



▶ **HYSTORY**

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). 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.

A new activity branch has been started in 2005 profiting from the expertise gained in years of R&D programs finalized to high precision mechanics in several research fields; a complete range of analytical gas supply generators has been devolved (nitrogen, hydrogen and zero air) widening the business area to the laboratory analytical instrumentation. Since the beginning the new division has been devoted to the design and production of analytical gas generators which have been rapidly renowned in Italy first than in Europe and outside Europe.

Thanks to the positive impact and to the very promising results on the market, the analytical gas generators branch activity in the end of 2014 was separated from the main company "Strumenti Scientifici Cinel" and the new company "CINEL SRL Gas Generators Technology" has been founded.

▶ **PATENT**

ITALIAN PATENT  
Number 0001397254

INTERNATIONAL PATENT  
Application Number EP10814714.1

▶ **CERTIFICATIONS**



Azienda con sistema di qualità certificato ISO 9001:2008

DESIGN AND PRODUCTION  
OF LABORATORY  
GAS GENERATORS



**AD&RC series**  
HYDROGEN  
GENERATORS



“Design and production  
of laboratory  
gas generators”



# AD series

no maintenance



## Description

CINEL s.r.l. Gas Generators Technology 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 bar (14 psi to 160 psi)
STANDARD PURITY	>99,99999%
AVAILABLE FLOW RATES RANGE	100-180-220-260-300-500-600-700-800-900-1000 cc/min
TANK CAPACITY	10 liters
WATER LEVEL	Showed by graphic display and visible
INPUT VOLTAGE	110 or 230 V - 50 or 60 Hz
WEIGHT	30 - 40 kg
POWER CONSUMPTION	80 - 380 Watt
PRESSURE ACCURACY	0.1 bar (± 0.5 %)
MICROPROCESSOR CONTROLLED DISPLAY	Graphic display, 128 x 64 px
INDEX OF PROTECTION	IP2
TEMPERATURE	+5°C to +35°C
RELATIVE HUMIDITY	0-80%, non condensing
OUTPUT PORT	1/8"
CASE DIMENSIONS	34x43x50 cm (WxDxH)

# 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 10.0 bar (14 psi to 145 psi)	OUTLET PRESSURE
STANDARD PURITY	>99,9995 %	STANDARD PURITY
AVAILABLE FLOW RATES RANGE	100-180-220-260-300-500-600 cc/min	AVAILABLE FLOW RATES RANGE
TANK CAPACITY	5 liters	TANK CAPACITY
WATER LEVEL	Showed by graphic display and visible	WATER LEVEL
INPUT VOLTAGE	110 or 230 V - 50 or 60 Hz	INPUT VOLTAGE
WEIGHT	25 - 35 kg	WEIGHT
POWER CONSUMPTION	80 - 225 Watt	POWER CONSUMPTION
PRESSURE ACCURACY	0.1 bar (± 0.5 %)	PRESSURE ACCURACY
MICROPROCESSOR CONTROLLED DISPLAY	Graphic display, 128 x 64 px	MICROPROCESSOR CONTROLLED DISPLAY
INDEX OF PROTECTION	IP2	INDEX OF PROTECTION
TEMPERATURE	+5°C to +35°C	TEMPERATURE
RELATIVE HUMIDITY	0-80%, non condensing	RELATIVE HUMIDITY
OUTPUT PORT	1/8"	OUTPUT PORT
CASE DIMENSIONS	25x42x35 cm (WxDxH)	CASE DIMENSIONS