

# 6 Semiconductor Manufacturing Process PRECISION AIR CONDITIONING UNIT

## Compact, chlorofluorocarbon-free, and low vibration/noise small-space air conditioning unit for precision control of temperatures and humidity in a spin coater cup

The air conditioning unit performs precision control of temperatures and humidity of the clean air supplied into a spin coater cup, ensuring uniform and highly reproducible photoresist characteristics. Cooling and dehumidifying with Thermo-Module guarantees such superior features as high accuracy, high stability, chlorofluorocarbon-free, compact size, light weight, and low vibration and noise.

### Features

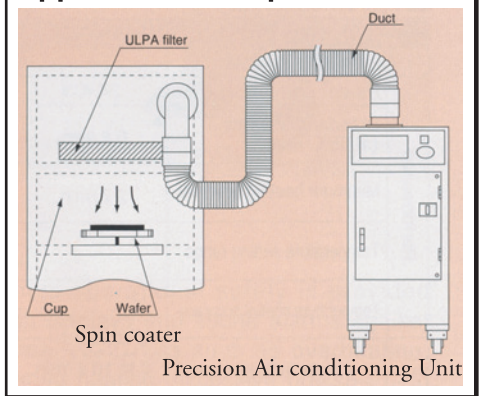
1. High accuracy  
A cooling dehumidifier with Komatsu's unique Thermo-Module offers highly accurate temperature and humidity control while ensuring a stable temperature and humidity regardless of the change in the ambient temperature and humidity.
2. Compact  
Small overall dimensions enable installation in a small space.
3. Chlorofluorocarbon-free  
The cooling/dehumidifying method without using chlorofluorocarbons is environmental friendly.
4. Low vibration and noise  
Since a compressor is not used, vibrations and noise during operation are minimal.



### Applications

1. Temperature and humidity control of the air in the spin coater cup
2. Air conditioning of various small spaces which require precision temperature and humidity control (Semiconductor, opto-electronics, and bio-medical related industries)

#### Application example



### Specifications

Model		SPA-5120-B
Environment	Working temperature and humidity	20 to 27°C and 35 to 50%RH
	Permissible variation of temperature	1.0°C/5min. (at a constant, relative humidity)
	Permissible variation of humidity	1.0°C RH/5min. (at a constant temperature)
Air supply	Maximum air flow capacity	3.0m <sup>3</sup> /min.
	Maximum cooling capacity	5°C lower than inlet temperature
	Maximum heating capacity	10°C higher than inlet temperature
	Maximum dehumidifying capacity	Down to 45% RH from 50%RH at an inlet temperature of 23°C
	Maximum humidifying capacity	UP to 60% RH from 35%RH at an inlet temperature of 23°C
	Temperature controllability	± 0.1°C
	Humidity controllability	± 0.5% RH
	Rise time	Less than 30 min.
Control method	Cooling and dehumidifying method	Digital PID cooling control with Thermo-Module
	Heating method	Digital PID heating control with a heater
	Humidifying method	Digital PID humidifying control with a pan type preheater
	Air adjusting method	Control of fan motor's revolution
Overall dimensions(mm)*1		W450 × D860 × H1100
Weight		Approx. 140kg
Power requirement		3-phase, 200-220VAC, -15%/+10%
Power frequency		50/60Hz ± 3Hz
Input current		Max. 20A
Power consumption		Max. 6.4kW

\*1: Not including the dimensions of any projections.