



# TF Series

Thin Film Deposition Systems



The TF series of coaters comprising the TF 500, 600 and 800 are designed for enhanced levels of process capability. A choice of chamber sizes, accessories, deposition techniques, work holders, load locks and pumping options allows the system to be configured to your exact needs. The chambers allow for glove-box integration with either horizontally sliding or vertically sliding access doors. Control options include manual operation or a PLC based control of vacuum cycle in combination with manual or deposition controller based process cycle, or a PC-based system which provides complete automation with advanced functions such as recipe control and data logging.

# CHAMBER CONFIGURATIONS



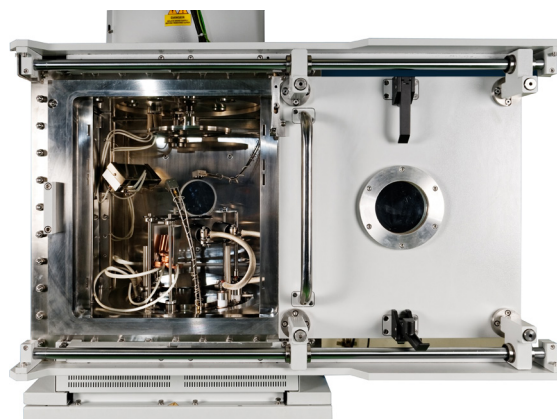
TF 500



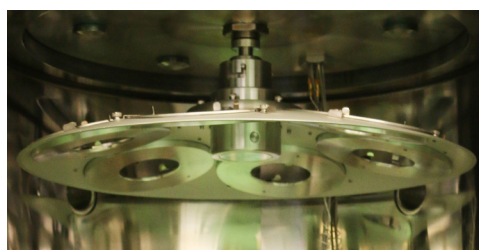
TF 600



TF 800



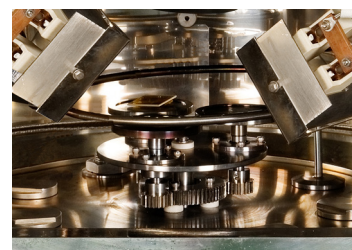
Glove Box Integrated Coater



Rotary Holder



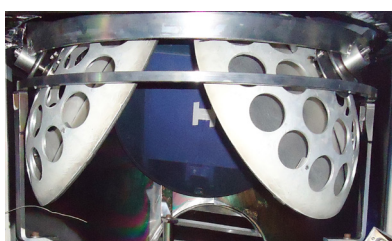
Rotary with Heating,  
Biasing and Z-shift options



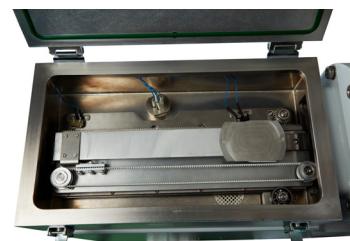
Planar Planetary



Planetary



Knudsen Planetary



Load Lock Substrate  
Handling

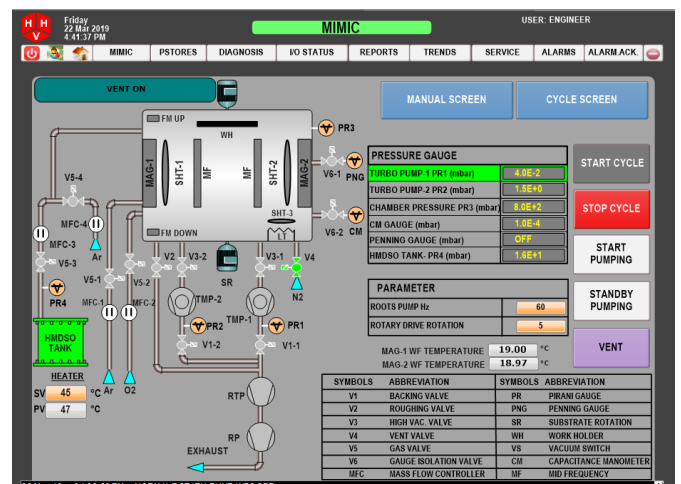
# SPECIFICATIONS

CHAMBER SIZE	Chamber diameter ranging from 500 mm to 800 mm. Customizable Height
HV PUMPING OPTIONS	Turbo / Cryo
ROUGHING/BACKING OPTIONS	Rotary / Dry. Optional Booster Pumps
BASE PRESSURE	Up to $10^{-7}$ mbar
SUBSTRATE SIZE	Maximum up to a 600 mm diameter
SUBSTRATE HOLDER	Rotary, Planetary, Knudsen Planetary, Domed, Drum, Heating, Biasing, Z shift, and other custom options

# CONTROL OPTIONS

CYCLE MODE		PUMPING MODE ONLY AUTO		VENT PUSH BUTTON	
MANUAL		AUTO		START PUMPING	
				STANDBY PUMPING	
				VENT	
				MIMIC	
<b>PRESSURE GAUGE</b>					
TURBO PUMP-1 PR1 (mbar)	1.0E-3				
TURBO PUMP-2 PR2 (mbar)	1.0E-4				
CHAMBER PRESSURE PR3 (mbar)	1.0E-2				
CM GAUGE (mbar)	1.0E-4				
PENNING GAUGE (mbar)	OFF				
HMDSO TANK- PR4 (mbar)	1.0E-1				
<b>PUMP PUSH BUTTON</b>					
ROTARY PUMP	ON				
ROOTS PUMP	OFF				
TURBO PUMP-1	OFF				
TURBO PUMP-2	OFF				
<b>VALVE PUMP PUSH BUTTON</b>					
V1-1 TURBO PUMP1	OFF				
V1-2 TURBO PUMP2	OFF				
V2-CHAMBER	OFF				
V3-1 CHAMBER-TMP-1	OFF				
V3-2 CHAMBER-TMP-2	OFF				
<b>VALVE MASS FLOW AND GAUGE PUSH BUTTON</b>					
V4-VENT VALVE	OFF				
V5-1 ARGON SPUTTERING	OFF				
V5-2 OXYGEN SPUTTERING	OFF				
V5-3 HMDSO TANK	OFF				
V5-4 ARGON MF	OFF				
V6-1 PENNING GAUGE	OFF				
V6-2 CAPACITANCE GAUGE	OFF				
<b>DC PULSE POWER</b>					
ENABLE	ON				
MAGNETRON	MAG SEL				
PULSED DC MODE	VOLTAGE				
TARGET VALUE	100.0				
POWER (W)	0.0				
VOLTAGE (V)	0.0				
CURRENT (A)	0.000				
PULSE FREQUENCY (kHz)	50				
PULSE REVERSE TIME (ms)	3.0				
<b>RF POWER</b>					
ENABLE	ON				
MAGNETRON	MAG SEL				
SET POWER (W)	500				
FORWARD POWER (W)	0				
REFLECTED POWER (W)	0				
BIAS VOLTAGE (V)	0				
<b>LT POWER</b>					
ENABLE	ON				
SV (A)	40.0				
PV (A)	0.0				
<b>MF POWER</b>					
ENABLE	ON				
SET POWER (W)	500				
POWER (W)	0				
VOLTAGE (V)	0.1				
CURRENT (A)	0.00				
<b>HMDSO HEATER</b>					
ENABLE	ON				
SET VALUE (°C)	45				
CURRENT VALUE (°C)	45				
<b>MFC1-ARGON1</b>					
ENABLE	ON				
SV (sccm)	250				
PV (sccm)	0				
<b>MFC2-OXYGEN</b>					
ENABLE	ON				
SV (sccm)	100				
PV (sccm)	0				
<b>MFC3-HMDSO</b>					
ENABLE	ON				
SV (sccm)	500				
PV (sccm)	0				
<b>MFC4-ARGON2</b>					
ENABLE	ON				
SV (sccm)	400				
PV (sccm)	0				
<b>SHUTTER STATUS</b>					
SHUTTER1-MAG LEFT	OFF				
SHUTTER2-MAG RIGHT	OFF				
SHUTTER3-LT	OFF				
<b>ROTARY DRIVE</b>					
ENABLE	ON				
ROTATING SPEED	5				
TOP/BOTTOM	DRIVE SELECTION				
NO. OF STEPS	5				
STOP	CONTI.				
STEP	JOG				
ROOTS H <sub>2</sub> VALVE SET	60				

Auto mode



Mimic screen

# RESULTS



Range of Optical and Electronic Thin Film Coatings produced using TF Series Coaters

Uniformity of  $\pm 5\%$  as standard. Custom designed configurations to get better than  $\pm 3\%$ .

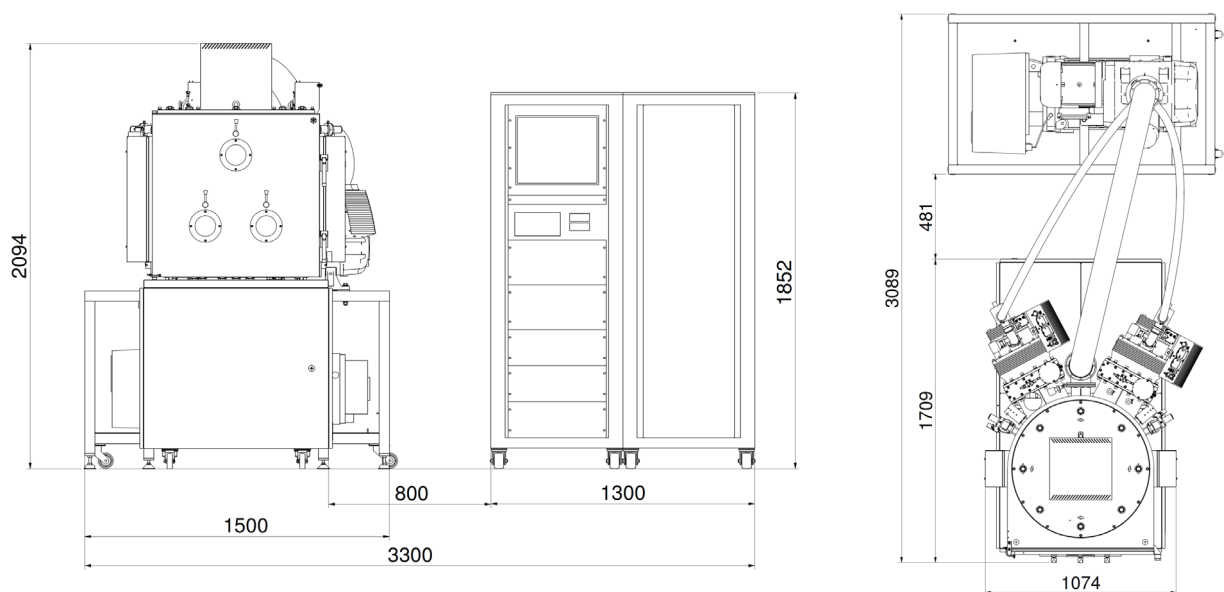
## FEATURES

- Wide range of processes in a single system package
- Ion beam process for optical coating applications
- Customizable chamber height to suit user requirements
- Accommodates range of work holders
- Fully interlocked for operator safety
- Compact unit minimizing footprint

## APPLICATIONS

- Semiconductors
- Optical coatings
- Metal coatings
- Organic Electronics
- Hard coatings
- Solar cells

## LAYOUT



All dimensions in mm  
Representative footprint. Actual dimensions will depend on system configuration.



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