



Nanospider™ Air Conditioning Unit

NS AC150, NS AC1000, NS AC2000

Precision fiber production requires a precision environment. The Nanospider™ Air Conditioning („NS AC“) product family is the first set of industrial-caliber **precision air conditioning** peripherals explicitly designed to meet the needs of precision fiber production and other sensitive manufacturing processes. The NS AC units provide outstanding accuracy and precision of output humidity and temperature across a broad range of ambient environments.



- ➔ Output humidity accuracy: +/- 3% RH
- ➔ Output temperature accuracy: +/- 1°C
- ➔ Independency on input variability

PRODUCT LINE

- **Customized AC units**
 - Elmarco delivers precision air conditioning units with parameters according to specific customer's needs, optimized for low investment and operating costs
- **NS AC150**
 - Small AC unit designed for laboratory and small volume production Nanospider™ equipment
 - Nominal process air flow 150 m³/hour
- **NS AC1000**
 - AC unit for single Nanospider™ production line
 - Nominal process air flow 1000 m³/hour
- **NS AC2000**
 - AC unit designed for multiple Nanospider™ production line units
 - Nominal process air flow 2000 m³/hour

FEATURES

- **Optimized for nanofiber production**
 - Built from the ground up to meet the accuracy and precision needs of industrial scale nanofiber recipes
 - High accuracy system for critical manufacturing processes
- **High output accuracy**
 - Output humidity accuracy: +/- 3% RH
 - Output temperature accuracy: +/- 1°C
 - Independency on input variability
- **Low energy consumption**
 - Dessicant wheel dehumidification
 - Heat recovery from output air stream
- **Easy to operate**
 - Fully automated operation
 - Low maintenance requirements



Nanospider™ Air Conditioning Unit

TECHNICAL DATA

PARAMETERS

Process side	NS AC150	NS AC1000	NS AC2000
Process air INLET	150 m ³ /hour	1000 m ³ /hour	2000 m ³ /hour
INLET temperature	18,0 - 30,0 °C	18,0 - 32,0 °C	18,0 - 30,0 °C
INLET humidity	1,5 - 13,0 g/kg	1,5 - 13,0 g/kg	1,5 - 12,0 g/kg
OUTLET temperature	20,0 - 25,0 °C	20,0 - 30,0 °C	20,0 - 30,0 °C
OUTLET specific humidity	1,5 - 9,0 g/kg	1,5 - 9,0 g/kg	1,5 - 9,0 g/kg
OUTLET temperature accuracy	+/- 1,0 °C	+/- 1,0 °C	+/- 1,0 °C
OUTLET humidity accuracy	+/- 3,0% RH	+/- 3,0% RH	+/- 3,0% RH
External pressure	150 Pa	200 Pa	250 Pa

Relative to p = 1013 mbar and σ = 1,2 kg/m³

Regeneration side	NS AC150	NS AC1000	NS AC2000
Regeneration airflow	120 m ³ /hour	120 m ³ /hour	500 m ³ /hour
INLET temperature	18,0 - 30,0 °C	18,0 - 30,0 °C	18,0 - 30,0 °C
INLET humidity	1,5 - 13,0 g/kg	1,5 - 13,0 g/kg	1,5 - 12,0 g/kg
Reactivation heater	3,0 kW	12,0 kW	18,0 kW
External pressure	50 Pa	200 Pa	150 Pa

Relative to p = 1013 mbar and σ = 1,2 kg/m³

Dimension	NS AC150	NS AC1000	NS AC2000
Height:	1800 mm	1940 mm	2200 mm
Width:	800 mm	1310 mm	1405 mm
Length:	2510 mm	4200 mm	4710 mm
Weight:	490 kg	1560 kg	1670 kg

EQUIPMENT

Safety/regulation

Meets all CE requirements

Maintenance

The equipment is nearly maintenance-free. The chiller and the input air filter should be checked on a frequency dictated by local conditions.

Optional equipment

Water chiller

Water accumulator

Water softener and filter

SITE

Connections

Voltage supply: 3/N/PE, 230/400 V, 50 Hz, 32 - 63 A

Process air duct connection: DN160 - 250 - 315

Waste air duct connection: DN80 - 160 - 160

Process water connection: 3/4" (1 - 8 bar)

Cooling water connection: G 1" - G 6/4" - G 2"

Drain water: DN32 (PVC piping)

The NS AC150, NS AC1000 and NS AC2000 are designed for specific Nanospider™ equipment needs in moderate regions and environments. To meet specific customer's needs, Elmarco delivers customized air conditioning units with parameters from a wide range of input and output characteristics.

