

Target stage

SOLUTIONS FOR EVERY PLD SYSTEM

TSST offers custom solutions for target stage designs based on a scanning or spinning motion of the targets, necessary to prevent drilling of the laser beam into the target. Both designs may hold up to six targets and can be equipped with shielding to prevent cross contamination.

TARGET SPINNING STAGE

A spinning target stage geometry uses spinning (rotation about the normal) and includes (automated) quick and accurate target selection. Typically six 1" targets or three 2" targets can be loaded. When the system is equipped with a loadlock, the full target carousel can be transferred.

TARGET SCANNING STAGE

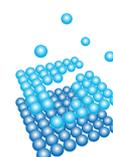
For the scanning stage geometry, the target carousel is mounted onto an XYZ manipulator, which moves in a pre-

programmed pattern. It is equipped with an automated quick and accurate target selection. Various scanning patterns can be set by the software, making this solution very suited for allowing efficient ablation of smaller or odd-shaped targets. Depending on the preferred design the whole carousel or individual targets can be transferred to the loadlock. As the design excludes any rotating parts in the chamber, this solution is highly recommended when true UHV conditions are required.

TSST is specialised in customised products. With almost 20 years of experience TSST is able to offer individually designed systems and components adapted to the need of our customer. This includes preparing a system for future upgrades.

Target stage solutions and possibilities

	Stage movement			Stage geometry			# and size		Target shape		Transfer	
	X	Y	Z	Horizontal	Vertical	UHV compatible	up to 6 targets	up to 2 inch	Round	Odd shaped	Individual targets	Whole carousel
Scanning	●	●	●	●	●	●	●	●	●	●	●	●
Spinning			●		●		●	●	●		●	●



TSST

Target stage

* optional

Typical Target Stage Specifications

TARGET SPINNING STAGE



Rotation of individual target to prevent laser drilling

Stage movement	Z, target select, individual target spinning
Amount of targets	up to 6
Target size	1", up to 2"
Target shape	Typically disc shaped
Transfer method	Individual targets or whole carousel (through loadlock*)
Stage geometry	Vertical
UHV compatible (<math><5 \cdot 10^{-10}</math> mbar)	No
Target shielding	Included

TARGET SCANNING STAGE



Programmable motion of the target to prevent laser drilling

Stage movement	Z, Y, Z, target select
Amount of targets	up to 6
Target size	1", up to 2"
Target shape	Disc, odd shaped
Transfer method	Individual targets or whole carousel (through loadlock*)
Stage geometry	Vertical, horizontal
UHV compatible (<math><5 \cdot 10^{-10}</math> mbar)	Yes
Target shielding	Included in vertical configuration, optional in horizontal configuration

CUSTOM TARGET STAGE SOLUTIONS



Specialised in customised solutions, TSST is able to offer individually designed stages and geometries to fit the customer's need.

TSST TARGET CONTROL SOFTWARE

The TSST software allows quick and easy target select and control over scanning or spinning motion. Furthermore, the growth recipe feature allows programming of all stage motions for fully automated growth of heterostructures.



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