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# CT Scan Slice Types – Guide to CT Scanner Slices

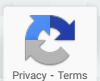
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In this blog post, we provide you with a thorough overview of the differences between CT scanner slice types.

By the end of this post, you will be able to distinguish between all kinds of CT scan slices. Perhaps, it will even help you find the right system for your specific needs.

But before we dive into the different slice categories, let us explain a bit about CT scan slice types in general.



Technology has no end, especially when we talk about medical imaging. It is one of the areas that has the biggest space for development.

Over the past few decades, CT scanner manufacturers, such as [Toshiba \(now Canon Medical\)](#), [Siemens](#), [GE](#), and [Phillips](#) have adopted different approaches to improving CT scanner performance and provided us with the latest technologies in order to save lives more efficiently.

It is also one of the reasons why there are so many different CT slice count types you can choose from.

### **How many slices (images) does a CT scan take?**

This ranges from 4 to 640 slices.

In the pre-owned market, the commonly available slice counts include 4, 8, 16, 32, 64, 128 slice CT scanners.

However, nowadays we encounter more and more CT scanners that provide up to 256, 320, and even 640 CT slice counts.

### **What are the benefits of a higher CT scanner slice count?**

- Saves time and reduces your scan times
- Higher patient throughput
- Reduced radiation exposure
- Excellent image resolution
- Options for advanced imaging, such as cardiac exams
- Provides fast and more comfortable scans for your patients (especially convenient for claustrophobic patients)

Nevertheless, the higher slice count reduces your scan time and produces better quality image resolution, but at the same time, increases your budget.

If your clinic only performs routine studies, you can choose a lower count CT scanner that is available at lower prices.

Therefore, the best advice we can give you is to think about your patient flow and your budget when deciding on your new CT scanner. If you only perform general studies, higher CT scan slice types will most likely not be worth it.

In this article, you will get an overview of CT scanners slices and how they are determined by the exams that you want to perform.

If you prefer, you can sign up for our e-mail course, which will walk you through the main points of purchasing a CT scanner.

## Join the CT e-mail course

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## The Different CT Scan Slice Types

Now, let us finally dive into the different CT scan slice types.

### 4 – 8 Slice CT Scanners

4- and 8-slice CT scanners are a good choice if you work in a veterinarian clinic or if your facility can only accommodate a limited number of patients with no need for urgent diagnoses.

These CT scanners are the cheapest on the market, but they are less powerful. Scan times are much slower than in CT scanners with higher CT scan slice types.

We would only recommend 4 and 8 slice CT scanners if your facility requires no urgent care and you can take time during your provided examinations.

**Some of the most popular, budget-friendly 4 and 8 slice CT scanners are:**

- Toshiba Asteion S4
- GE BrightSpeed Edge 8

Nevertheless, these CTs are slowly being withdrawn from the CT market as they are not as popular as before.

## 16 Slice CT Scanners

16-slice CT scanners are suitable for general studies, especially if your radiology department has a steady patient flow. These systems are the ideal machines for everyday use.

They are faster than the 4 and 8 slice CT scanners, therefore if your priority is reduced scanning time, you have a fairly steady patient flow, and you also offer urgent care, a 16 slice CT scanner is a great choice for you.

These systems provide full organ coverage with high-resolution imaging. However, if you are looking for detailed cardiac imaging, such as coronary vessel analysis, you will need to invest in a more advanced CT scanner.



### Toshiba Aquilion 16

A popular and solid 16-slice CT scanner that covers a wide range of needs with a good performance.

### Some of the most popular 16-slice CT scanners are:

- Toshiba Activion 16
- Toshiba Aquilion 16
- Philips MX 16
- Siemens Somatom Emotion 16
- GE BrightSpeed Elite 16
- Siemens Somatom Sensation 16
- Philips Brilliance 16
- Toshiba Aquilion RXL

## 32 Slice and 40 Slice CT Scanners

32- slice to 40-slice CT scanners generally offer shorter examination time than the previous systems. The obtained image is not influenced by motion artifacts to the same extent.

This slice count category is a bit more expensive than those with a lower number of slices.

### Popular 32- and 40-Slice CT scanners are:

- Toshiba Aquilion RXL

## What is the difference between a 16 slice and 32 slice CT scanner?

CT scanners with 32- and 40- slices are typically found in radiology departments that have a steady patient flow, just like the 16-slice CT scanners.

The main difference is the quicker scan time, compared to the 16-slice CT scanners. The extra slice counts in 32 and 40 provide more coverage per gantry rotation, resulting in time-saving in your examinations. And thus you are able to accommodate a greater number of patients.

However, you should also expect a slightly higher price.

## 64 Slice CT Scanners

The 64-slice CT scanner is a standard for hospitals and imaging centers. It is recommended if you provide advanced exams and if you need to perform basic cardiac and trauma studies.

The 64 slice CT machine will allow you to:

- See plaque formation on the walls of arteries and heart contractions
- Observe small vessels and arterial branches in sheer images of the finest details

And thus help you diagnose diseases like heart attacks and strokes.

Keep in mind that although the 64 slice CT scanner can perform cardiac exams, it still requires slowing of the heart rate. And thus, for advanced cardiac studies, it is optimal to have a CT scanner with more slices.

64 slice CT scanners are the perfect match for practices with moderate to high patient throughput. Especially where reduced scan time is the essence. You can produce diagnostic images within 5-10 seconds.

If you are required to do complete cardiac examinations, such as calcium scoring or coronary angiogram, please take into consideration that you may need an injector and a post-processing workstation with cardio software on.

**Some of the most popular 64 slice CT scanners are:**

- Toshiba Aquilion 64
- Siemens Somatom Sensation 64
- Siemens Somatom Definition AS



**Toshiba Aquilion 64**

The Toshiba Aquilion 64 is a popular, easy-to-use, and fast CT scanner with several unique features

## **What is the difference between a 16 slice and 64 slice CT scanner?**

The main difference is that the 64-slice is faster than the 16-slice. With some of the 64-slice scanners, you can execute a full body scan in under a minute.

They have a larger X-ray tube, they are more powerful and provide better images.

Furthermore, the 16-slice systems can only do limited cardio and basic trauma examinations, while with the 64-slice systems you are able to execute more advanced trauma examinations and basic cardiovascular procedures.

Finally, used 16-slice CT machines cost around 60.000-100.000 euros, while the 64-slice systems are 90.000-130.000 euros.

## **128 Slice CT Scanners**

128-slice CT scanners are usually found in supporting specialty practices such as cardiac departments or research facilities, where the volume of patients is very high.

These CT systems are able to scan the whole body in just seconds and produce outstanding 3D images of any organ.

The 128-slice CT scanners provide you with diagnostic information to differentiate between tissues and to make it easier to determine the disease.



Toshiba Aquilion CX/CXL  
A high quality CT scanner that provides 128 slices of high definition in a single rotation.

The images can show the blood flow circulation of whole organs.

Stroke patients can be easily saved by quickly scanning the entire brain and finding the blocked artery or the leaking blood vessel.

**Popular 128-Slice CT scanners are:**

- Toshiba Aquilion CX/CXL
- GE Discovery CT750 HD
- Siemens Somatom Definition AS
- GE Optima 660
- Philips Ingenuity 128-Slice

## What is the difference between 64 slice and 128 slice CT Scanner?

The 128-slices CT scanners have more rows of detectors, which means that these systems provide larger volume coverage and shorter examination times. This is very useful in cardiac studies.

Furthermore, the 64-slice systems can only do basic cardio examinations, while with the 128-slice CT scanners you are able to execute more advanced cardiovascular procedures.

Lastly, the price is also one of the differences between 64-slice and 128-slice CT scanners. The 64-slice CT scanners are around 90.000-130.000 euros, while a 128-slice CT system can cost between 120.000 to 180.000 euros.

## 160 Slice CT Scanners

160-slice CT scanners were designed with the latest advances in low-dose technology.

These systems result in at least 50% less radiation than standard CT scanners.

The low dose provides you with the highest quality images for your diagnoses.

The best-known 160-slice CT scanner is the [Toshiba Aquilion Prime](#).



Toshiba Aquilion Prime  
A high-end 160 slice CT scanner that comes with several innovative technologies.

## What is a 256 Slice CT Scanner?

256-slice CT scanners are able to efficiently scan the whole body in seconds, whilst reducing the scan time and being able to image the entire heart in one heartbeat.

They provide visual details about the structure and function of the heart in high-resolution 3D images.

These systems are used primarily to detect coronary artery diseases and to assess coronary artery bypass grafts, cardiac structure, and morphology. They reduce radiation exposure and provide excellent image quality as well as accurate diagnoses.

A popular 256-slice CT scanner is the Philips Brilliance iCT.

## 320 Slice and 640 Slice CT Scanners

320-slice CT scanners are advanced imaging systems that can scan the whole body from head to toe, in less than one minute. Therefore, these systems are great for emergency rooms.

Thanks to their advanced technology, they help you accurately identify any abnormality.

The 320-slice CT scanners have special applications that are invaluable in disorders of the heart and the brain.



Toshiba Aquilion One  
Top of the line CT scanner from Toshiba  
with 320 slices for effortless cardiac and  
outstanding imaging.

### **What is the highest CT scanner slice count?**

The highest slice CT scanner is the Toshiba Aquilion One with 640-slices.

It has the newest technology that enables faster and more detailed diagnosis.

### **Some of the most popular 320 and 640-slice CT scanners are:**

- Toshiba Aquilion One
- Toshiba Aquilion One Vision Edition

## **Sum up – CT Scan Slice Types**

### **To sum up, how many slices do you need based on the exams you perform?**

Choosing the right CT scanner might seem challenging. However, knowing what examinations you will be executing will help you determine which of the CT scan slice types is the best for you.

All types of CT scan machines can perform general imaging procedures, for example abdominal, which includes the scanning of internal organs such as the liver and kidneys.

However, certain procedures, such as cardiac, rely on higher slice counts to deliver sufficient image quality. Remember, if you are required to do complete cardiac examinations as we mentioned above, consider that you may need an injector and a post-processing workstation with cardio software on.

To get a better overview of CT scanner applications in relation to slices, see the table below:

We hope you find this blog post useful. If you have any further questions, please do not hesitate to contact us.

Before you go, you can learn about [CT X-ray tube counts](#), [how much a CT scanner costs](#), or check our stock of [used CT scanners](#).

You can also sign up for our brand new mail crash course on CTs. This will walk you through all the main factors to consider when [purchasing a CT scanner](#).

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