

MEDICAL IMAGING CT (COMPUTED TOMOGRAPHY)



1 Why are power supplies so special in CT?

- CT systems need up to 120 kW, mostly for X-ray generation.
- Power supplies must endure 90 g in rotating gantries.
- Low-noise, stable output is key for advanced detectors.
- Rugged, compliant designs ensure safe, reliable performance

2 AE's power supply options for CT equipment

Advanced Energy provides medically certified AC-DC and DC-DC solutions for all CT subsystems.

- LCM series (300 W – 3 kW) powers patient tables and gantry components
- Fanless LCC supports high-temp environments.
- iMP and uMP families offer configurable, multi-output power with intelligent control for dense system needs.
- UltraVolt High Power C Series delivers precise high-voltage DC-DC power for photon-counting detectors



LCM100 Series

1000 W AC-DC Power Supply



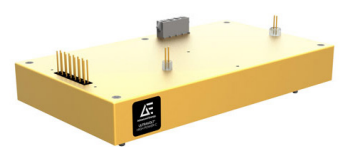
LCC600 Series

600 W Conduction Cooled AC-DC Power Supply



iMP Series

750 – 1500 W Configurable AC-DC Power Supplies



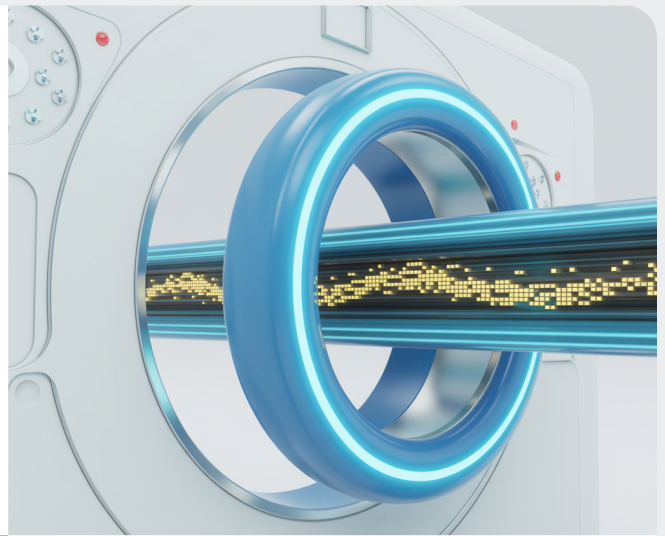
High Power C Series

Capacitor-Charging Supply for >30 W Applications

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Trends of power supplies in CT systems

- Faster gantry rotation boosts imaging speed and throughput but adds mechanical stress to CT components.
- Photon-counting detectors require compact, ultra-stable high-voltage DC-DC power supplies.
- Increasing demand for rugged, efficient, and precise solutions.
- Standard off-the-shelf products or full custom solutions based on application requirements



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Voltage accuracy and stability requirements



Modern CT detectors require ultra-stable voltage with ripple (noise in the single-digit millivolt range at ~1 kV.

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Typical power supply and voltage levels

- Multiple power supplies are used across CT subsystems.
- Patient tables and stationary gantries require 0.6 – 2 kW at 12 – 24 V.
- Rotating gantries range from 1 kW to 8 kW+, depending on system complexity.
- Photon-counting detectors need compact, high-voltage DC-DC power with exceptional stability and low noise.

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How does AE ensure 24/7 reliability for CT power solutions?



Advanced Energy power supplies offer:

- High efficiency for optimized performance in medical imaging systems
- Wide input voltage ranges for flexible integration across subsystems
- Thermal stability up to 85°C without derating, ensuring reliable continuous operation in harsh environments
- Medically certified for compliance and safety in demanding healthcare applications

