



Special Plastic Module for  
semiconductor industry

# **S.P.M. s.r.l.**

## Quartz parts cleaners for EPI processes



## SUMMARY

– Athens Model	LPE 2061 QUARTZ BELL JAR CLEANING SYSTEM
– Cairo Model	LPE 3061 QUARTZ CHAMBER & PROCESS KIT CLEANING SYSTEM
– Manila Model	LPE 3061 QUARTZ CHAMBER & LPE 2061 QUARTZ BELL JAR AND PROCESS KIT CLEANING SYSTEM
– Monaco Model	ASM QUARTZ CHAMBER AND PROCESS KIT CLEANING SYSTEM
– Nice Model	LPE 2061 QUARTZ BELL JAR, ASM CHAMBER AND PROCESS KIT CLEANING SYSTEM
– Piraeus Model	LPE 2061 OR AMC 7810-7820 QUARTZ BELL JAR AND PROCESS KIT CLEANING SYSTEM
– Agrigento Model	CHAMBER LPE 3061, SMALL PARTS, BELL JAR AND QUARTZ TUBES CLEANING SYSTEM
– Sunnyvale Model	LPE 3061, ASM QUARTZ CHAMBERS AND PROCESS KIT CLEANING SYSTEM



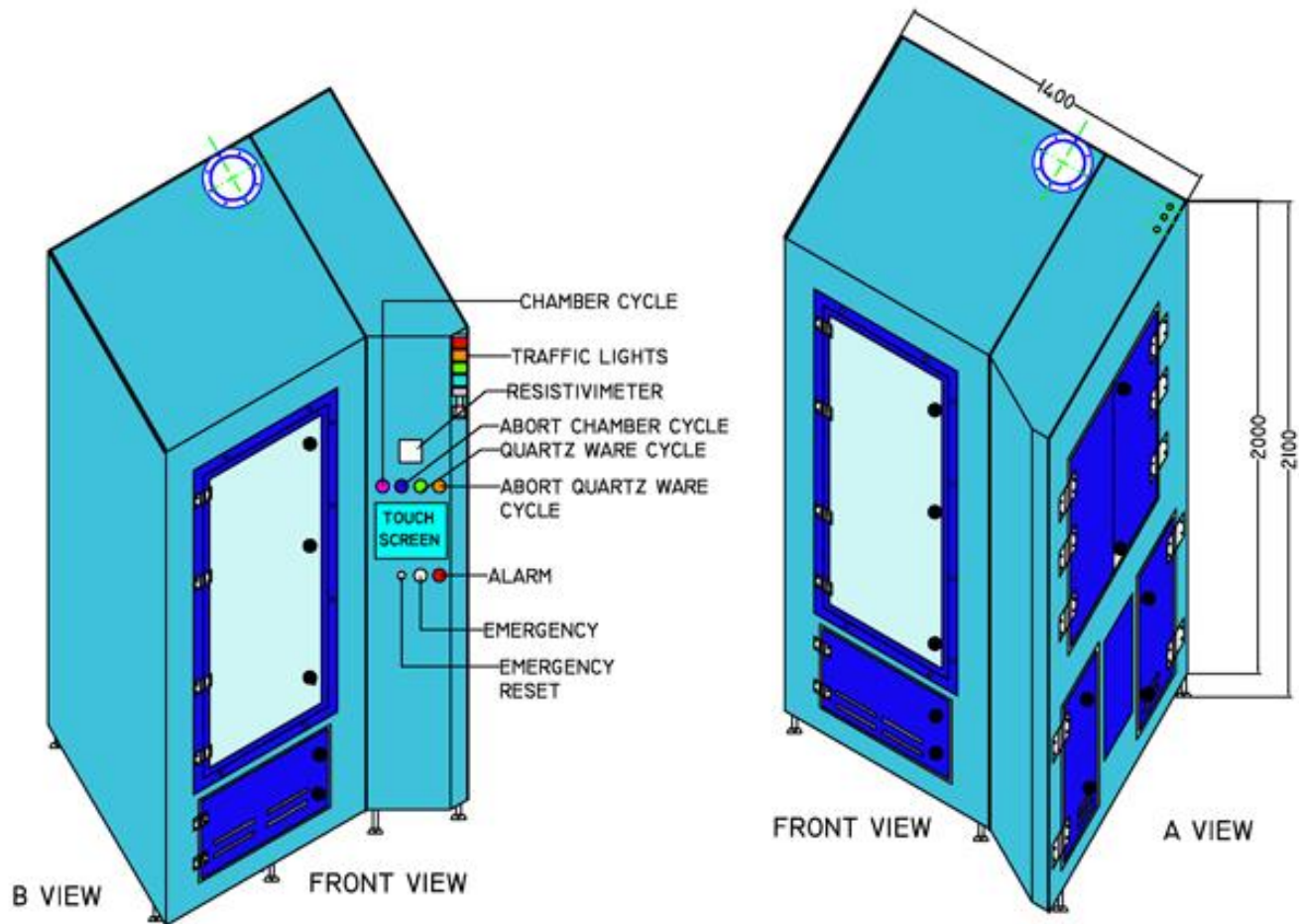
# Athens Model



- This system is specifically projected for LPE 2061 belljar cleaning in vertical version, equipped with spray rinsing and adjustable rotating platform.
- Special manual access door for fumes containment and a second door, with sensors, for safety.
- It is equipped with: filling system, heat exchangers for hot H<sub>2</sub>O DI and hot N<sub>2</sub> production.
- Cleaning processes are ruled by PLC, with dedicated recipes, displayed and modifiable by touch screen.



## LPE 2061 QUARTZ BELLJAR CLEANING

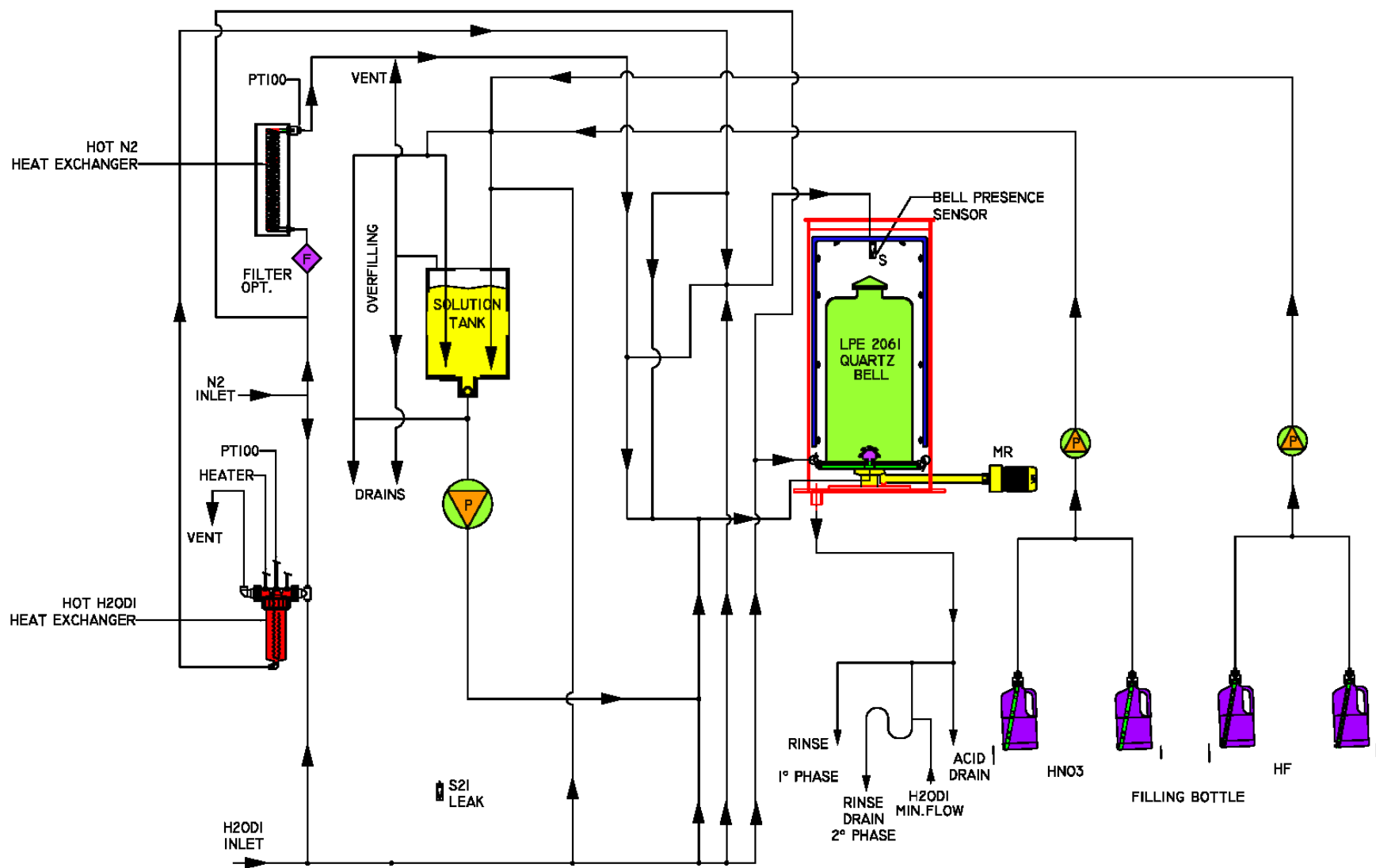




The Athens Model can clean:



*LPE 2061 Quartz Belljar*





# Cairo Model

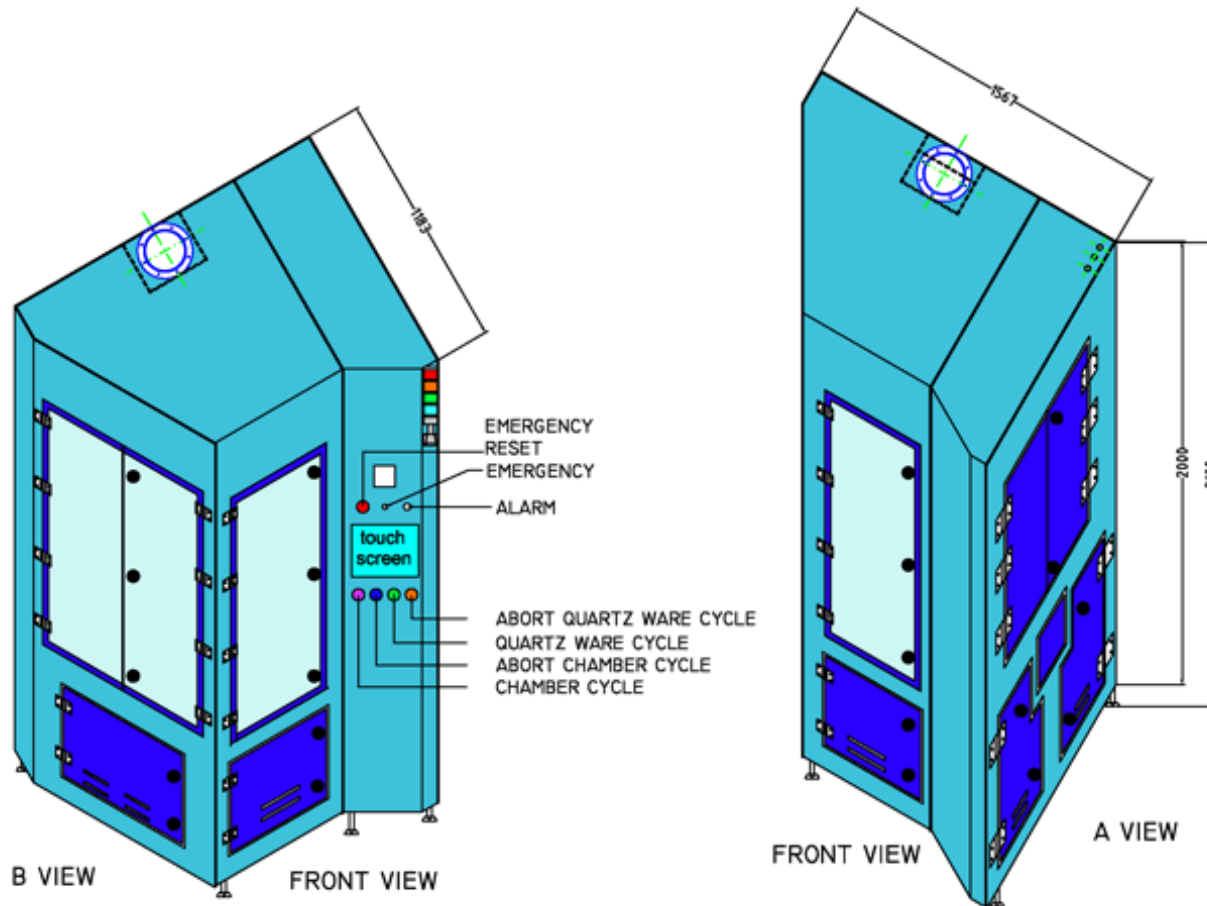




- This revolutionary system can clean up different parts: LPE 3061 quartz chamber and various using a special process kit.
- The rinse up process is with hot H<sub>2</sub>O DI (produced on line). The cleaning system is with nebulized acid mixings, to warrant the complete wetting of all walls and to reduce chemical consumption.
- Cleaning processes are ruled by PLC, with dedicated recipes, displayed and modifiable by touch screen.

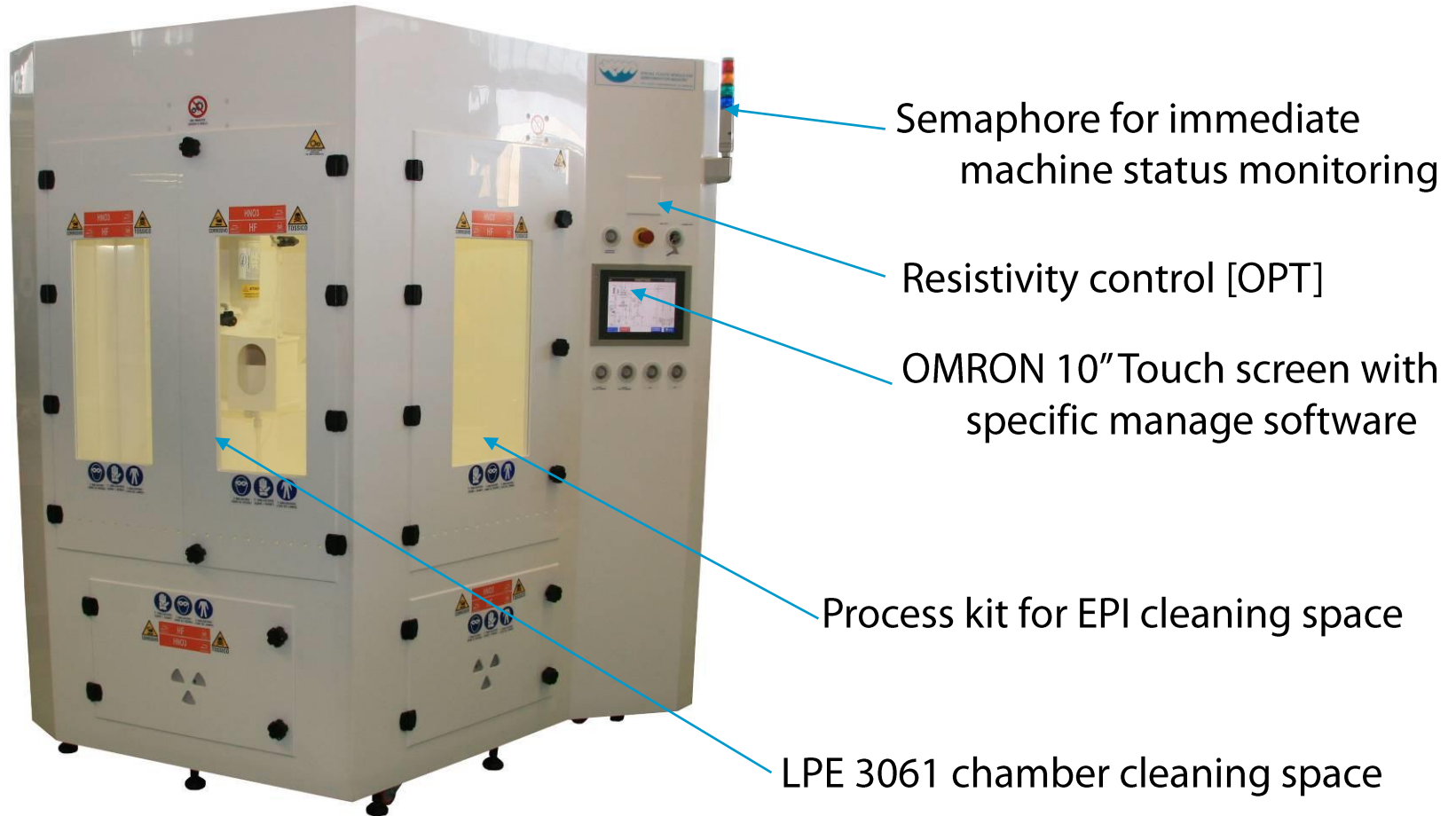


*HYBRID SYSTEM FOR 3061 LPE CHAMBER CLEANING & PROCESS KIT*



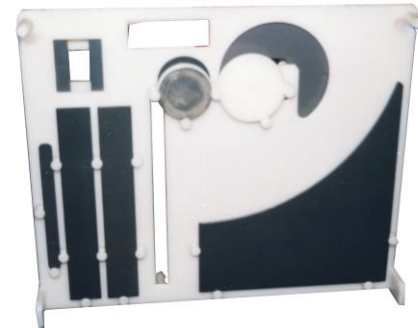


## *HYBRID SYSTEM FOR 3061 LPE CHAMBER CLEANING & PROCESS KIT*



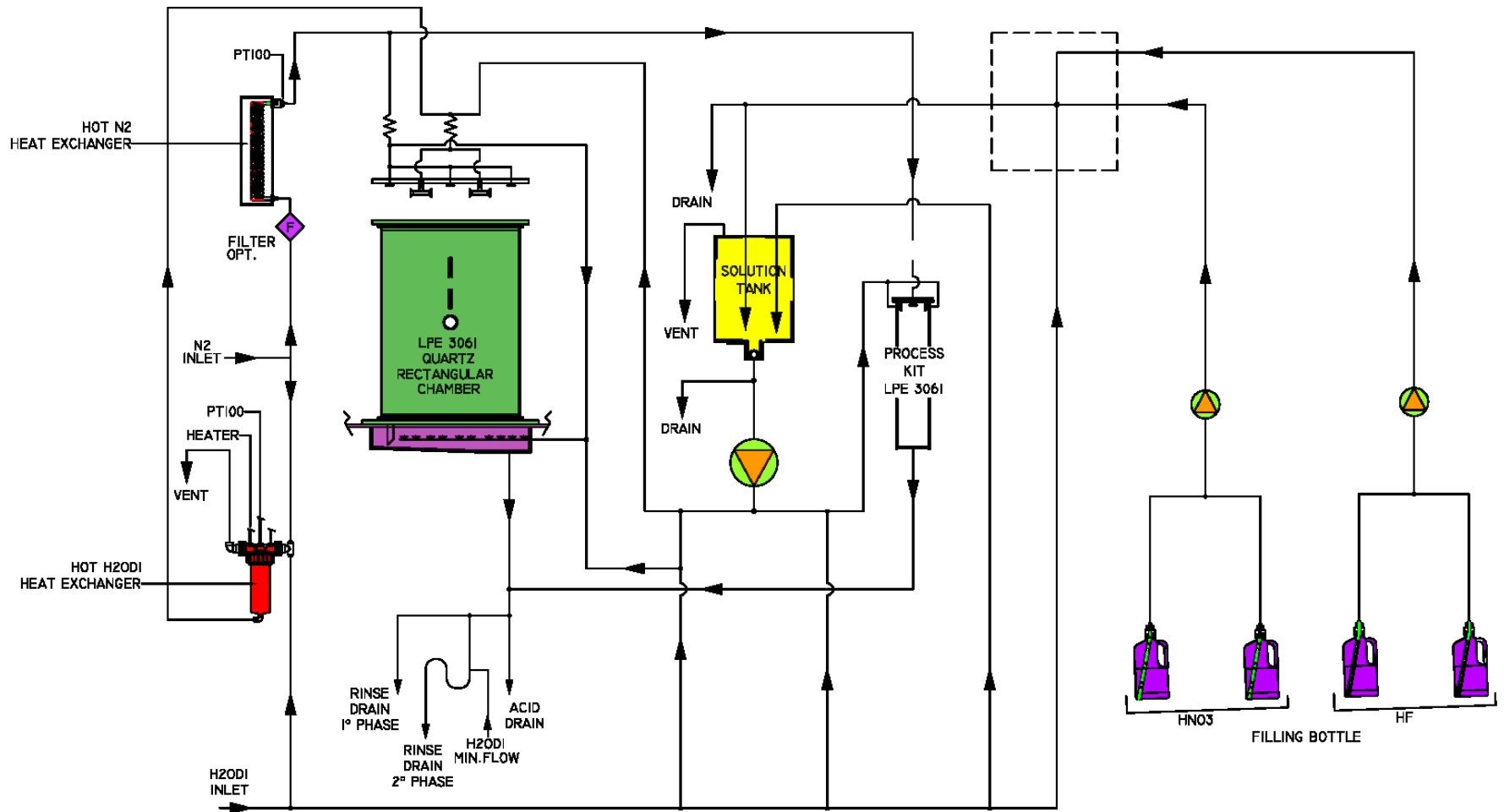


## The Cairo Model can clean:



*LPE 3061 Process kit Holder*

*LPE 3061 chamber and Process kit for EPI with special parts holder*

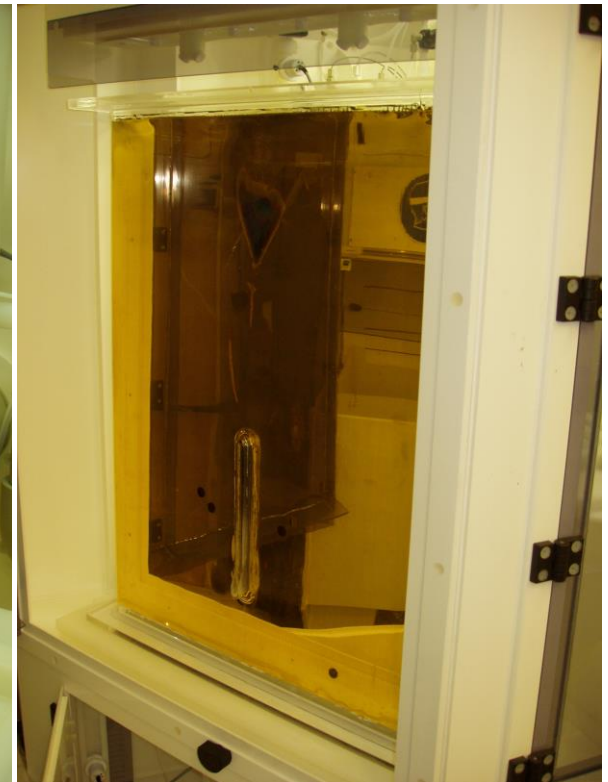


## Equipped with (main component):

Process kit for EPI cleaning space



LPE 3061 chamber cleaning space





## Equipped with (main component):

Accurate chemical dosing  
system for chemical mixturing



Water group



Internal day tank



Filling system from bottle  
(without CDS)



# Manila Model

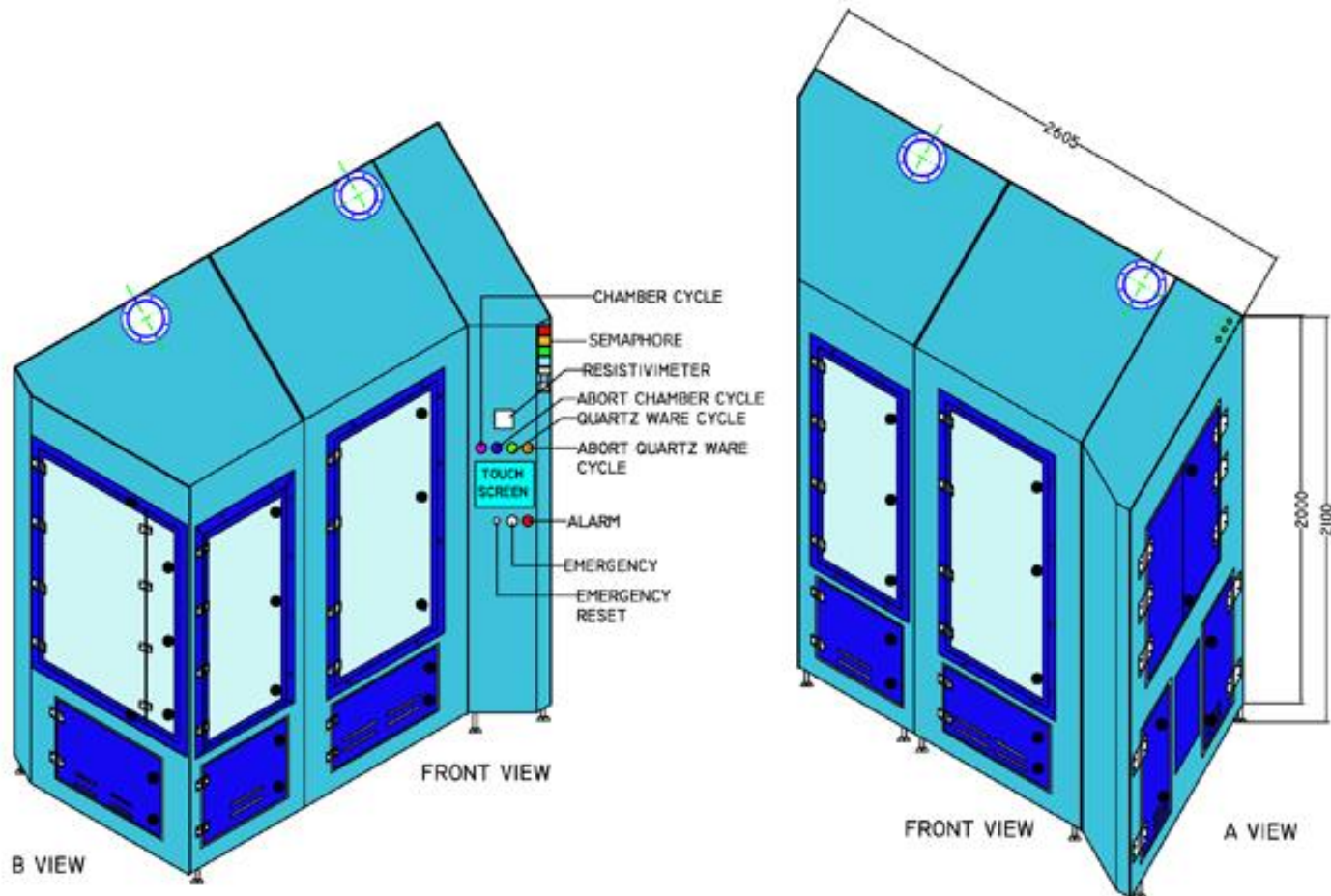




- The hybrid process unit operates an integrated process and is composed by 2 main modules, equipped with a unique general control.
- Dedicated to LPE 3061 chamber, LPE 2061 bell jar and parts clean up.
- The cleaning system is with nebulized acid mixings, to warrant the complete wetting of all walls and to reduce chemical consumption. This integrated module cannot contemporarily accomplish the two different cycles, but just one cycle at a time.
- Cleaning processes are ruled by PLC, with dedicated recipes, displayed and modifiable by touch screen.

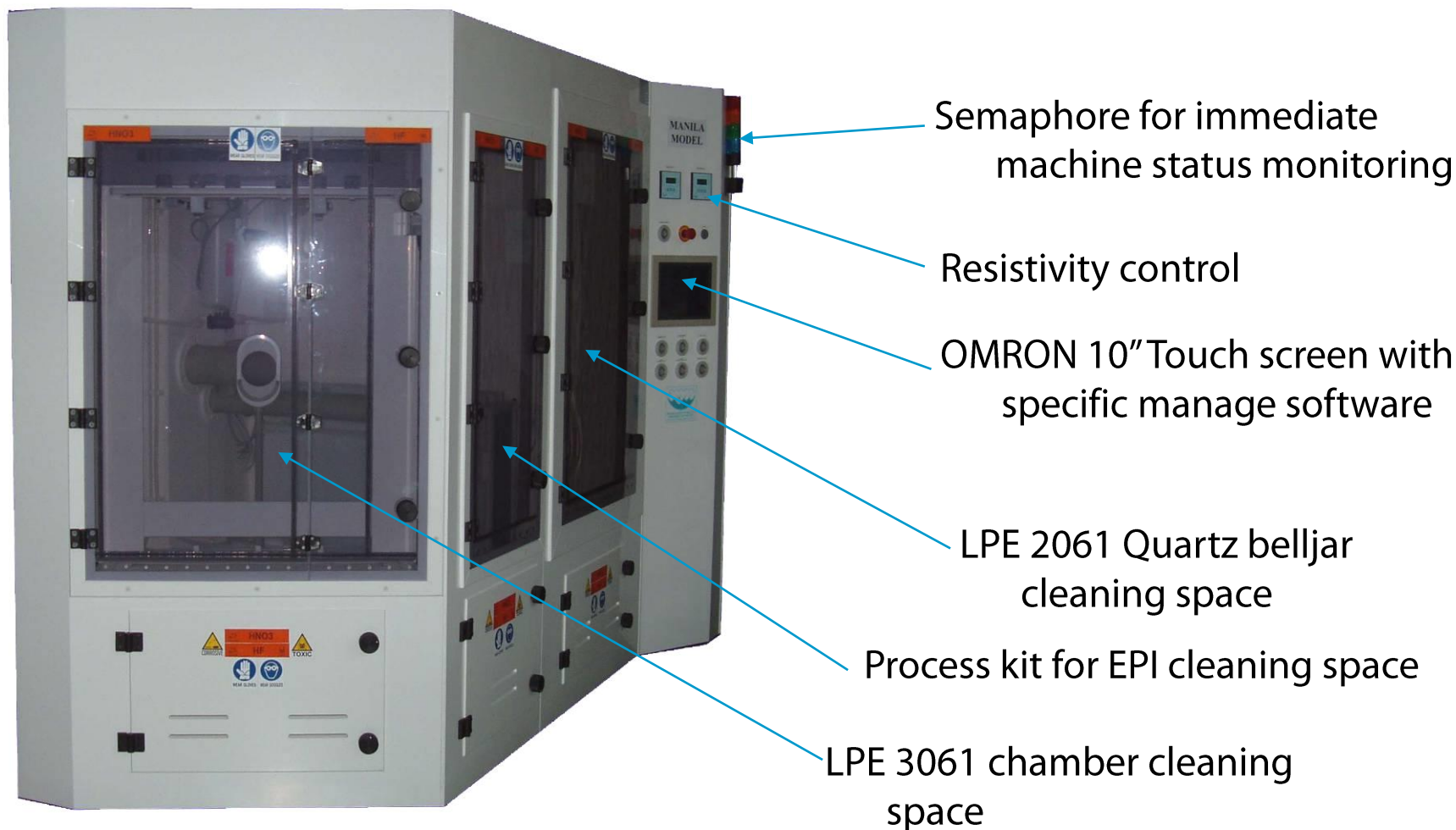


## HYBRID SYSTEM FOR 3061 LPE CHAMBER CLEANING & 2061 LPE QUARTZ BELLJAR CLEANING



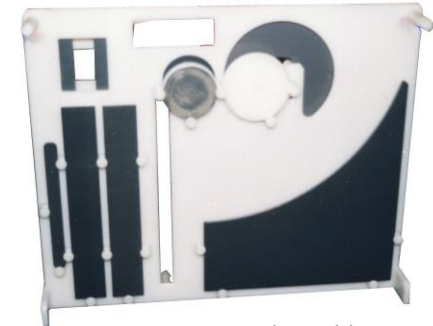


## *HYBRID SYSTEM FOR 3061 LPE CHAMBER CLEANING & 2061 LPE QUARTZ BELLJAR CLEANING*





## The Manila Model can clean:

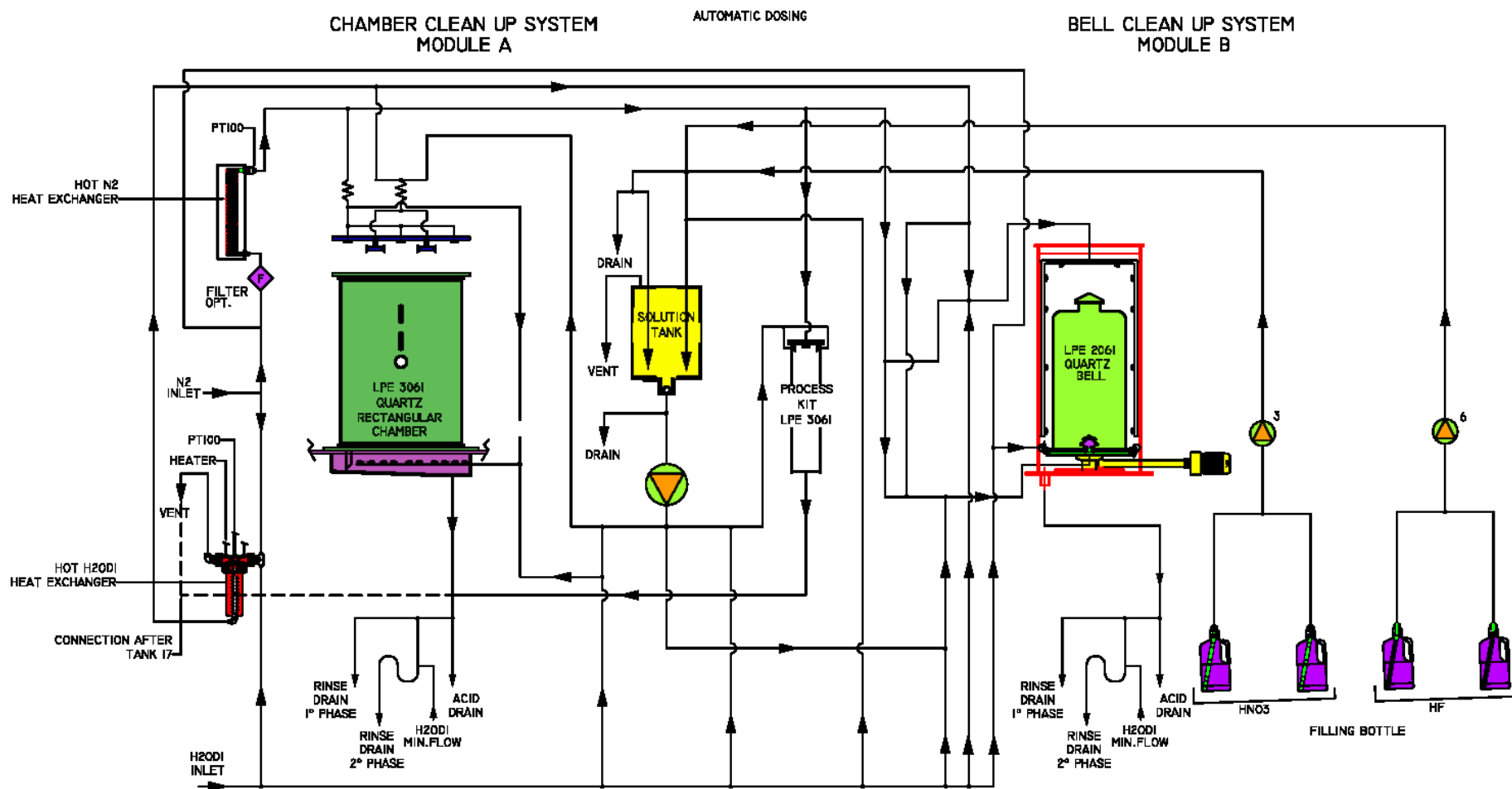


*LPE 3061 Process kit Holder*



*LPE 2061 Process kit Holder*

*LPE 3061 chamber, LPE 2061 Quartz belljar and Process kit for EPI with special parts holder*





## Equipped with (main component):

Process kit for EPI cleaning space



LPE 3061 chamber cleaning space







## Equipped with (main component):

LPE 2061 belljar cleaning space



Water group



Filling system from bottle





# Monaco Model

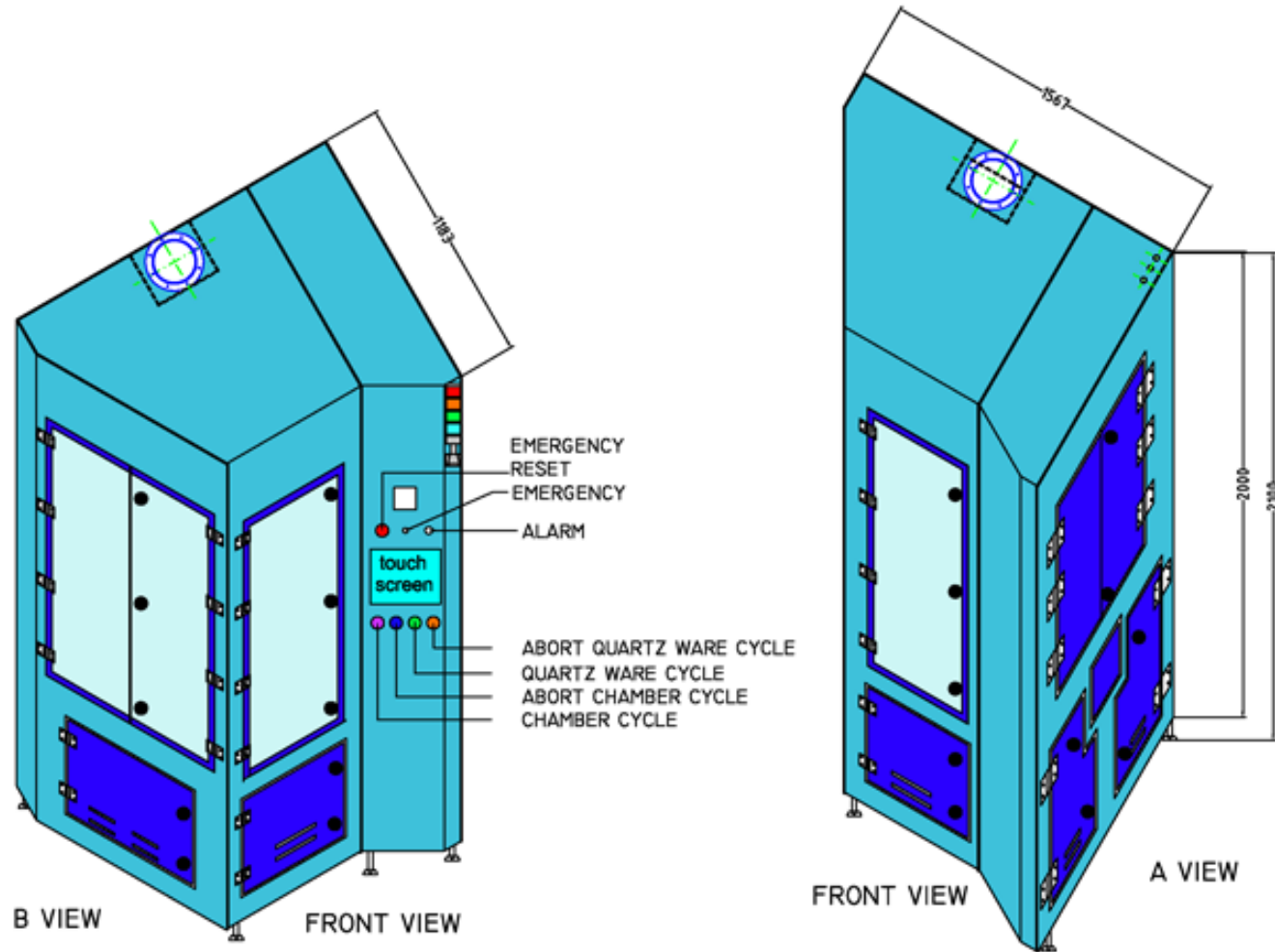




- This system cleans up different quartzware: ASM chambers and various, using special process kits.
- It is a new vertical version cleaning system that doesn't need any protection mask, because the process is accomplished by a special mechanism - preset into the chamber housing that protects non wetting parts.
- The traditional spray system has been transformed in a nebulizing system.
- Cleaning processes are ruled by PLC, with dedicated recipes, displayed and modifiable by touch screen.



*ASM QUARTZ CHAMBER AND PROCESS KIT CLEANING SYSTEM*





The Monaco Model can clean:



*ASM chamber and Process kit with special parts holder*

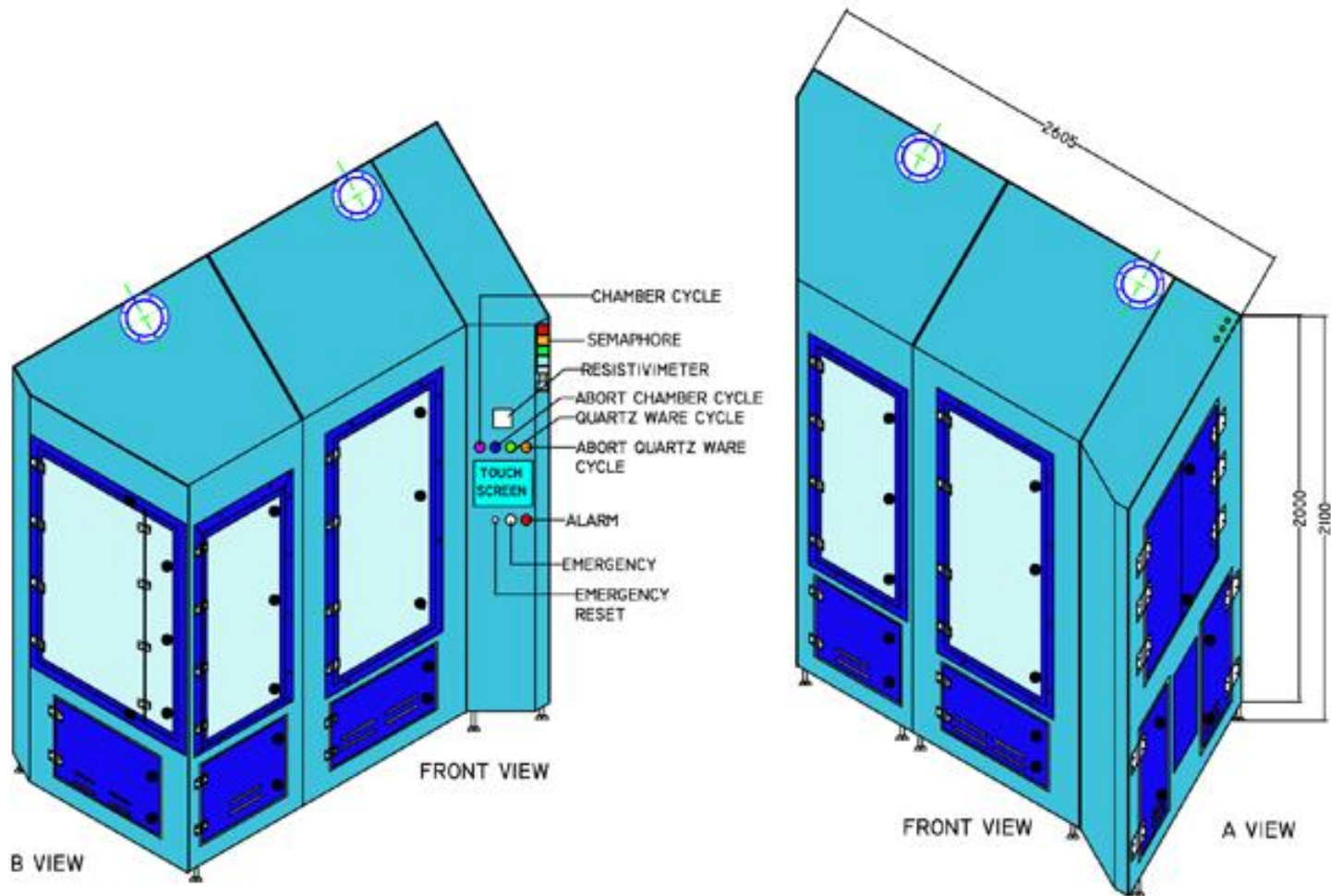


# Nice Model



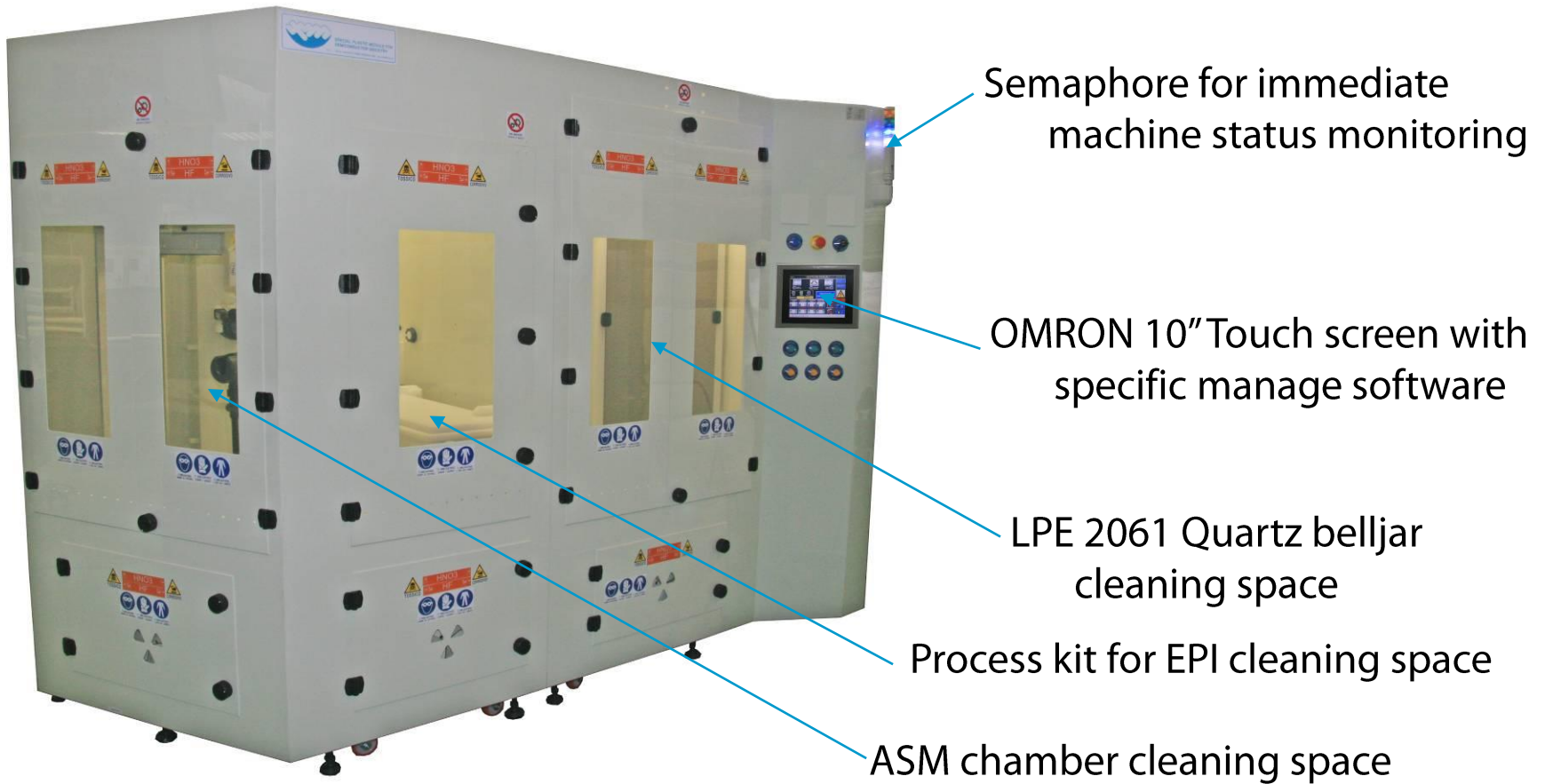
- Nice model is an automatic clean up module for EPI process quartzware, and more specifically for LPE bell jar, ASM chamber and small parts.
- This cleaning module is equipped with specific supports for bell jars anchoring and their rinse is accomplished while bell jars are rotating. An unidirectional spray system cleans bell internal surface.
- Nice model has a process tank for quartz small parts clean up, inherent to processes LPE and ASM.
- Cleaning processes are ruled by PLC, with dedicated recipes, displayed and modifiable by touch screen.

*HYBRID SYSTEM FOR LPE 2061 QUARTZ BELL JAR, ASM CHAMBER AND PROCESS KIT CLEANING*



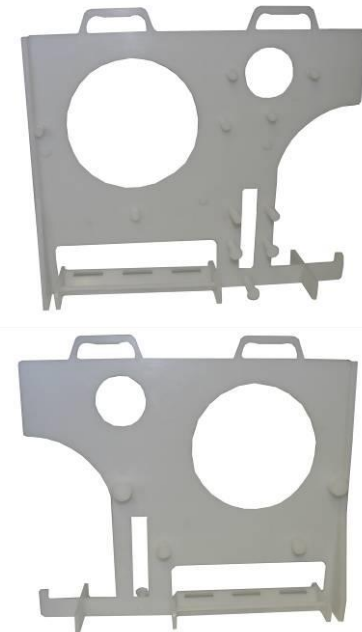


*HYBRID SYSTEM FOR LPE 2061 QUARTZ BELL JAR, ASM CHAMBER AND PROCESS KIT CLEANING*





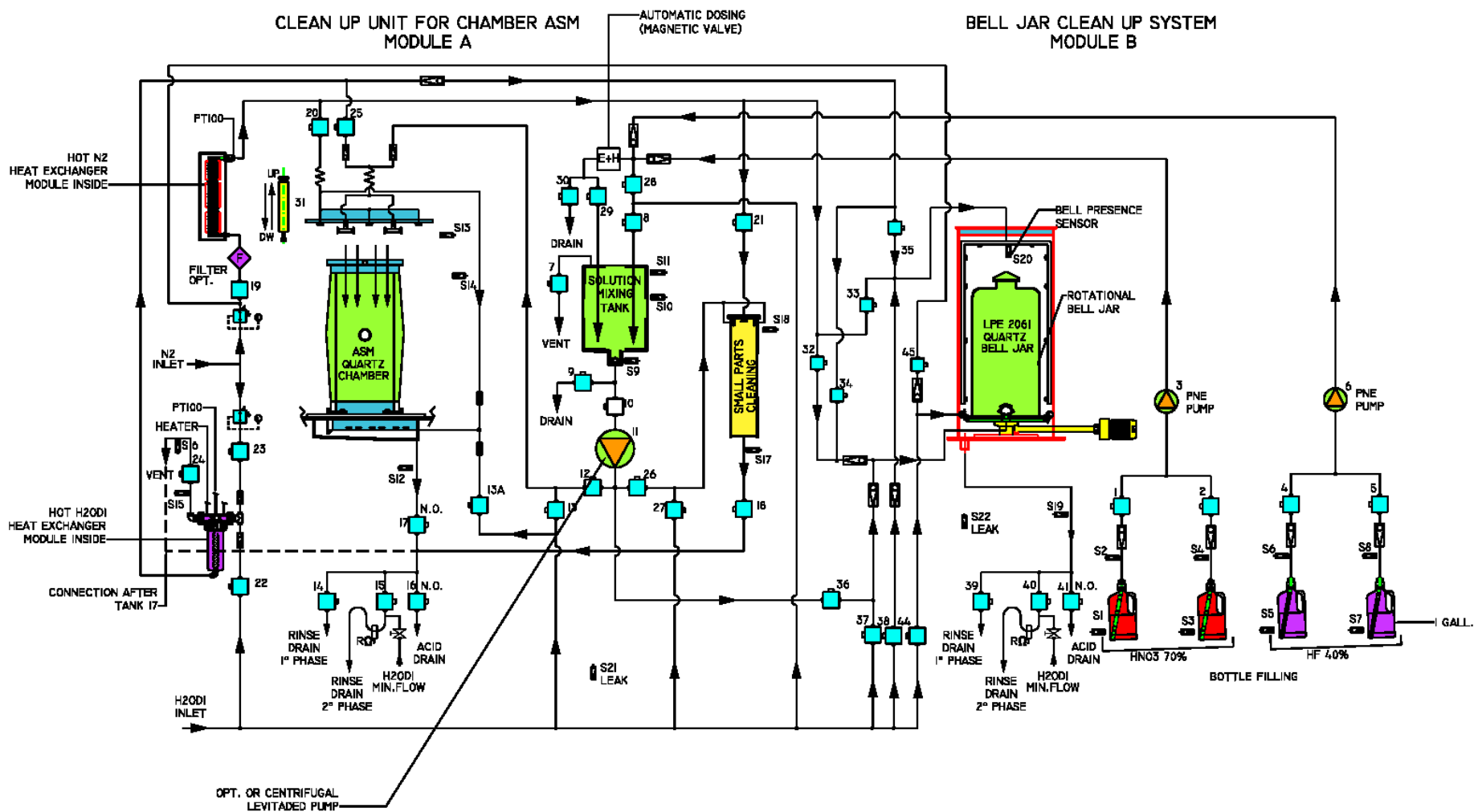
## The Nice Model can clean:



*LPE 2061 Process kit Holder*

*LPE 2061 Quartz Belljar , ASM chamber and Process kit for EPI with special parts holder*





## Equipped with (main component):

ASM chamber cleaning space



Process kit for EPI cleaning space



LPE 2061 belljar cleaning space





## Equipped with (main component):

Rotary plateau to clean belljar  
saving chemicals



Custom tank to clean process  
kit



Automatic enclosyng system  
to clean ASM chambers only  
inside



General control with Ormon PLC



H2ODI and N2 in-line heaters



Filling system from bottles with hi-  
precision automatic dosing system





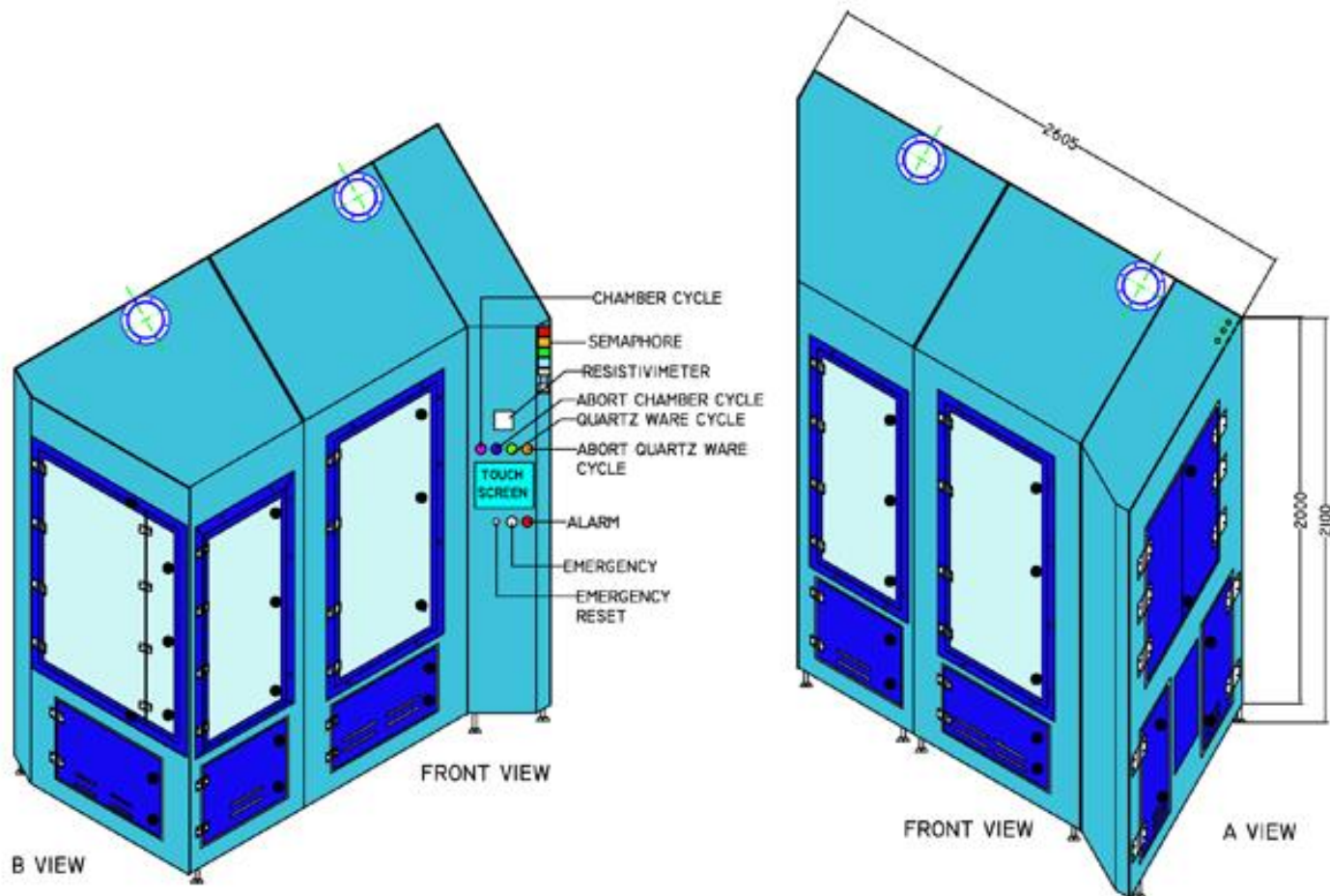
# Piraeus Model



- Piraeus model is an automatic clean up module for EPI process quartzware, and more specifically for LPE bell jars, AMC chamber and various.
- This cleaning module is equipped with specific supports for bell jars anchoring and their rinse is accomplished while bell jars are rotating.
- An unidirectional spray system cleans bell internal surface.
- There are dedicated kits for clean up of every models.
- Cleaning processes are ruled by PLC, with dedicated recipes, displayed and modifiable by touch screen.



*LPE 2061 OR AMC 7810-7820 QUARTZ BELL JAR AND PROCESS KIT CLEANING SYSTEM*





## The Piraeus Model can clean:



*LPE 2061 Process kit Holder*

*LPE 2061 Quartz Belljar , AMC chamber 7810-7820 and Process kit for EPI with special parts holder*



# Agrigento Model



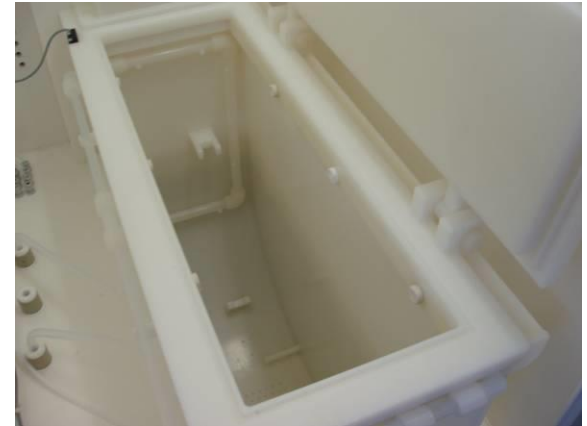
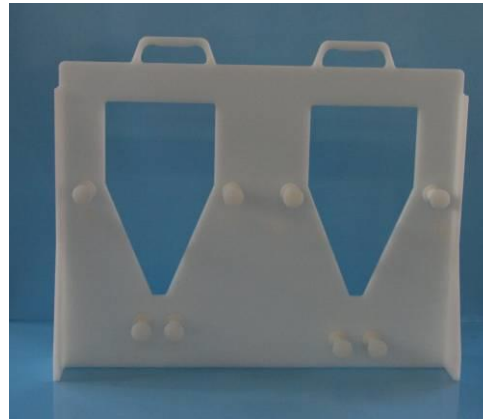
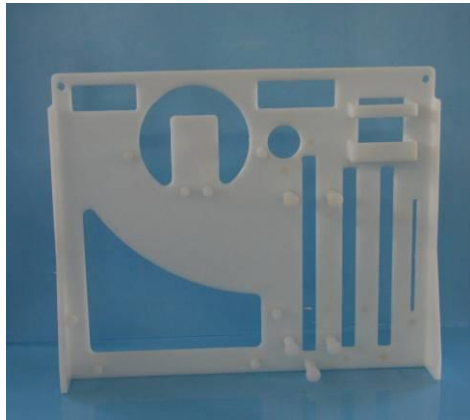


- Agrigento model is an automatic clean up module for EPI process quartzware, and more specifically for LPE bell jar, LPE quartz chamber, small parts and quartz tubes.
- This cleaning module is divided in four modules: Module A for general control ; Module B for the Bell Jar cleaning and for quartz tubes; Module C for the tank for small parts cleaning; Module D for chamber cleaning.
- Cleaning processes are ruled by PLC, with dedicated recipes, displayed and modifiable by touch screen.



### *CHAMBER LPE 3061, SMALL PARTS, BELL JAR AND QUARTZ TUBES CLEANING SYSTEM*



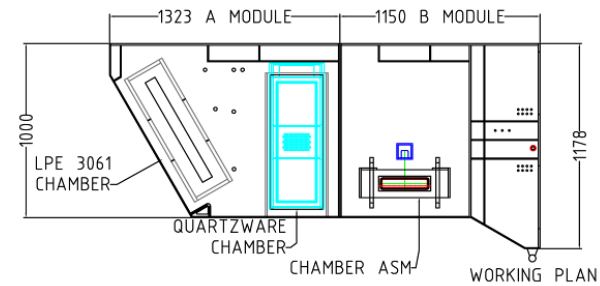
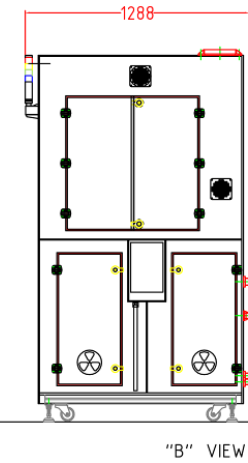
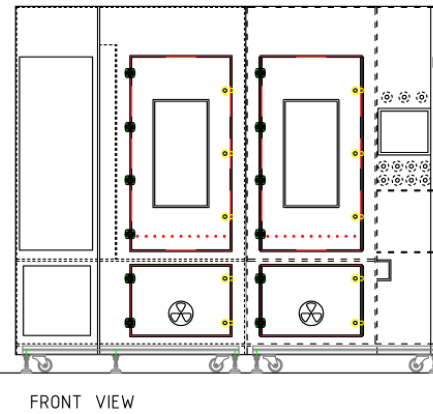
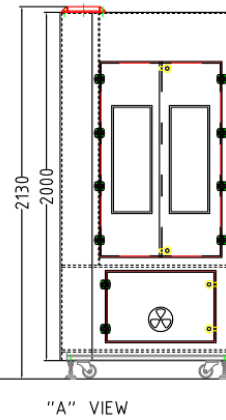
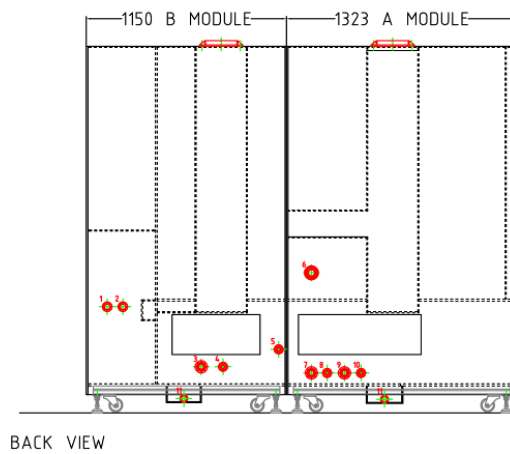
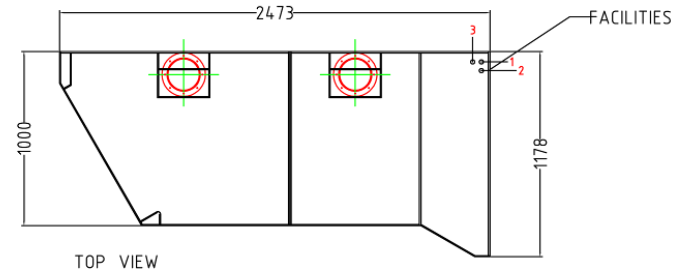




# Sunnyvale Model

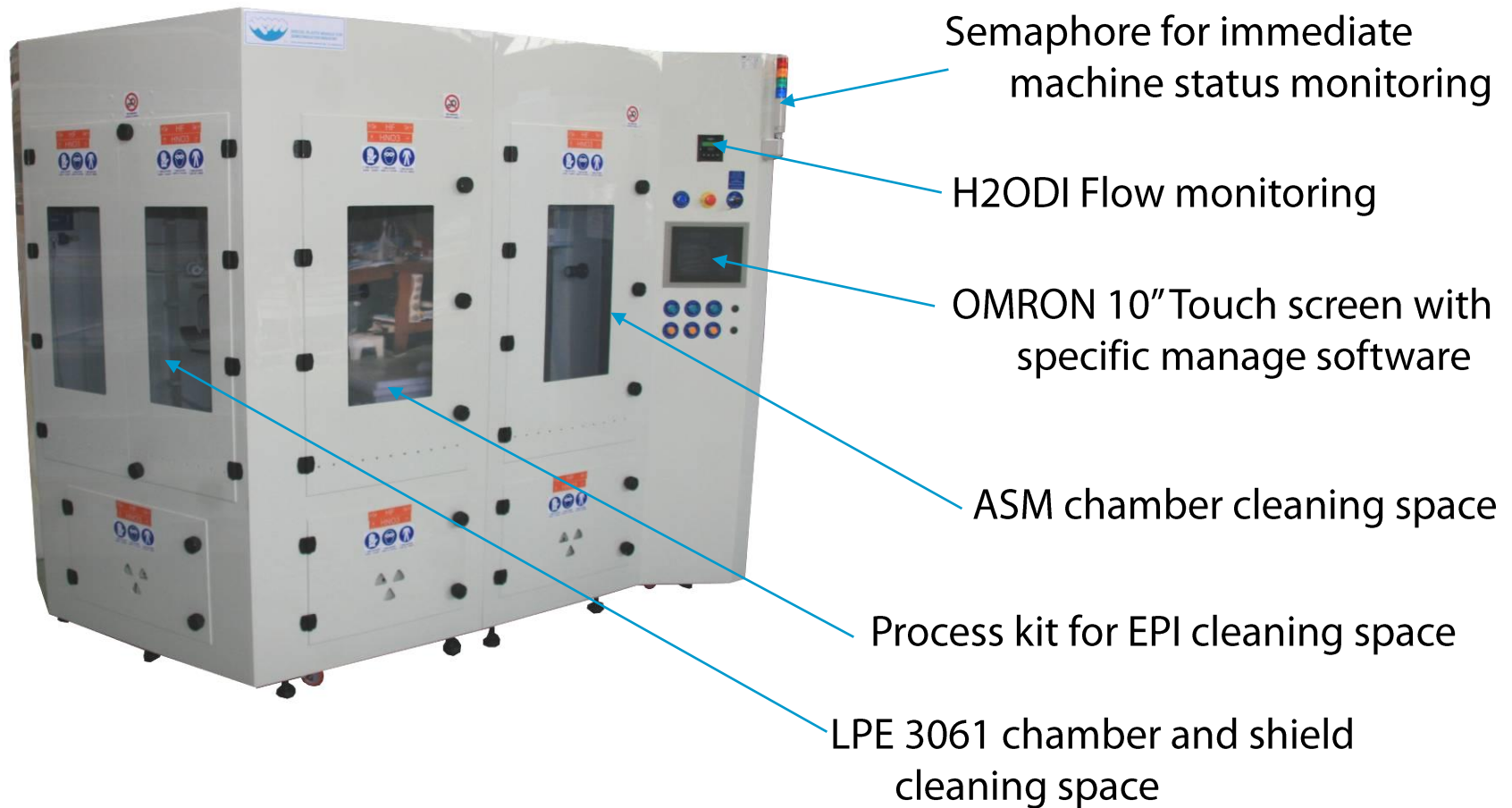


- Sunnyvale model is an automatic clean up module for EPI process quartzware, and more specifically for LPE 3061 chamber and shield, ASM chamber and small parts with dedicated process kit.
- The rinse up process is with hot H<sub>2</sub>O DI (produced on line). The cleaning system is with nebulized acid mixings, to warrant the complete wetting of all walls and to reduce chemical consumption.
- Cleaning processes are ruled by PLC, with dedicated recipes, displayed and modifiable by touch screen.



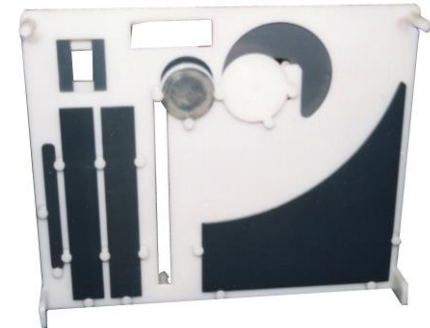


## *HYBRID SYSTEM FOR LPE 3061 CHAMBER AND SHIELD, ASM CHAMBER AND PROCESS KIT CLEANING*





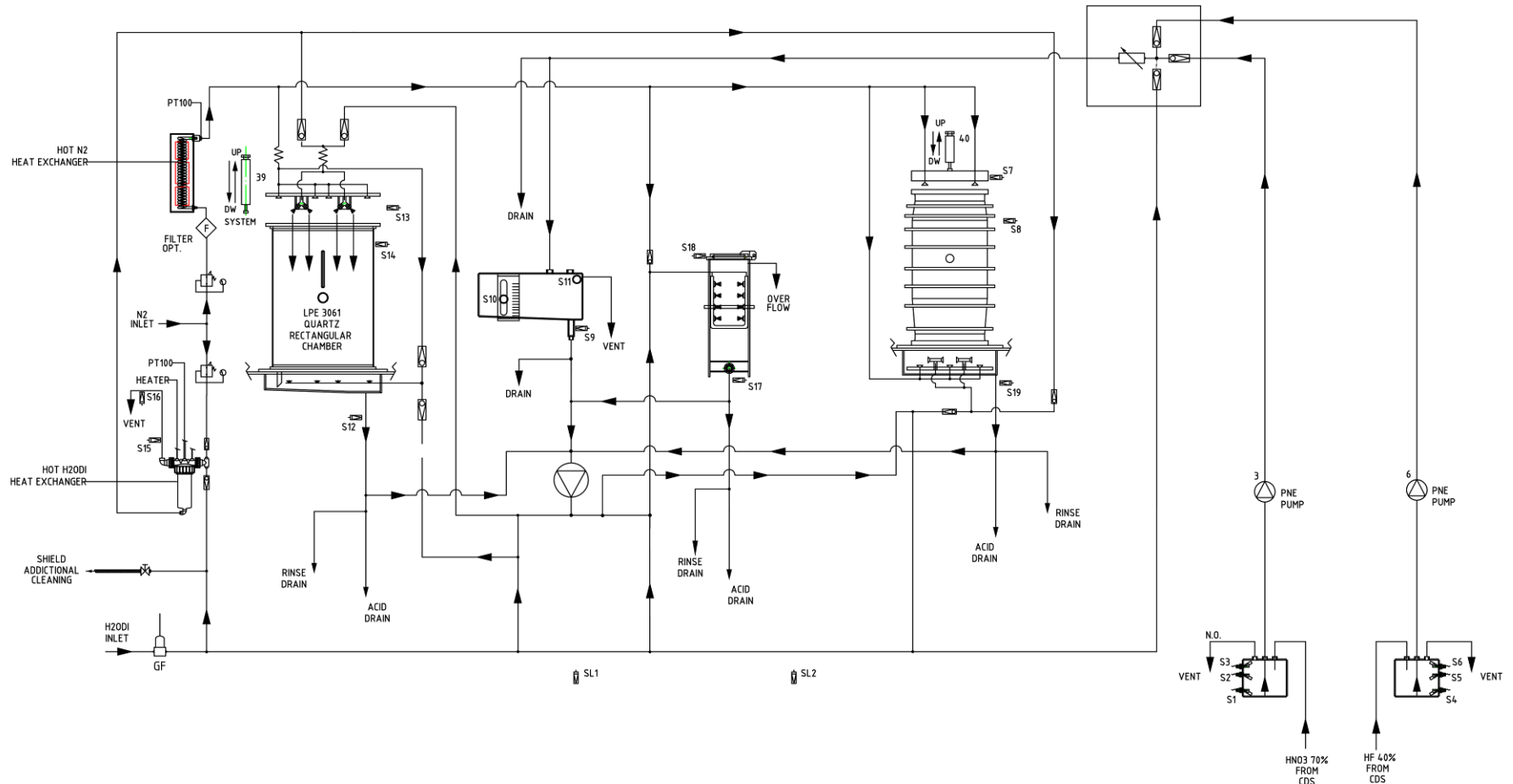
## The Sunnyvale Model can clean:



*Process kit Holder*

*LPE 3061 Quartz chamber and shield , ASM chamber and Process kit for EPI with special parts holder*







## Equipped with (main component):

ASM chamber cleaning space



Process kit for EPI cleaning space



LPE 3061 chamber cleaning space





## Equipped with (main component):

Automatic sealing cover for inside only chambers cleaning



Buffer tanks for chemicals filled by CDS.



Optimized exhaust connection



General control with Ormon PLC and SMC valves



Inline chemical dosing



Mixing tank for solution preparation





# Trolley for EPI





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*President*



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semiconductor industry

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