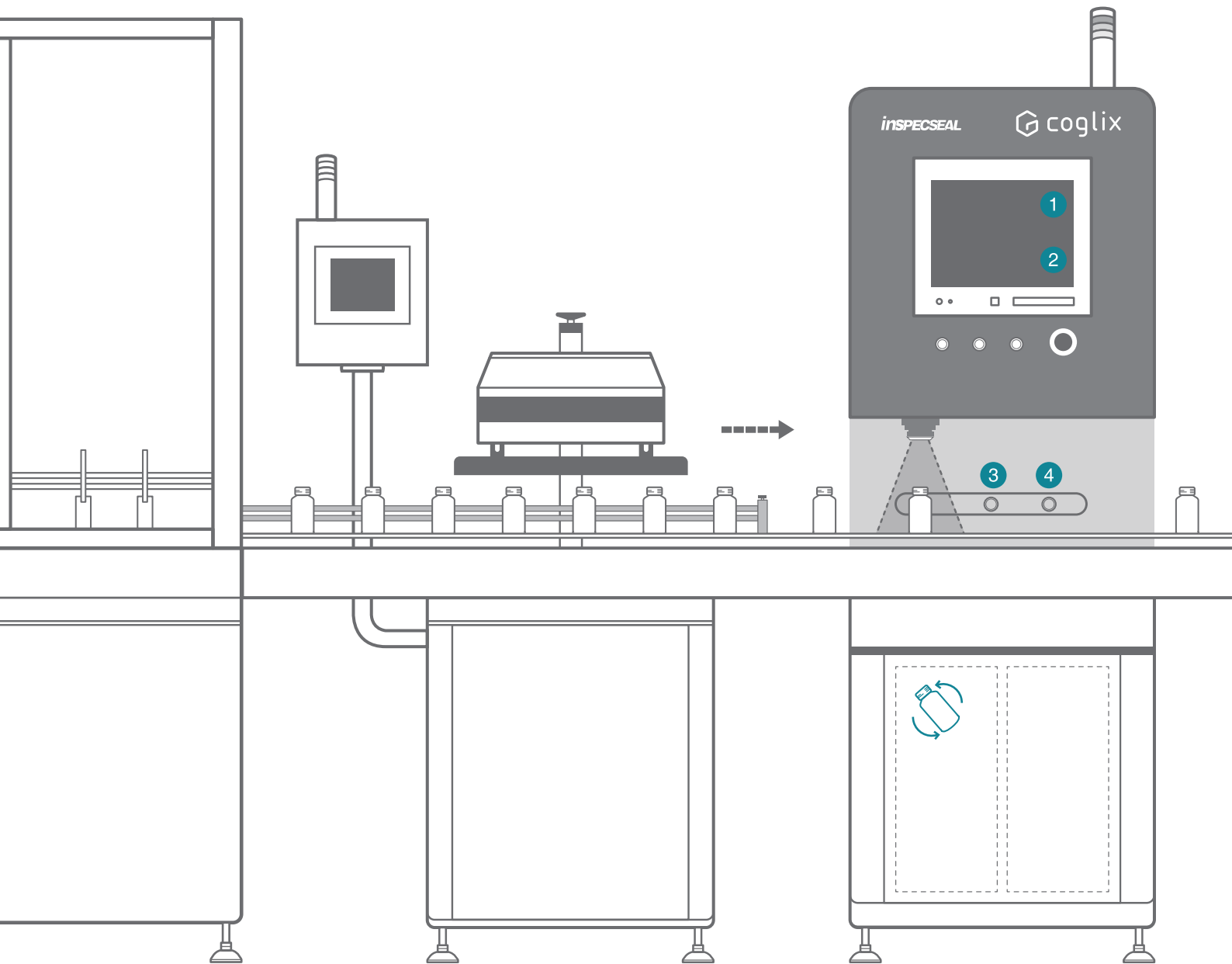


- **Increased market demand with regard to seal inspection**

1. Health regulatory authorities ask to inspect the seal integrity of induction sealed caps in order to protect the product from contamination.
2. Manufacturers need to prove that there is no leakage in sealed containers/packages.
3. Customers would not trust the quality of a brand if they find a defective seal.

# UNDERSTANDING THE *insPECSEAL*

Inspecseal means defects can be addressed and corrected immediately, which significantly reduces the quantity of defective packages produced.



Capping

Sealing

*insPECSEAL*

Capping

Sealing

## 1 SETUP

Simple set up through Image capture – Teaching – Result Prediction processes

UNDERSTOOD!



Capture

Teaching

Prediction

- Sealing uniformity
- Inspection accuracy

## 2 PROCESSING

A captured image is analyzed, sorted out, and judged!

Capture

Analysis

Classify

Control

The causes of defects are sorted out into three categories :

- **Packaging Material Problems**  
Damaged Seal, Inverted Seal
- **Sealing Machine Problems**  
Overheat, Underheat
- **Capping Machine Problems**  
Loose cap, Crooked Cap

3 Defect Rejection

Cause of Rejection



4 Ambiguity Rejection

Cause of Rejection

Manual inspection required

CHECK!



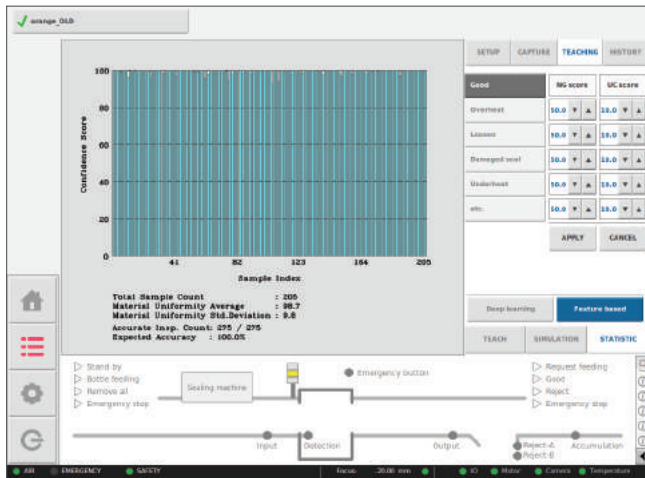
-----> **Quality-Controlled Result :** Our Suggestion!



-----> **Unexpected Result :** Conventional way...

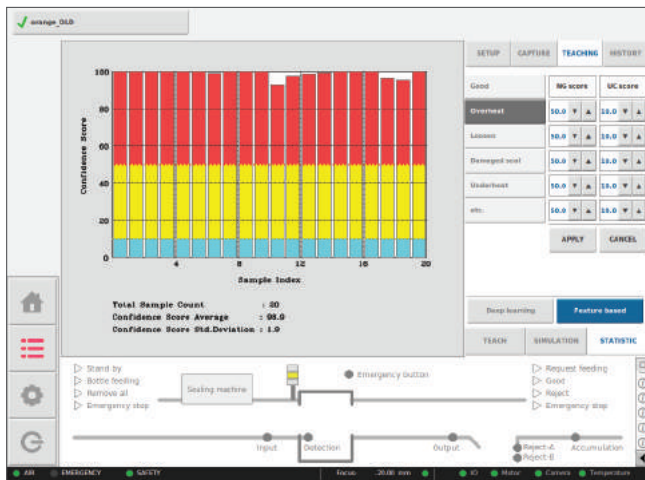


## • PREDICTION



### Sealing uniformity prediction

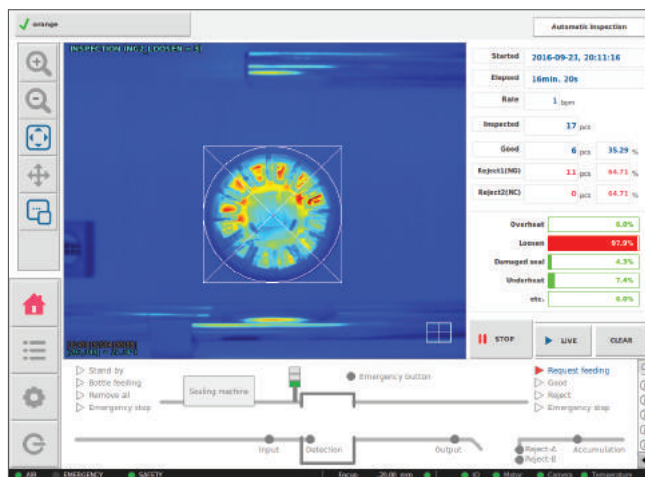
- Sealing quality analysis
- Expected inspection accuracy



### Sealing defects characteristics prediction

- Types of defect characteristics are analyzed and predicted for each sample
- Detection range of defect and ambiguity rejection can be adjusted to optimize the expected accuracy

## • CLASSIFICATION



### Defects classification

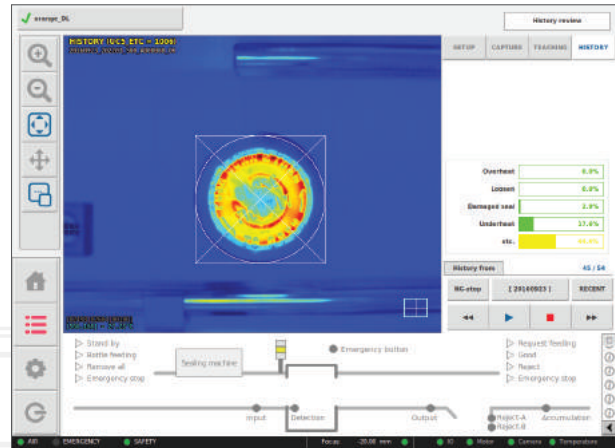
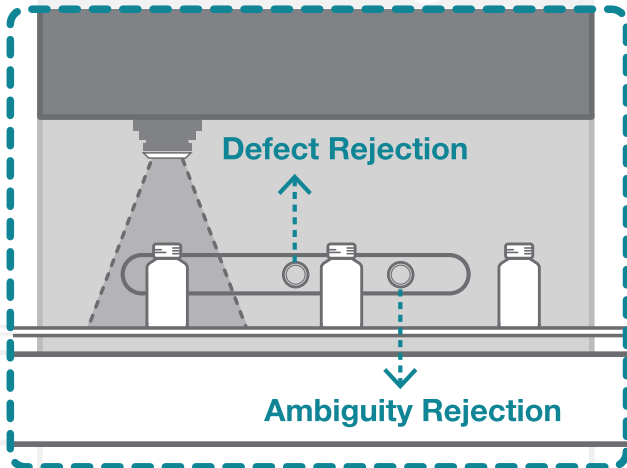
- Quality defects found during quality analysis are classified according to the causes
- Types of defects are displayed on the screen
- Additional defect classifications can be created upon request depending on different characteristics of a defect not identified by the list



## • 2 - WAY REJECTION

1. Reject by confidence scores
2. Reject due to ambiguity

Rejection due to ambiguity of the seal quality which requires manual inspection



US Patent Appl. No. 15/306,337

US Patent Appl. No. 15/306,486

PCT Patent Appl. No. PCT / KR2016/011737

PCT Patent Appl. No. PCT / KR2016/011738

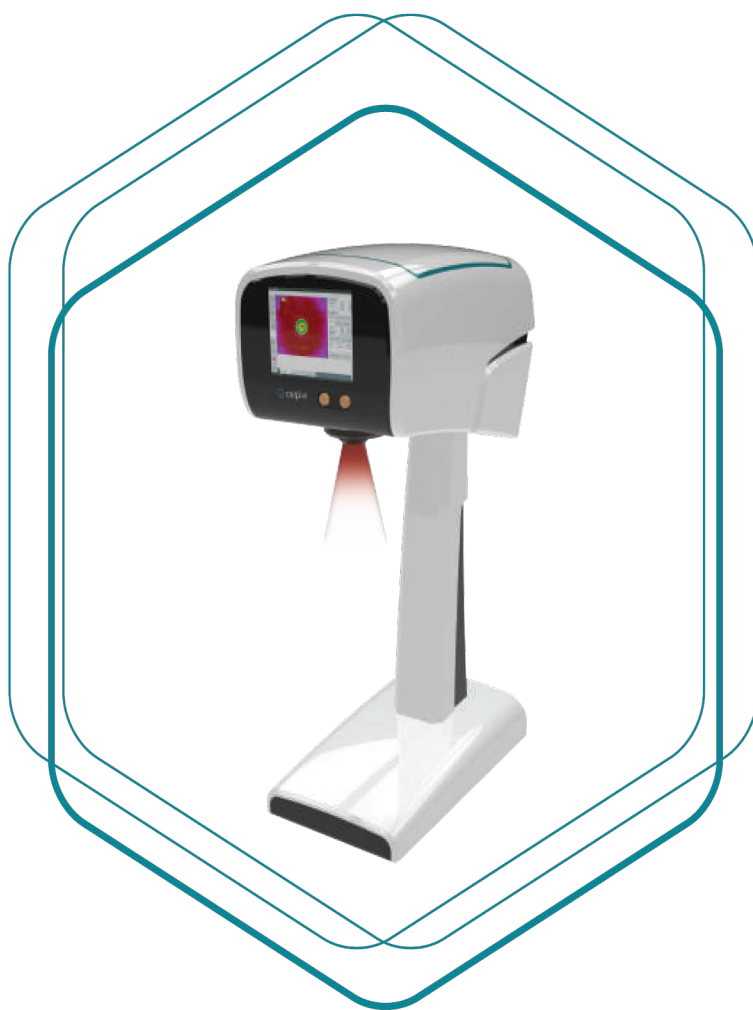
## • APPLICABLE CONTAINERS AND CAPS

	Containers		Cap
Material	HDPE, Glass bottles		HDPE CRC (Child Resistant Cap) PP
Size	Diameter	20-200mm	20-200mm
	Height	50-300mm	10-50mm

· Note: Other size containers and closures may be applicable. Contact us for more information

## • SPECIFICATIONS

IPC	Intel Core i7 2.6GHz/4G RAM/1TB SSD
Dimension	850 (length) x 600 (width) x 2100 (height) mm
Weight	150kg
Electricity	220Vac/110Vac, 5A
Compressed air	5kg/cm <sup>2</sup>



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