

NPS collaboration meeting
02/01/2021
Detector frame and infrastructure

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Assembly in Orsay



Box frame



Crystals frame



Adjustment



Adjustment crystals frame in the box



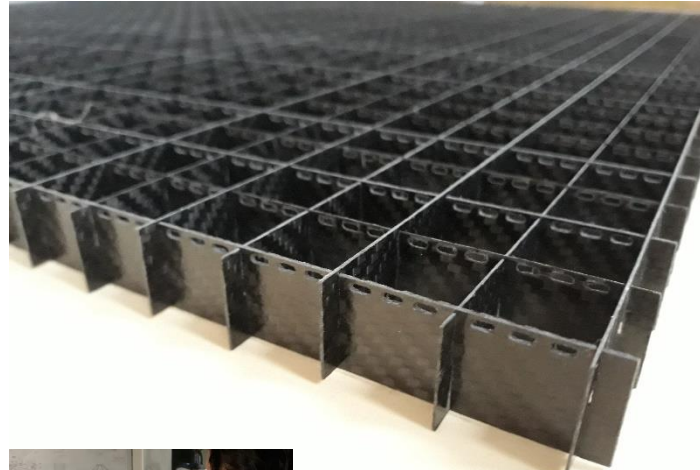
Assembling 1080 PMt support



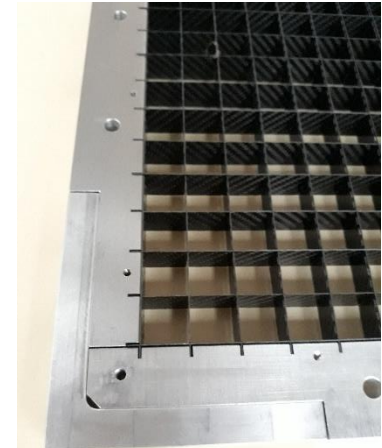
Assembly in Orsay



Cutting of optical fibers



Pre-assembly carbon plates



Scintillators



Gluing T° sensors wires
on Reference plate



Pre-assembly cooling plates

Assembly in Orsay



Pre-assembly Crystals frame



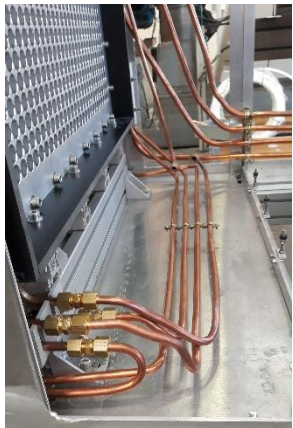
Wire sensors



PCB mounting test



Copper cooling tubes
with connectors



Top heat exchanger



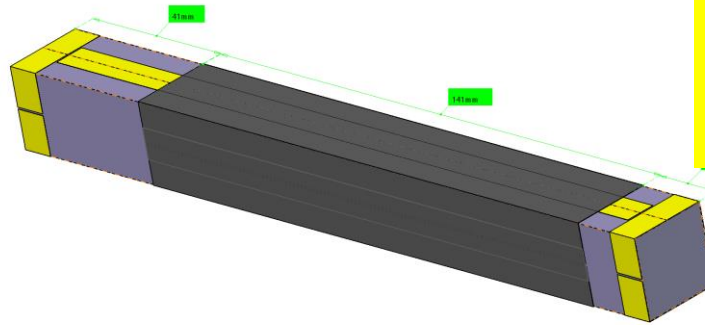
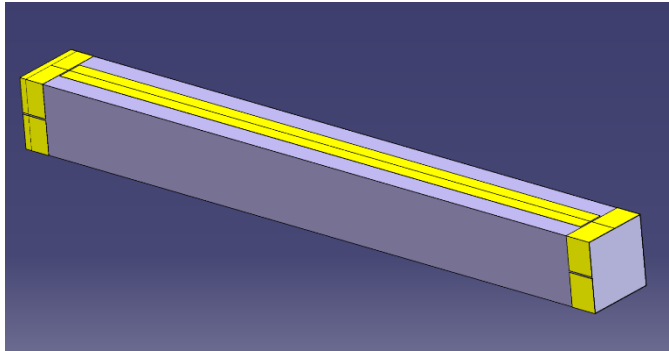
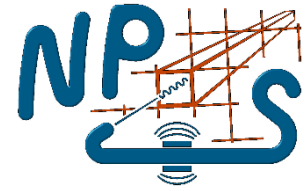
PCB cabling



Ready to fly to Jlab...



Tasks that could be done by the NPS collaboration before our arrival (proposal)



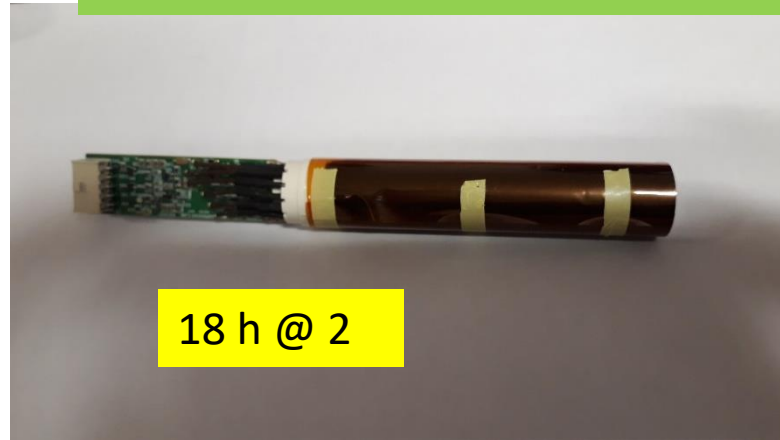
12 days wrapping only @ 2 + time folding and oven

reflective sheets wrapping with tape (1080 crystals)

Tedlar sheets wrapping with tape (1080 crystals)



9 h @ 2



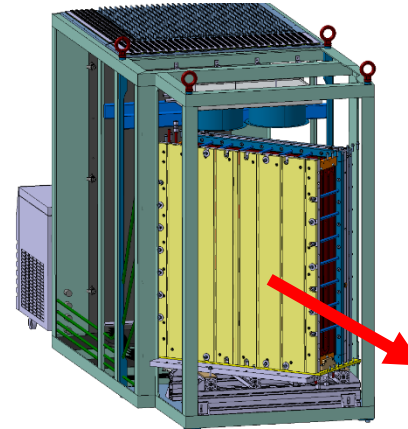
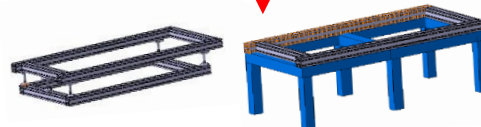
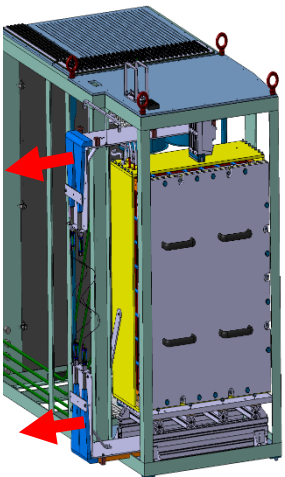
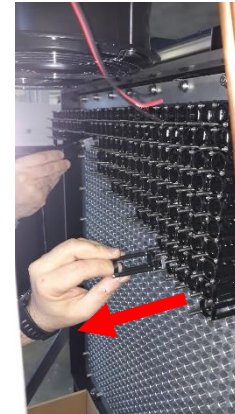
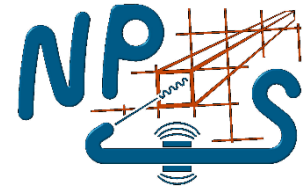
18 h @ 2

PMT + base assembly (1080)

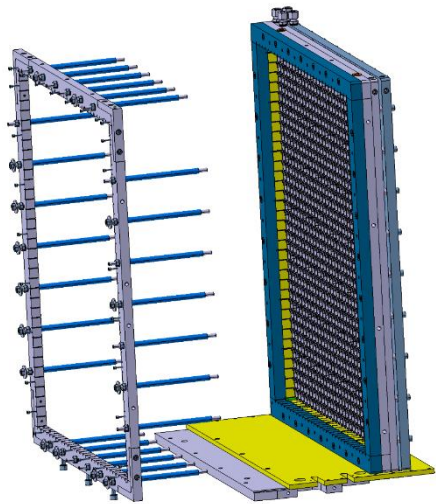
Kapton sheet/tape protection on PMT (1080)

Main mounting steps at JLab

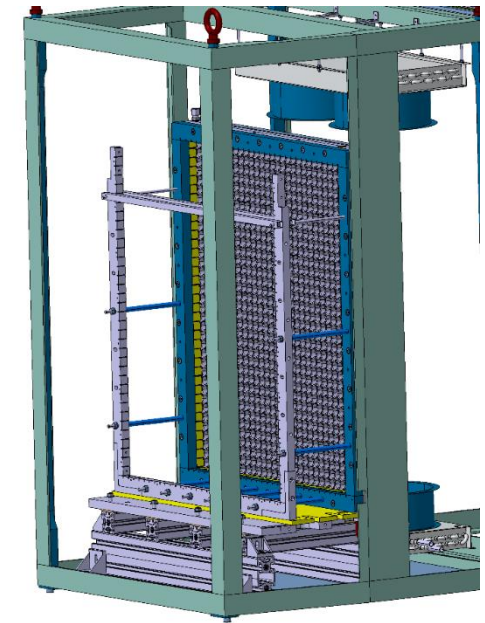
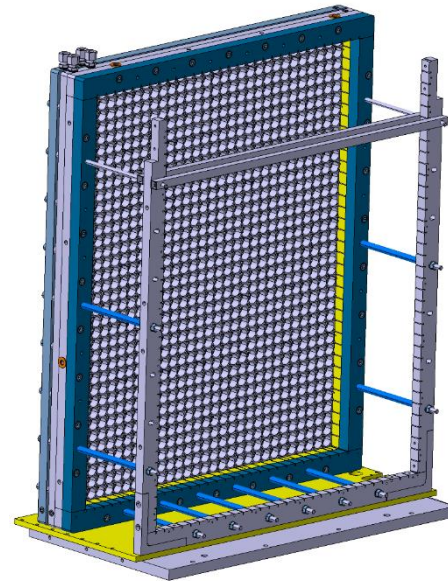
Day 2
day 1 = administration



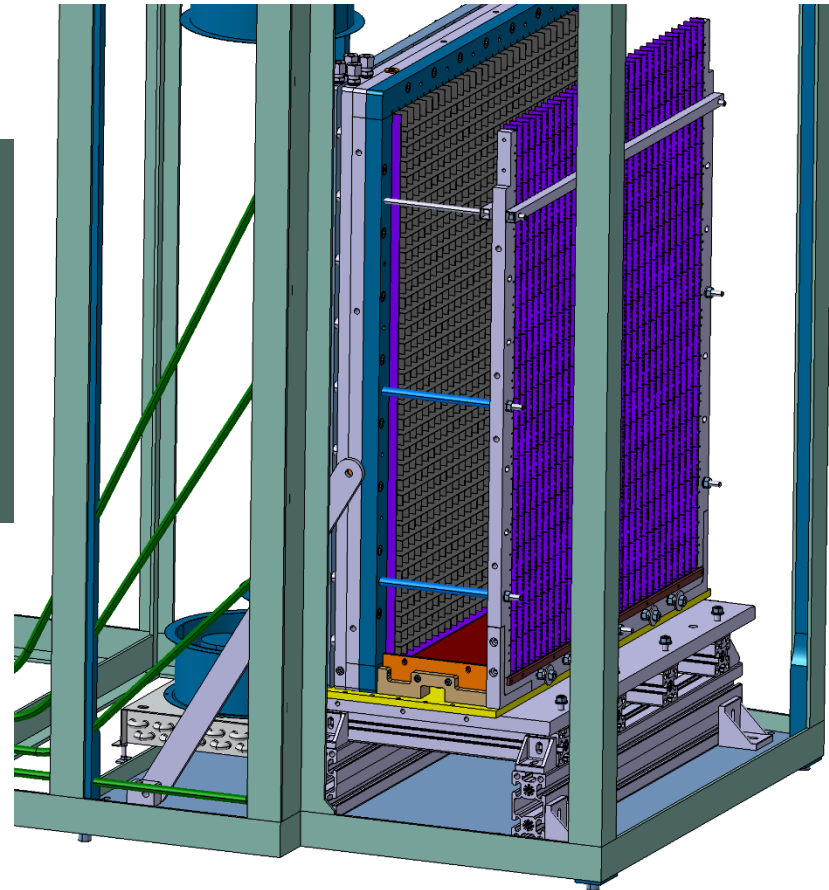
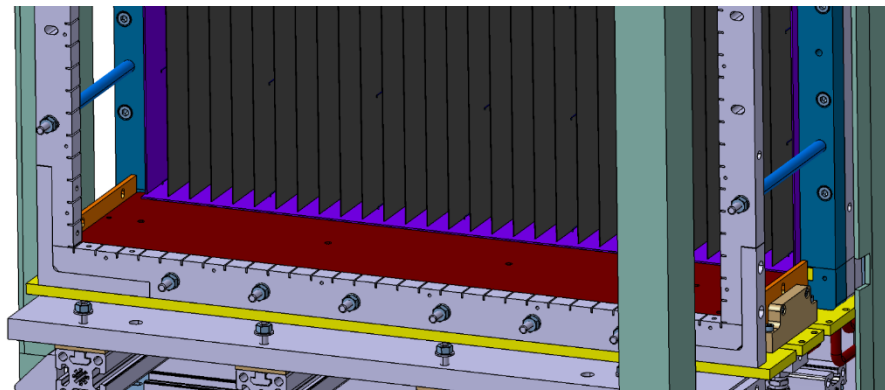
1) Open wood box , remove 30 PCB & all PMT supports, position onto JLab frame and remove calorimeter frame



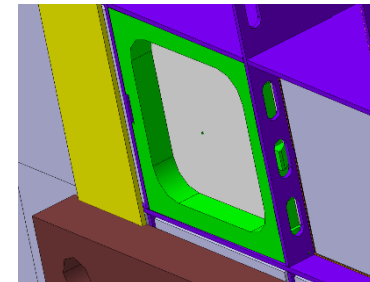
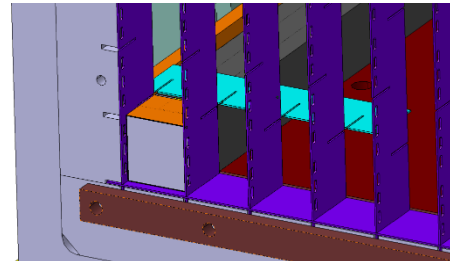
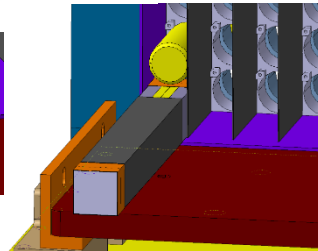
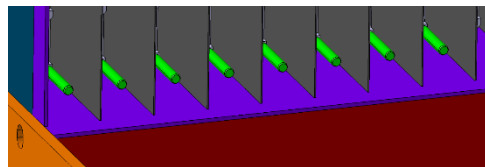
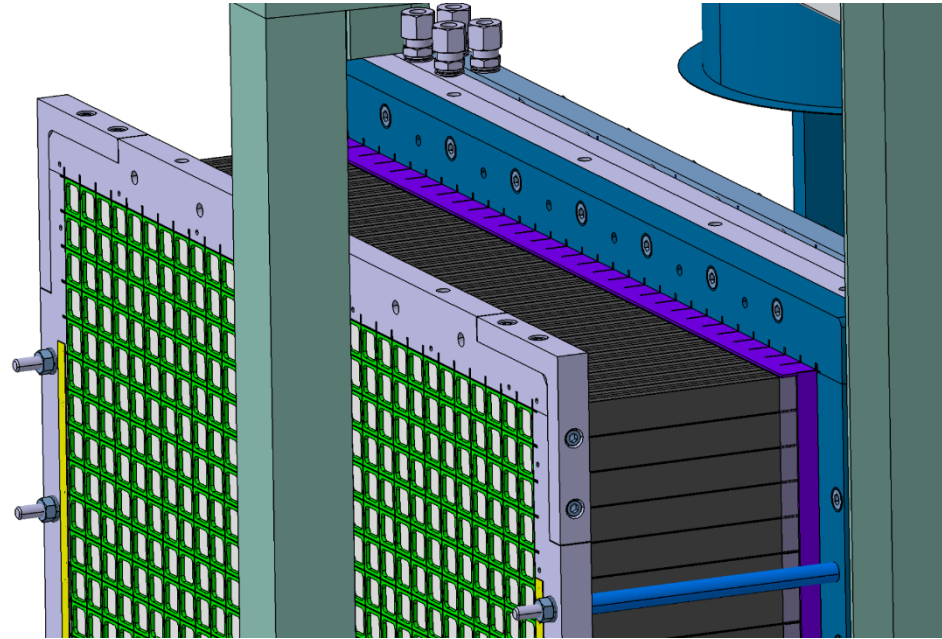
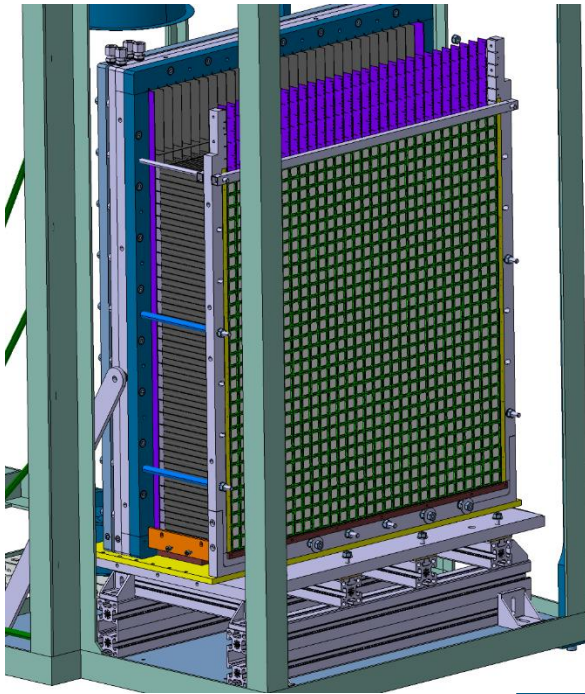
Bottom iron
shielding



3) Mounting bottom iron shielding plate, assembly calorimeter frame and insert in the box

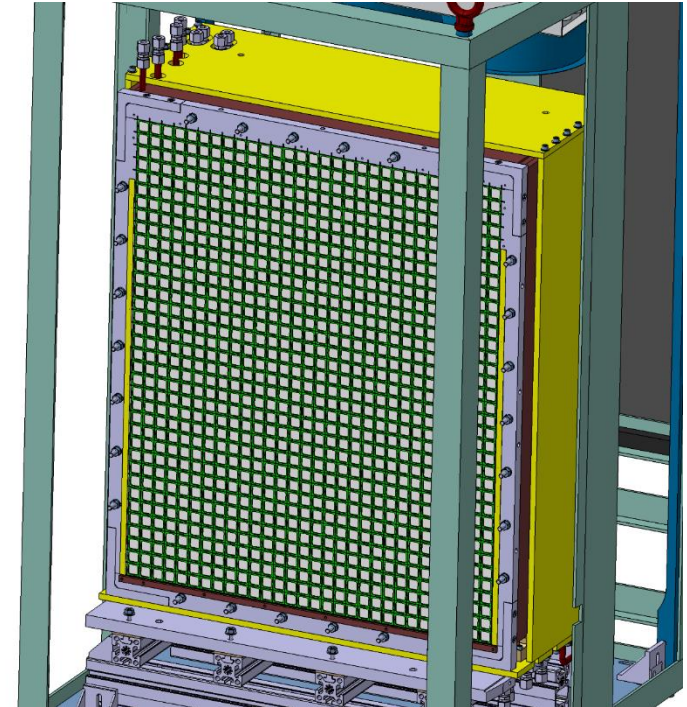
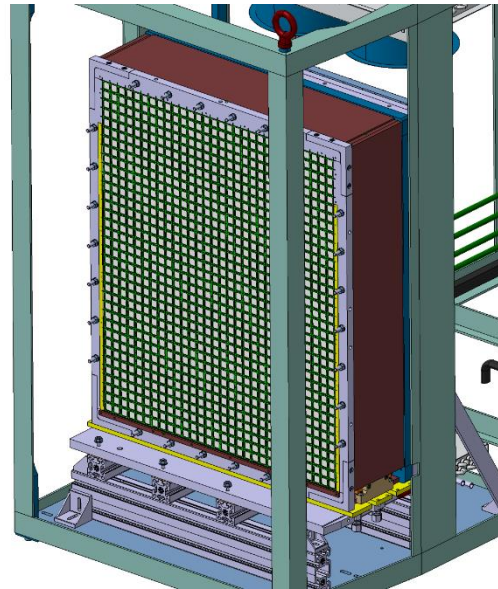
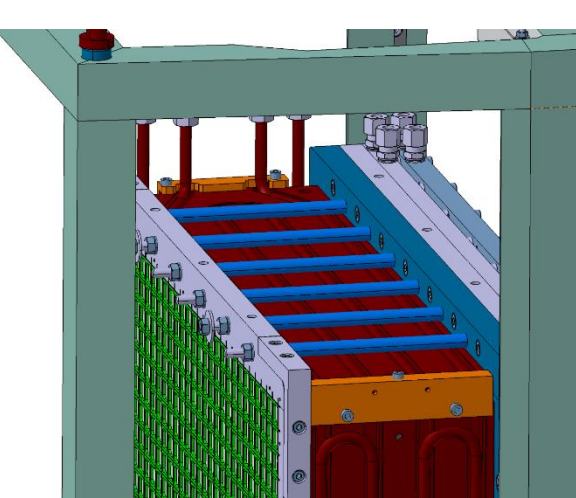


4) Assembly bottom copper plate, mu metal vertical plates and front vertical carbon plates



5) Stacking crystals

135 crystals = 3+3/4 rows/ day @ 2 Maxi = 8 days



6) Mounting copper plates, foam and shielding plates

Main mounting steps at JLab

Days 15

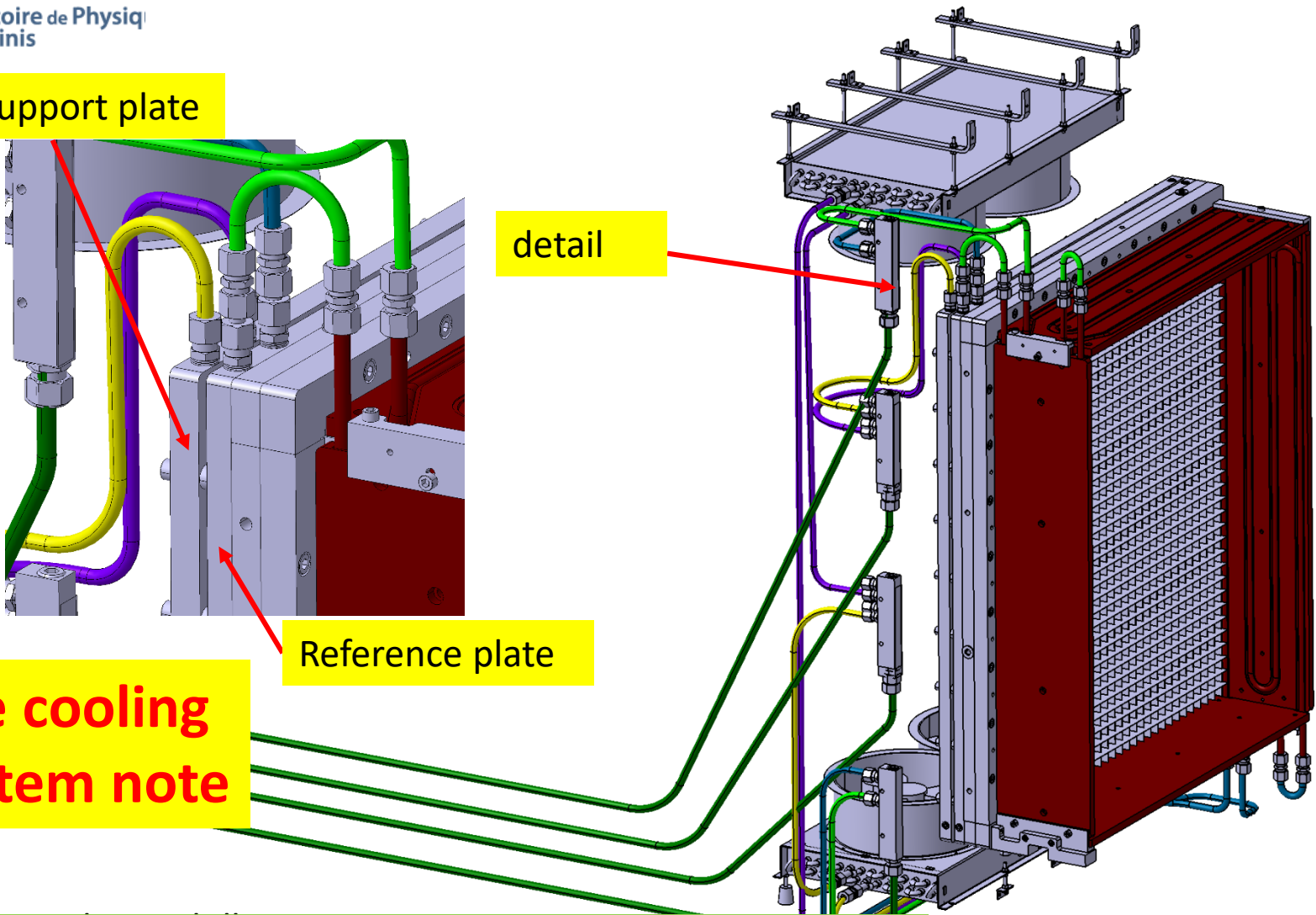
PMT support plate

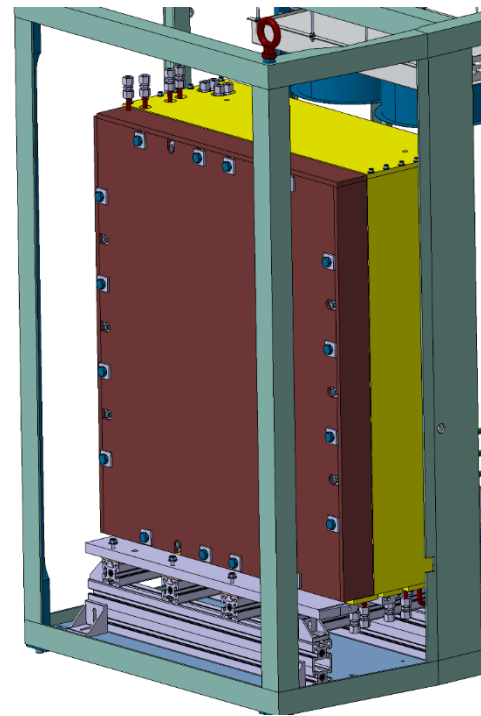
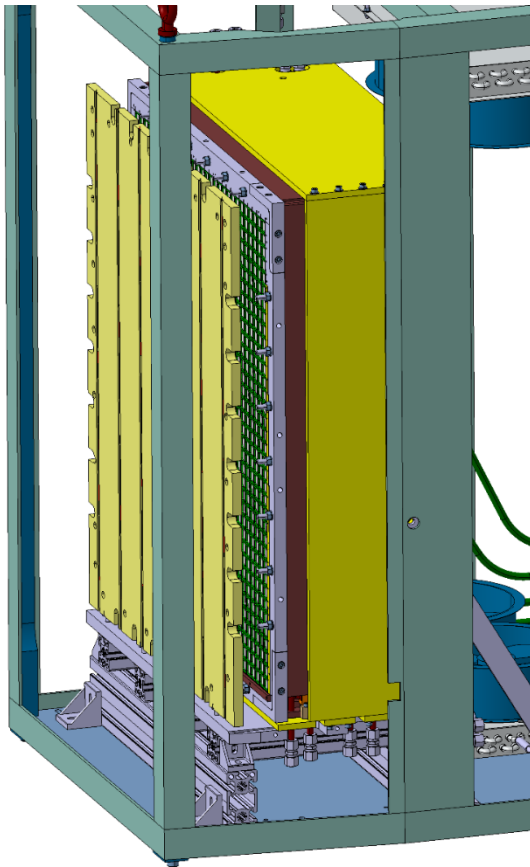
detail

Reference plate

See cooling
system note

7 : Connection of all the copper tubes and tightness test

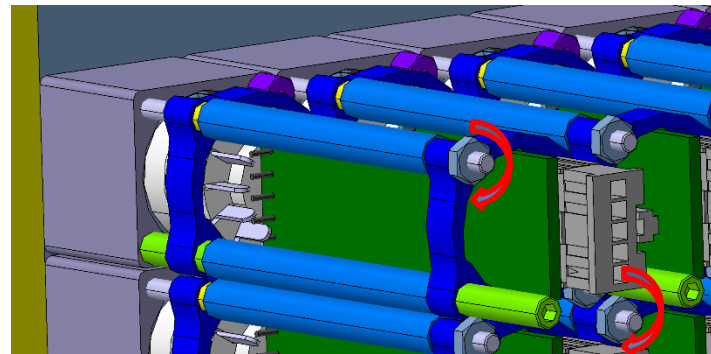
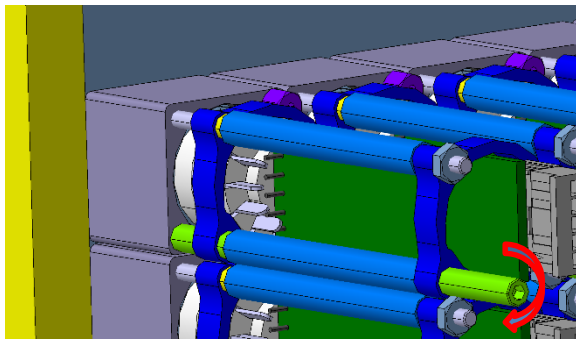
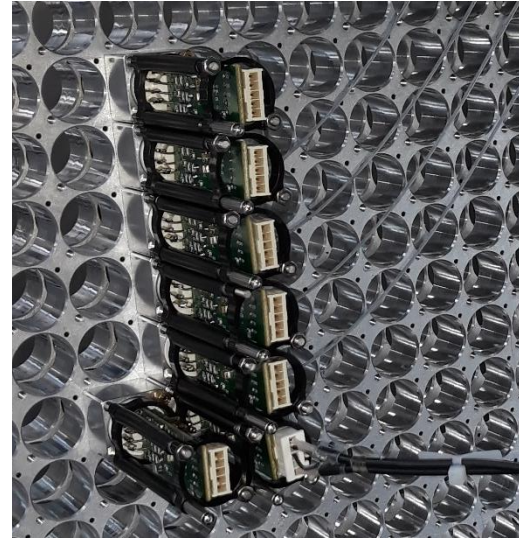




8) Mounting front PE plate with T° sensors, foam and Top plate



Add optical
grease

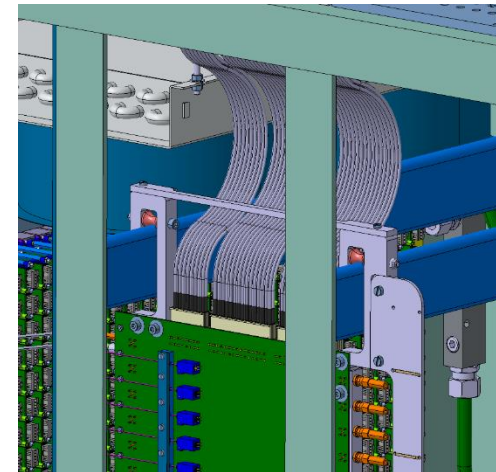
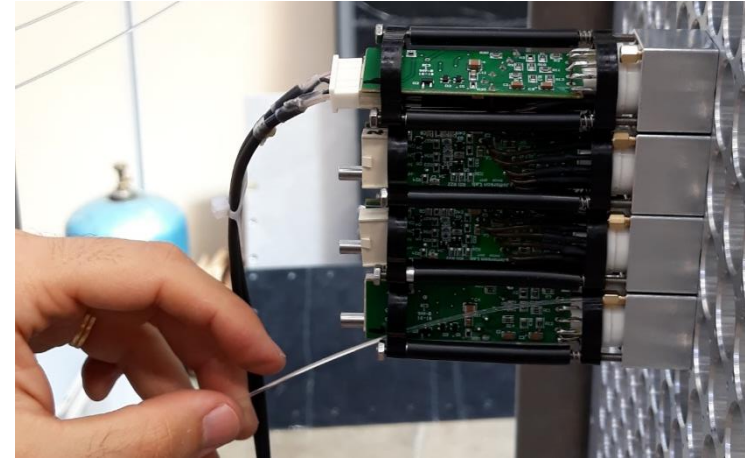
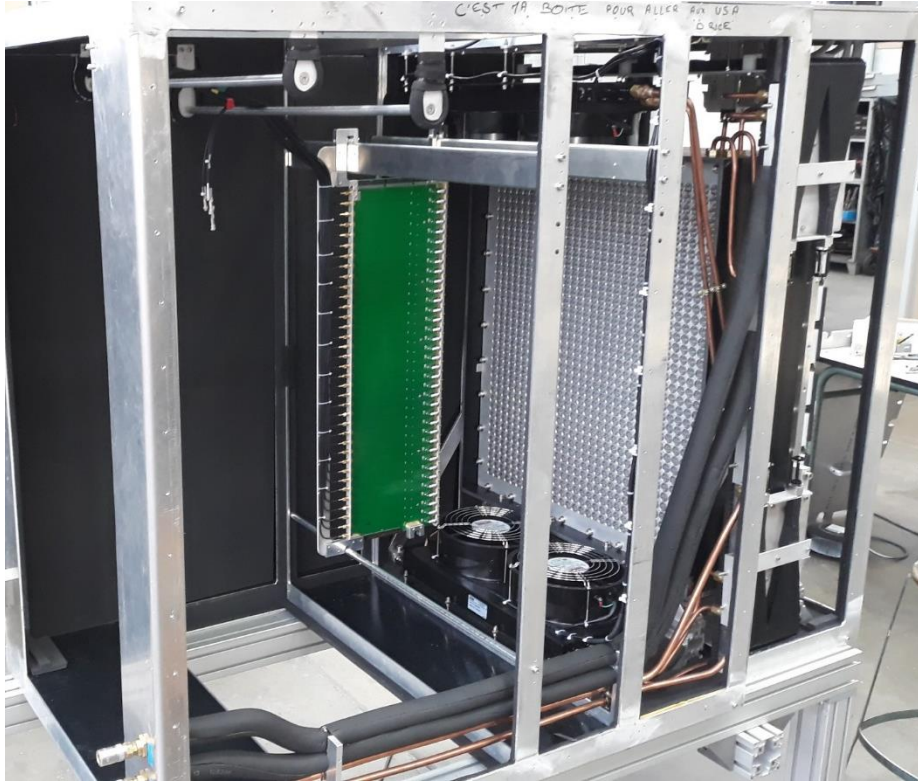
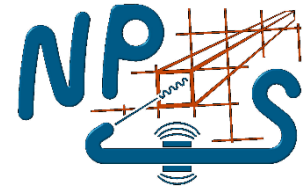


9) Mounting PMTs on support plate

2 peoples Max @ a time

Main mounting steps at JLab

Days 19 to 33

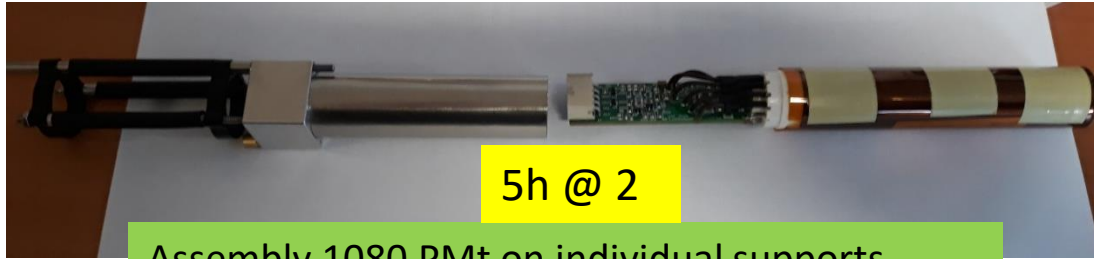
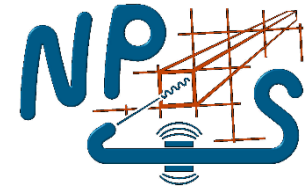


4h /PCB @ 1 alone

2 PCB / day = 15 days

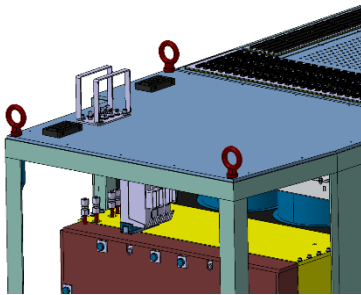
10) PCB mounting and cabling (fibers , HV cables ,LED flat cables and Anode cables)

Main mounting steps at JLab :
 // tasks



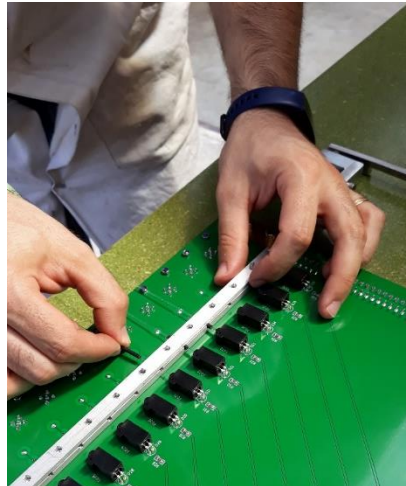
5h @ 2

Assembly 1080 PMt on individual supports



4h @ 2

T° sensors cabling



1h30/ PCB/person :
 2 peoples, 30 PCB
 3 to 4 days

30 PCB cabling on table :
 fibers + front cables

Additional
 backward sensors
 connecting

4h @ 2

Gas connection

1 day @ 2