RIE

Engineered for hard-to-etch materials like compound semiconductors and thermal oxide films.

Spica, Sirius, Sculptor

SPT's Reactive Ion Etching (RIE) systems — Spica, Sirius, and Sculptor — are designed for precise, high-uniformity etching of hard-to-process materials such as SiC, GaN, compound semiconductors, and thermal oxide. With advanced plasma control and optimized chamber design, our tools deliver excellent anisotropy, selectivity, and process stability for both R&D and mass production environments.

Applications:

- Through-Silicon Via (TSV)
- LED Devices
- RF Devices
- Power Semiconductor Devices
- Optical Devices

FEATURES
Why Choose SPT for High-Precision RIE

Optimized Plasma for Difficult Materials

Delivers stable etching for compound semiconductors and oxide films.

Industry-Leading SiC Etch Rate

Ideal for RF and power device manufacturing.

High-Speed Etching for Optical Devices

Processes hard materials like SiO_2 and $LiNbO_3$ with speed and precision.

Enables vertical anisotropic etching of polymer layers.

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Precise Etching of Organic Films
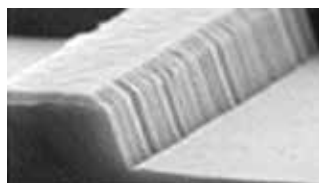
Enables vertical anisotropic etching of polymer layers.

RIE Performance for Material Selectivity, Profile Control, and Precision Etching

Vertical Etching of Organic Films

High-Speed Etching of $LiNbO_3$

Tapered SiC Etching (Courtesy of RFMD)

Multilayer SiO_2 Etching for Optical Waveguides

Specifications

Process Module	Spica	Sirius	Sculptor
Wafer size (mm)	200	200	200
Platform	APX, DPX, VPX, CPX	APX, DPX, VPX, CPX	APX, DPX, VPX, CPX
Etching Speed	Medium	High	High
Processing Damage	Extremely Low	Low	Low
Substrates	GaN, GaAs	SiO_2, SiN, quartz, Glass	SiC

Platform	APX	DPX	VPX	CPX
Intended Use	R&D	Prototype	Small Volume	Mass Production
Number of Chambers	1	2	3	4
Cassette Transfer Robot	-	Atmospheric	Vacuum	Vacuum
Robot Motion	2-Axis	2-Axis	3-Axis	3-Axis
Number of Cassette Stations	0	2	1	2