

Cinel Strumenti Scientifici was founded in Padua in the 70's with a technical partnership of INFN LNL Legnaro Laboratory on particle accelerator projects and since then has been involved in some of the most challenging projects all over Europe.

Nowadays, CINEL has reached a long experience on mechanical design and manufacture of apparatuses in several scientific and research fields such as Synchrotron Light Sources (monochromators, fully integrated front ends and beam lines, experimental chambers), as well as accelerator components (vacuum chambers, accelerating cavities, radiofrequency quadrupole cavities) and accessories for analytical instruments such as laboratory gas generators.

Cinel has acquired skilled experience in the field of cryogenics, superconductivity, astrophysics and bio-mechanics collaborating with well-known institutions as a qualified partner in the mechanical, thermal and control system design and it can now propose turnkey solutions with high level standardization.

CAD-CAM environment and CNC machines allow Cinel to fully develop whole technical projects, from the design phase to the product certification taking care of all the electro-mechanical, pneumatic and hydraulic aspects.

Cinel in an ISO 9001 qualified company.

The first premises, the head quarter of the company, is 2000 m². It is arranged in order to separate the workshop area from the welding and from the mounting and testing areas. It is now operative a second premises of 500 m² for final assembly and testing. Both premises are based in Vigonza (Pd) Italy.



Azienda con sistema di qualità certificato ISO 9001:2008

ITALIAN PATENT
 Number 0001397254

EUROPEAN PATENT
 Application Number EP10814714.1

NITROGEN GENERATORS **N₂**

HYDROGEN GENERATORS **H₂**

OXYGEN GENERATORS **O₂**

ZERO AIR GENERATORS **Z** ZERO AIR

Luglio 2015



DESIGN AND PRODUCTION
 OF LABORATORY
 GAS GENERATORS



AD&RC series
 HYDROGEN
 GENERATORS

“Design and production
 of laboratory
 gas generators”

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www.cinelsrl.com
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The constant and completely
 autonomous supply of hydrogen flux



AD series



Description

Strumenti Scientifici CINEL s.r.l. has developed a new high purity hydrogen generator (>99,99999%) that is perfect for laboratory use since it allows to eliminate the safety problems caused by traditional bottles.

This new system uses PEM technology for the production of very pure hydrogen which is based on the innovative conception of the electrolytic cell that Cinel has developed together with the University of Padua's Chemical Science Department and for which has received the ITALIAN PATENT N. 0001397254 and the EUROPEAN PATENT Application Number EP10814714.1.

This device, in comparison with the current electrolysis cells on the market, reduces energy consumption, is safer to use and is mechanically more resistant.

The new AD series (Automatic Dryer System) hydrogen generator does not need maintenance because the gas purifying system regenerates cyclically, any maintenance of desiccant cartridge is not required.

Technical data

OUTLET PRESSURE	from 1 to 11.0 bar (14 psi to 160 psi)
STANDARD PURITY	>99,99999%
AVAILABLE FLOW RATES RANGE	100-1000 cc/min
TANK CAPACITY	10 liters
WATER LEVEL	Shown by graphic display
INPUT VOLTAGE	110 V / 60 Hz - 230 V / 50 Hz
WEIGHT	30 - 40 kg
POWER CONSUMPTION	80 - 380 Watt
FUSE	N.2 5x20 mm, 6.3 A, type T
PRESSURE ACCURACY	0.1 bar (± 0.5 %)
MICROPROCESSOR CONTROLLED DISPLAY	Graphic display, 128 x 64 px
INDEX OF PROTECTION	IP2x
TEMPERATURE	+10°C to +40°C
RELATIVE HUMIDITY	0-80%, non condensing
OUTPUT PORT	1/8
CASE DIMENSIONS	width 34 cm, height 43 cm, length 50 cm

RC series



The standard maintenance operations only include the periodical filling of the internal tank with deionized water. The tank's high capacity of 10 l greatly reduces the frequency of this operation.

The efficiency of the system is one of the best in the world for this kind of technology.

The new RC series (Regenerable Cartridge) hydrogen generator combines high performance with competitive price. The RC series has double desiccant cartridge columns with huge capacity that limit the frequency of the operations for the maintenance of the desiccant cartridge. A programmed alarm advises the user for the intervention.

The cartridge can be also replaced by a new one immediately without any waste of working time.

Applications

Ionization flame detector (FID)
Carrier gas for GC and GC MS
Collisions on ICP MS

Technical data

OUTLET PRESSURE	from 1 to 11.0 bar (14 psi to 160 psi)	OUTLET PRESSURE
STANDARD PURITY	>99,999%	STANDARD PURITY
AVAILABLE FLOW RATES RANGE	100-600 cc/min	AVAILABLE FLOW RATES RANGE
TANK CAPACITY	5 liters	TANK CAPACITY
WATER LEVEL	Shown by graphic display and visible	WATER LEVEL
INPUT VOLTAGE	110 V / 60 Hz - 230 V / 50 Hz	INPUT VOLTAGE
WEIGHT	25 - 35 kg	WEIGHT
POWER CONSUMPTION	80 - 225 Watt	POWER CONSUMPTION
FUSE	N.2 5x20 mm, 6.3 A, type T	FUSE
PRESSURE ACCURACY	0.1 bar (± 0.5 %)	PRESSURE ACCURACY
MICROPROCESSOR CONTROLLED DISPLAY	Graphic display, 128 x 64 px	MICROPROCESSOR CONTROLLED DISPLAY
INDEX OF PROTECTION	IP2x	INDEX OF PROTECTION
TEMPERATURE	+10°C to +40°C	TEMPERATURE
RELATIVE HUMIDITY	0-80%, non condensing	RELATIVE HUMIDITY
OUTPUT PORT	1/8	OUTPUT PORT
CASE DIMENSIONS	width 25 cm, height 42 cm, length 35 cm	CASE DIMENSIONS