

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

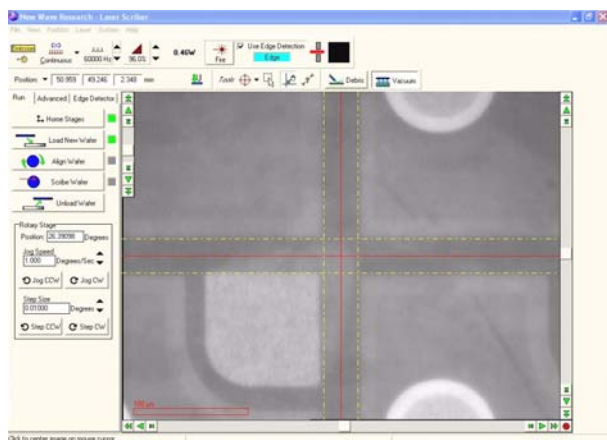
- Cost effective 24/7 production proven laser scribing system
- Tool of record at key LED manufacturers
- Enhanced DPSS UV laser for efficient and reliable operation.
- Excellent laser-beam quality to enable sharp, uniform, and consistent scribe lines.
- Highly accurate, repeatable, and reliable X-Y 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.

Robust Backside Alignment (option)

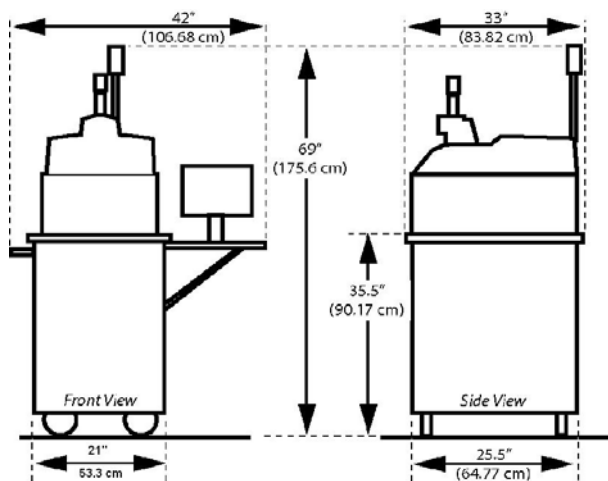
This special option allows users to scribe and view their wafer from below. This is important as many of the wafers now includes a metal layer making it impossible to see the streets and circuit. By viewing the wafer from the bottom with a second camera, the alignment and scribing can be easily accomplished.

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



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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

USA
New Wave Research, Inc
48660 Kato Road
Fremont CA 94538-7339
Tel: 510-249-1550
Tel: 800-566-1743
Fax: 510-249-1551
Email: Lasers@new-wave.com

Japan
New Wave Research, KK
5F Chojiya Building, 1-36-4,
Shinjuku-ku, Shinjuku
Tokyo, 160-0022 Japan
Tel: +81-3-3351-0131
Fax: +81-3-3351-0121
Email: NewWaveKK@new-wave.com

Taiwan
New Wave Research G. C. Co., Ltd.
2Fl., No. 58-3, Xing Shan Road,
Neihu Dist., Taipei
Taiwan 114
Tel: 886-2-8792-7585
Fax: 886-2-8792-7584
Email: NewWaveGC@new-wave.com

Europe
New Wave Research Co. Ltd.
8 Avro Court
Ermine Business Park
Huntingdon, Cambridge
PE29 6XS, UK
Tel: 44-(0)1480 456 566
Fax: 44-(0)1480 456 545
Email: NewWaveEU@new-wave.com

China
New Wave Research (China) Co., Ltd
Rm. 1102, 11/F, Jiaxing Mansion,
No.877, Dongfang Rd.
Shanghai 200122, China
Tel: 86-21-5058-7785
Fax: 86-21-5058-7786
Email: NewWaveCN@new-wave.com