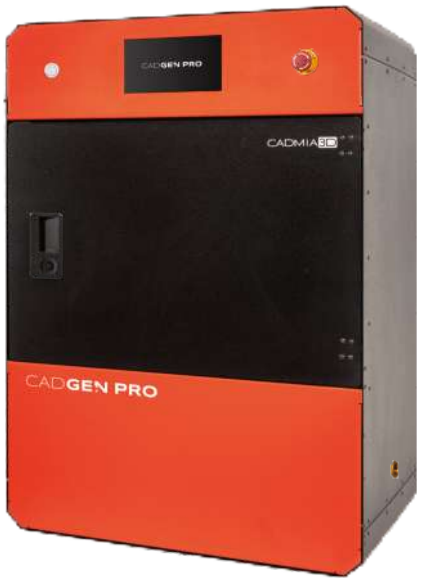
CADMIA TOOLS

# CADGEN PRO

Product specification




## Nitrogen Generator with Membrane Technology

- Achievable nitrogen purity: 99.8% (±2%)
- Inlet pressure range: 6–10 bar
- Nitrogen output flow rate: up to 25 L/min
- Nitrogen grade: 4.0 and higher
- Required inlet air quality: 1-4-1 (ISO 8573-1:2010)
- Dimensions: 581 × 830 × 250 mm
- Weight: 35 kg
- Power consumption: 100 W

### High-Quality Membrane Generator

- Premium membrane made of high-grade aluminum with technically advanced fibers
- Nitrogen extraction occurs without any moving parts
- Exceptional performance in nitrogen separation

### Highly Efficient Control

- Thanks to microprocessor-controlled valves, the generator is capable of maintaining all set parameters in real time
- Electronic control of the generator protects the membrane and reduces air consumption

### Simple, Reliable, and User-Friendly

- Universal plug & play solution
- All filters integrated in a sealed housing
- Easy setup via touch display
- No professional installation or commissioning required

### Guaranteed Purity

- The electronics continuously maintain nitrogen purity and flow

### With Integrated Pre-Filtration

- A built-in three-stage pre-filtration system is seamlessly integrated into the generator

### Automatic Calibration

- No need to waste time on manual calibration–everything runs automatically

- CADgen PRO, a new nitrogen generator developed by Cadmia 3D, is primarily designed for SLS 3D printers equipped with a nitrogen chamber. However, thanks to customizable user parameters, it is suitable for a wide range of industrial applications requiring a consistent supply of high-quality nitrogen.
- It utilizes membrane-based compressed air separation technology. Membrane generators are an excellent choice for additive manufacturing applications.
- Thanks to its design, construction, durability, and ease of use, the generator unit is an ideal solution for 3D printing with materials that require an inert atmosphere. All pre-filters, control elements, and input/output pressure regulators are integrated directly into the generator.

SLS 3D print, that you will enjoy!

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## Advantages of membrane technology for nitrogen generation

### Less membrane modules needed per nitrogen system

More nitrogen per fibre is produced from Parker hollow-fibre membranes than any other in the world

### Large membrane diameter

Lowest membrane module pressure drop

### Use of low pressure standard industrial compressor

No high pressure compressor needed to obtain required nitrogen flow

### Quick start-up time

Required nitrogen purity is produced instantly, no time needed to heat-up

### Energy savings

Operation at a low pressure requires less energy

### Low noise operation

Radiated noise generated by membrane technology is extremely low

### Reduced CO2 emissions

No heater required to open polymer membrane structure, thus reducing the energy consumption

### No maintenance required

No user serviceable parts

| Purity % | Typical Nitrogen flow rate in m3/hr) (SCFM) | | | | | |
|---|---|---|---|---|---|---|
| | 99,5 | 99,0 | 98,0 | 97,0 | 96,0 | 95,0 |
| 4 bar g (58 psi g) | 0.20 (0.12) | 0.32 (0.19) | 0.50 (0.29) | 0.73 (0.43) | 0.84 (0.49) | 1.04 (0.61) |
| 5 bar g (72.5 psi g) | 0.28 (0.16) | 0.46 (0.27) | 0.73 (0.43) | 0.92 (0.54) | 1.17 (0.69) | 1.54 (0.91) |
| 6 bar g (87 psi g) | 0.44 (0.21) | 0.60 (0.35) | 0.92 (0.54) | 1.20 (0.71) | 1.53 (0.9) | 1.75 (1.03) |
| 7 bar g (101.5 psi g) | 0.44 (0.26) | 0.71 (0.42) | 1.16 (0.68) | 1.49 (0.88) | 1.90 (1.12) | 2.10 (1.24) |
| 8 bar g (116 psi g) | 0.54 (0.32) | 0.85 (0.5) | 1.31 (0.77) | 1.75 (0.77) | 2.17 (1.28) | 2.60 (1.53) |
| 9 bar g (130.5 psi g) | 0.59 (0.35) | 0.97 (0.57) | 1.54 (0.91) | 2.08 (1.22) | 2.50 (1.47) | 3.00 (1.77) |
| 10 bar g (145 psi g) | 0.67 (0.39) | 1.11 (0.65) | 1.78 (1.05) | 2.29 (1.35) | 2.80 (1.65) | 3.40 (2) |

| Purity % | Typical Feed-air consumption at nitrogen flow rate in m3/hr) (SCFM) | | | | | |
|---|---|---|---|---|---|---|
| | 99,5 | 99,0 | 98,0 | 97,0 | 96,0 | 95,0 |
| 4 bar g (58 psi g) | 1.9 (1.1) | 1.8 (1.1) | 1.9 (1.1) | 2.3 (1.4) | 2.3 (1.4) | 2.5 (1.5) |
| 5 bar g (72.5 psi g) | 2.2 (1.3) | 2.3 (1.4) | 2.6 (1.5) | 2.7 (1.6) | 3.0 (1.8) | 3.6 (2.1) |
| 6 bar g (87 psi g) | 2.5 (1.5) | 2.8 (1.6) | 3.2 (1.9) | 3.4 (2) | 3.9 (2.3) | 4.0 (2.4) |
| 7 bar g (101.5 psi g) | 3.0 (1.8) | 3.3 (1.9) | 3.9 (2.3) | 4.2 (2.5) | 4.8 (2.8) | 4.7 (2.8) |
| 8 bar g (116 psi g) | 3.5 (2.1) | 3.8 (2.2) | 4.4 (2.6) | 4.9 (2.9) | 5.4 (3.2) | 5.8 (3.4) |
| 9 bar g (130.5 psi g) | 3.7 (2.2) | 4.3 (2.5) | 5.1 (3) | 5.8 (3.4) | 6.3 (3.7) | 6.7 (3.9) |
| 10 bar g (145 psi g) | 4.1 (2.4) | 4.8 (2.8) | 5.9 (3.5) | 6.3 (3.7) | 7.0 (4.1) | 7.5 (4.4) |

| Ambient Conditions | |
|---|---|
| Ambient temperature | +2°C to +45°C (+36°F to 113°F) |
| Ambient pressure | atmospheric |
| Air quality | clean air without contaminants |

| Operating Conditions Feed-air | |
|---|---|
| Maximum operating pressure | 13.0 bar g (190 psi g) |
| Min. / Max. operating temperature | +2°C to +50°C (+36°F to 122°F) |
| Maximum oil vapour content | <0.01 mg/m3 (<0.01 ppm (w)) |
| Particles | filtered at 0.01 µm cut off |
| Relative humidity | <100% (non condensing) |

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