



Pulsotron 500K-RING Thermonuclear Fusion reactor Ignition Grade

Contains all the materials needed to build a thermonuclear fusion reactor designed to reach Ignition Conditions that consists on generating more energy that injected in the machine.

500K-RING is a 3 stage reactor heats electrostatically 1 kilojoule of plasma to a record energy 500KeV that could be used to confine and ignite high density plasma using up to 86 Megawatts high power system

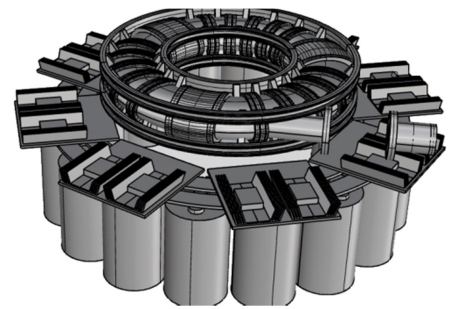
This scientific instrument is easy to upgrade and modify to adapt to different operation modes and it is remotely operated.

- PRELIMINARY SPECIFICATIONS -

Applications

This product operation upgrades an institution to first level in the investigation of following fields:

- High efficiency electrostatic plasma heating
- Thermonuclear Fusion Physics
- High Energy
- Energy Generation
- Plasma tests
- Plasma diagnostics



Features

- Designed to reach ignition conditions that generates more energy released than injected with adequate configuration and design of the power sequences
- 3 Stages multiturn high efficiency electrostatics acceleration of Hydrogen or Deuterium ions to 500KeV
- 86 Megawatts power that heats the fuel from 5 microseconds
- Low temperature electrons to allow high efficiency and high density
- High density fuel to yield high density fusion energy generation
- Anti-return magnetic coils
- Rated to clean fusion using aneutronic reactions: H-Li6 and H-Be9
- Could be used with H-B11 by using solid Boron or compound under client design
- Installation under 10kV for easy regulations
- Neutron generating reactions under installation under the responsibility of the user. Could be used to make D-D fusion by using deuterium ions hitting DLi7 as long as deuterium density in DLi7 is greater than pure deuterium solid.

- Investigators can design with their own software different discharge times to optimize operation
- Technical support 1 year
- Network cooperation with other colleges that uses the same installation

*Combustion chamber can be damaged if full ignition is reached

Some of the design parameters:

RING version		size 0.2	size 0.2
Cyclotron frequency,, $f=w/2\pi$, $w=v/r$	Hz	15.63E+6	15.63E+6
Particle energy	eV	5.00E+05	5.00E+05
Volts	V	1.20E+3	1.60E+3
Turns		208.33	156.25
Time to go	s	13.33E-6	9.99E-6
Energy	J	1000	750
Power	W	75.04E+6	75.04E+6
Amps. High current low inductance	A	62.53E+3	46.90E+3
Compression time	s	1.00E-3	1.00E-3
Amps using compressor	A	833.3333333	468.75
Element		H	D
Atomic mass	amu	1	2
Particle weight	Kg	1.66E-27	3.32E-27
Particles speed	m/s	9.82E+06	6.95E+06
Kg of accelerated particles	kg	2.07E-11	3.11E-11
Number of accelerated particles		1.25E+16	9.36E+15

Includes

- 3 High speed pulse generators that can be paralleled to generate peaks up to 74 Megawatts
- 2 pulse generators that allows peak discharges up to 5kA 1200V every one to generate pulses up to 12Megawatts
- Electrostatic acceleration system of 700Joule plasma to 500KeV from 4 microseconds
- Energy Pulse AC capacitors energy storage up to 6 Kilojoules
- Capacitor bank charger and discharger
- Vacuum grade reactor main chamber 0.2m diameter and coils support
- The Plasma chamber walls material is non-magnetic or low magnetic with low degassing
- Anti-return coils support
- Turbomolecular pump station
- Hydrogen/Deuterium generation and injection system
- GPIO card used to control the reactor
- Magnetic sensor

- Configuration Application of coils and main parameters
- 3 Targets
- Included wires, screws, sealing, pipes
- 1 year support

Operation

- Remote safe operation
- Safe working installation with all capacitors discharged
- User can modify coils parallel/serial configuration and parallel capacitors in order to modify test parameters

Pulse generators

- 8 pulse generators that can be paralleled to generate peaks up to 7.7 kiloamps at 1200V to 9Megawatt
- 2 pulse generators that allows peak discharges up to 5kA 1200V every one to generate pulses up to 12Megawatts
- 3 High speed pulse generators rated to 50Mhz 16/186Apk allowing an overall power of 74MW to heat 1Kilojoule plasma in 4 microseconds extracted from capacitor bank

Dimensions, weigh and external supply requirements

- Dimensions 500x500x300mm without vacuum pump and injection unit
- Approximate freight weight 40kg without turbomolecular pump
- 220V/110Vac 50/60Hz 3KW

Licencing, Terms and uses

These are PRELIMINARY SPECIFICATIONS: Drawings and specifications can be modified without notifying

It is a designing kit oriented to experienced users to allow them mounts their device. User is responsible of maintenance, safe operation and needed certifications when assembled

Customers are automatic joined to the consortium to allow integrate the different generated technologies, sharing the IP property accordingly its usefulness to easily integrate in production lines

Main Fusion design parameters

