

# Components

## Bubbler Precursor Temperature Controller



Many reaction constituents for semiconductor and PV processes are available only in liquid phase. We adopted suitable delivery systems to make them usable for technology process. One of the methods is based on liquid vapor pick-up by flowing gaseous media through the liquid. Flow of such carrier gas is controlled by electronic MFCs and is introduced to liquid container through a dip-tube while a carrier vapor mixture leaves the container through separate top outlet. In order to maintain the same pick-up rate during the whole process and from process to process, liquid media temperature has to be precisely controlled. We developed proprietary powerful combined cooling/heating engine for dry bath environment.

### Technical Data

Dimensions W x H x D (mm)	320 x 240 x 320 (Liquid container $\varnothing$ 145 - 155)
Weight	15kg
Max. power consumption	150W (Cooling power 30W)
Max. cooling/heating, relative to ambient	-20°C/+50°C
Regulation accuracy	+/-0.1°C