



# BAK EVAPORATOR FAMILY

# THE BAK

## A NEW GENERATION

TAKING THE BEST FROM  
THE PAST, EXPANDING YOUR  
HORIZONS FOR THE FUTURE!



“MORE THAN  
1400 SYSTEMS  
WORLDWIDE”



Welcome to the new generation BAK evaporator - a whole family of platform sizes and geometries taking all the best from the tried and tested BAK generations before, and extending your capabilities with new sources, new process control options and new handling concepts.

# THE BAK

## JUST THE RIGHT SIZE



Substrate capacity by machine type (with calotte)

BAK	501	641	701	761	901	1101	1400
2"	32	78	106	152	186	216	330
3"	20	33	44	64	88	104	167
4"	8	24	26	40	51	64	104
6"	4	9	10	18	23	24	42
8"	3*	6	7	9	10	12	28

The BAK batch coater delivers thin film deposition and etch capabilities for precision optics, optoelectronics and semiconductor applications to customers around the globe. From "Lift Off" to "SAW", "Multilayer Dielectrics to Metallisation" "LEDs to Lasers", it can be configured just the way you need for directional coating, enhanced film thickness uniformities and the tightest optical, mechanical and environmental specifications.

Choose from platform sizes between 0.5m and 1.4m according to throughput and process. The new generation BAK family brings you the complete solution including processes and substrate handling on a platform with proven reliability and the best ever cost of ownership.

\*with planets

# SIT BACK AND RELAX WITH “KHAN”



“A PLATFORM FIT FOR THE FUTURE”



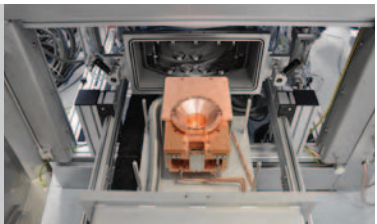
With full automation through pump down, process and vent, the Khan system and process controller makes production easier than ever. Simultaneous control for up to 5 process sources, full integration of quartz and optical thickness monitoring and new capabilities including “real time in situ process re-optimisation” enable the most complex optical and optoelectronic processes ever.



# THE BAK JUST THE RIGHT GEOMETRY

“THE MOST  
FLEXIBLE  
**BAK** EVER  
BUILT”

The standard BAK chamber is just the starting point for a whole series of custom production solutions. Your BAK can be delivered with “extended throw” geometry where the source is lowered but the operator can still maintain comfortable working heights for source replenishment or substrate loading. For handling of the most reactive coating materials or the very fastest cycle times, a “split chamber” variant enables the sources to be isolated in their own vacuum chamber and kept ready during main chamber vent, and for high uniformity “in-situ” dep & etch capability the chamber back can be extended to enable installation of movable ion sources. Irrespective of the geometry, all our platform variants are engineered for rapid source access, replenishment and maintenance.

Platform Geometry	Typical applications	
Standard Throw	<ul style="list-style-type: none"> <li>— High rate metallisation</li> <li>— Precision Optics</li> </ul>	
Extended throw	<ul style="list-style-type: none"> <li>— General “Lift off” processes</li> <li>— SAW devices</li> </ul>	
Split chamber	<ul style="list-style-type: none"> <li>— “Reactive” coating materials</li> <li>— Special doping processes</li> </ul>	

# BAK

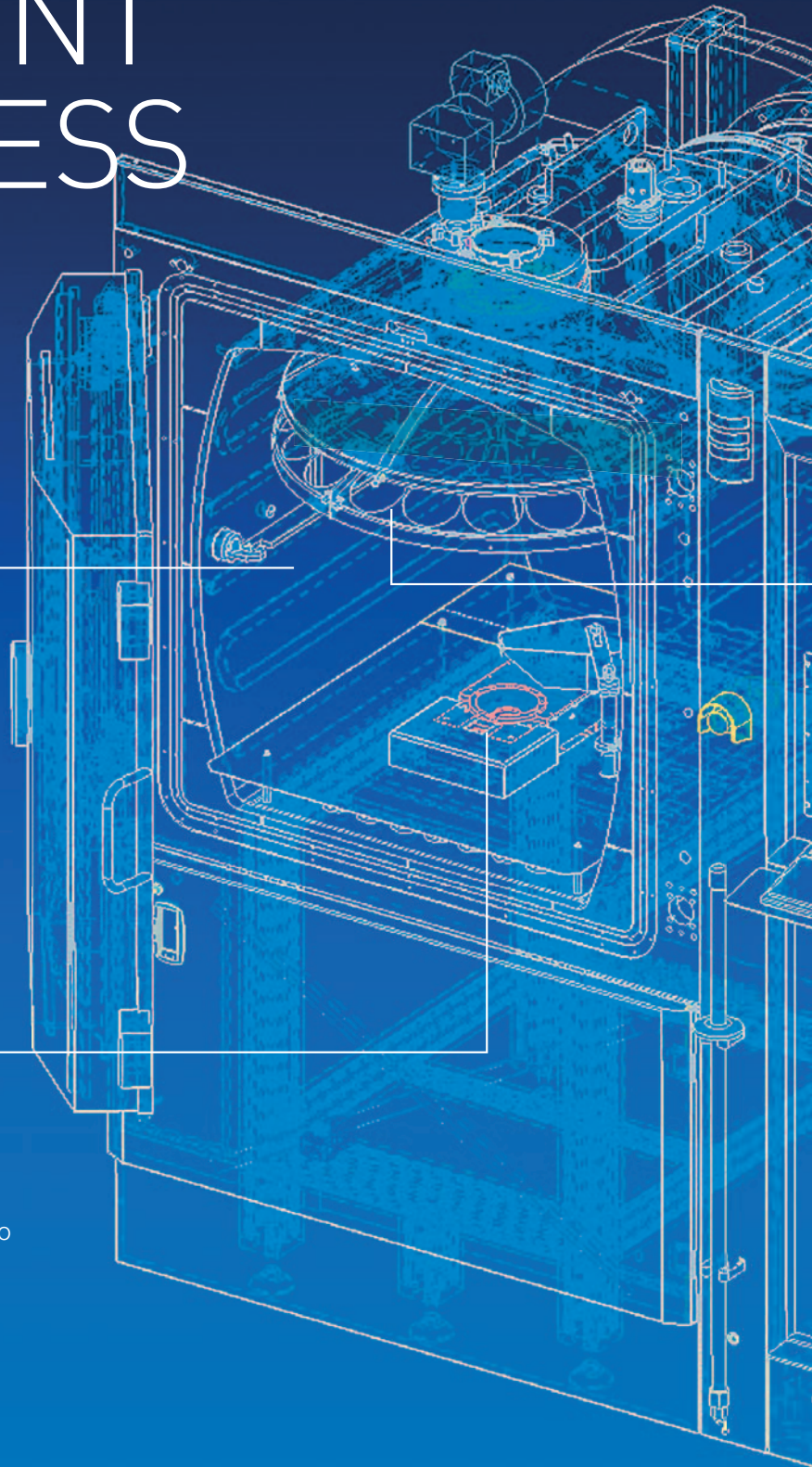
## A BLUEPRINT FOR SUCCESS

### Process chamber

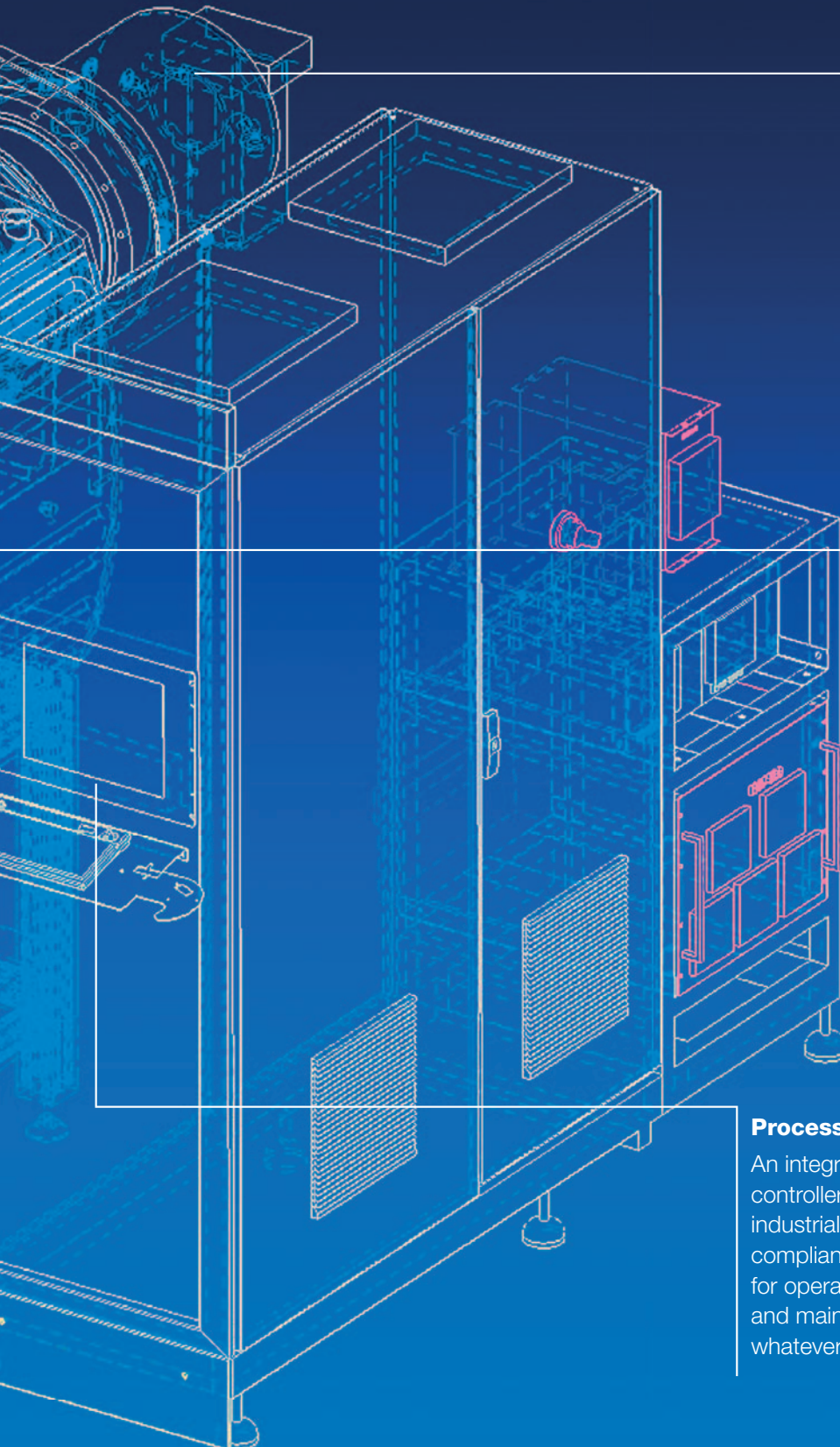
A tried and tested chamber design, extendable for different process geometries, flexible for different source configurations. Ready for whatever the future brings.

### Sources

Choose from our biggest ever range of sources- from deposition to custom etch, e guns to effusion cells, barrel sources to boats. With closed loop process control to ensure the right thin film result every time.







### **Pumping system**

Pumping configurations according to your preference. Turbomolecular, diffusion or cryopumping. Tailor-made to bring you the best process results and highest production throughputs.

### **Custom tooling**

Custom tooling for optics, optoelectronic and semiconductor processes. Manual handling or cassette to cassette with automated robot handling. With the BAK there is always a solution.

### **Process controller**

An integrated system and process controller built around a robust industrial server, SEMATECH compliant, with intuitive handling for operators, process engineers and maintenance. Fully prepared for whatever sources you introduce.

# THE BAK SOURCES AND PROCESS CONTROL

“MORE  
SOURCES  
THAN  
EVER”

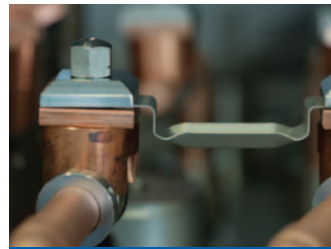


Your BAK comes ready for installation of a whole range of deposition and etch sources including accessories like front and backside heating systems. The chamber base plate and side walls come with a series of standard feedthroughs enabling installation of the combinations of deposition and etch sources required for layer processing. All our sources are engineered for 24/7 production, robust and easy to maintain, optimised for the lowest materials utilisation and the best repeatability. As process requirements change in the future, simply reconfigure

your system by moving, exchanging or adding new ones, reconfigure your Khan control system in just a few minutes and you are ready to go.

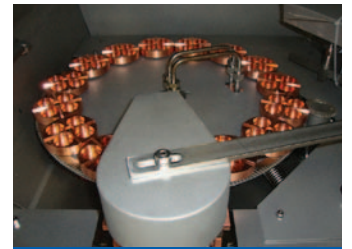
Control rates and terminate your layers using high sampling rate quartz monitoring or the very latest broadband optical monitoring techniques with new “in situ” techniques like optical pyrometry for new levels of temperature control during deposition.

Choose from our widest ever range of sources. From simple thermal boats and high capacity barrel sources to effusion cells, e guns and etch sources.



**Thermal Evaporation**

Standard and custom designs for complex substrate geometries and a large variety of coating materials



**E Guns**

From 1 to 60 pocket, single or co-evap, for dielectrics, metals and TCOs



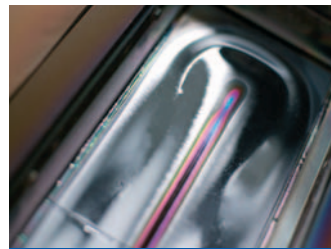
**Barrel Source**

A range of source volumes for deposition of very thick layers



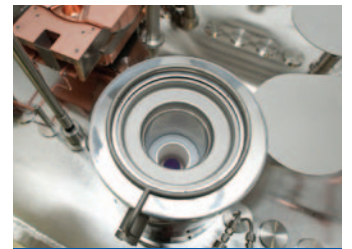
**Effusion Cells**

Complex alloying processes and processing of very low vapour pressure materials at up to 2000°C



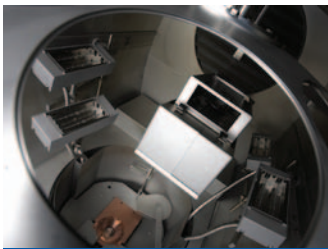
**Sputter**

Metals, dielectrics and TCOs. Closed loop reactive processes. Co-sputter for complex materials



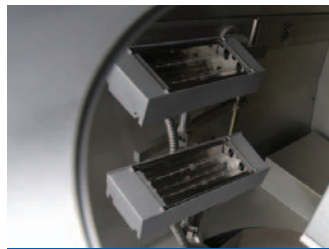
**PIAD**

Improved film qualities, lower process temperatures and shorter process times



**Etch**

Round and moveable linear mills for high rate, accurate in situ dep and etch processes



**Heating**

Combined front and /or backside heating for process temperatures up to 350°C



**Glow Discharge**

700W or 2000W according to application

From multilayer optical stacks with edge tolerances <1nm to ultrathin 1nm precious metal layers and co-evaporation of alloys there is a BAK process control solution that fits.



**Khan**

Khan process controller. Closed loop control with user defined parameter tracking and full run statistics logging



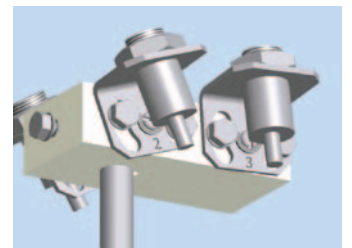
**Quartz Monitoring**

Single or 6 way quartz with increased sampling rates for termination accuracy in single and co deposition processes



**Optical Monitoring**

UV to IR, monochromatic or broadband, test glasses or direct substrate measurement



**Optical Pyrometry**

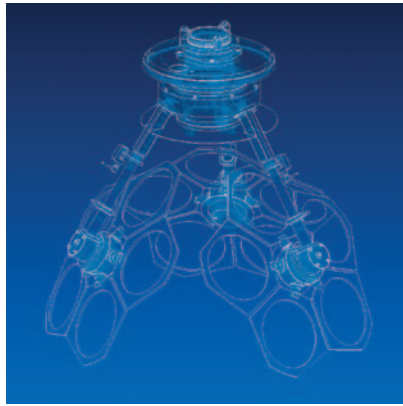
Outstanding control or temperature distribution across coating zone for hot processes

# TOOLING THAT MAKES THE DIFFERENCE

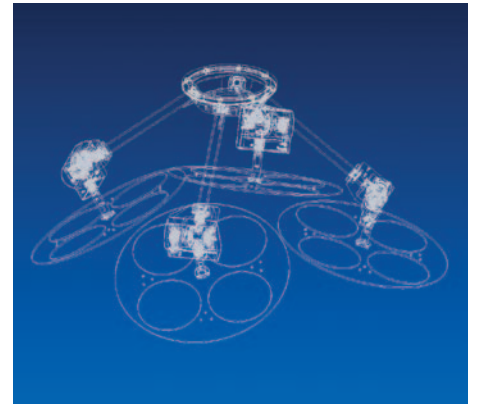




Knudsen planetary



Flip system for double-sided coating



Custom substrate movement

Example of optimised capacity based on tooling choice for BAK761

Substrate Size	Substrate Handling		
	4 segments	3 segments	Knudsen
3"	64	54	123
4"	40	39	78
6"	16	18	33
8"	8	6	15

Evatec's portfolio of tooling solutions is designed to maximise batch capacity without compromise on film quality. Choose from single piece and segmented domes with standard or "lift off" geometries or flip systems for double sided processes. For high rate metallisation our range of planetary system designs enables larger batch sizes and lowest materials utilisation and for complex substrate geometries our engineering department offers a bespoke design service.

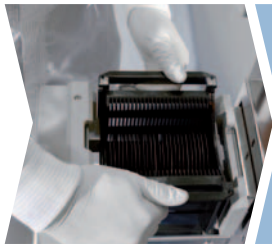
# THE BAK

## CUSTOMISED JUST FOR YOU



Evatec's custom engineering capabilities add further possibilities to ensure seamless integration of the BAK in your production line. Here are just a few of the engineering options available:

- Add our 'Autoload' cassette to cassette handling solutions with integrated robot load / unload of the cassette to eliminate all manual handling and enable automated individual wafer tracking
- Integrate additional processing chambers along side your BAK to integrate pre or post deposition processes in controlled environments
- Incorporate vacuum load lock systems for custom applications and increased throughput



**1.** Front end cassette load and unload. Wafer sizes up to 8 inch.



**2.** Precise handling of wafer by robot, including wafer centering.



**3.** Dome loading including metrology wafers



**4.** Dome transfer through dedicated side port either direct to coater or via loadlock chamber.

Whichever BAK you choose, the Evatec team is committed to deliver BAK production tools for Semiconductor, Precision Optics, and Optoelectronics that stand out for their reliability, leading process performance, and long lifetime. To find out more simply call your local sales and service team or contact us at [www.evatecnet.com](http://www.evatecnet.com)



## ABOUT EVATEC

### **Evatec Ltd.**

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Evatec offers complete solutions for thin film deposition and etch in the optical and semiconductor markets. Evatec engineers are able to offer practical production advice from R&D to prototyping and mass production. We recognize that no single technique offers the answer to all problems.

With a technology portfolio including standard and enhanced evaporation as well as sputter, we are ready to offer sampling services and custom engineering to meet our customers individual needs.

We provide sales and service through our global network of local offices. For more information visit us at [www.evatecnet.com](http://www.evatecnet.com) or contact our head office.

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