AccuScribe Titan

Wafer Scribing Laser System

Advanced Wafer Scribing Laser System

The AccuScribe Titan is the successor to New Wave Research's already acclaimed laser-based wafer scribing systems (SS40). The AccuScribe tool is a field-proven, cost-effective scribing laser system. The AccuScribe produces consistently clean, die scribed lines at a uniform depth resulting in superior die singulation yield for LED manufacturers.

Similar to its predecessor, the AccuScribe Titan is ideal for the 24/7 production environment however, the Titan features a more stable and robust design that allows for easy alignment of the wafer. It accommodates industry-standard blue film expansion frames, performs both full and partial wafer scribing, and features an automatic edge detection capability.

Titan offers a backside alignment option, which allows users to scribe non-transparent wafers utilizing an X-Y stage to ensure consistent laser focus and scribe depth during the scribing operation.

Features

- Cost effective 24/7 production proven laser scribing system
- Tool of record at key LED manufacturers
- Enhanced DPSS UV laser for efficient and reliable operation.
- Excellent laser-beam quality to enable sharp, uniform, and consistent scribe lines.
- Highly accurate, repeatable, and reliable X-Y stage.
- Precision rotational stage for automated alignment capability.
- Real-time display of scribing operation on LCD flat panel display.
- Robust backside alignment option for scribing non-transparent wafers.
- Global support and services via regional offices in the U.S., Europe, Japan, China, Korea and Taiwan.

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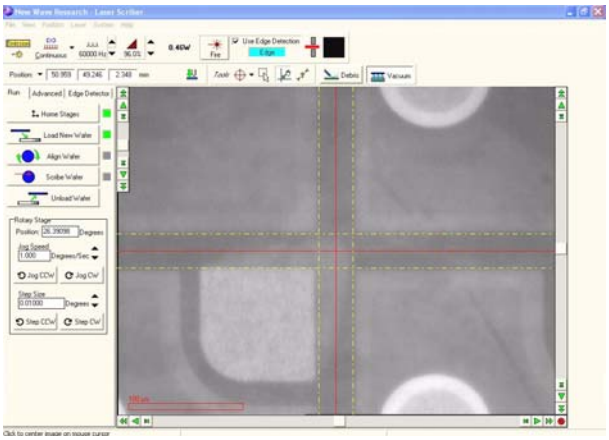
Robust Backside Alignment (option)

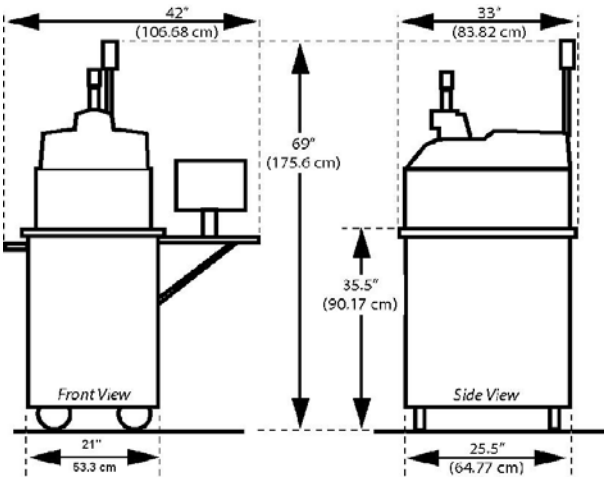
This special option allows users to scribe and view their wafer from below. This is important as many of the wafers now includes a metal layer making it impossible to see the streets and circuit. By viewing the wafer from the bottom with a second camera, the alignment and scribing can be easily accomplished.

User-Friendly Software Interface

Reliable and user-friendly Windows® XP-based software allows for quick setup and real-time display of the actual scribing operation.



Mechanical Specifications



System Specification

All specification based on 350um x 350um line spacing on 50mm diameter wafers.

Throughput	Up to 5 wph (production worthy)
Scribe time	≤ 11 min
Alignment time	≤ 60 sec
Scribe	
Depth	20 um ± 10%
Kerf Width*	5.0 um (typically)
X-Y Stage	
Travel**	100mm x 100mm
Encoder resolution	0.1 um
System level resolution	1.0 um
Accuracy	± 1.5 um over 50 mm, orthogonality <5um over 100 mm, repeatability 1um
Lifetime of laser diode	10,000 hrs
Laser system classification	Class 1

System Dimensions

Chiller	Width = 27.94 cm [11"], Depth = 33.02 cm [13"], Height = 33.02 cm [13"]
System Footprint	107cm x 84cm [42" x 33"]

Site Requirements

Power	100-120 or 200-240 VAC 50/60 Hz
Ambient temperature	20° - 25° C (68° - 77° F)
Wafer vacuum	10-15 inches of Hg
Nitrogen for laser purge	15 psi
Vacuum for debris removal	Flow rate: 10 cfm Vacuum level: 60" of water through a ½" ID tube.
Nitrogen to laser head purge	2 - 5 sccm

* measured on a standard wafer. Kerf width is define as actual scribing street from edge to edge which does not include the debris built-up outside of the scribing edge.
** for backside alignment option, travel is 80mm

CLASS 1
LASER PRODUCT

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www.new-wave.com

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