FASA DWS–1336
Diamond Wire Wafering Saw

(Solar and Sapphire/LED Applications)

The all new **Diamond Wire Wafering Saw** is the latest innovation from FA Systems, which has been conceived for Solar and Sapphire/ LED wafering requirements. This system incorporates breakthrough methods and innovative features that significantly reduce the total cost of wafer manufacturing while offering higher quality wafers and being maintenance and environmentally friendly (complete elimination of slurry management).

Patent Pending

Specifications:

Machine Platform

- Footprint: 3,880 mm (L) X 2,640 mm (W) X 3,400 mm (H)
- Weight: Approx. 13,500 Kg
- Electrical supply: 3 phase, 480±10% VAC, 50/60 Hz (120KW Max)
- Compressed clean dry air: 5~7 bar @ 15 cfm
- Chilled water: < 20°C, 100 l/m @ 2 Bar
- Cooling Capacity: 15 Kw for Coolant 15 Kw for 8 Spindle Bearing Unit
- Noise level during slicing: < 78 dB

Work Piece

Feed Material: Mono/Multi-Crystalline Silicon Ingot

- Size: 125 mm x 125 mm up to 156 mm x 156 mm
- Loading length: 800 mm

Feed Material: Sapphire

- Size: 50mm (2")/ 100mm(4")/ 150mm (6")/ 200mm (8")
- Loading Length: 300mm

Diamond Wire

- Si Wafering:
  Wire Diameter: 100 - 160 µm
  Wire Tension: 10 - 30 N
- Sappire Wafering:
  Wire Diameter: 200 - 250 µm
  Wire Tension: 40 - 60 N

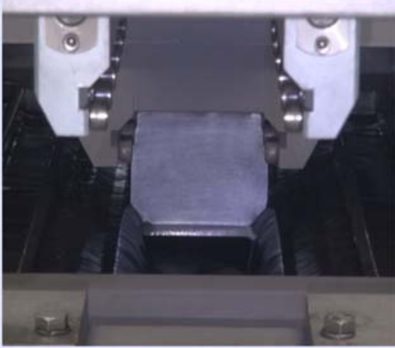
Wire Guide Drum

- Grooving O.D.(Max~Min): 344~330 mm
- No. of Wire Guides: 2

Typical Performance

- Unscheduled Downtime: < 5%
- Yield: > 95%
- Wafer Quality: Low TTV and Low WARP Values

UNIQUE FEATURES & ADVANTAGES



Wafer Ingot Holder

Ingot After Cutting

Unique Wire Tensioning System

FA Diamond Wire-Saw: Breakthrough Technology!

- Makes use of Diamond Wire to cut ingots faster.
- Technology leap - Breakthrough Method to achieve significant performance and cost saving benefits over existing wire-sawing methods.
- More efficient process that eliminates limitations in conventional wire-saw machines such as:
  - Slow cutting speed, low yield and throughput,
  - Variation in wafer thickness due to wire wear during cutting (TTV),
  - Environmental issues related to the use of slurry.

Green Technology- Environment friendly

- Elimination of slurry management.
- Cleaner and faster process.
- Less Plant Complexity - specialized equipments required for slurry mixing supply and recovery systems are not required.

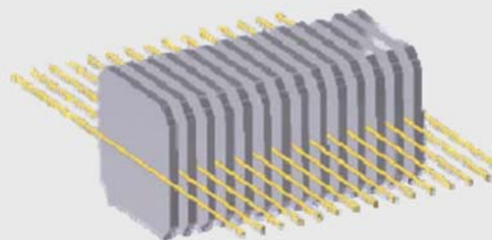
Reduced Cost of Ownership/ Increased productivity

- Small Kerf loss, High Yield and Throughput, Accuracy and Repeatability.
- Recovery of precious Si (>90%).
- Faster cutting speed — up to 6-8 X faster than conventional process on average.
- Increased capacity without increasing capital expenditures.
- Reduced costs of utilities such as electricity and cooling water.
- Achieve lowest possible processing cost (i.e., cost/watt or $/W).
- Fastest ROI - Lowest cost of ownership with lowest period for ROI!!

Quality Results

- Flatter and Smoother wafers.
- Excellent cutting accuracy.
- Precision cuts with Excellent Surface Quality.

Sliced Sapphire Wafers



Sliced Silicon Wafers

Manufacturer of Customized Automated Equipment
Technology. Customization. Globalization. People
Providing Flexible, Innovative and Low Cost Automation Solutions

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REV 5.0, OCT 2011