

## DC High Voltage Capacitor Charging Power Supplies 7.5 kJ/s to 20 kJ/s and more Series CCR

From 1 kV to 120 kV output voltage



**CCR24kV-7.5kJ**  
0 to 24 kV, 15 kJ/s

*Non-contractual photo*



**CCR30kV-20kJ**  
0 to 30 kV, 20 kJ/s

*Non-contractual photo*

### Main information

- Compact & industrial design
- Voltage & Current outputs continuously adjustable from 0 to 100%
- Voltage & Current setting and monitoring from front panel or remote interface
- High reliability & efficiency
- High precision regulation
- Total protection against arc, overload, short circuit & over temperature
- Remote, inhibit & interlock functions
- 3 ½ digit display with polarity display
- Master/Slave architecture and control unit allows **250 kJ/s** configurations and more
- Possibility to drive 2 to 6 chargers with control unit
- Double resonance technology (ZVC)
- Safety switch key
- Air cooling with high reliability fans
- 2 years warranty

\* You can choose your own full scales (Vmax and Imax) even if these values are not available in standard. For example, you can get a 45kV generator based on 3kJ/s model. In this case, you will get an Output Voltage adjustable from 0 to 45kV and an Output Current from 0 to 1.33A.

### Description

High Voltage CCR models of Capacitor Charging Power Supplies are designed for modulators, Excimer lasers, X Ray radiation Therapy and Flash lamps process.

As they integrate both double resonant technology and efficient components, they offer high reliability and performance.

These units offer in local and remote programming and monitoring, safety interlock, short circuit and overload protection like in all our products.

All the models are air cooled and their presentation can be either 19" racks (5U, 7U or 10U) or 19" cabinet with lifting rings and wheels.

Four ranges of charge rates available from 7.5kJ/s to 20kJ/s and more.

Designed to operate without damage or interruption in rugged environments, they support an intensive use 24 hours per day, 7days per week.

HV block can operate in the air up to 20 kV models. It is merged in an oil tank for higher Voltage models.

Much higher powers can be reached by using a master/slaves architecture or control-unit.

With its low cost per J/s, this series is particularly well adapted in applications looking for power and performance at affordable prices.



## Options

- ✓ Other voltage and current values available with no extra cost
- ✓ Reversibility and floating outputs
- ✓ Non instrumented front panel
- ✓ Automatic inhibit when discharging
- ✓ RS232, GPIB, Ethernet and Profibus interfaces
- ✓ Optic fibre transmission kit with RS232 only
- ✓ LABVIEW run time RS232 or GPIB or Ethernet
- ✓ Relay interface 24V DC
- ✓ Insulated remote interface
- ✓ Control-unit: for 2 to 6 chargers
- ✓ Repetition frequency > 10 Hz ; no extra cost
- ✓ Customer remote adaptation  
*General Atomics compatibility CS Series or other*
- ✓ Safety signs and devices alerting to hazard
- ✓ Tropicalization
- ✓ Remote front panel
- ✓ Specific AC or DC mains power inputs
- ✓ OEM design on request

*Any special requests can be considered*

Possible restrictions when multiple options (please contact our sales department for more details)

## Electrical specifications

### Output Voltage and Output Current

Both Voltage Output and Current Output are continuously adjustable from 0 to 100 % (full scale)

**local mode:** with 10 turns potentiometers *resolution 0.05%*

**remote mode:** by an external 0 to 10 V

### Maximum frequency

In standard : **10 Hz**

On request : **up to 1 kHz** depending on the application

### Reproducibility\* (pulse to pulse voltage variation)

For frequencies < 10 Hz : **± 0.1 %** *better on request*

For ±10% mains voltage : **± 0.1 %**

### Current regulation\*

**Load Regulation:** **± 0.05 %** (for 0 – 100 % load)

**Line Regulation:** **± 0.05 %** (for Mains Voltage ± 10 %)

**Voltage holding:** **0.25 % p-p** (*better on request*)

**Stored energy:** **0.2J/kJ**

### Protections

Against short circuit & HV arc to ground

Shutdown on Over temperature & open interlock

### Stability (after one hour warm-up)

**0.01 % / hour, 0.03 % / 8 hours** of operating with constant load and ambient temperature

**Temperature coefficient:** **100 ppm/°C**

**Operating temperature:** from **0 to 40°C**

**Efficiency:** **> 92 % full load**

### Air cooling by air

Dust filter fans on front panel

Easily removable filters for cleaning

### Mains voltage

**400 VAC ±10%** 47-63 Hz 3 Phase + Earth

**Inrush current:** limited to full power operating current

**Power factor:** **> 0.98**

**Calibration:** with probes periodically approved by Authorized Measurement Laboratories

### CE Certification

\* For fixed polarity

### Our chargers are supposed to be used in following conditions :

- Complete discharge
- Max. frequency : 10 Hz
- Capacitor Load
- Reversal Voltage ≤ 10% under certain conditions

If it is used in other conditions, please fill our charger form.



## Physical description

Non-contractual photo



	5U – 19" Rack	7U–19" Rack	10 U – 19" Rack	19" Cabinet
Dimensions	H222xW483xD600 mm	H311xW483xD600 mm	H 444xW483xD600 mm	Height : from 12 to 42 HU Depth : 800 mm

Voltage	CCR 7.5 kJ/s Series		CCR 10 kJ/s Series		CCR 15kJ/s Series		CCR 20kJ/s Series	
	Current	Model	Current	Model	Current	Model	Current	Model
< 1kV	ON REQUEST				ON REQUEST			
1 kV	15.00 A	CCR1KV-7.5KJ	20.00 A	CCR1KV-10KJ	30.00 A	CCR1KV-15KJ	40.00 A	CCR1KV-20KJ
2.5 kV	6.00 A	CCR2.5KV-7.5KJ	8.00 A	CCR2.5KV-10KJ	12.00 A	CCR2.5KV-15KJ	16.00 A	CCR2.5KV-20KJ
5 kV	3.00 A	CCR5KV-7.5KJ	4.00 A	CCR5KV-10KJ	6.00 A	CCR5KV-15KJ	8.00 A	CCR5KV-20KJ
10 kV	1.50 A	CCR10KV-7.5KJ	2.00 A	CCR10KV-10KJ	3.00 A	CCR10KV-15KJ	4.00 A	CCR10KV-20KJ
15 kV	1.00 A	CCR15KV-7.5KJ	1.33 A	CCR15KV-10KJ	2.00 A	CCR15KV-15KJ	2.67 A	CCR15KV-20KJ
20 kV	750 mA	CCR20KV-7.5KJ	1,00 A	CCR20KV-10KJ	1.50 A	CCR20KV-15KJ	2.00 A	CCR20KV-20KJ
25 kV	600 mA	CCR20KV-7.5KJ	800 mA	CCR25KV-10KJ	1.20 A	CCR25KV-15KJ	1.60 A	CCR25KV-20KJ
30 kV	500 mA	CCR30KV-7.5KJ	667 mA	CCR30KV-10KJ	1.00 A	CCR30KV-15KJ	1.33 A	CCR30KV-20KJ
40 kV	375 mA	CCR40KV-7.5KJ	500 mA	CCR40KV-10KJ	750 mA	CCR40KV-15KJ	1.00 A	CCR40KV-20KJ
50 kV	300 mA	CCR50KV-7.5KJ	400 mA	CCR50KV-10KJ	600 mA	CCR50KV-15KJ	800mA	CCR50KV-20KJ
60 kV	250 mA	CCR60KV-7.5KJ	333 mA	CCR60KV-10KJ	500 mA	CCR60KV-15KJ	667 mA	CCR60KV-20KJ
80 kV	188 mA	CCR80KV-7.5KJ	250 mA	CCR80KV-10KJ	375 mA	CCR80KV-15KJ	500 mA	CCR80KV-20KJ
100 kV	150 mA	CCR100KV-7.5KJ	200 mA	CCR100KV-10KJ	300 mA	CCR100KV-15KJ	400 mA	CCR100KV-20KJ
120 kV	125 mA	CCR120KV-7.5KJ	167 mA	CCR120KV-10KJ				
150 kV	ON REQUEST							
200 kV	ON REQUEST							

Polarity can be positive, negative, floating (option), or reversible(option)  
Floating or reversibility options can modify the size of the unit

Higher Voltage: Contact Us

### Example of reference : CCR 50KV-20KJ

Mode : CCR model (Capacitor charger)  
Voltage : Adjustable from 0 to 50 kV  
J/s : 20 kJ/s charging power

HV connectors and cables available



All our chargers are delivered with :

**HV output:**  
HV connector and 3 meters HV cable

**Mains input:**  
400 VAC models: Terminal block connector

