

## 600 Series:

603NT, 643NT, 654NT and 654NTX

The 600 Series is targeted towards sensitive applications requiring material that produces particulate contamination. The tools in this family surpass the criteria for deposition of thin films in high-density devices and other applications requiring absolutely minimal defects.

- Vertical, side sputtering systems
- 13 x 13-inch pallet size
- Small footprint
- Dual-process loadlock
- Optional cassette-to-cassette operation for particulate-free, reliable substrate handling
- Multiple Bias types enable denser films and planarization
- Multi-size capability enables rapid change from one substrate to another

The 600 Series features multi-process sputtering for increased process flexibility and higher throughput. The 600 Series family also features a special application Linear Moving Magnetron™ Cathode. The patent pending design of the LMM Cathode is engineered for efficiency in today's most demanding applications by providing bullet proof high-rate reactive process and long target life. In addition, the 600 Series can handle one 8" wafer and as many as thirty-six 2" wafers.

## In line with your process

The most reliable in-line sputtering tools in the industry are developed and manufactured by KDF. All of KDF's systems are engineered to meet versatility and high-throughput demands across a number of markets at the industry's lowest cost of ownership:

- Mainstream silicon
- Emerging materials
- Flat panel display
- Optical Communications

Across all platforms, KDF's in-line batch sputtering systems are easier to use and maintain than cluster tools. KDF's solutions provide users with increased:

- Film uniformity
- Throughput
- Process stability
- ROI
- Automation
- Tool uptime
- Reliability
- Environmental health and safety benefits

KDF meets the needs of its customers by quickly developing tailored solutions and building on its core competencies. KDF can specifically modify its tools to increase throughput, ROI or time to market to configure the in-line sputtering system that you need. All existing KDF equipment is supported with upgrades and retrofits. In addition, as the OEM for MRC batch systems, KDF sustains all MRC batch products.



600 SERIES

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### 603NT

The 603NT is typically used for sensitive applications requiring target material that produces unusually high particulate contamination. The tool can be configured with an optional high vacuum load lock. The 603NT is typically used in telecommunications manufacturing, chip resistor and resistor network applications.

### 643NT

The 643NT's advanced mechanical and electrical design features result in tight process control, high reliability and extremely low defect rate. Process control features include a palletized batch processing area that allows instantaneous changing of wafer sizes, enabling a change of pallets to occur on any given run. For example, either a front or back side GaAs wafer process can be accommodated. KDF maintains a large pallet library, offering clients pallets that are optimized for a wide range of applications.

### 654NT and 654NTX

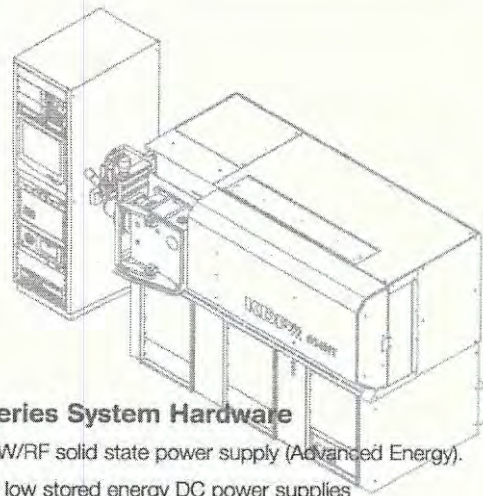
Developed for the rapidly growing telecommunications and compound semiconductor markets, the four-target versatility of 654 tools can be applied to a full range of leading edge microelectronic component manufacturing applications. The system provides enhanced etch and deposition uniformity and high-speed batch processing.

The 654NTX is one of KDF's X Series™ products. It features the latest KDF cathode designs, which have been lengthened to 17 inches, offering improved uniformity over the entire pallet. X Series cathodes are available in both Planar and Inset™ cathode form.

### 600 Series Vacuum Specifications

- Chamber ultimate  $\leq 1.0 \times 10^{-7}$  torr.
- Chamber leak rate, 20 minutes to  $1 \times 10^{-4}$  torr.
- High vacuum dome ultimate  $< 1.0 \times 10^{-7}$  torr.
- High vacuum dome leak rate, 15 minutes to  $1 \times 10^{-4}$  torr.
- Pump down from atmosphere 110 minutes or less to  $1 \times 10^{-8}$  torr or  $2 \times 10^{-7}$  torr overnight.

SYSTEM CAPACITY							
	2" wafers	3" wafers	4" wafers	5" wafers	6" wafers	8" wafers	300mm
643/654NT PALLET 13" x 13"	36	16	9	5	4	1	1



### 600 Series System Hardware

- 1.25kW/RF solid state power supply (Advanced Energy).
- 12kW low stored energy DC power supplies (Advanced Energy).
- Integrated throttle valve with upstream or downstream pressure control available.
- Comprehensive vacuum gauge control package with high vacuum dual ion tubes and multiple convection tubes for high/low pressure monitoring
- Process gas control with up to four gas controllers; feedback controlled capacitance manometer; master/slave gas select ability; and gas ratio control.
- Stepper motor pallet carrier drive with optical encoder providing accurate programmable pallet carrier positioning, scan velocity profiling available.
- Low pressure hydraulics system for safety.

### 600 Series Computer Sub-System

- Windows NT™ GUI environment supporting a Brooks/Techware II Ultra computer on an industrial Pentium IV PC.
- Fully integrated package for real-time data display, data logging, report creation, remote interface and printing.
- Maintenance test screens with full diagnostic and manual software process control capability.
- 18.1-inch flat panel color monitor with touch screen control, displaying real-time activity.

### 600 Series Basic Facility Requirements

- Power: 208VAC, 3-phase, 100Amps.
- Water: 6.5 GPM, 60 PSIG min., 10°C—24°C.
- Compressed Air: 85—100 PSIG.
- Process Gas: 25 PSIG 99.999%.
- Purge Gas: Dry N<sub>2</sub>.

\*Contact KDF for details on the many optional features available for 600 series systems. Specifications subject to change

**KDF**  
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