



CORPORATE HEADQUARTER

SYNOVA SA
Chemin de la Dent d'Oche
CH- 1024 Ecublens
Switzerland
Tel. : +41 21 694 35 00
Fax : +41 21 694 35 01
<http://www.synova.ch>
Email: info@synova.ch

NORTH AMERICA

SYNOVA USA INC.
PO Box 293357
Lewisville, TX 75029
USA
Tel. : +1 972 317 4147
Fax : +1 972 317 2494
Email: tlevesque@synova-usa.com

ASIA PACIFIC

SYNOVA ASIA-PACIFIC
18F One International Finance Centre
1 Harbour View Street, Central
Hong Kong
Tel. : +852 2166 8064
Fax : +852 2166 8999
Email: green@synova-asia.com

Subsidiaries and distributors in:

Japan, South-Korea, China, Taiwan,
Philippines, Singapore, Malaysia
Thailand, Indonesia, India

Entire addresses are available on:
<http://www.synova.ch/distributors.php>

Specifications LDS 200

AXES

Type	XY-Table with separate axes on granite base
Drive	Linear motors
Useable working area	240 x 240 mm
Maximum stroke (X x Y)	600 x 400 mm
Accuracy	$\pm 3 \mu\text{m}$
Repeatability	$< 1 \mu\text{m}$
Maximum axis speed	1000 mm/s
Maximum acceleration	20 m/s ²
Index	0.0001 mm

OPTICAL HEAD

Type	Projection of fiber exit into water jet nozzle
Image ratio	4:1, 6:1 or 8:1
Nozzle diameter	25 μm , 30 μm , 35 μm , 40 μm , 50 μm , 60 μm , 75 μm or 100 μm
Alignment	Vision controlled

VISION SYSTEM

Type	Pattern matching
Optical magnification	Continuous, from x 0.58 to x 7
Illumination	Coaxial, LED light
Automatic alignment method	Image processing, alignment time < 5 s
Quality control	Kerf check by image analysis

WORK PIECE

Wafer size	25 to 203 mm (1" to 8")
Applicable tape	LaserTape®
Applicable tape frame	Standard frame types (5", 6" or 8")

CLEANING STATION LDS 200 C/A

Cleaning	Megasonic and high pressure water jet
Drying	Front and back side

LOADING STATION LDS 200 A

Cassettes	Standard frame cassettes (6" or 8")
Frames	Single frame drawer

UTILITIES

Electrical power	230 V, 50/60 Hz
Total power consumption	6 kVA
Air pressure	5 - 6 bars, oil free

DIMENSIONS/WEIGHT (WxDxH)

LDS 200 M	1140 x 820 x 1630 mm / 800 kg
LDS 200 C	1140 x 1100 x 1630 mm / 900 kg
LDS 200 A	1560 x 1100 x 1630 mm / 950 kg

LASER

Type	Solid state Nd:YAG, pulsed
Available wavelengths	1064 nm, 532 nm
Average power	100 W, optional 200 W
Laser beam transmission	Optical fiber, length 10 m
Laser cooling water	Max. 12 l/min, max 16°C, industrial water

DIMENSIONS (WxDxH)

Infrared fiber laser	440 x 560 x 290 mm
Green laser power supply	620 x 600 x 900 mm
Green laser	1520 x 240 x 260 mm

WATER PUMP

Type	Two-cylinder pressure amplifier
Water pressure	50 to 500 bars (5 to 50 Mpa)
Pressure transmission	Flexible water hose
Average water flow for cutting	0.05 l/min, < 0.3 mm, degasified
Water flow for cleaning	Max. 1 l/min, DI-water, particles < 3 mm
Dimensions (WxDxH) / weight	1348 x 750 x 1613 mm / 450 kg

OPTIONS

Transformer
Vacuum pump
Uninterruptible power supply

The above specifications are subject to change without notice due to technical improvement.

The Laser Dicing System incorporates the worldwide patented technology of water jet guided laser, invented at the Swiss Federal Institute of Technology Lausanne, Switzerland. This machine conforms to CE and CDRH regulations.



LASER DICING SYSTEM

Incorporating Laser Microjet® Technology

200 series

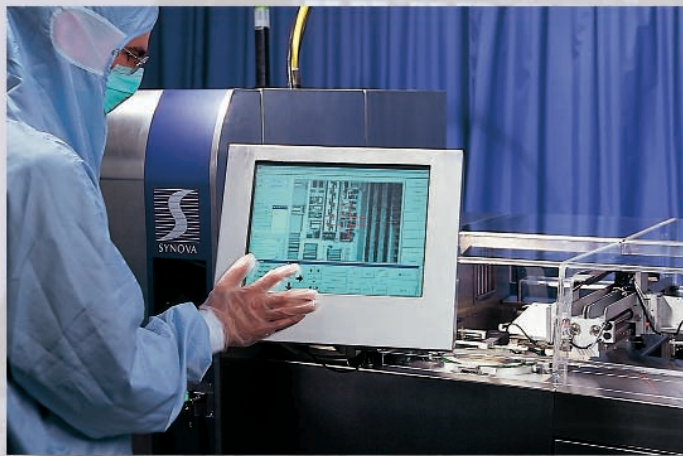
LDS 200 M

LDS 200 C

LDS 200 A

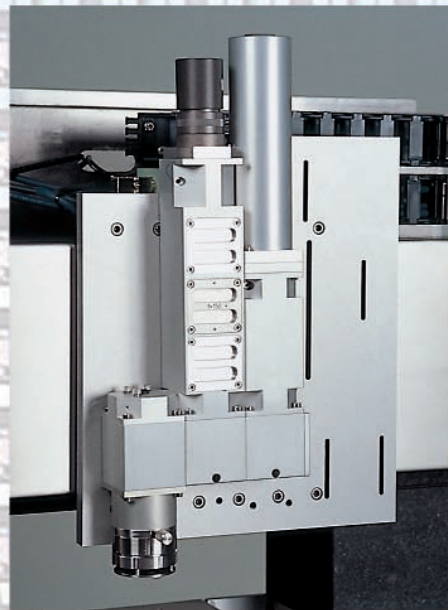
Expand your capabilities with the latest development in laser technology

The LDS 200 at a glance



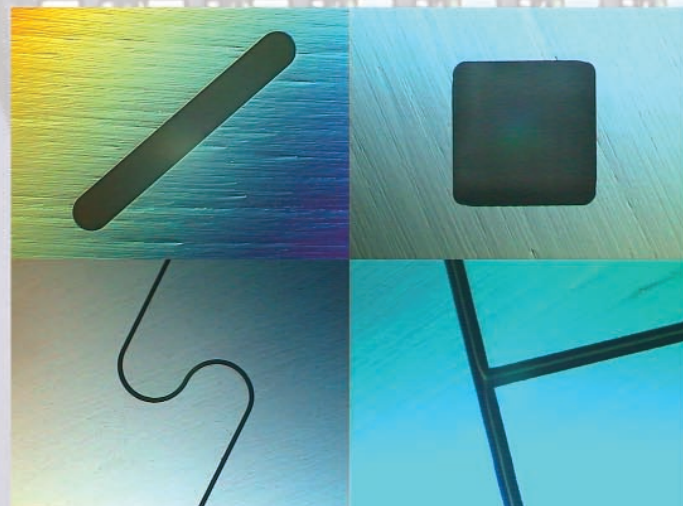
Ease of use

A large color TFT flat screen with touch panel allows comfortable operation of all machine functions. Using the latest generation of real-time processors creates an entirely new concept in CNC control and man-machine communication.



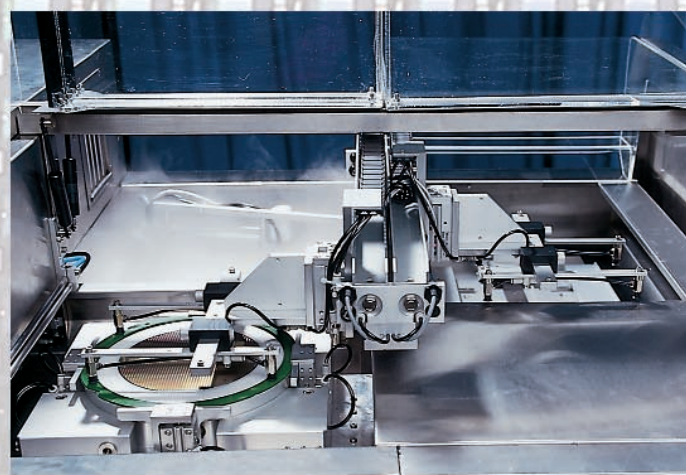
Low Cost of Ownership

The LDS incorporates the combined technology of water jet guided laser to eliminate time and money spent on conventional saws: no blade change, no blade dressing. The LDS has only negligible need of consumables. In fact, the laser beam has no wear.



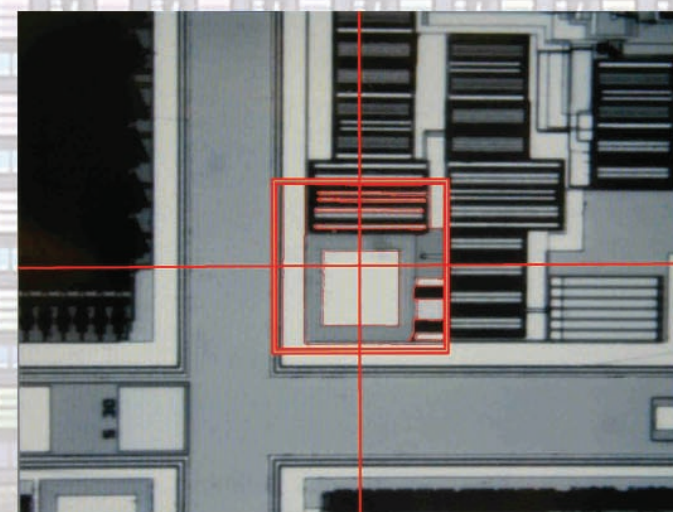
New Capabilities

The laser allows multi-directional cutting, a totally new feature, allowing new designs in chip geometry. Holes, slots, T-cuts, round chips, any contour is cut with the same precision as in standard patterns.



Flexibility

The LDS is available with a Megasonic-cleaning station and cassette loading unit, to tailor the LDS to your demands of automation. The basic version is easily upgradeable to a fully automatic, from-cassette-to-cassette dicing system.



Fast Process Control

Due to the integration of the latest software in image processing, nothing is faster in the market for alignment and quality control. Wafer alignment and kerf check is executed in milliseconds.



High Accuracy

A stable structure made of granite is the key for high precision, ensuring an outstanding, dynamic response. Linear motors are used in achieving high speed and accuracy. Furthermore, the system is designed for future cutting speeds made possible by new laser sources.



Reliability

Component parts for the LDS are backed by the reliability of our carefully chosen suppliers, each one a market leader within their own field. In addition, a vast array of sensors provides constant control and allows continuous diagnostic transparency thru a modem connection.



High Processing Speed

Especially in the case of thin wafers, unprecedented speeds have been achieved resulting in a significant increase in throughput. In addition, throughput becomes faster and simpler due to no tool change.