

Ci Cluster Tool:

After years of development and testing, KDF is proud to announce the release of its new cluster tool line, called **Ci** for Cluster Intelligence. The **Ci** tools will be offered in a four sided and eight sided package, both system types will feature Brooks Marathon series vacuum handlers. Depending on the application system will be populated as dictated by the process. The **Ci** is designed for a variety of niche market places including compound semiconductor, DWDM components, MEMS, MOEMS, sensors, Nanotechnology and advanced packaging production with substrate sizes up to 200 mm. The KDF tool is a cost effective means of entering or sustaining today's high yield high throughput requirements. With over twenty years of manufacturing and engineering expertise KDF is confident that this tool will out perform others in its class without the high cost of other OEM's. This tool can be run with custom wafer carriers if required, or can be configured from 4 to 8 inch wafers as ordered.

The **Ci** tools offer a host of modules to populate every facet of the central handler. The **Ci S** module or Sputter Module features KDF's unique design rotating circular magnetron cathode assembly, which provides high sputter rates coupled to excellent utilization along with superior uniformity. This sputter module can also be equipped with a stepper driven rotating anode platen to achieve the ultimate in substrate uniformity. If required this platen can also be provided with another KDF exclusive, a PBN / PG back side heater element and capable of attaining temperatures up to 1000° centigrade. You can find out more detailed information about this under our Degas module description.



In line with your process

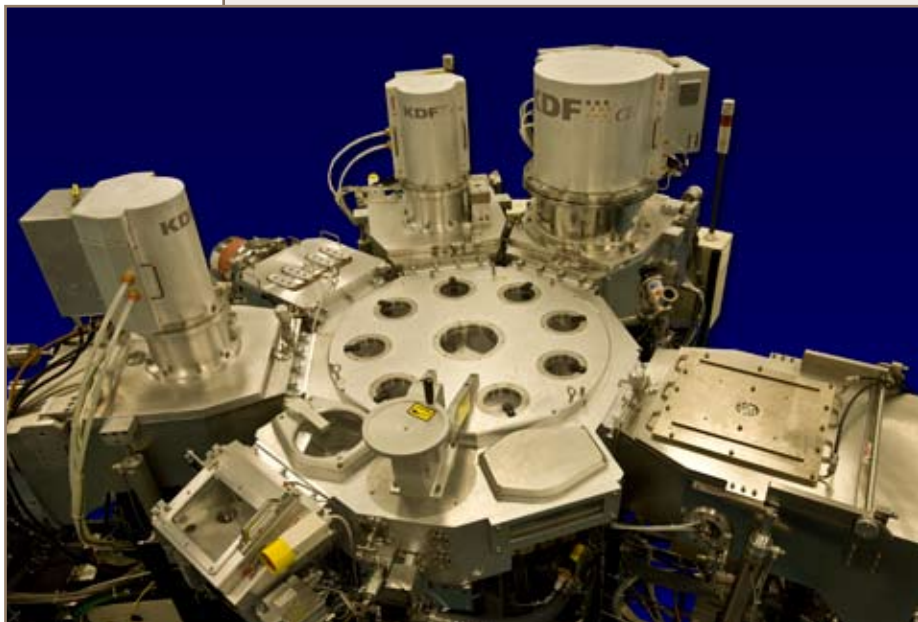
The most intelligent cluster platforms in the industry are developed and manufactured by KDF. All of KDF's systems are engineered to meet versatility and high throughput demands across a number of markets at the industry's lowest cost of ownership.

- **Mainstream silicon**
- **Emerging materials**
- **Optical communications**
- **Medical devices**

KDF's intelligent cluster solutions are easier:

- **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 cluster sputtering system that you need.



Ci CLUSTER

Ci S Sputter Module

- 12 inch Rotating Circular Magnetron Cathode RF or DC operation
- SS chamber assembly with Quick change shields
- SS rough and regen valves Nupro vent valves
- Water Cooled chamber top plate
- Automated Top Plate hoist
- MKS Pendulum Throttling Gate valve
- Up or downstream gas capable
- AE 10kW DC supply **
- Automatic shutter for Pre Sputter mode, or target clean
- MKS single gas MFC 200sccm
- MKS 627 100 mt manometer
- CTI 8F cryo pump
- ACR, Auto Pump, Auto Vent
- Rockwell PLC system with integrated brick pc

- MKS Quattro Combo gauges (485 interface)
- KDF cryo temp readouts with setpoints
- Plasma view port assembly
- 24 VDC water ON/OFF valving along with safety water leak detectors
- Full host of interlocks for system and personnel safety
- Ethernet IP run air manifold
- Back side lift pin pedestal design for wafer entry and extraction

Options

- MKS second and third gas channels
- AE Pinnacle Plus DC Power supply **
- AE Dressler 3kW RF option (replaces DC supply)
- Heated platen anode pedestal for temperatures up to 1000 degrees C
- Rotating anode 0 to 60 rpm
- CTI Onboards Cryo pumps
- RF bias operation
- Al shield kits for Ti W dep

Ci S Tri-Sput Module

- Three 3 inch sputter guns with each having a dedicated RF600W power supply
- SS chamber assembly with Quick change shields
- SS rough and regen valves Nupro vent valves
- Water Cooled chamber top plate
- 24 VDC water ON/OFF valving along with safety water leak detectors
- Full host of interlocks for system and personnel safety
- MKS Pendulum Throttling Gate valve
- Up or downstream gas capable
- Automatic shutter for Pre Sputter mode, or target clean
- MKS single gas MFC 200sccm
- MKS 627 100 mt manometer
- CTI 8F cryo pump
- ACR, Auto Pump, Auto Vent
- Rockwell PLC system with integrated brick pc

- MKS Quattro Combo gauges (485 interface)
- KDF cryo temp readouts with setpoints
- Plasma view port assembly
- 24 VDC water ON/OFF valving along with safety water leak detectors.
- Full host of interlocks for system and personnel safety

- Ethernet IP run air manifold
- Back side edge lift pin pedestal design for wafer entry and extraction

Options

- MKS second and third gas channels
- AE Pinnacle Plus DC Power supply **
- Heated platen anode pedestal for temperatures up to 1000 degrees C
- Rotating anode 0 to 60 rpm
- CTI Onboards Cryo pumps
- RF bias operation
- Al shield kits for Ti W dep

Ci D Degas Module

- Small Compact design Aluminum chamber
- Manual lift top plate with gas assist cylinders
- CTI 8 F cryo pump
- SS gate valve
- SS rough valves and regen, Nupro vent valves
- Ethernet IP run air manifold
- MKS 999 RS485 combo gauge
- Heated PBN/PG backside heater element temps up to 1000 C
- Heater control PWM phase control with the PLC performing the PID
- Back side edge lift pin pedestal design for wafer entry and extraction

Ci E Etch Module

- KDF Exclusive design BMC (Band magnetron cathode) etch cathode offers high rate low damage ion bombardment of the substrate
- SS chamber
- Osaka Mag-lev Turbo pump, with dedicated dry pump back up
- MKS three gas MFC's provide three channels of gas flow
- MKS Pendulum throttling gate valve
- CTI inline water pump, before the turbo
- Back side edge lift pin pedestal design for wafer entry and extraction
- SS rough valves and foreline, Nupro vent valves
- Ethernet IP run air manifold
- 24 VDC water ON/OFF valving along with safety water leak detectors
- Full host of interlocks for system and personnel safety
- Water Cooled chamber top plate and counter magnet assembly
- Automatic Top Plate hoist
- Rockwell PLC system with integrated brick pc
- Advanced Energy 3 kW RF Power supply

Options

- Heated platen anode pedestal for temperatures up to 1000 degrees C
- Rotating anode 0 to 60 rpm

Ci Load and Unload Centers

KDF offers a single wafer entry load lock which is a small Aluminum chamber which is turbo pumped for basic R&D operation. KDF will also configure the tool with a single or dual Brooks VCE(s) to allow rapid wafer load and unload function for the system.

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