AccuScribe SS40EL

Wafer Scribing Laser System

Advanced Wafer Scribing Laser System

The AccuScribe SS40EL 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 SS40EL is ideal for the 24/7 production environment. the It accommodates industry-standard blue film expansion frames, performs both full and partial wafer scribing, and features an automatic edge detection capability.

The system 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
- Proven system by key LED manufacturers
- Enhanced DPSS UV laser for efficient and reliable operation.
- Excellent laser-beam quality to enable sharp, uniform, and consistent scribe lines.
- Reliable and accurate X-Y stage.
- Automatic 2" 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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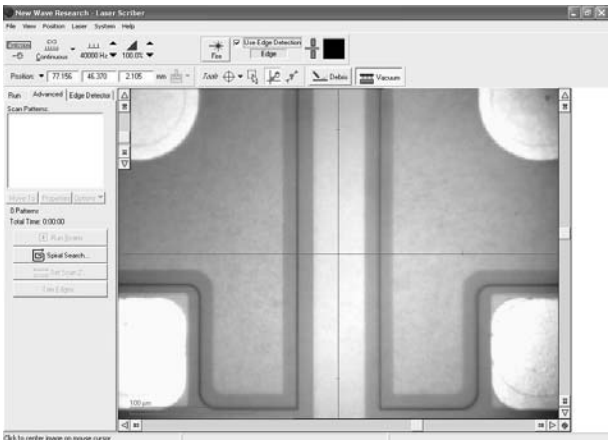
Robust Backside Alignment (option)

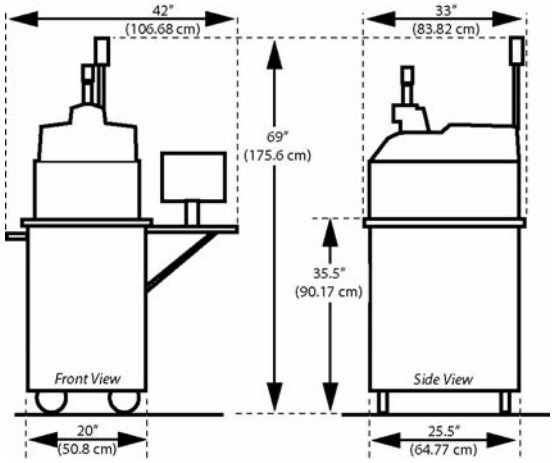
The SS40EL includes a special option which allows users to scribe and view their wafer from below. This is important as many of the wafers now includes a metal layer making it impossible to see the streets and circuit. By viewing the wafer from the bottom with a second camera, the alignment and scribing of non-transparent wafers 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 3.3 wph (production worthy)
Scribe time	≤ 17.18 min
Alignment time	≤ 60 sec
Scribe	
Depth	20 um ± 10%
Kerf width*	5.0 um (typically)
X-Y Stage	
Travel	100mm x 100mm
Resolution	1.0 um
Accuracy	± 3 um over 50 mm, orthogonality 3.8um over 100 mm, repeatability 2um
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 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.

NEW WAVE RESEARCH

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