Special Plastic Module for semiconductor industry s.r.l.

S.P.M. s.r.l.

Full automatic wet bench for solar cells texturing

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INTRODUCTION

S.P.M. s.r.l. Texturing wet bench is composed by:

- 1 process tank KOH – RT/60°C
- 3 QDR
- 1 process tank HF+HNO3 RT/9°C cooled
- 2 process tank KOH+IPA RT/70-85°C
- 1 process tank HF+HCL RT
- 2 cascade rinse tank for final rinse with resistivity meter
- 1 dryer with hot H2ODI and hot air

The machine is controlled by an OMRON PLC and an industrial pc with embedded 15” touch screen. The software is made with WONDERWARE InTouch, that is a leader program for SCADA.

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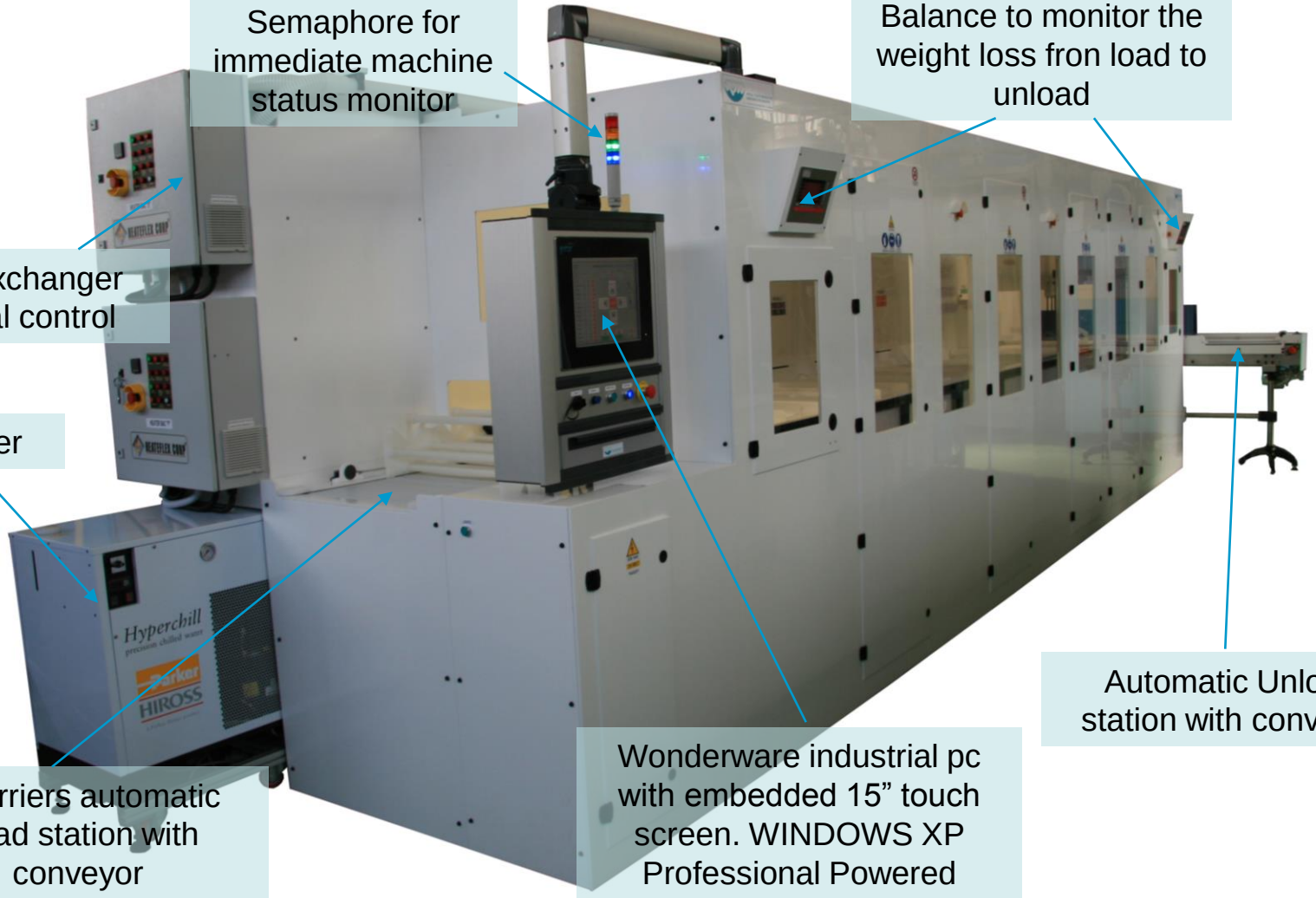
SOLAR TEXTURING: front view



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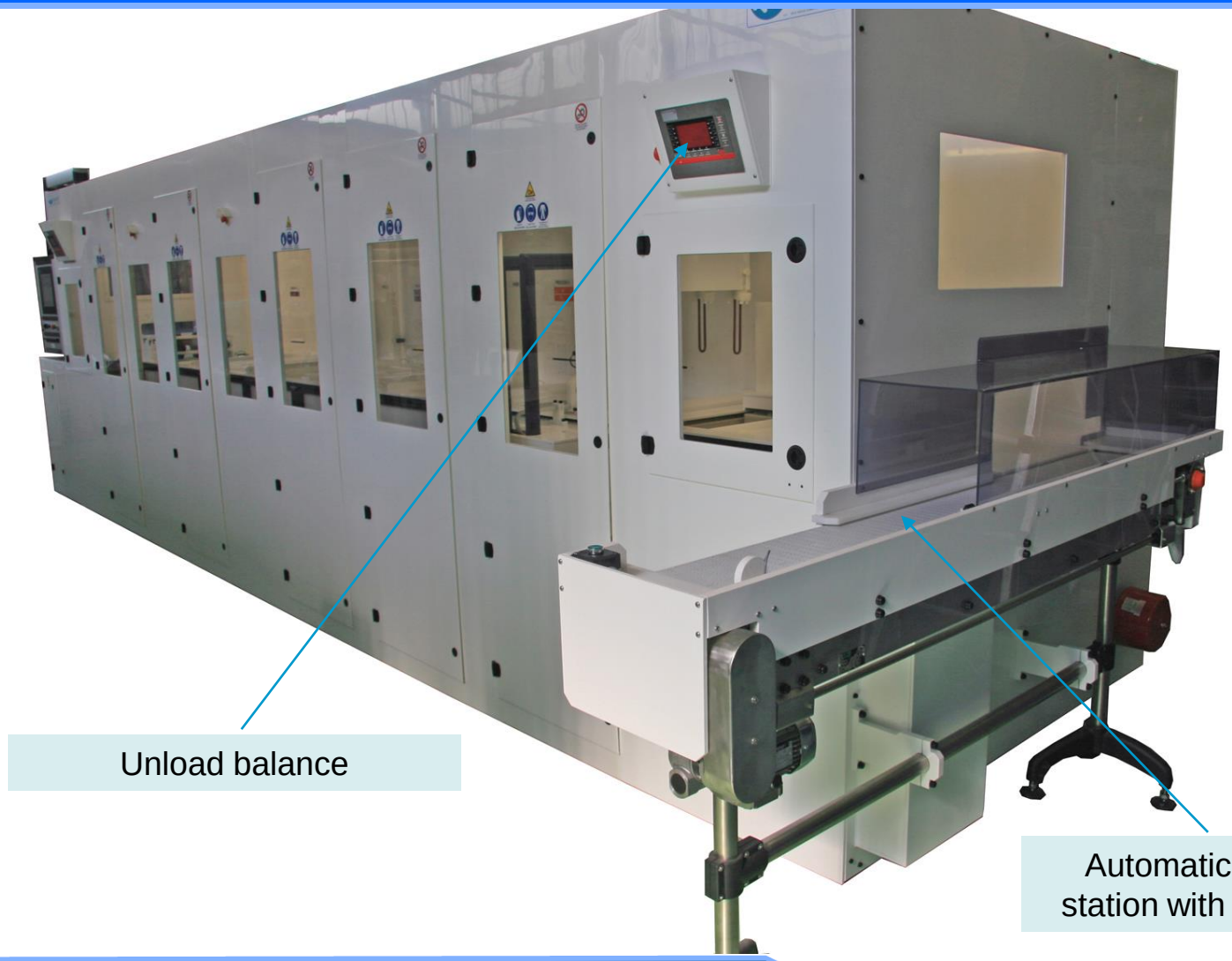
SOLAR TEXTURING: front view



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SOLAR TEXTURING: lateral view

Semaphore for immediate machine status monitor

Heat exchanger general control

chiller

4 carriers automatic Load station with conveyor

Wonderware industrial pc with embedded 15” touch screen. WINDOWS XP Professional Powered

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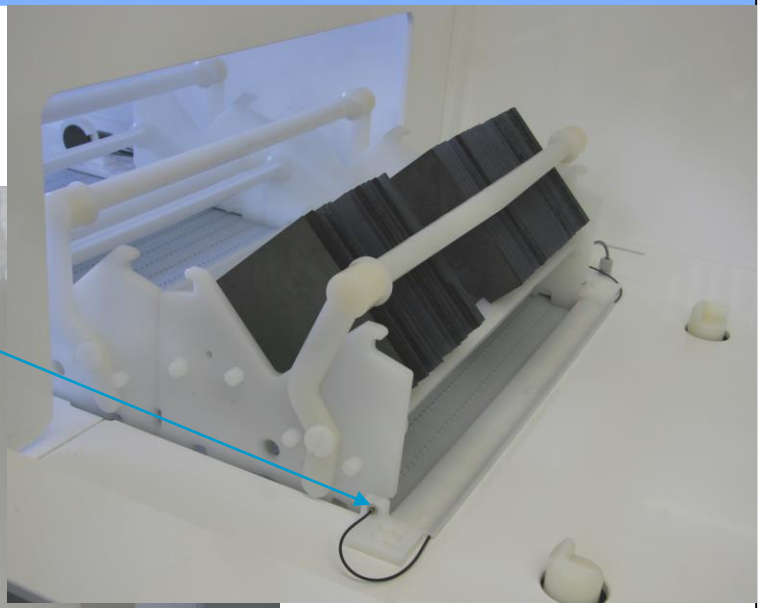
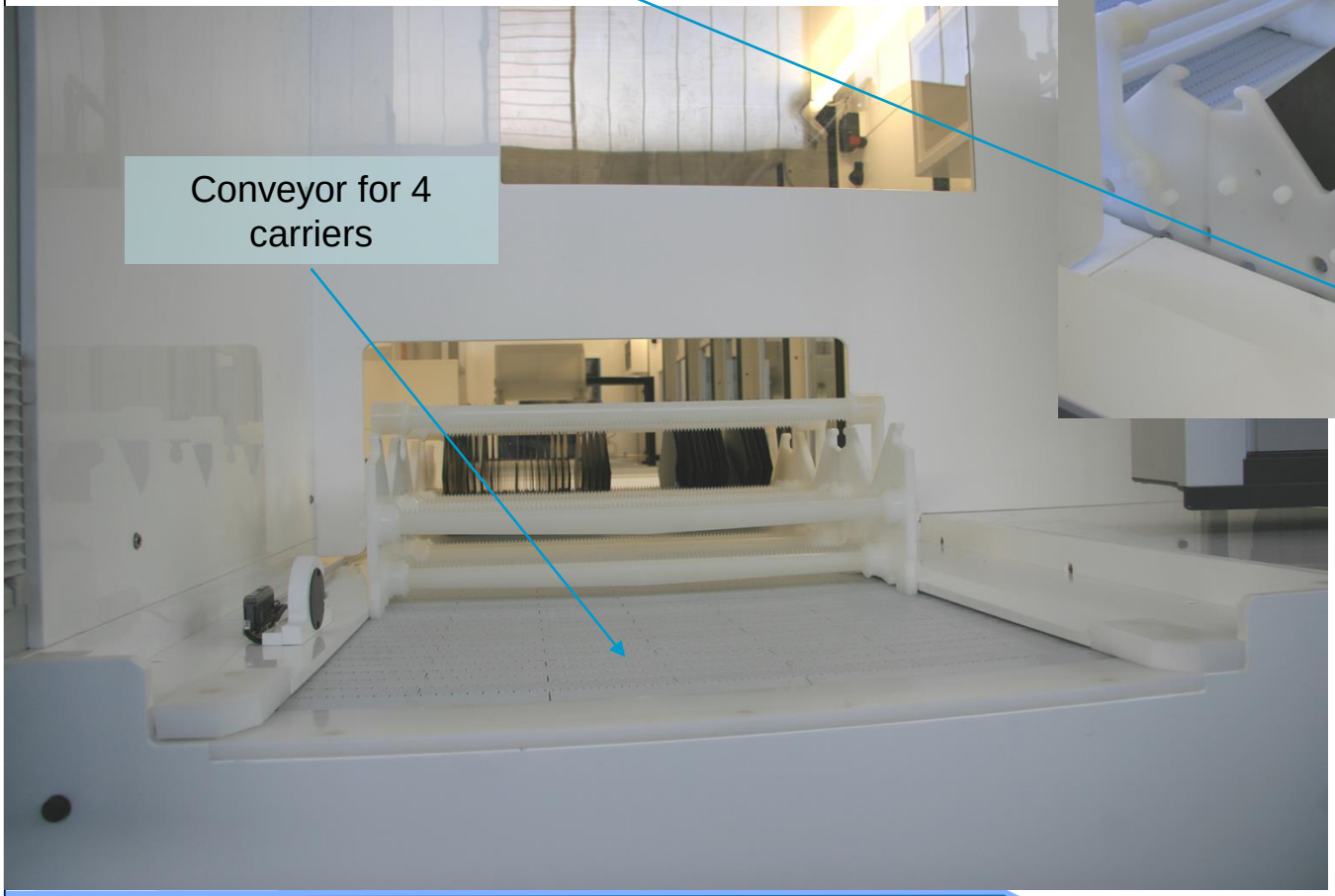
SOLAR TEXTURING: Loading

Optical barrier

Conveyor for 4 carriers





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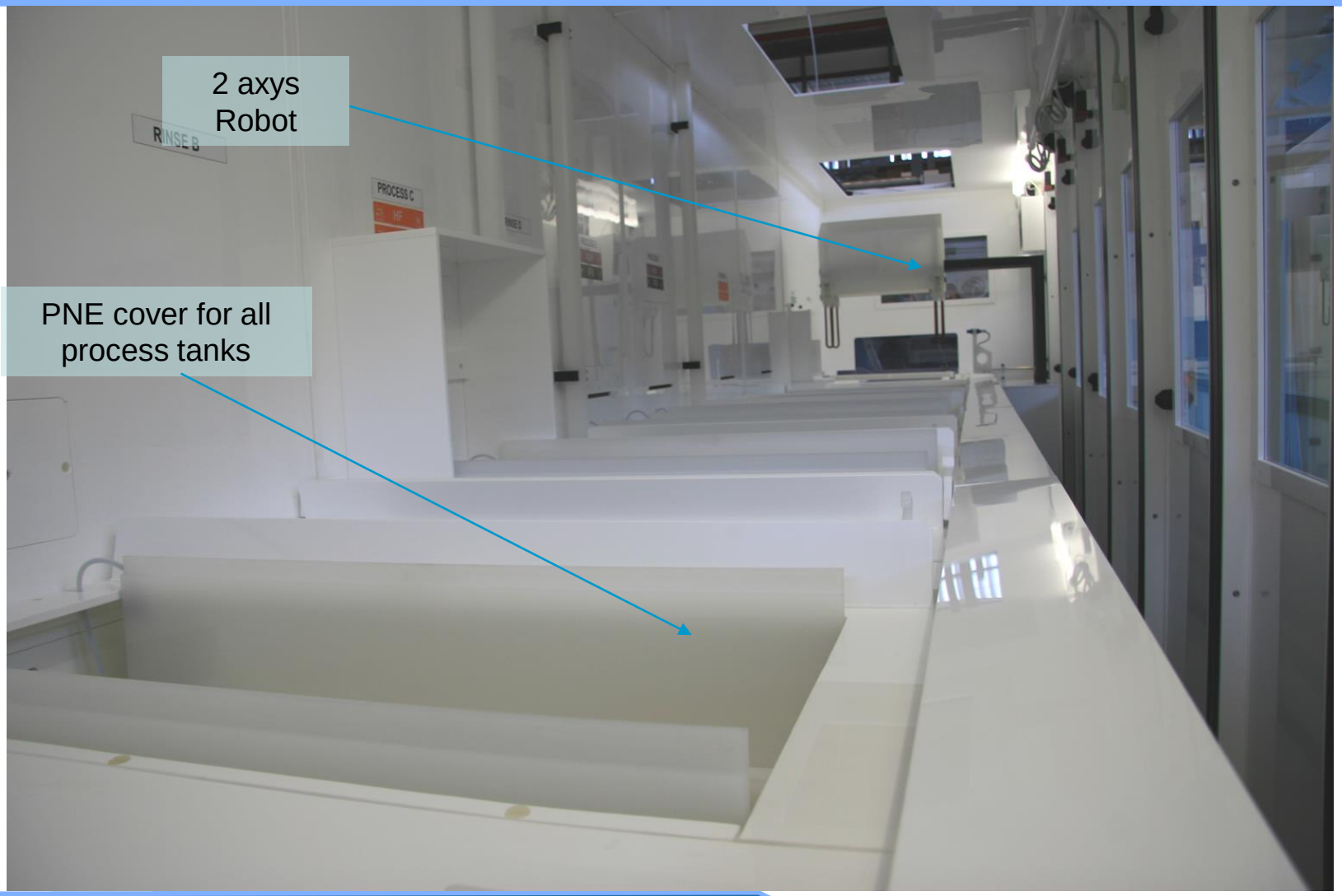
SOLAR TEXTURING: inside view



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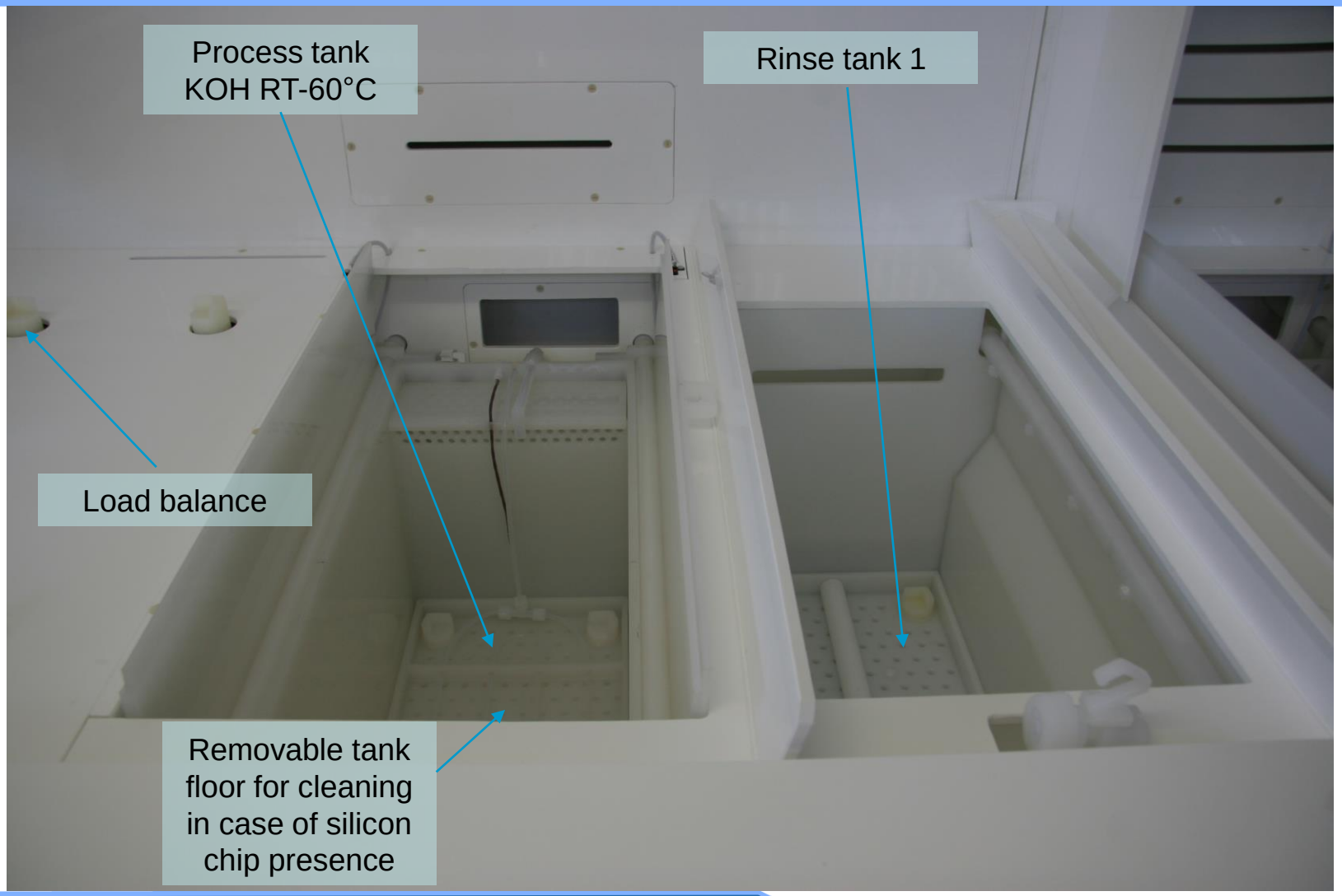
SOLAR TEXTURING: Tank A-B



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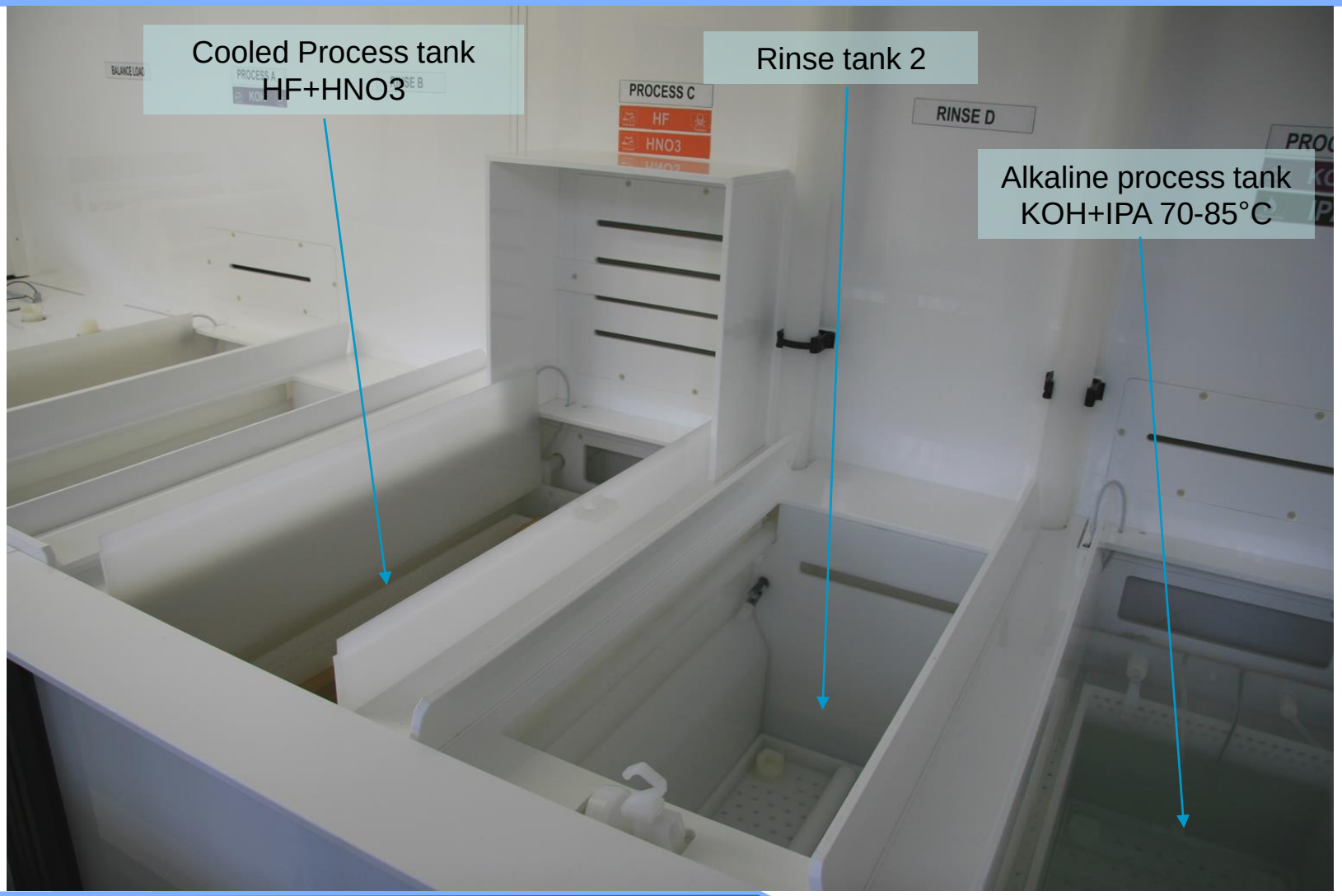
SOLAR TEXTURING: Tank C-D-E



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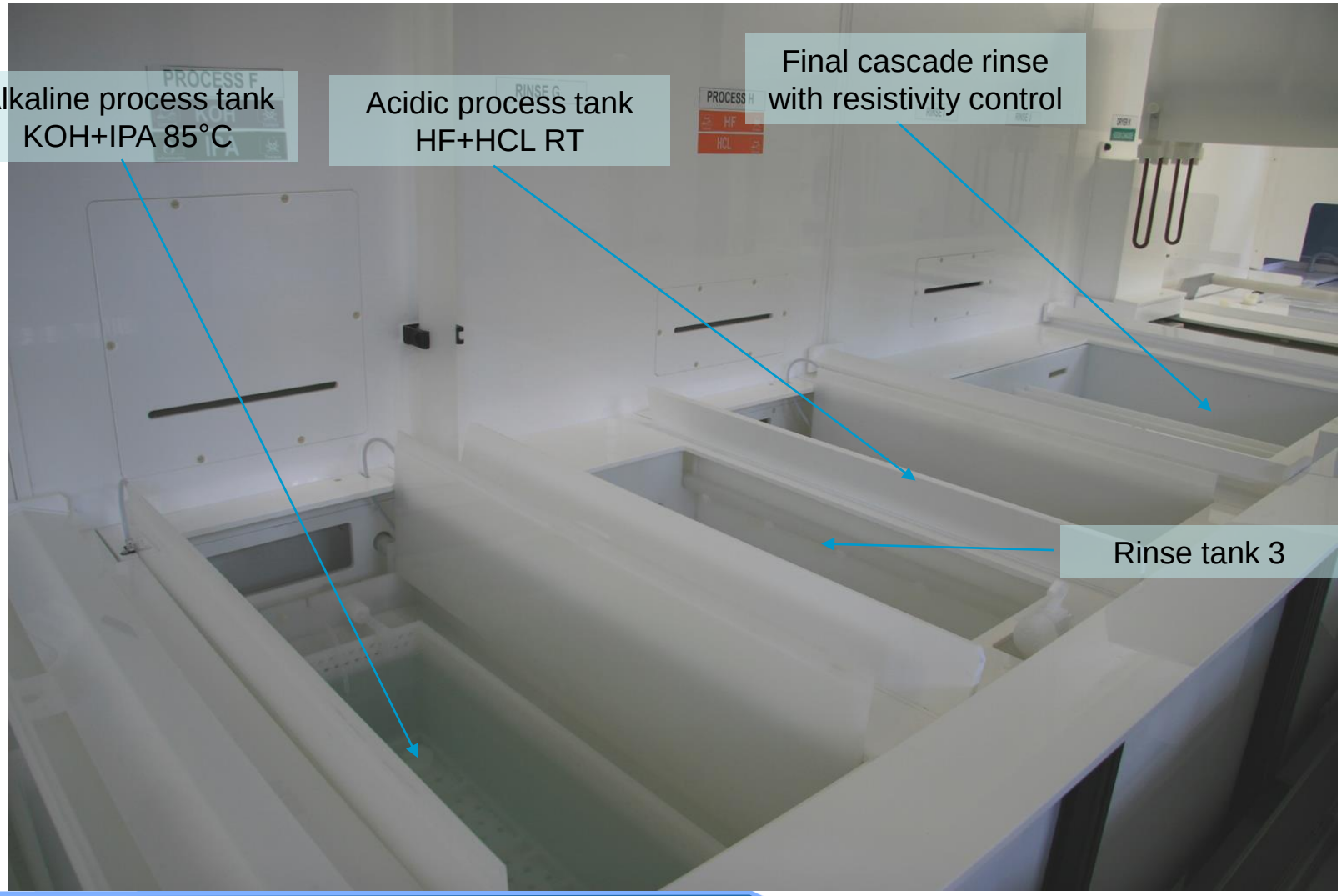
SOLAR TEXTURING: Tank F-G-H-I-J



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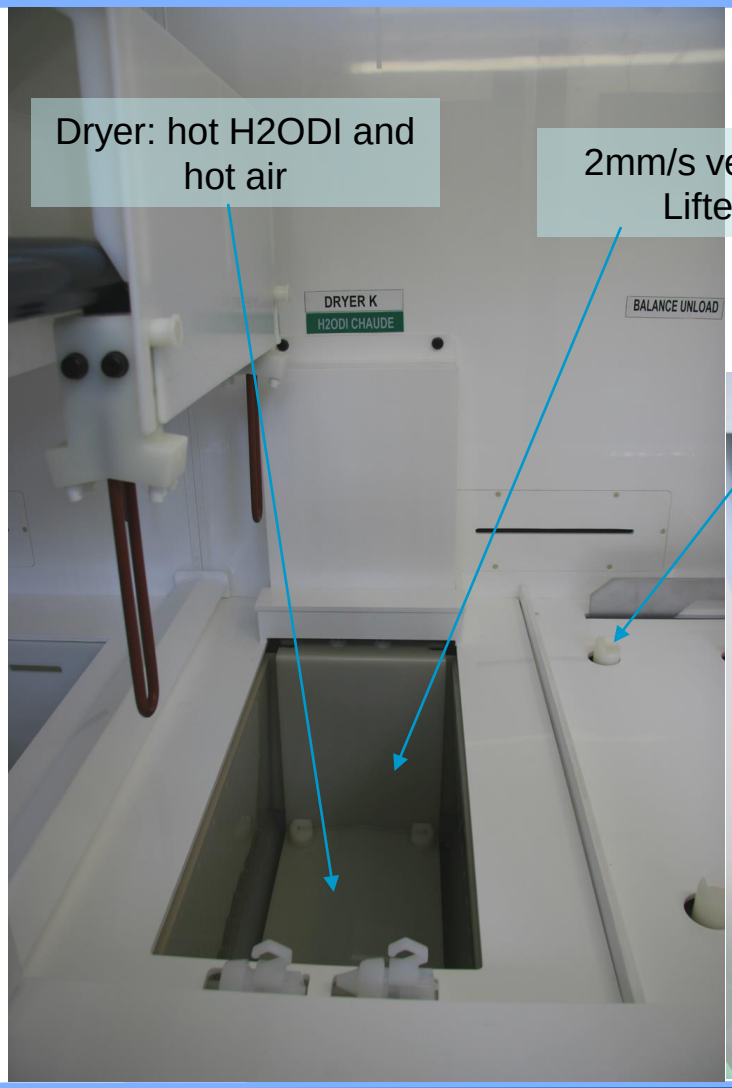
SOLAR TEXTURING: dryer



Dryer: hot H2ODI and hot air

2mm/s vertical Lifter

Unload balance

Air heaters

Blower

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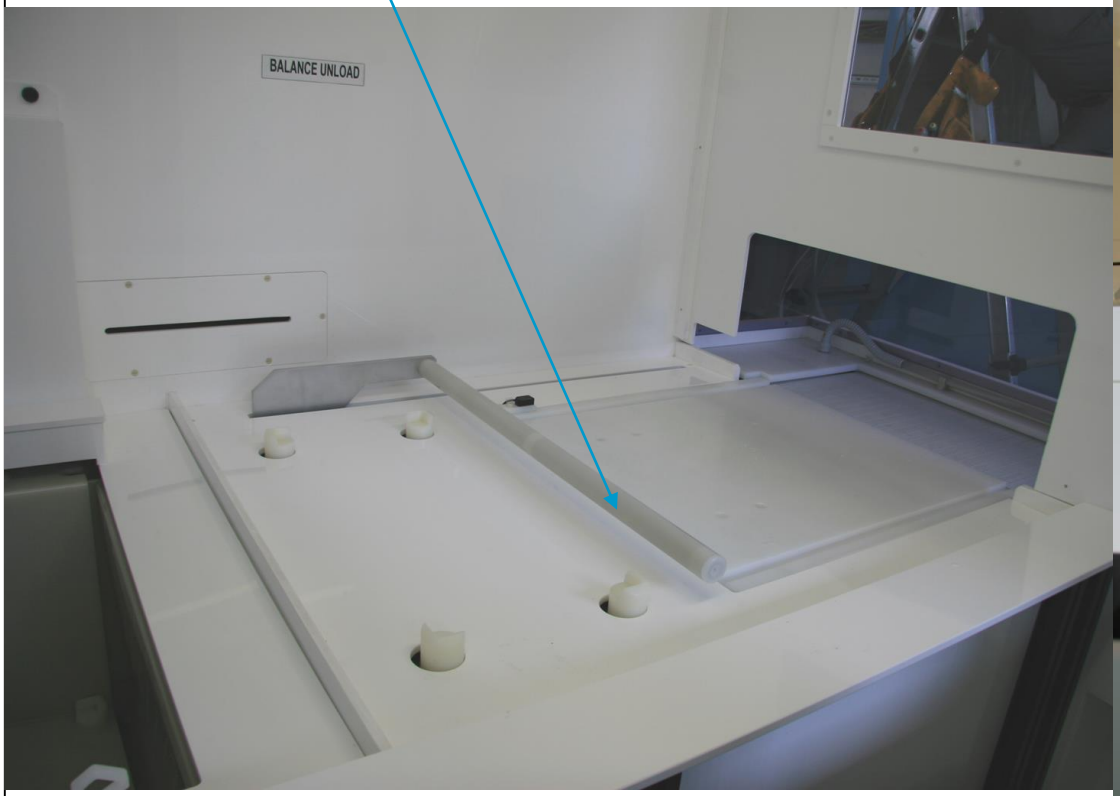
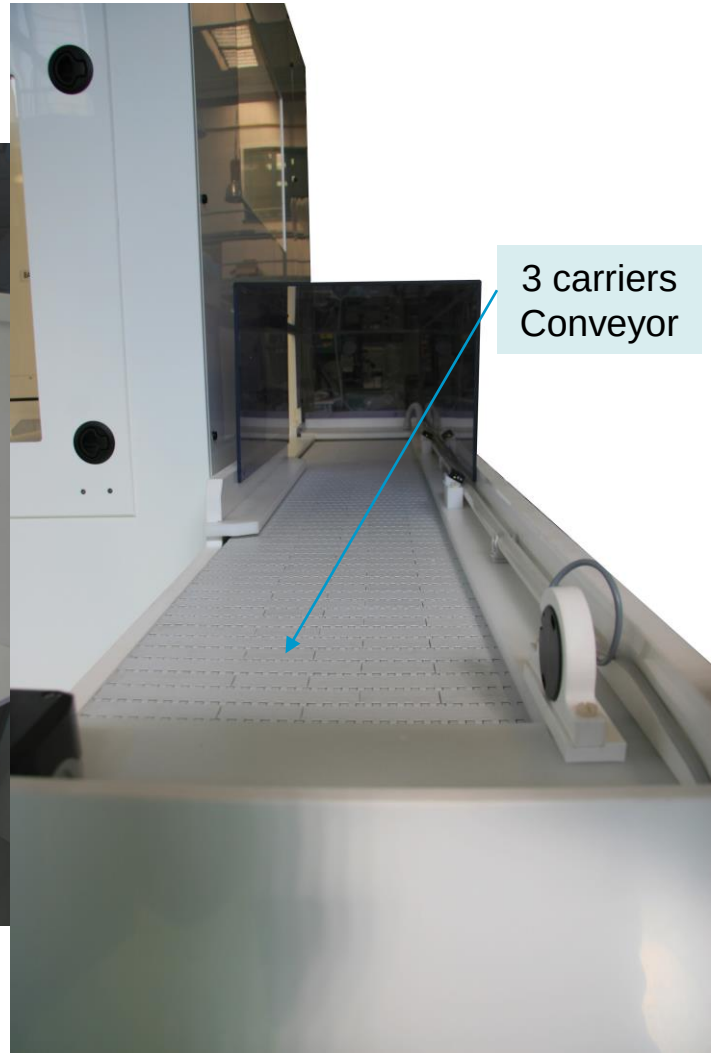
SOLAR TEXTURING: Unload

PNE transferrer





3 carriers
Conveyor

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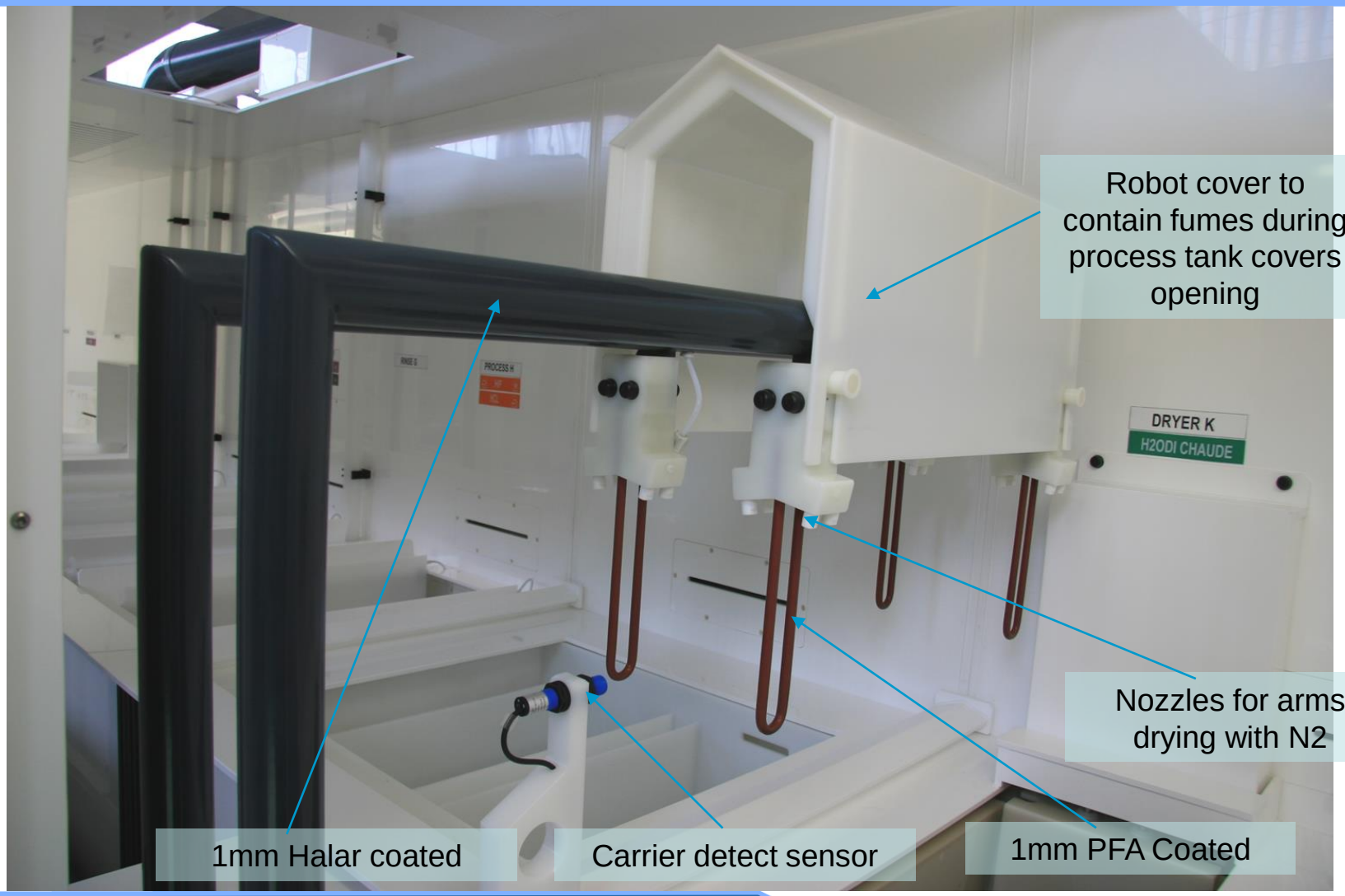
SOLAR TEXTURING: Robot arms



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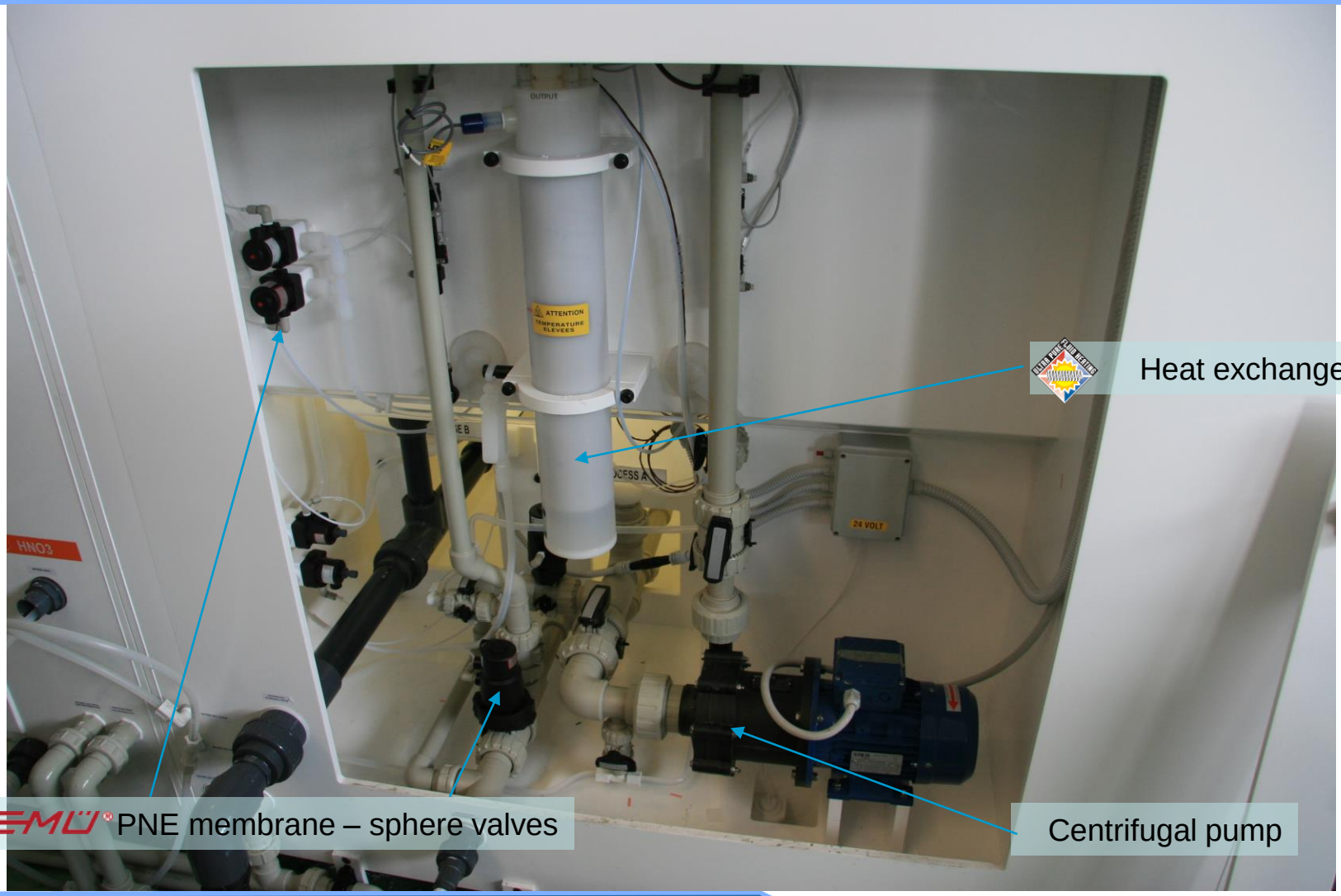
SOLAR TEXTURING:
Water group (module 1)



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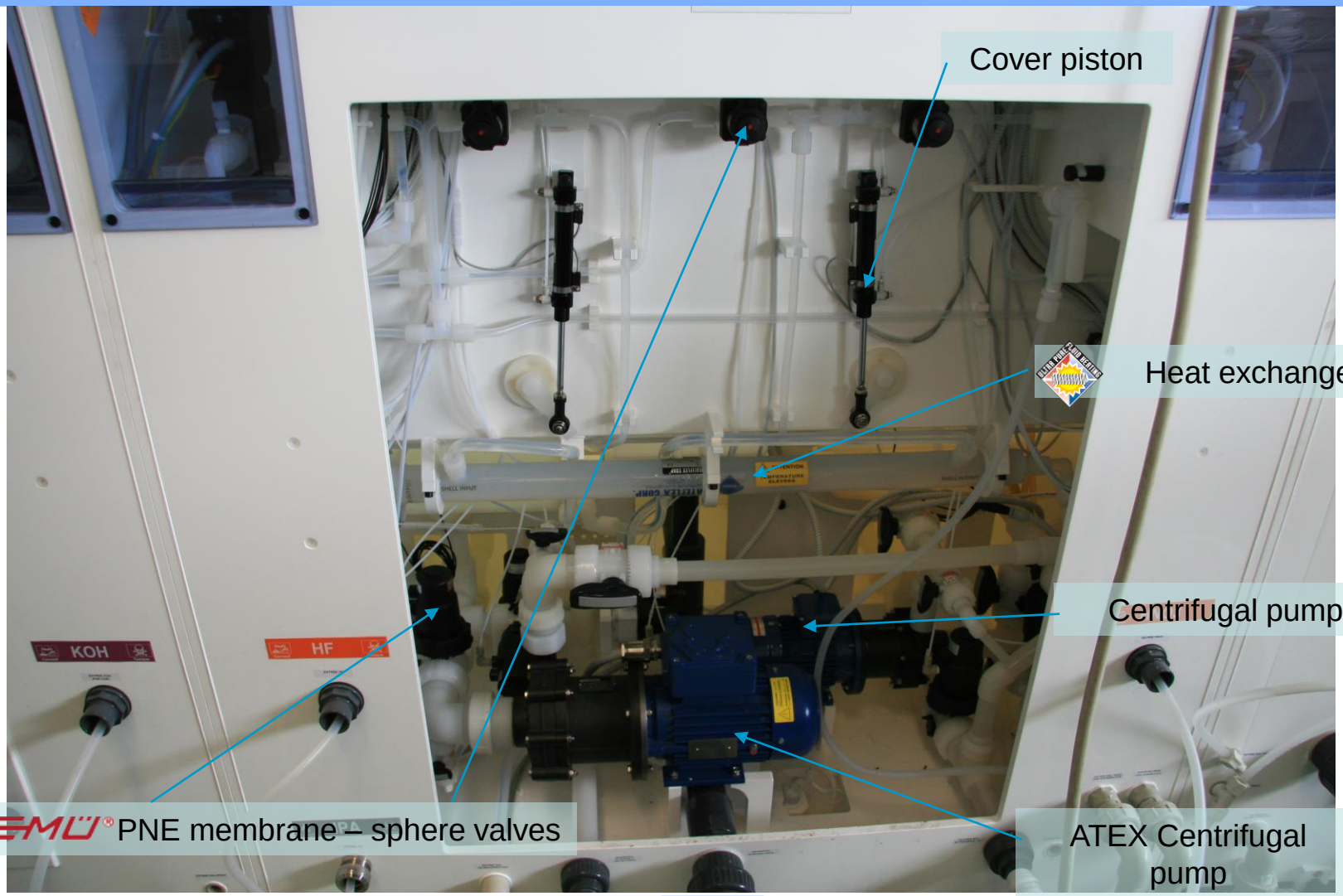
SOLAR TEXTURING:
Water group (module 2)



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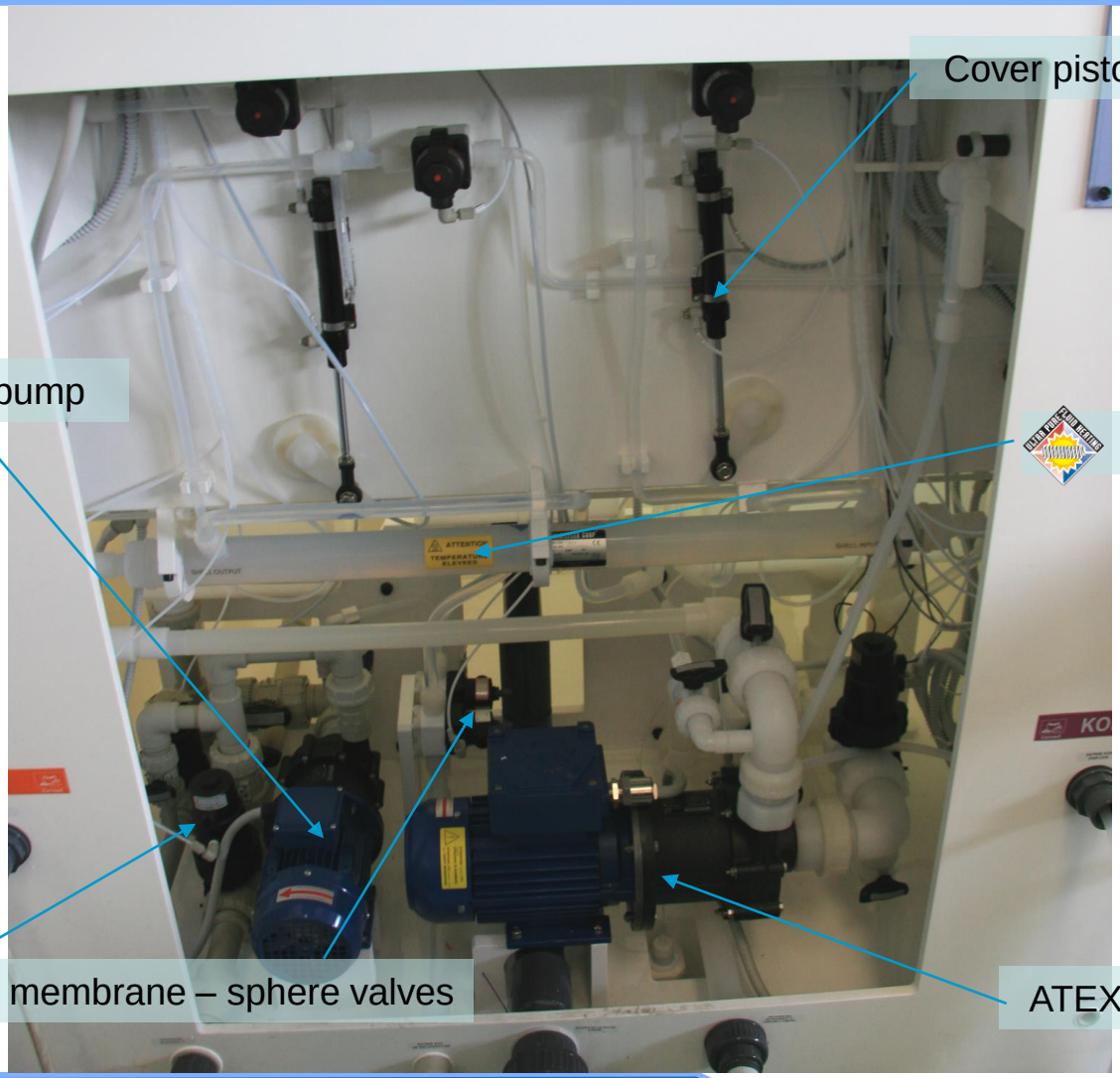
SOLAR TEXTURING:
Water group (module 3)



Cover piston

Centrifugal pump

Heat exchanger

GEMÜ® PNE membrane – sphere valves

ATEX Centrifugal pump

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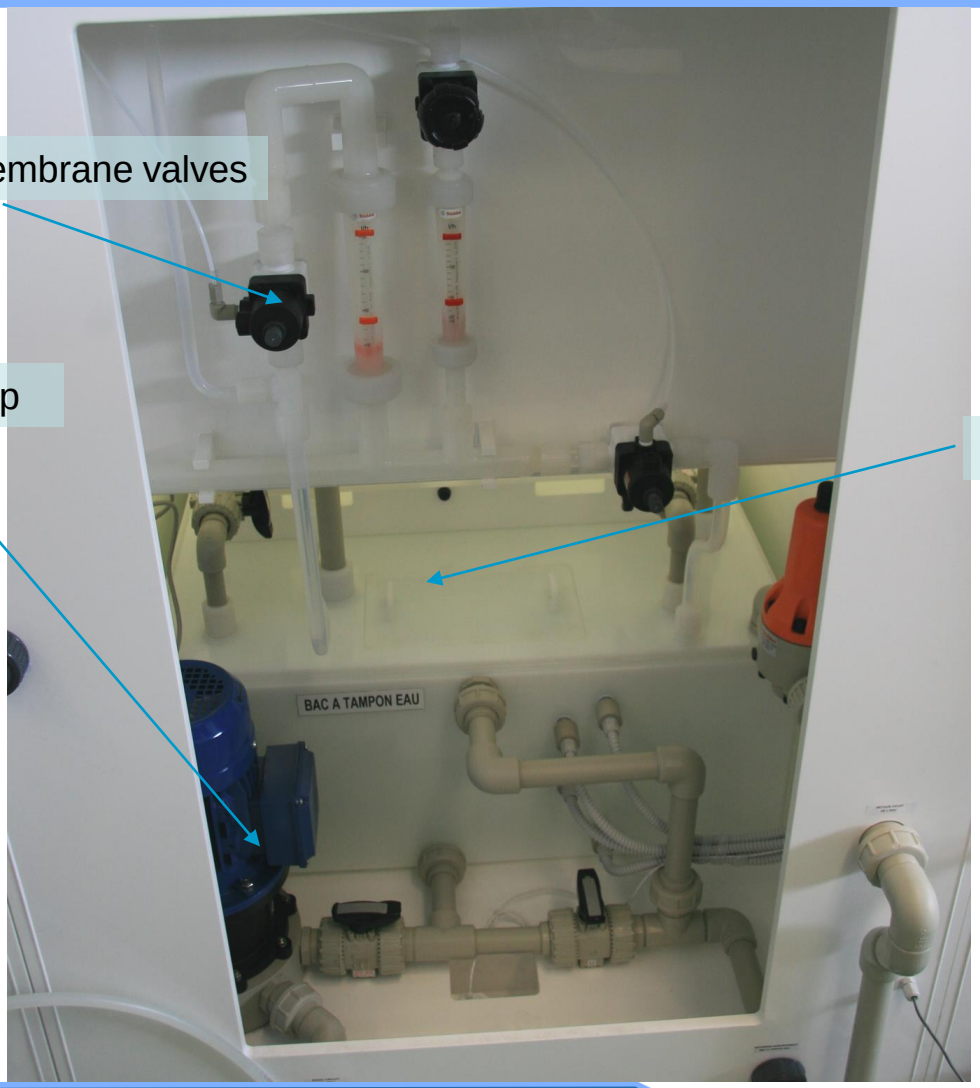
SOLAR TEXTURING:
Water group (module 4)



GEMÜ® PNE membrane valves

Centrifugal pump

H2ODI Recovery tank

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SOLAR TEXTURING:
External heat exchanger

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