



Cios has the right power

**Whenever and wherever
you need it**

[siemens-healthineers.us](https://www.siemens-healthineers.us)



SIEMENS
Healthineers

The right power

Whenever and wherever you need it

The Cios family from Siemens Healthineers answers various power needs. For crisp static imaging for documentation, dynamic imaging for the acquisition of image series (e.g., of moving objects), or for long-lasting procedures with obese patients.



Static imaging – for the imaging of static objects and the documentation of surgical results



Dynamic imaging – exceptional, high maximum tube current in pulsed fluoroscopy mode resulting in high peak output power



Long-lasting imaging – high maximum average power for prolonged pulsed fluoroscopy and effective heat management



Cios Select



Cios Select with FD



Cios Fusion



Cios Alpha



Peak power: 2.5 kW
 Max tube current:
 24 mA
 Tube design:
Stationary anode



Cios Select

Designed for affordable access to brilliant image quality and concise simplicity—for the **vast majority of all surgical applications.**



Peak power: 2.3 kW
 Max tube current:
 24 mA
 Tube design:
Stationary anode



Cios Select with FD

Designed for outstanding image quality and simplicity of use, and with a budget in mind—for the **vast majority of all surgical applications.**

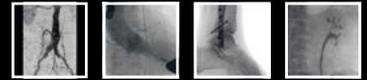


Peak power: 2.3 kW
 Max tube current:
 25 mA
 Tube design:
Stationary anode



Cios Fusion

Designed for Full View FD and innovative usability—for the **vast majority of all surgical applications.**



Peak power: 25 kW
 Max tube current:
 250 mA
 Tube design:
Rotating anode + active water cooling



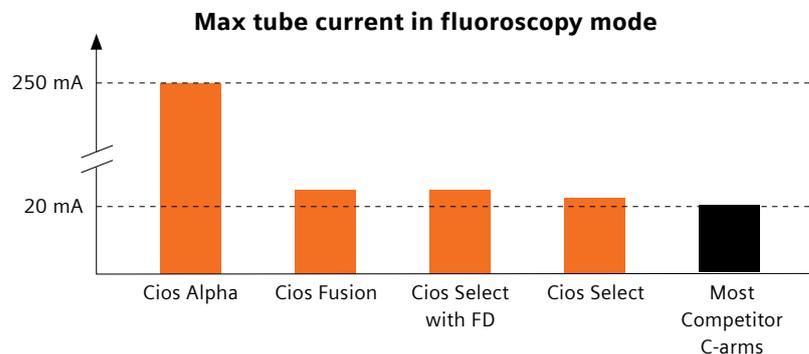
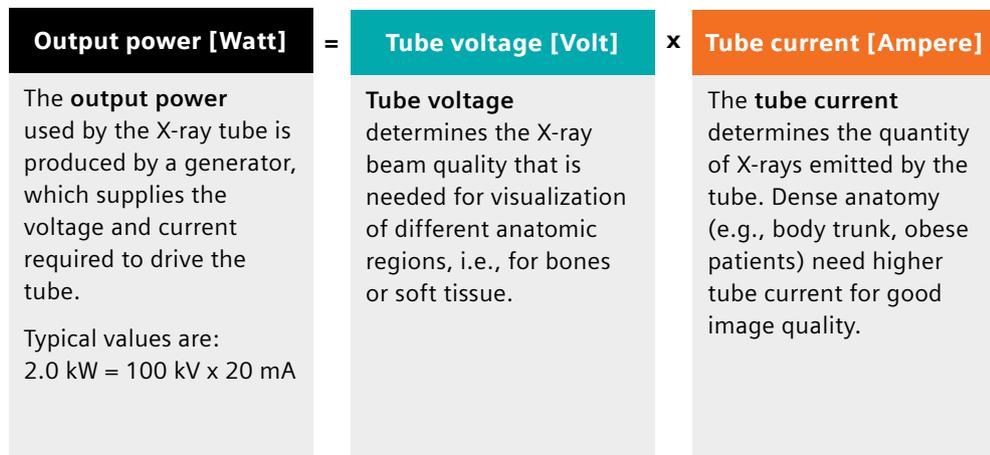
Cios Alpha

Designed for Full View FD at high power and fully motorized usability for **long, advanced procedures such as vascular, cardiac, and others.**

Power and image quality

The tube current determines the quantity of X-rays emitted by the tube. Dense anatomy needs higher tube currents for good image quality. High output power, however, does not necessarily mean good image quality; it is a theoretically achievable value with little clinical relevance (e.g., only in Cassette Mode, less than 1% of all procedures). Most C-arms have a maximum tube current of 20 mA for (regular or high level/boost) fluoro. At a typical tube voltage of 100 kV, this translates into 2.0 kW = 100 kV x 20 mA.

The Cios family of mobile C-arms has been designed for high max tube currents in order to create excellent image quality. All members exceed 2.0 kW output power.



Anode design and image quality

There are two types of X-ray tubes: those with stationary anodes and those with rotating anodes. Simply put: output power of up to 2.5 kW can be achieved with a small tube size and a stationary anode while higher power requires better heat capacity, a larger tube design, and a rotating anode. For most surgical applications, a stationary tube is sufficient to fulfill the power needs and heat loads.

Cios Alpha is the C-arm that is intended for the most advanced applications, thus equipped with a high power tube. Cios Select, Cios Select with FD, and Cios Fusion are intended for applications that a stationary tube can sufficiently fulfill.

| | Stationary anode | Rotating anode |
|---|--|--|
| + | <ul style="list-style-type: none"> Traditional, proven, long-lasting, and cost-efficient design | <ul style="list-style-type: none"> High maximum tube currents High heat capacity/dissipation |
| - | <ul style="list-style-type: none"> Limited for advanced power & time demanding cases | <ul style="list-style-type: none"> Larger tube housing More complex and expensive design |

| | | | |
|---|---|---|--|
|  |  |  |  |
| Cios Select | Cios Select with FD | Cios Fusion | Cios Alpha |
| Stationary anode | | | Rotating anode |

| | Cios Select | Cios Select with FD | Cios Fusion | Cios Alpha |
|--------------------------------------|-------------|---------------------|-------------|------------|
| Ortho/Trauma Surgery | ● | ● | ● | ● |
| Spine Surgery | ● | ● | ● | ● |
| Vascular Surgery | ● | ● | ● | ● |
| Cardiac Surgery | ● | ● | ● | ● |
| Gastroenterology & Abdominal Surgery | ● | ● | ● | ● |
| Pain Management | ● | ● | ● | ● |
| Urology | ● | ●* | ●** | ●** |

| | | | | |
|-------------------------------------|--------------------------|------------------------------------|---|---|
| Detector technology | Image intensifier (I.I.) | Image intensifier (I.I.) | Flat detector (FD) | Flat detector (FD) |
| Field of view | 23 cm (9 in.) | 23 cm (9 in.) | 30 cm x 30 cm (12 in. x 12 in.)*** 20 cm x 20 cm (8 in. x 8 in.) | 30 cm x 30 cm (12 in. x 12 in.)*** 20 cm x 20 cm (8 in. x 8 in.) |
| Max power output | 2,5 kW | 2,3 kW | 2,3 kW | 25 kW***/12 kW |
| Max tube current single image | 13 mA | 24 mA | 25 mA | 250 mA (at 25 kW***)/ 120 mA (at 12 kW) |
| Max tube current pulsed fluoroscopy | 24 mA | 24 mA | 25 mA | 250 mA (at 25 kW***)/ 119 mA (at 12 kW) |
| Heat storage capacity | 1.100 kHU | 1.200 kHU | 1.200 kHU | 5.300 kHU |
| Cooling system tube | Passive | Passive | Passive | Active*** |
| Continuous heat dissipation | 80 W | 80 W | 80 W | 300 W w/ active cooling/100 W w/o active cooling |
| Max. uninterrupted fluoro time | 50 min at 300 W | 20 min at 600 W 60 min at 170 W | 20 min at 600 W 60 min at 170 W | 60 min at 500 W |
| IDEAL (dose management) | Yes | Yes | Yes | Yes |

● Main application ● Possible application

*Main application for Lithotripsy **Main application for Endourology ***Option

At Siemens Healthineers, our purpose is to enable healthcare providers to increase value by empowering them on their journey toward expanding precision medicine, transforming care delivery, and improving patient experience, all enabled by digitalizing healthcare.

An estimated 5 million patients globally benefit every day from our innovative technologies and services in the areas of diagnostic and therapeutic imaging, laboratory diagnostics, and molecular medicine, as well as digital health and enterprise services.

We are a leading medical technology company with over 170 years of experience and 18,000 patents globally. With more than 48,000 dedicated colleagues in 75 countries, we will continue to innovate and shape the future of healthcare.

The outcomes and statements provided by customers of Siemens Healthineers are unique to each customer's setting. Since there is no "typical" hospital and many variables exist (e.g., hospital size, case mix, and level of service/technology adoption), there can be no guarantee that others will achieve the same results.

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