

# Product Introduction

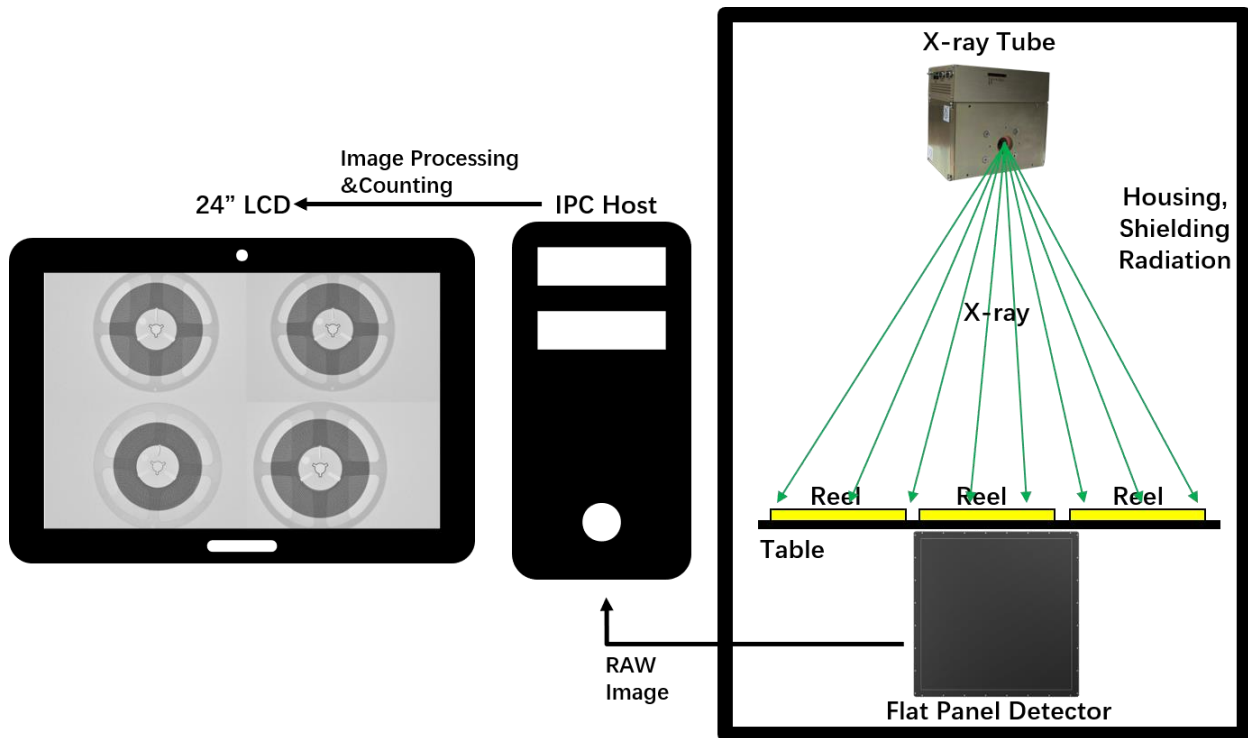


Microfocus X-Ray Parts Counter XC-01

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**Shenzhen Weiming Photoelectricity Co., Ltd**  
**Microfocus X-Ray Inspection System Leader**

## 1. Working Principle



## 2. Our Advantages

- 2.1. 80kV closed type X-ray tube, longer lifetime, maintenance-free.
- 2.2. 17" Super definition digital flat panel detector (FPD).
- 2.3. Ultrafast counting, four 7" reels or one 15" (380mm) reel needs less than 10s.
- 2.4. Support max 17" (430mm) reel or tray with a moisture barrier bag.
- 2.5. Permanently updated AI deep learning algorithm for free, support connecting MES, ERP, WMS, and other management systems.
- 2.6. Automatically scan codes and count at the same time, and then print the corresponding label when user takes out a reel.
- 2.7. No need to switch single/multi reel mode, automatically print the label when users count one reel.
- 2.8. Support work order number function and counting record query & statistics.

### 3. Equipment Parameters

<b>X-ray source</b>	Type	Integrated, microfocus
	Max tube voltage	80kV
	Max tube current	700 $\mu$ A
	Focal spot size	30 $\mu$ m
<b>Flat panel detector</b>	Type	Super definition digital FPD
	Effective area	430mm*430mm
	Pixel size	139 $\mu$ m
	Resolution	3072*3072
<b>Reel/tray counting</b>	Max size	17" (430mm)
	Max thickness	88mm
	Min parts size	01005
	Speed	7-10s
	Accuracy	01005 $\geq$ 99.98%, 0201 & above $\geq$ 99.99%
<b>Equipment</b>	Dimensions	1000mm (L) * 1300mm (W) * 1820mm (H)
	Weight	580kg
	Power supply	AC110-220V 50/60HZ
	Max power	800W
	Industrial PC	I7 CPU, 16G RAM, 256G SSD+4T HDD
	Displayer	24" HDMI LCD
<b>Other functions</b>	Auto code scanning	Barcode and QR code.
	Label printing	print the corresponding label when user takes out a reel.
	Counting record	Inquiry by time range, work order number.
	Management system connection	MES, ERP, WMS etc.
	Mode switching	No need to switch single/multi reel mode
	Work order no.	Support work order number recording
<b>Safety</b>	Radiation leakage	No leakage, international standard: $\leq$ 1 $\mu$ Sv/h.
	Back door safety interlock	Once users open the back door, X-ray tube will power off immediately. When the back door is open, users can't turn on the X-ray.

	Anti-pinch	Safety light curtain covers the whole drawer, the drawer will stop immediately when something enters.
	Emergency stop	In front of the operation position, press to power off.

## 4. Speed and Accuracy

Till now, the counting time and accuracy of various sizes of reels as below. It will be faster and more accurate as our algorithm updates.

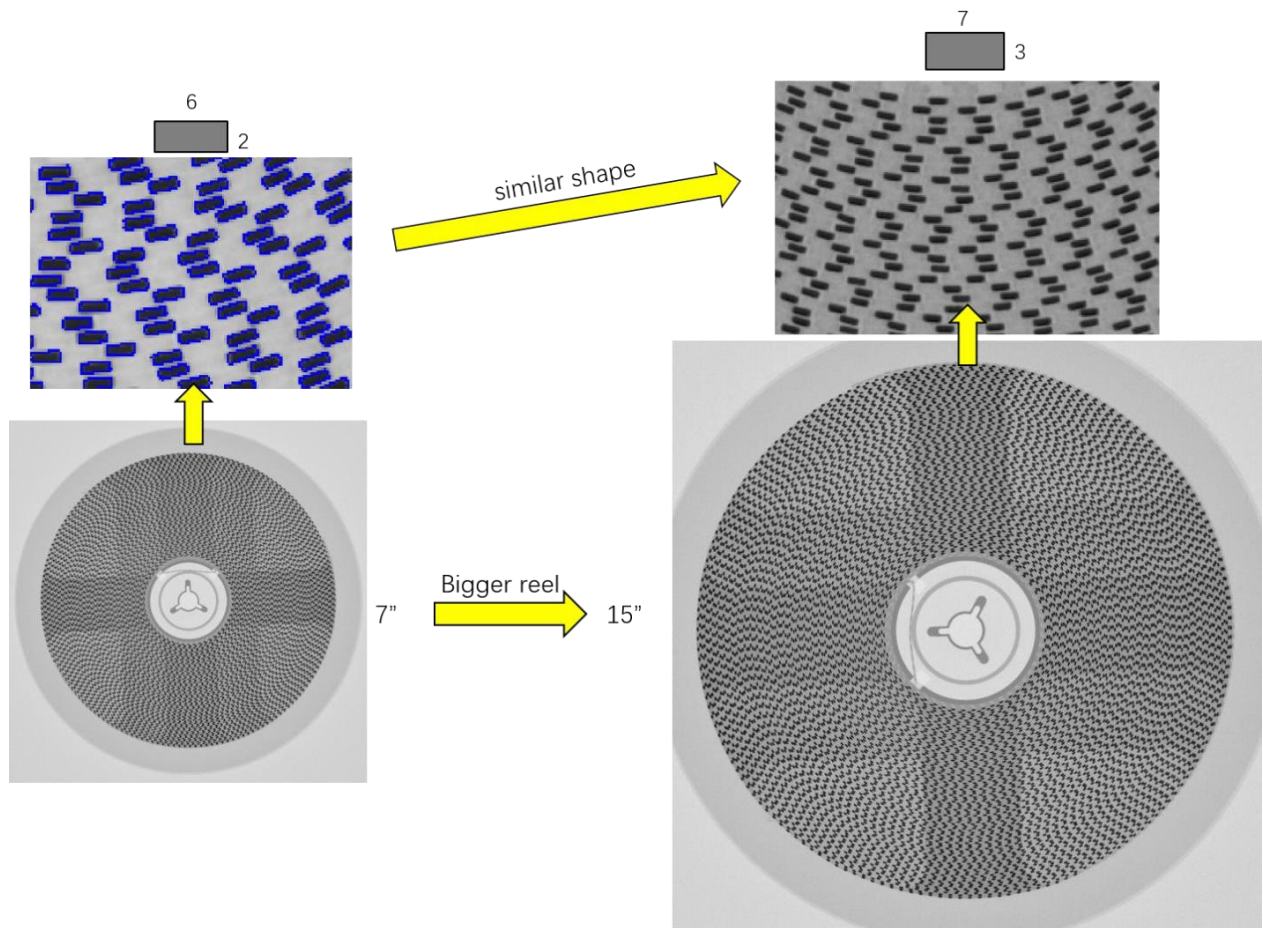
Reel size	Parts size	Quantity	Accuracy	Speed
7" (180mm)	01005	40000	99.98%	9-10s
7" (180mm)	0201	20000	99.99%	8-9s
7" (180mm)	0402	10000	99.99%	7-8s
7" (180mm)	0603	5000	99.99%	7-8s
10" (254mm)	1206	5000	99.99%	7-8s
15" (380mm)	1206	10000	99.99%	7-8s

## 5. Artificial intelligence deep learning algorithm

Our counting software uses a powerful artificial intelligence deep learning algorithm. No need to bind components to algorithm, we use AI to automatically identify components and automatically apply algorithm. The algorithm can learn the counted component data, such as:

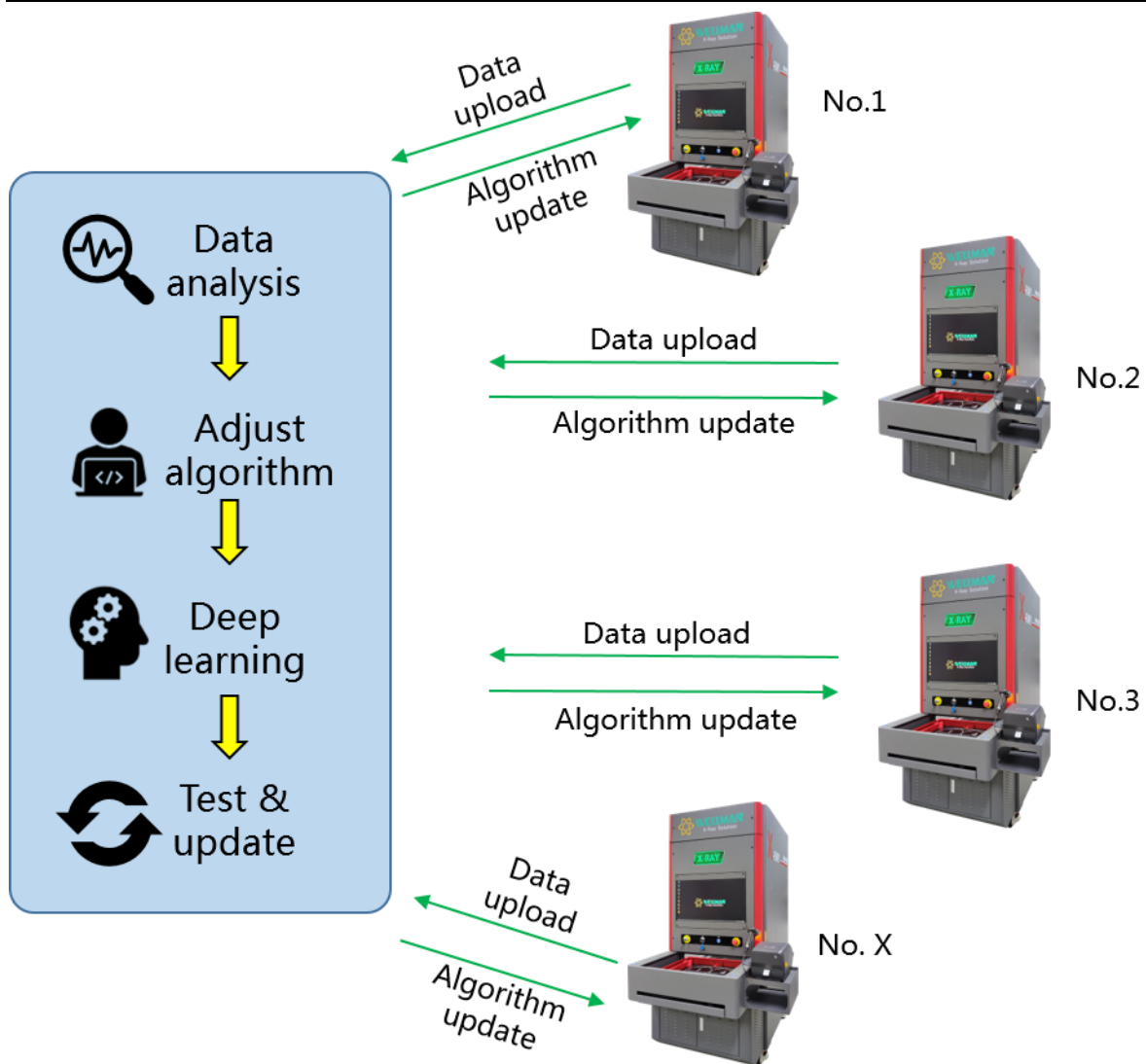
1. Aspect ratio
2. The angle of each corner of the component;
3. Slope between components from inside to outside;
4. Deformation of component images from the inside to the outside, etc.

As the number of components counting increases, the results become more and more accurate. When we need to count similar components, or larger trays, we can easily handle it.



## 6. Cloud database

Every Wellman X-ray counter can connect to our cloud database. The data and images of the machine will be uploaded to the cloud, and the machine will automatically download the latest database. Our engineers also optimize the algorithm in the background according to the images and data collected by each machine, and regularly update it to the database for customers.

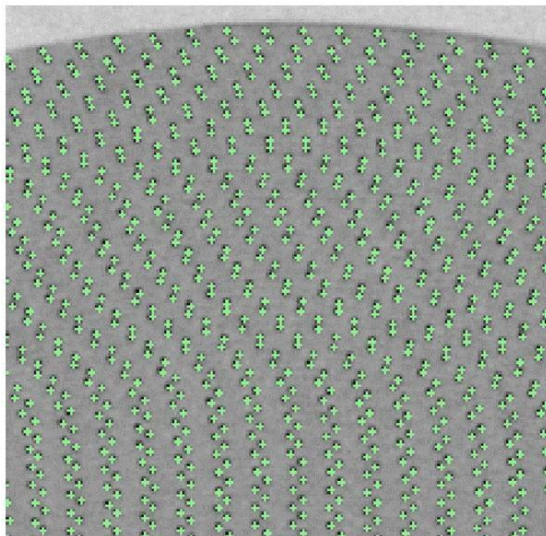


Over time, the accuracy of counting will be closer to 100%, and the coverage of component types will become wider and wider. When a machine counts a new kind of component, if the data of this kind of component is stored in our database, our software can directly call the data, which brings users higher efficiency, accuracy and coverage.

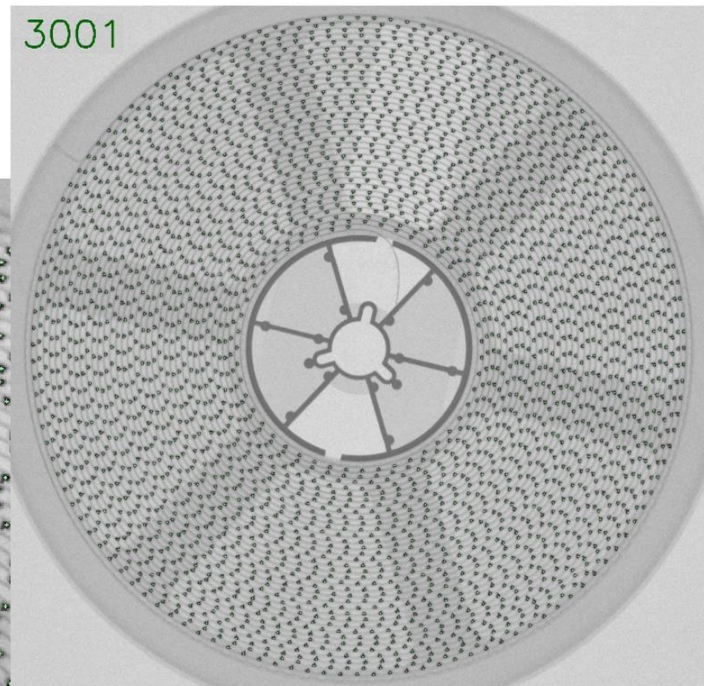
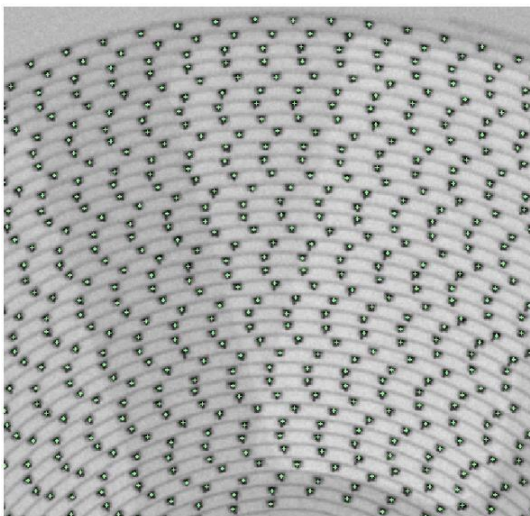
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## 7. Sample images

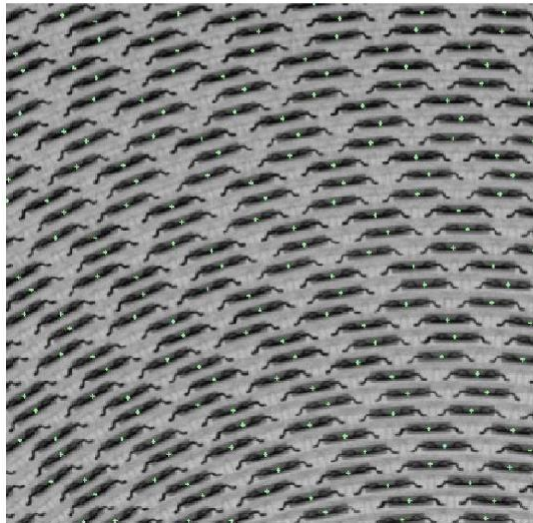
01005 Full Reel



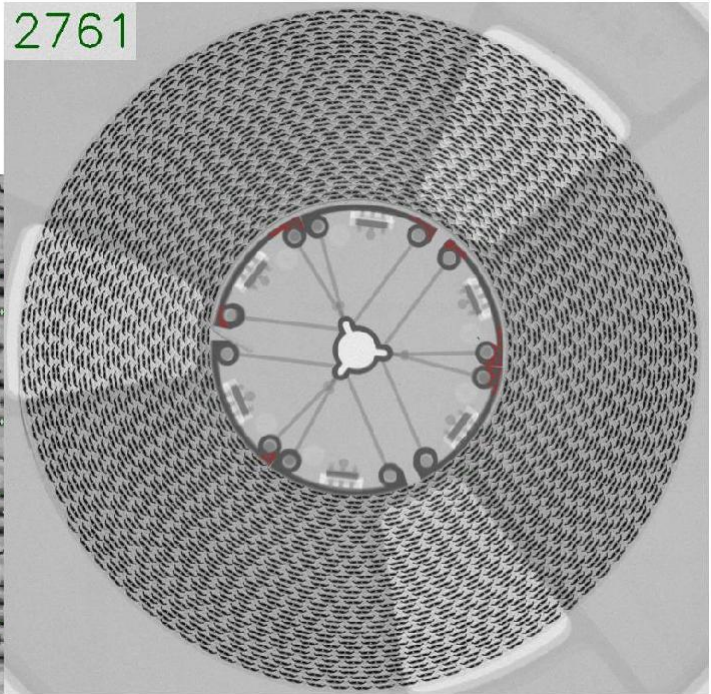
0201 Full Reel



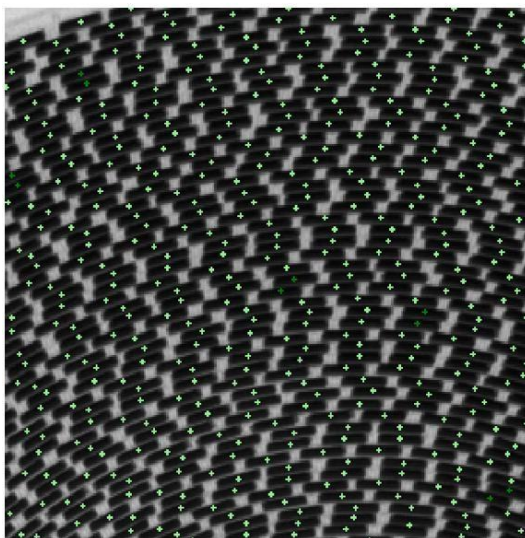
Complex tall parts



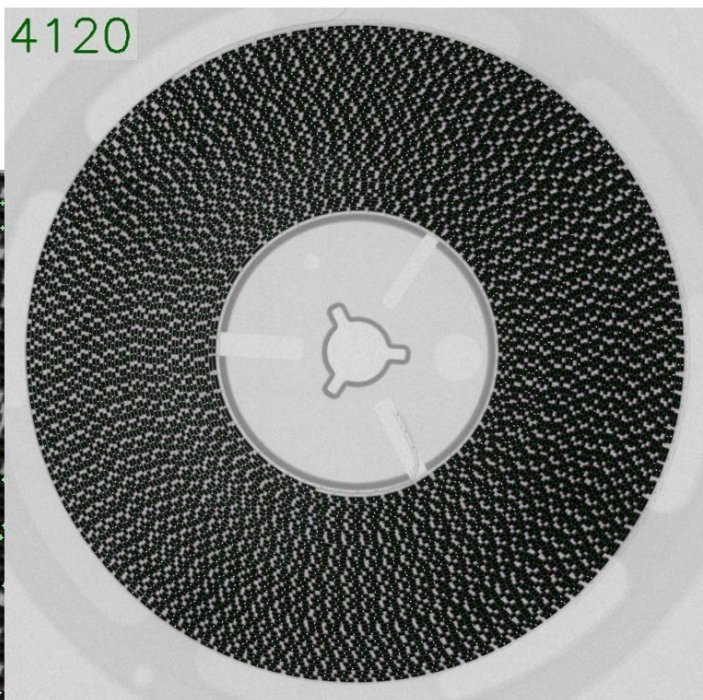
2761



Overlapped chips

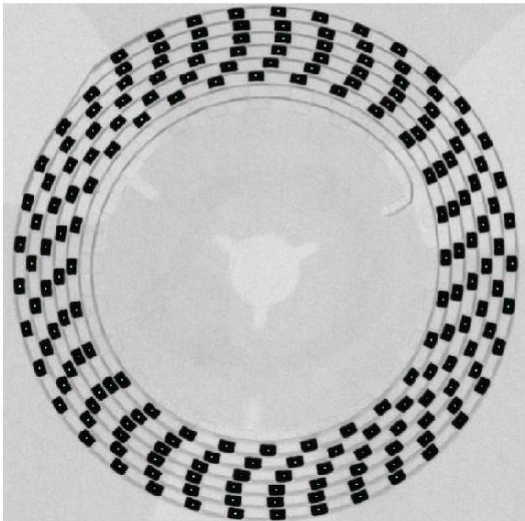


4120



Small amount parts

188



Scattered Chips

1079

