

H8 beam time preparation

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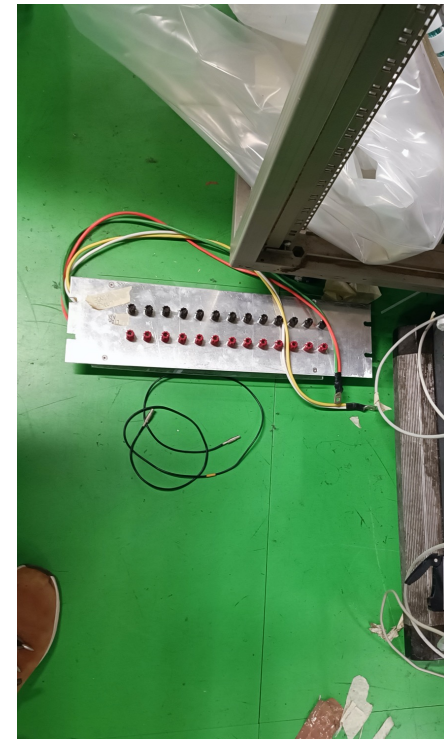
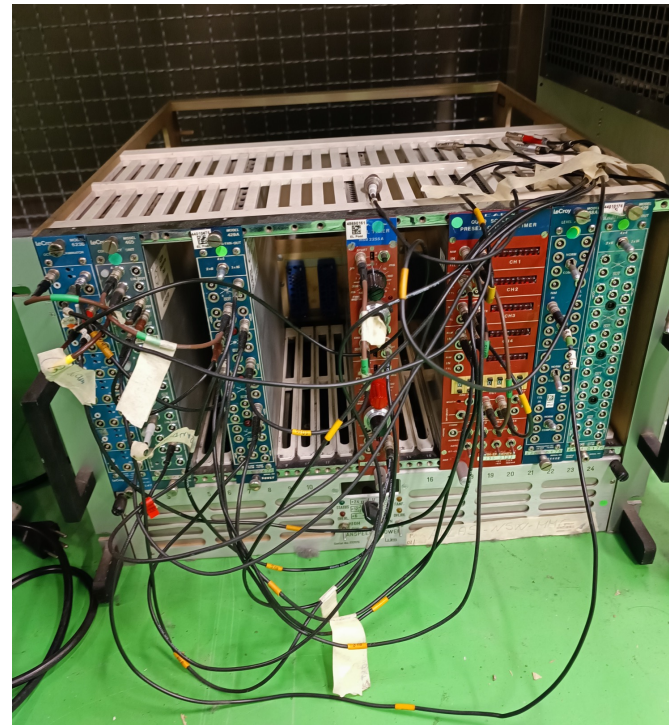


Equipment status

Equipment	Quantity	Available?	Comments
Rotameters	2	BB5	Found 2 'new' ones used in the BB5 CRS, up to 60 l/h. Also with adapters for different pipe size
Pressure sensors	2	BB5	The ones used in P1 are different, in case we need them we can ask Paolo/Irakli
RH Vaisala sensor	1	LMU	Will be sent to BB5/Spyros
Gas Filters	Multiple	BB5/GIF	Plenty of them available
Copper gas pipes	> 20 m	BB5	See picture, more than 30 m of copper line if available for us. Also found by Spyros
Plastic pipes + connectors	20 m	BB5	6 mm diameter. Ordered and delivered at BB5. Shorter pieces and connectors available as well
Cooling water/chiller	1 chiller	LMU	Delivered from LMU, + spare available from LMU, 90% distilled water + 10% tap water to avoid corrosion.
Cooling water pipes	Several meters	BB5	10 mm diameter, available in BB5
LV power supply	1	BB5	Will use the Delta SM 15-100 placed in BB5 (1 phase 240V plug) see picture..
LV patch panel	1	BB5	Now it is dismantled from the upstream chambers but available at BB5
HV power supply	1+1	GIF	Main Frame from GIF + HV board for scintillators to be ordered from the electronic pool
HV cables	20	BB5	2x4 (SM1-PCB3) + 4 (drift SM1) + 4x2 (BL HV and drift) -> 18 available + 2 extensions Possible to build new ones with spare cable and SHV connectors (Takis), more available at 188
Scintillators	2	Givi	2 thin ones mounted on upstream chamber setup
Gas bottles	1 bank / 2x50l bottles	GIF	Available, will be transported to the test beam location. 2 bottles of 50l each at 95 bar also available from GIF, might be a better solution for transportation/storage. Gas is enough for 2 weeks
Pressure reducer	1	BB5	Found a new one suitable for flammable gas connector (as the one on our gas bottles)
NIM crate and modules	1	BB5	The same one used in GIF++: discriminator, coincidence unit, fan-in fan-out, quad-scaler, dual-timer

Equipment available

- We can use the usual LV power supply, the one in the picture of BB5
- LV patch panel available at BB5
- Copper gas pipes available at BB5, also other pipes available
- Pressure sensors available at BB5, otherwise we can ask Paolo/Irakli for the P1 ones
- NIM crate with all needed modules







Equipment available

- SM1-M40 mounted on tilting trolley, and Givi's scintillators mounted on the upstream chamber setup



HV board for scintillators

- CAEN A7030DN available on the pool
- Needed -1.8 kV and about 200uA for each scintillator
- Can be installed on the MainFrame that we will move from GIF++ to H8B

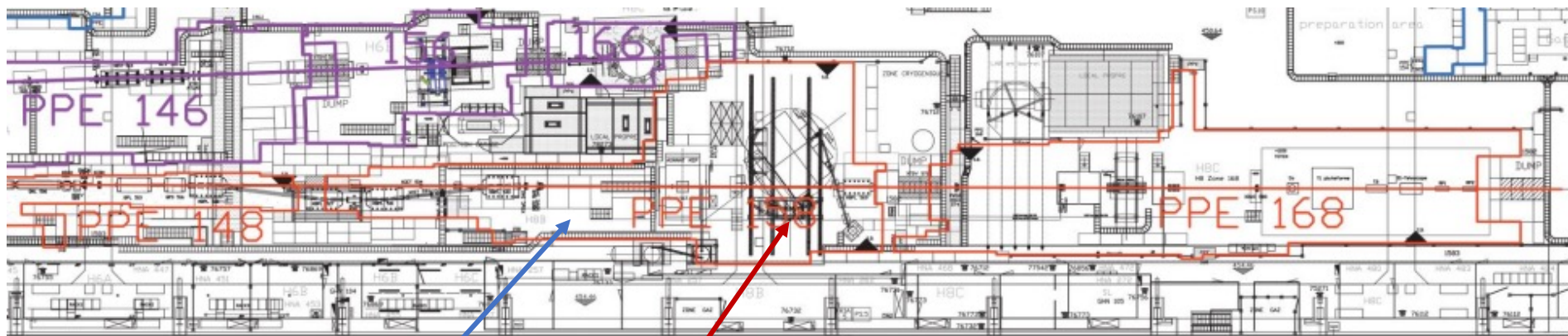
<p>A7030DN</p> 	<p>CAEN POWER SUPPLY SY5527 12CH. -3KV 1MA</p>	<p>0521</p> <p>Support : Full </p> <p>Datasheet </p>	<p>SY High voltage Negative</p>	<p>CHF 26</p>	<p>✓</p> <p>10 In stock [who is using it (9 used)]</p>	<p>Add to cart </p>	<p>12</p>	<p>Neg</p>	<p>3 kV</p>	<p>50 mV</p>
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Back-up

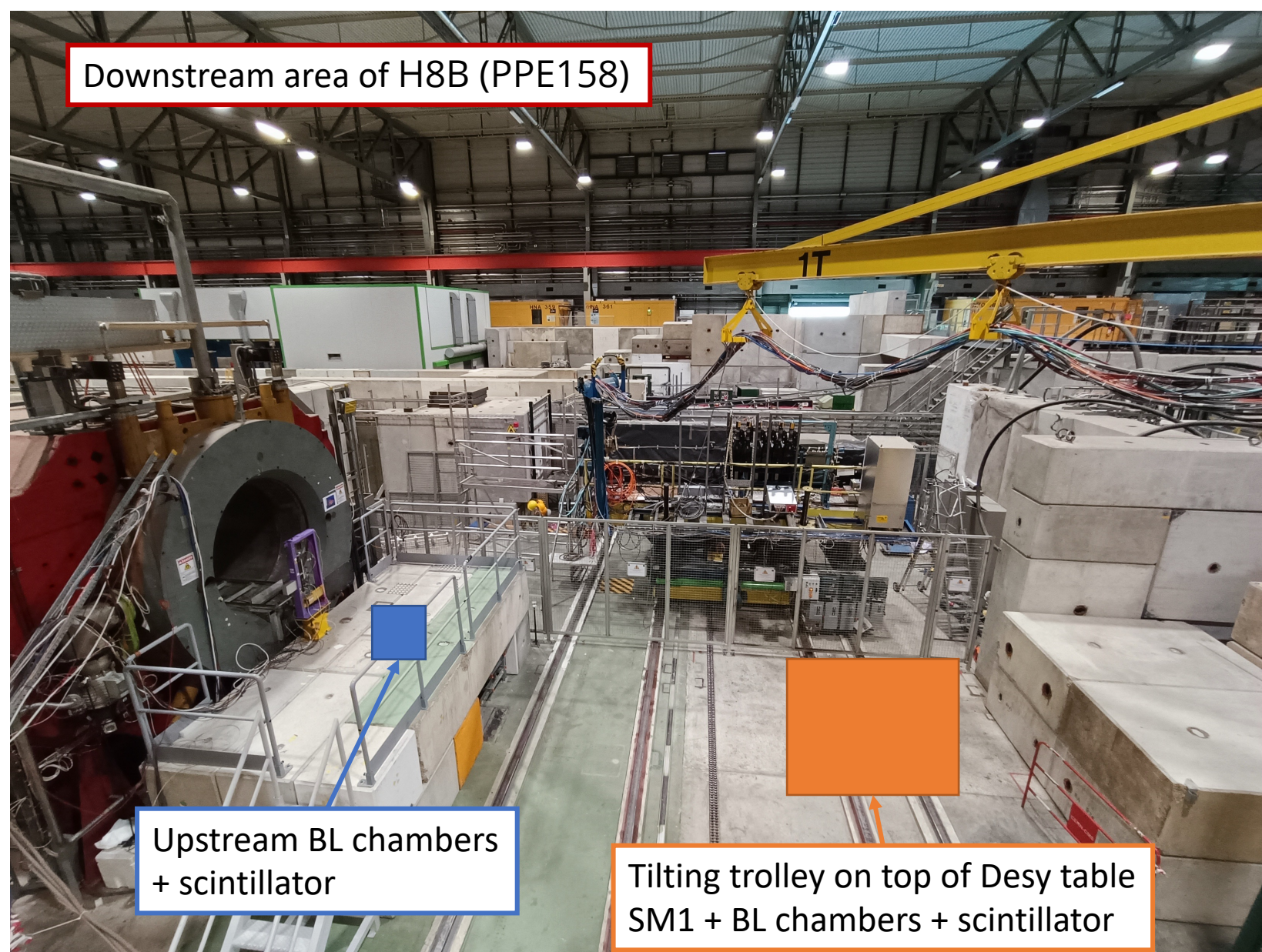
Location

- Done check on site
- H8B (PPE158)
- **We will be in the downstream area**
- Upstream area is too high for our setup



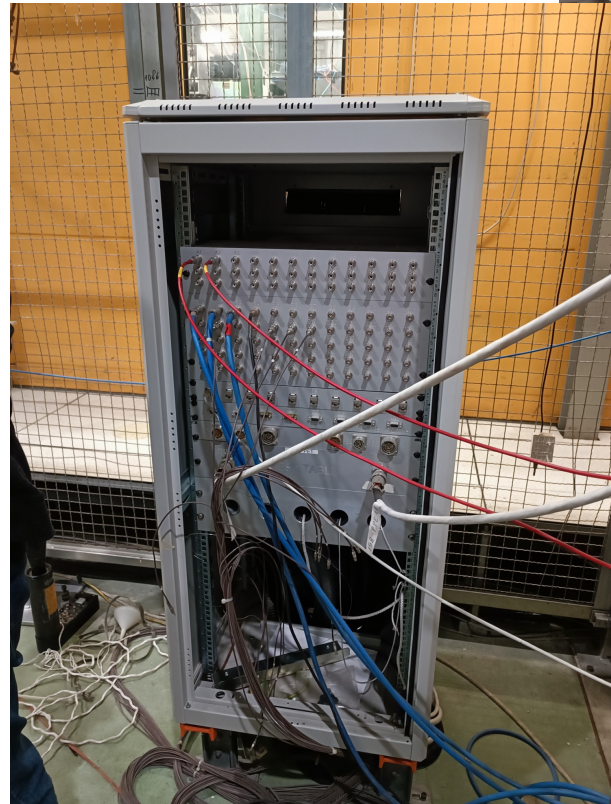
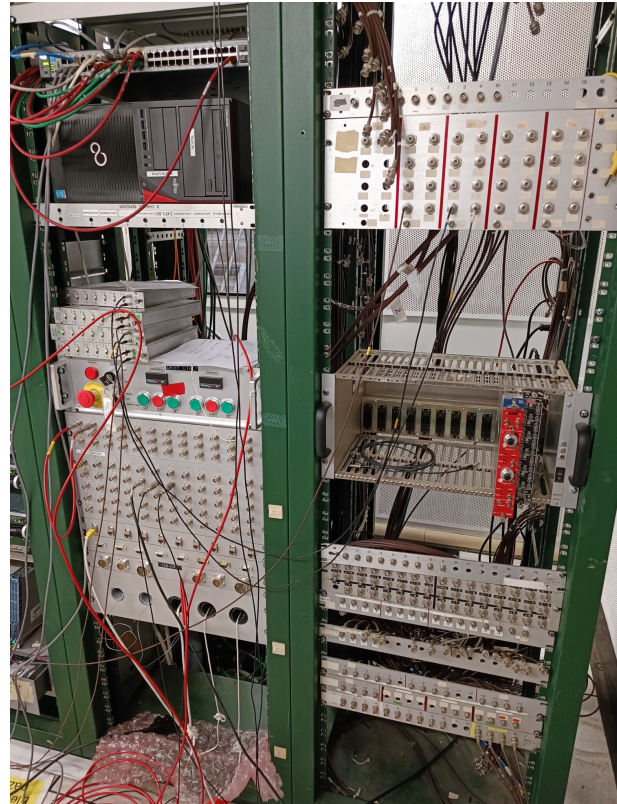
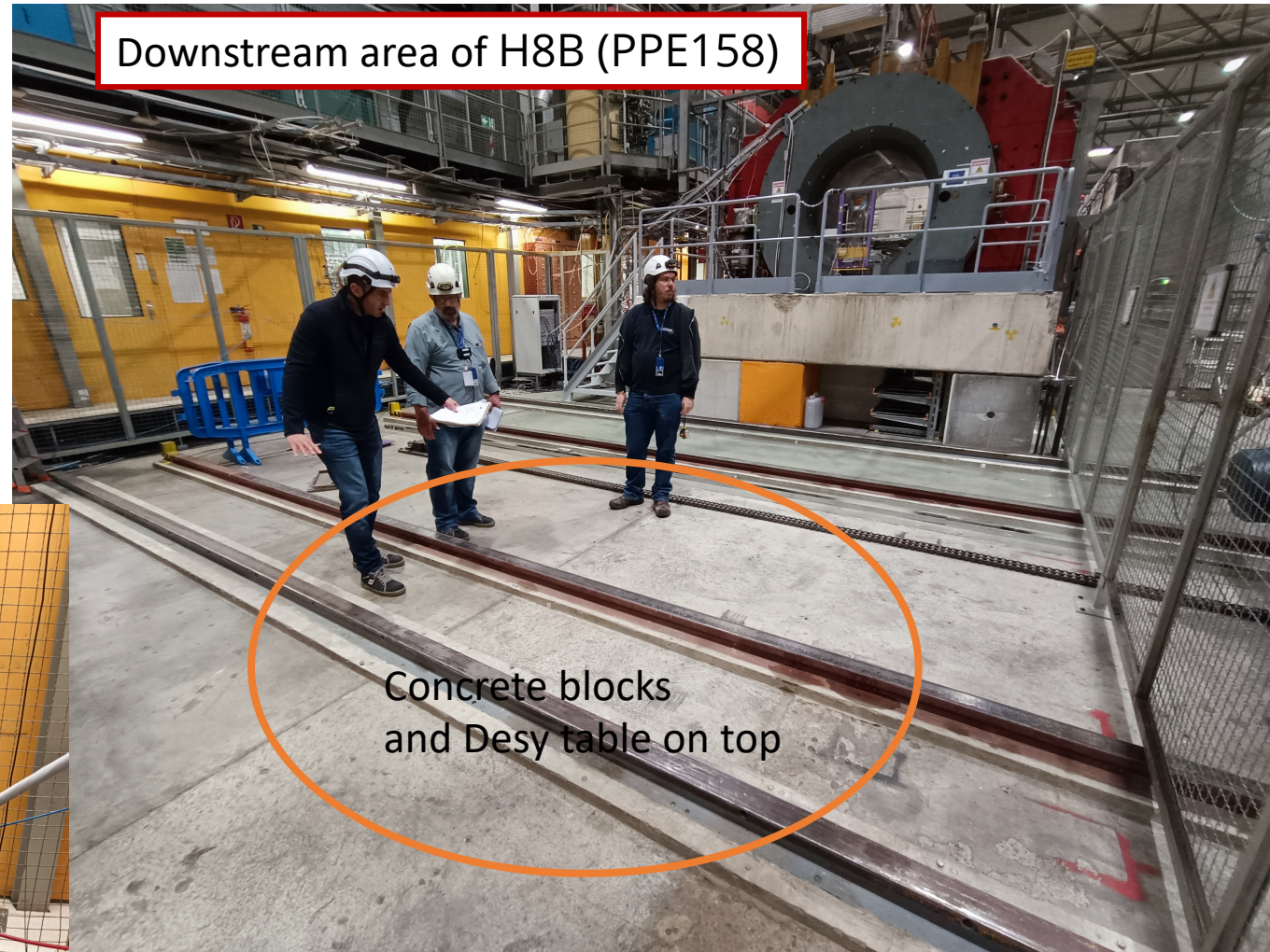
Location

- We will be in the downstream area
- Upstream BL chambers setup will be on the platform (beam height 125 cm)
- Tilting trolley will be on the orange Desy table, about 5 m distant from the upstream chambers
- Desy table will be fixed on concrete blocks of 40 cm height, placed next to the rails
- Lowest position of the Desy table is about 68 cm + the 40 cm of the blocks
- Final base height is 108 cm
- Beam height is 280 cm from the floor and 125 cm from the floor of the upstream balcony



Location

- Control room located in front of the experimental area, yellow rooms visible in the picture
- Patch panel available inside the experimental area and connected to the control room
- A rack is also inside the experimental area and can be moved where we want



Setup dimensions

Tilting trolley:

- Footprint dimensions 130 x 105 cm² (BL chambers are 8 cm outside the footprint)
- Height with SM1 mounted is about 300 cm
- Weight about 200 kg
- Height of the basis is 58 cm with the wheels, or 42 cm without the wheels
- Height of the SM1-PCB3 centre is 168 cm (with the wheels)
- Minimum and maximum PCB3 heights from the ground are 147 and 189 cm

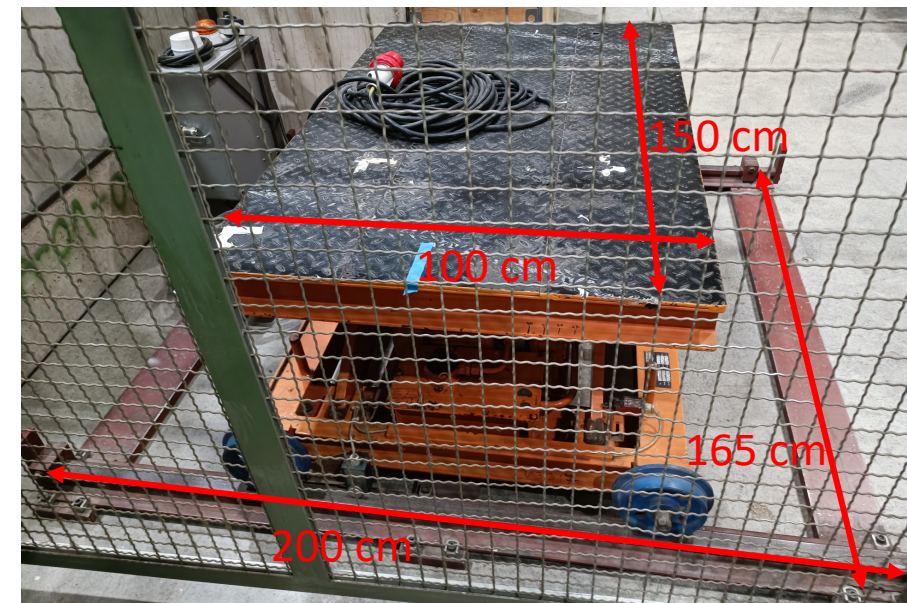
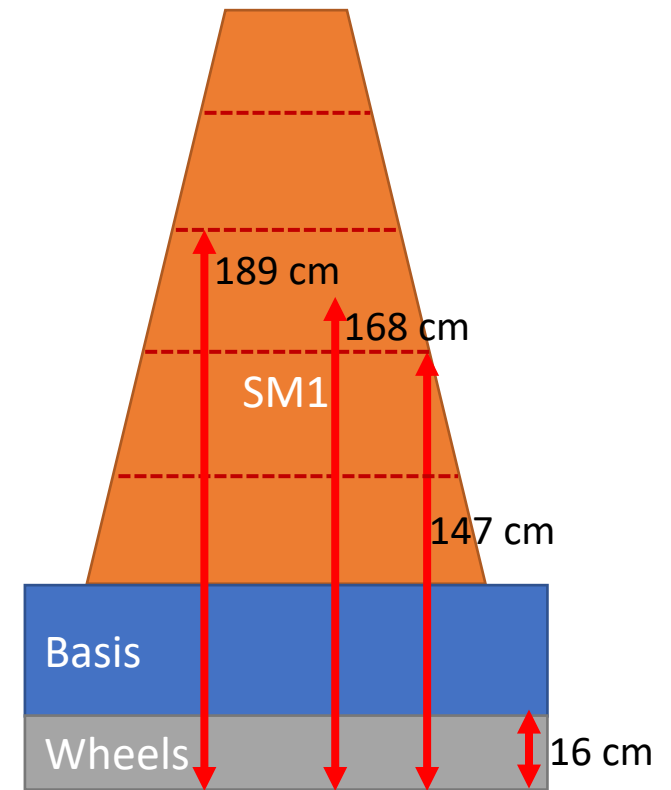
Orange table plane is 150 x 100 cm², so our trolley can stay on it fully.

The orange Desy table will add ≥ 108 cm of height (40 cm of concrete blocks)

This results in:

- total minimum height of 255 cm -> ok
- total maximum height of 297 cm -> a bit too high! Beam is at 280 cm

→ To recover the height, we will remove the wheels, recovering 16cm, just before placing the trolley on the table



Setup dimensions

Upstream setup:

- Footprint dimensions 57 x 53 cm²
- Maximum height with CL chambers mounted is about 220 cm
- Centre of the chambers is around 168 cm -> too high for the H8 beam height

We will need to lower the position of the 2 BL chamber by roughly 40 cm, to be centred around 125 cm.

Easy operation done in advance at BB5, but adjustable at H8B.

