



# CO<sub>2</sub> - Cooling and Mechanics



## Outline

- Status of CO<sub>2</sub> - Cooling
- Drawings / Pictures of CO<sub>2</sub> - Cooling
- AGIPD - Dummy

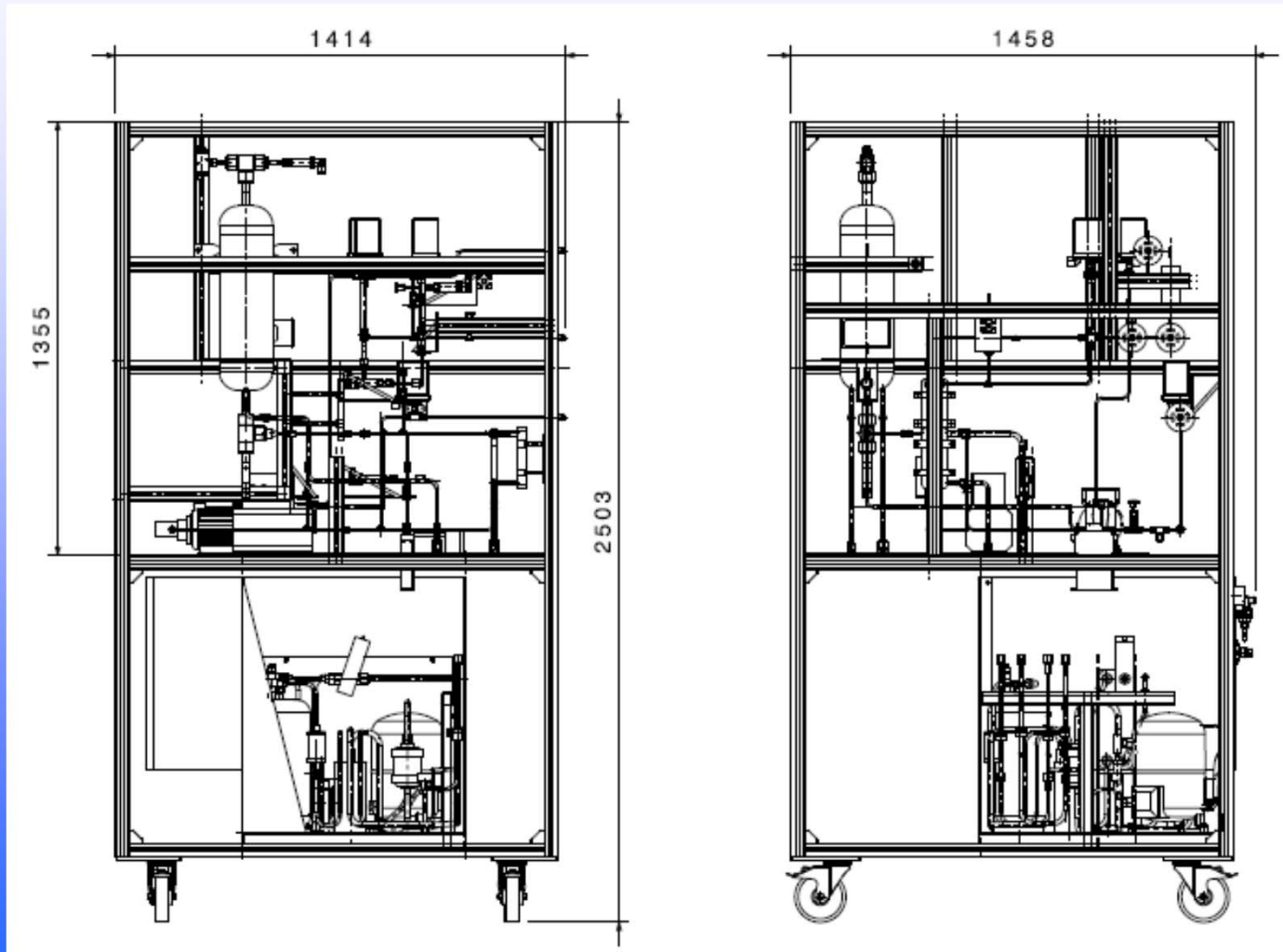


## Some Informations on the status:

- NIKHEF is working on CO<sub>2</sub>-Cooling
- Drawings are nearly all done
- Electronic parts all at NIKHEF
- Mechanical components in fabrication
- Controller has to be programmed, needs time
- Testphase in may at NIKHEF
- Delivery date: 1.june 2011



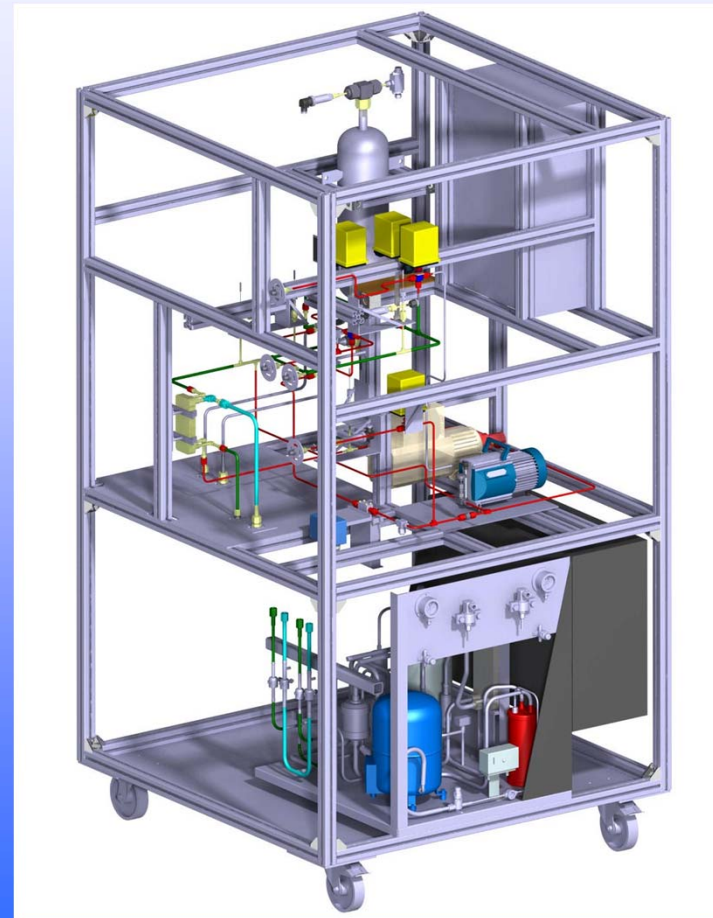
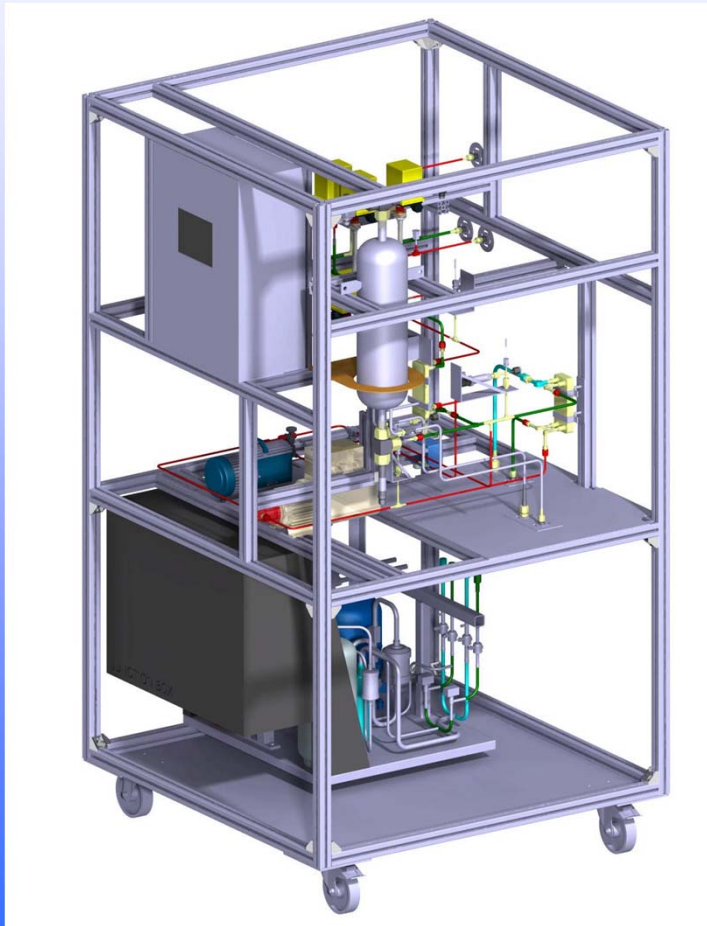
Drawings  
from NIKHEF





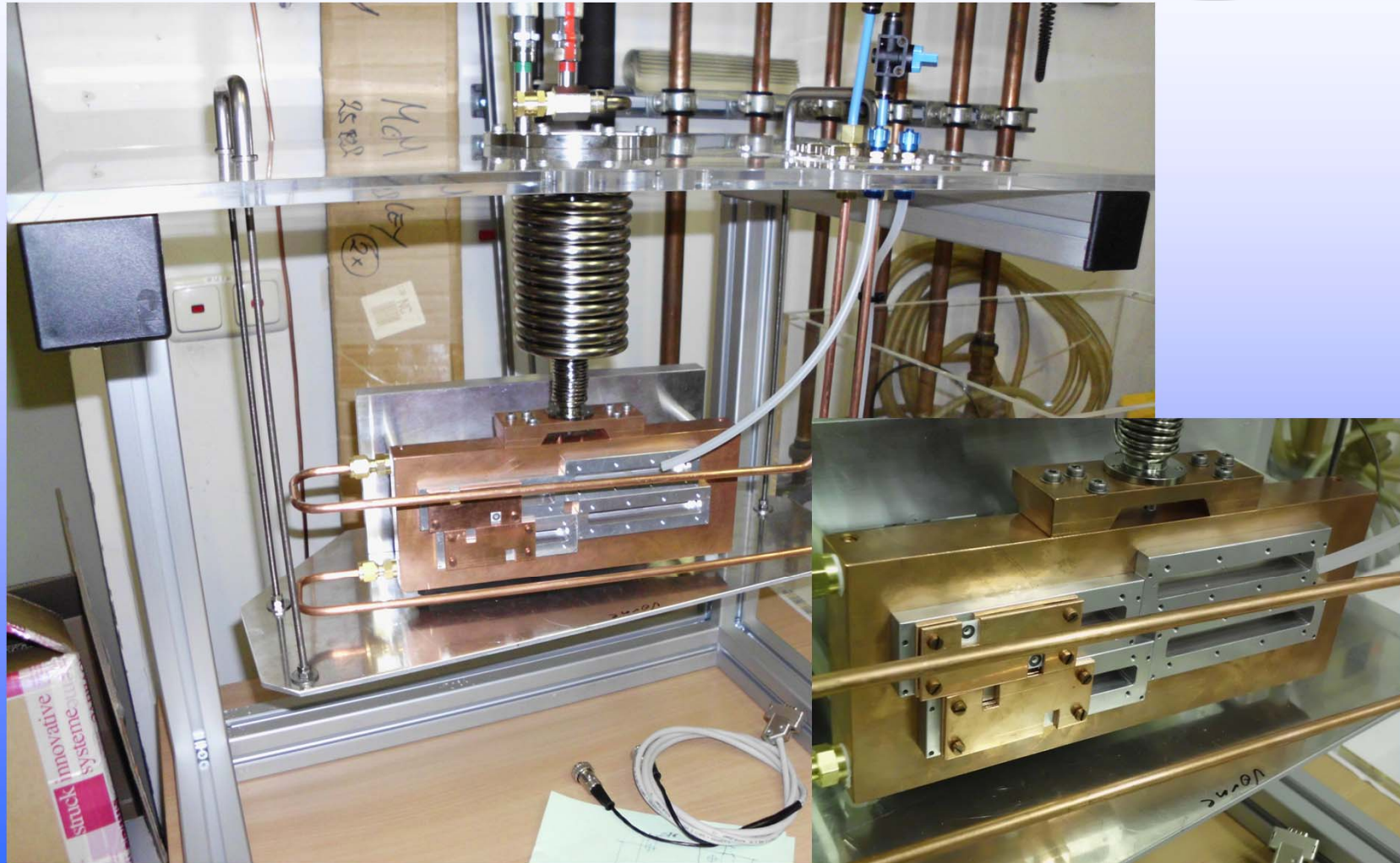
CO<sub>2</sub>-Cooling

pictures from NIKHEF



# AGIPD-Dummy

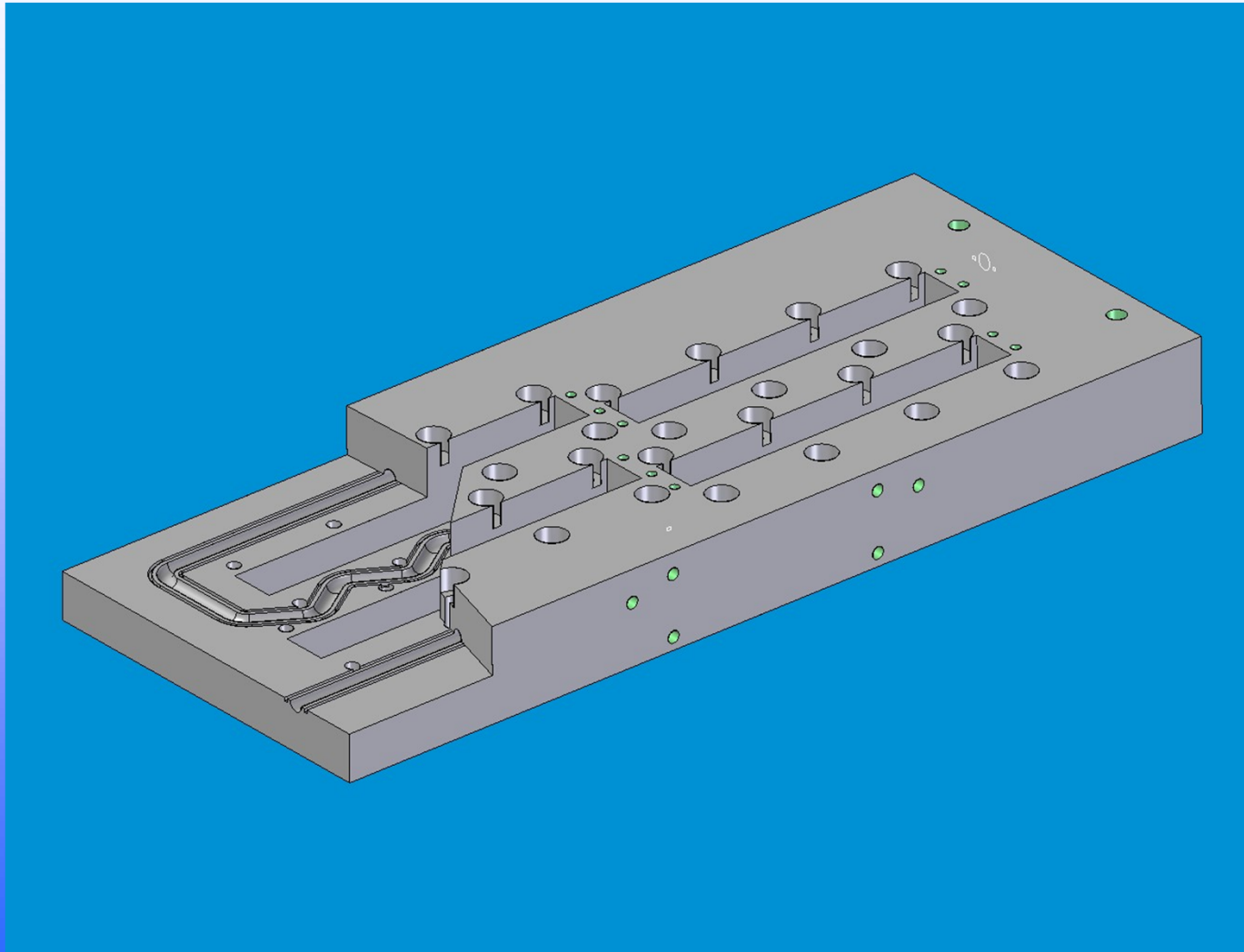
in Lab





AGIPD-Dummy

Coolplate in design





- Thanks





## **CO<sub>2</sub> - Cooling:**

### **CO<sub>2</sub> Cooler for XFEL Detector R&D**

For XFEL detector R&D activities DESY is interested in acquiring a CO<sub>2</sub> cooler based on the Nikhef 2-PACL technique.

### **Global Specifications**

Nikhef designs and builds a cooling plant for DESY with the following specifications:

1. Cooling Power maximum 1.2 kW
2. Minimum evaporating temperature required -15°C
3. Temperature stability in time of < 2°C
4. Maximum cooling volume of detector: < 1 liter
5. Ambient temperature < 35°C
5. No parallel cooling loops.
6. Distance of cooling machine to experiment < 5 meter



## AGIPD Bare Module

### Chip Parameters:

No. of Pixels            64 x 64  
Total Area                12.94 x 13.74

(assuming 800um periphery + 70um die seal ring)

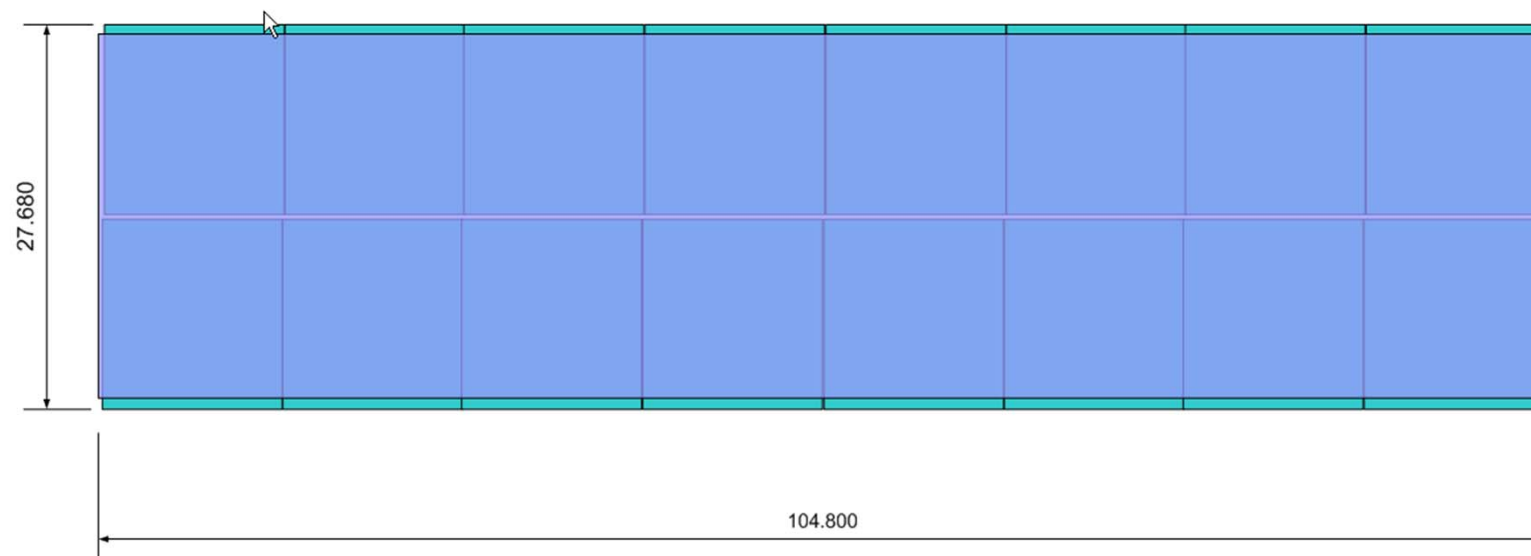
### Module Parameters:

No. of Pixels            519 x 129  
Active Area             103.800 x 25.800  
Total Area (Sensor) 104.800 x 26.800  
Baseplate                104.800 x 27.680  
HDI                        104.870 x 28.680  
Support                  104.940 x 28.780

(assuming 500um Sensor Guard Ring)

### Multi Module Parameters:

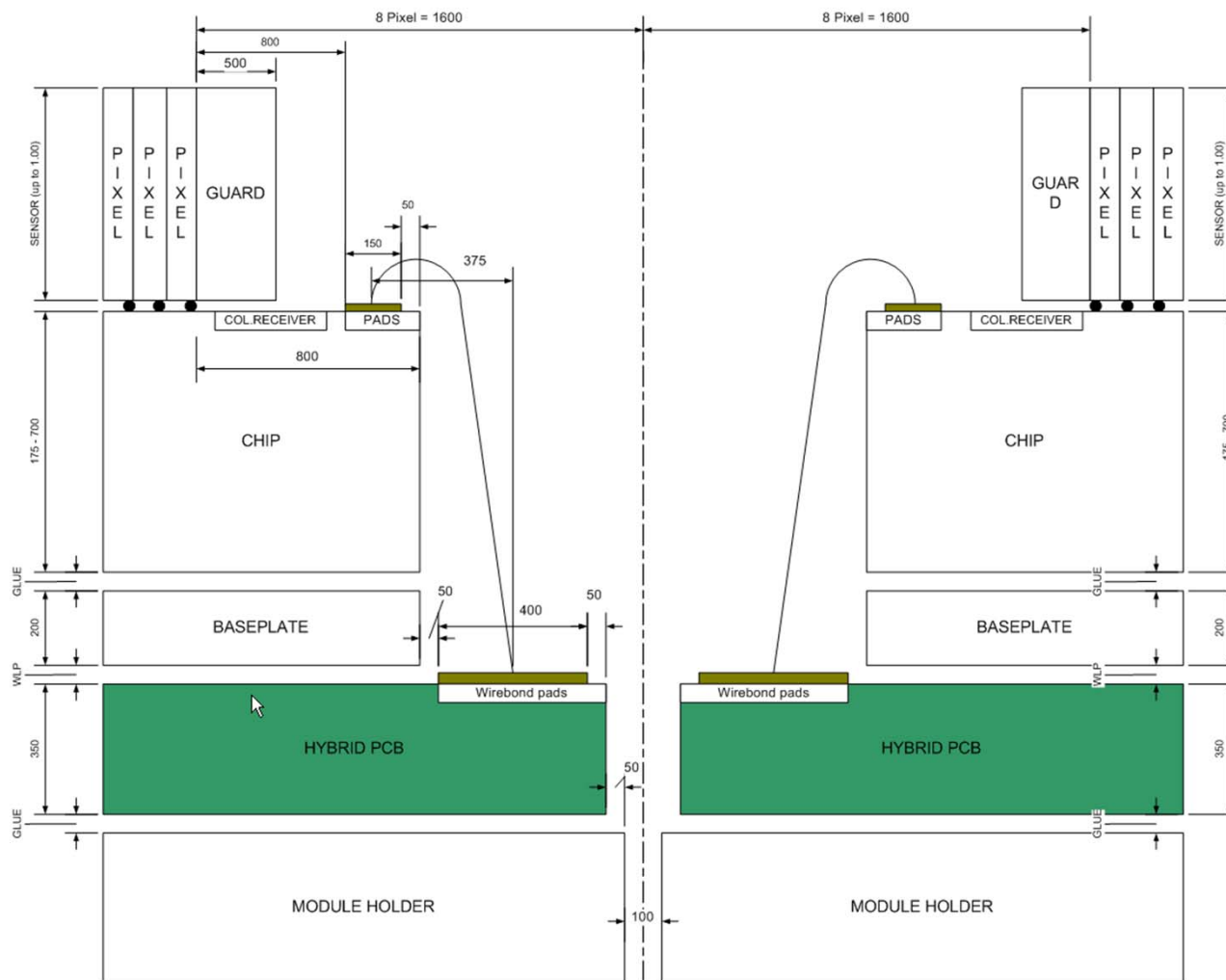
No. of dead Gap Pixels            (2x3) x (2x8)  
No. of Pixels incl. Gap            525 x 145  
Module Step                         105.000 x 29.00





## Dimensions

### Module 2 Module Longside





# Dimensions

## Module 2 Module Shortside

