

# AEROSOL GENERATORS

## 7811

The Grimm 7811 multi-purpose nebulizer is a ready-to-use aerosol generator with two integrated pumps to provide air for atomizing particles and an optional dilution and drying of the raw aerosol.

Both flow rates can be independently controlled, the dilution air flow can be monitored by an integrated flowmeter.

A diffusion dryer column is located at the front of the instrument for easy maintenance and regeneration of the silica gel.

For convenience, up to six nebulizers can be stored inside the removable cover on the instruments backside.



### SPECIFICATIONS

particle generation method  
 particle concentration  
 outlet aerosol flow rate  
 power supply  
 air supply  
 maximum altitude  
 ambient temperature  
 ambient humidity  
 size (h x w x d)  
 weight

nebulizer  
 dependent on material (e.g. DEHS >  $10^7$  p/cm<sup>3</sup>)  
 nebulizer: ~ 2.5 - 7.0 L/min; dryer: ~ 7.5 - 17 L/min  
 100 – 240 VAC / 50 – 60 Hz / 1.7 A  
 two integrated pumps (two controllable flows)  
 2000 m (6500 ft)  
 0 – 40°C (32 – 104°F)  
 0 – 90% RH, non-condensing  
 32.5 x 31 x 28 cm (12.8 x 12.2 x 11 in)  
 11 kg (24.3 lbs)

### FEATURES

- generation of aerosols from all kinds of liquids, suspensions and solutions e.g. NaCl, DEHS, PSL
- integrated pumps
- no compressed air needed
- independently controllable flows (nebulizer flow and dry air flow)
- suitable for small liquid volumes

### APPLICATIONS

- instrument calibration and testing
- filter efficiency testing
- inhalation and toxicology studies
- multi-purpose test aerosol generation

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## 7860

The Grimm 7860 WO<sub>x</sub> generator is a ready-to-use instrument to produce well defined aerosol particles in the size range between 1.2 – 20 nm. Its principle of operation is based on the sublimation of tungsten oxide. Heated tungsten reacts in dry, clean air to several oxides and nitrates. A heating cell around a WO<sub>x</sub> coil provides a temperature of approximately 900°C – the sublimation temperature of WO<sub>3</sub>. Tungsten oxide sublimates into a controlled fraction of the carrier gas and is immediately diluted when exiting the heated zone by a flow of purified air. (Reischl et al. 1997, Ankilov et al. 2002, Steiner 2006).

By means of three adjustable flows (WO<sub>x</sub> air, carrier air, dilution air) and a variable heating source, the mean particle diameter and output number concentration of the aerosols can be controlled.

The generator operates with an external compressed air supply (2 – 6 bar). An automatically operating security valve secures the instrument in the case of accidental overpressure.

The unit is designed in accordance with the German VDI Standard 3491.



### SPECIFICATIONS

particle size range	1.2 – 20 nm
particle concentration	variable up to 10 <sup>7</sup> p/cm <sup>3</sup>
outlet aerosol flow rate	~ 0.03 - 33 L/min
material	tungsten oxide
power supply	85 – 264 VAC / 47 – 440 Hz max. 1 A (RMS by 110 VAC)
air supply	external compressed air (2 – 6 bar; oil and particle free)
cleaning system	integrated
size (h x w x d)	22 x 17.7 x 27 cm (8.7 x 7 x 10.6 in)
weight	7.5 kg (16.5 lbs)

### FEATURES

- particle size range 1.2 - 20 nm
- well-defined aerosol material (WO<sub>x</sub>)
- controllable mean particle diameter
- controllable particle number concentration
- external compressed air supply (2 – 6 bar)
- integrated cleaning system

### APPLICATIONS

- fine filter efficiency test
- inhalation and toxicology studies
- mixing and coating processes (e.g. for ceramic technology)
- determination of the detection limits and efficiency of condensation particle counters