

QUADRIO^α

HIGH VOLUME PLASMA SYSTEM

Quadrio^α is a compact standalone plasma cleaning system suitable for substrates with a strip form factor.

Capable of performing **PE** and **RIE** processes, the **Quadrio^α** provides high uniformity reliable results with a competitive throughput.

Quadrio^α comes in two versions:

- **Quadrio^{α4}** with **4 tracks**, 400 UPH*
- **Quadrio^{α5}** with **5 tracks**, 500 UPH*

Both versions contain all subassemblies required for your plasma process:

- A 13.56 MHz RF system inclusive of an automatic tuning network
- Two mass flow controlled gas input lines
- A dry vacuum pump contained in the body of the machine
- A high precision capacitive pressure gauge
- An all-aluminum chamber with no welded joints, nickel-coated for maximum performance
- Two automatic doors
- A PC controller with a fieldbus and an LCD touch screen user interface
- An anti-jam system that protects the substrates, with automatic recovery function

*Throughput capability is measured with 10 sec plasma time.



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General Enquiries

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APPLICATIONS

- Organic decontamination and surface activation of lead frames prior to wire bonding
- Adhesion promoter prior to molding
- Adhesion promoter of die attach materials on lead frames or PBGA strips
- Adhesion promoter for flip chip packages prior to underfill
- Flux removal from semiconductor packages or hybrids
- General activation, cleaning and decontamination

PROCESS GASES

- Pure: Ar, He, O₂, N₂, H₂
- Mixtures: N₂/H₂, Ar/O₂, Ar/H₂ all in various mix ranges
- Other gases available on request

SOFTWARE SPECIFICATIONS

Microsoft Windows™ based software, inclusive of:

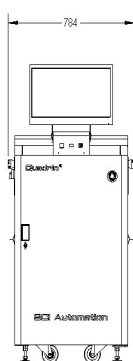
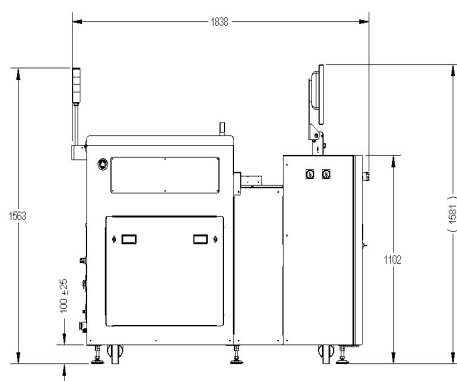
- User interface on touch screen
- Full manual and automatic operation
- Setup page to allow full customization
- User page with security level selection for controlled access to the machine
- Programs page, for the selection and definition of all the process variables
- Automatic advanced logging capabilities

OPTIONS

- SECSGEM
- Single substrate traceability package
- Purge line
- H₂ generator
- 3rd gas line
- Ionizer
- High capacity vacuum pump

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HIGH VOLUME PLASMA SYSTEM



System name / type	Quadrio ^α	Standalone high throughput strip plasma system
System dimensions	Footprint (mm)	784 x 1838 x 1581H (including monitor)
	Weight (kg)	540
Quadrio^{α5} substrates / magazines	Min dimensions (mm)	25 x 100 x 0.1H / 35 x 100 x 50H
	Max dimensions (mm)	75 x 300 x 1.5H / 85 x 300 x 250H
Quadrio^{α4} substrates / magazines	Min dimensions (mm)	25 x 100 x 0.1H / 35 x 100 x 50H
	Max dimensions (mm)	100 x 300 x 1.5H / 105 x 300 x 250H
Chamber	Material	Nickel-coated aluminum
	Dimensions (mm)	505 x 314 x 87H
	Volume (L)	13.79
	Plasma type	Direct plasma; RIE
RF generator	Frequency (MHz)	13.56
	Max power (Watts)	600
Automatic tuning network	Type	L/C Network
	Functions	Auto tuning; preset tuning
	RF line	All silver-coated copper conductor
Electrodes configuration	Geometry	Planar
Pressure gauge	Type	Capacitive
	Range (mbar)	0.0001 to 1
Gas lines	Quantity	2
	Max flow rate (mL/min)	200
Pumping system	Vacuum pump	Dry pump (600 L/min)
Controller	PC with fieldbus	CPU; digital I/Os; DAC and ADC
	User interface	21" active touch screen
System facilities	Electrical power supply	Single phase 110-240V 50/60 Hz, 2.5KVA
	Process gas fittings	Swagelok 6 mm OD
	Process gas pressure	1 to 1.5 bar
	Process gas purity	99.995 % or better
	Compressed air	5 to 6 bar
	Compressed air fittings	8 mm OD one touch fitting
	Exhaust port	25 mm OD
Standards	SEMI	S2, S8, E10-0814
		Cleanroom ready
	Others	ISO 9001
		CE
Options	Hydrogen generator	Up to 300 mL/min of H ₂ with purity above 99.995 %
	Traceability package	Handling of substrates marked with 2D codes.
	High capacity pump	Dry pump up to 1000 L/min