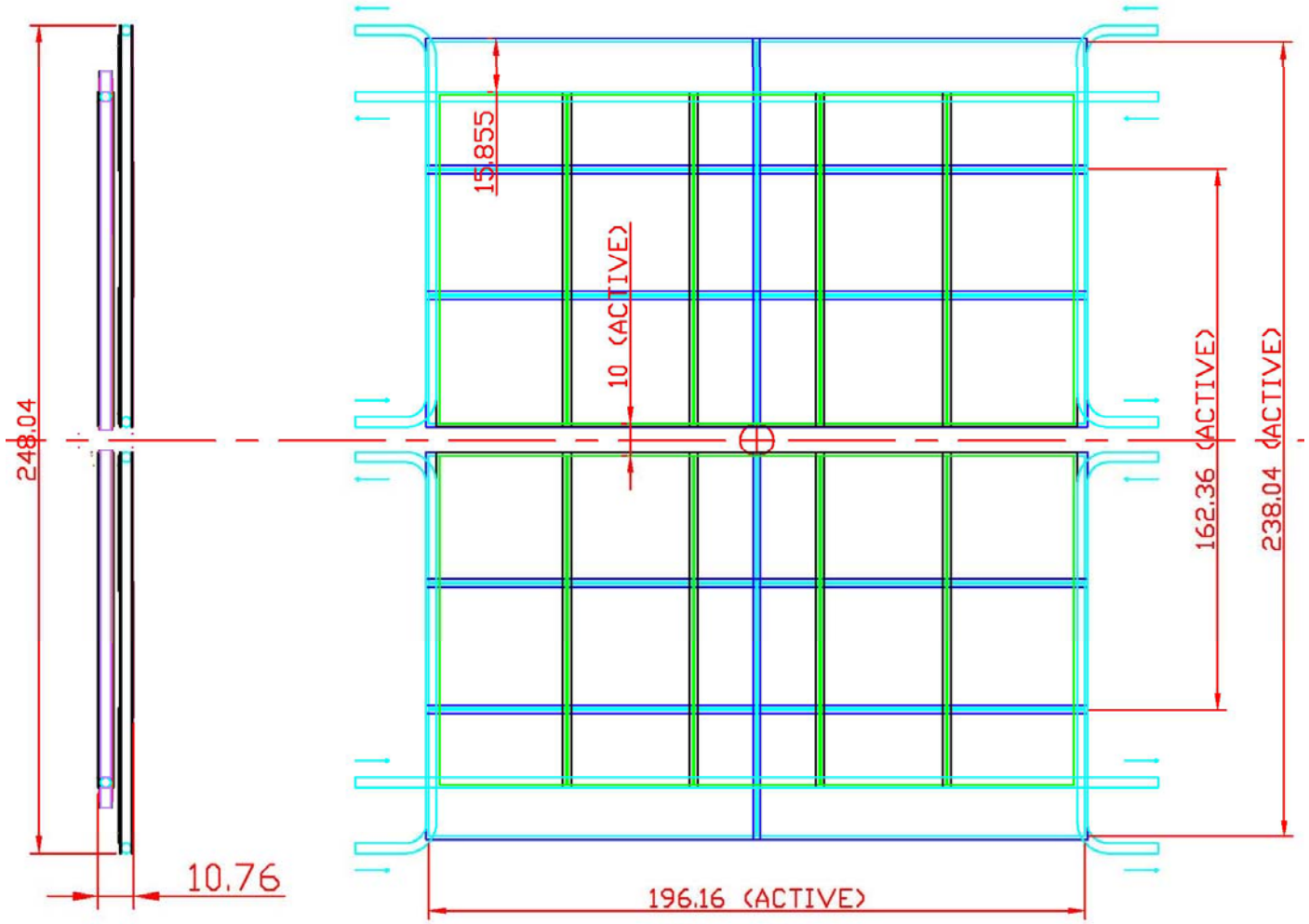
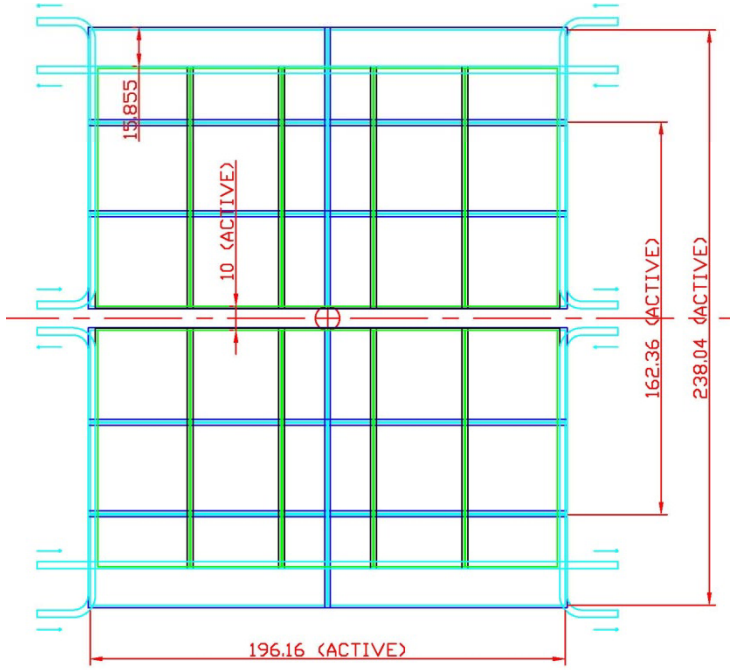
Sensor Layout

- The downstream region is shown
- Maximum height at cooling tubes = 248 mm.



Sensor Layout

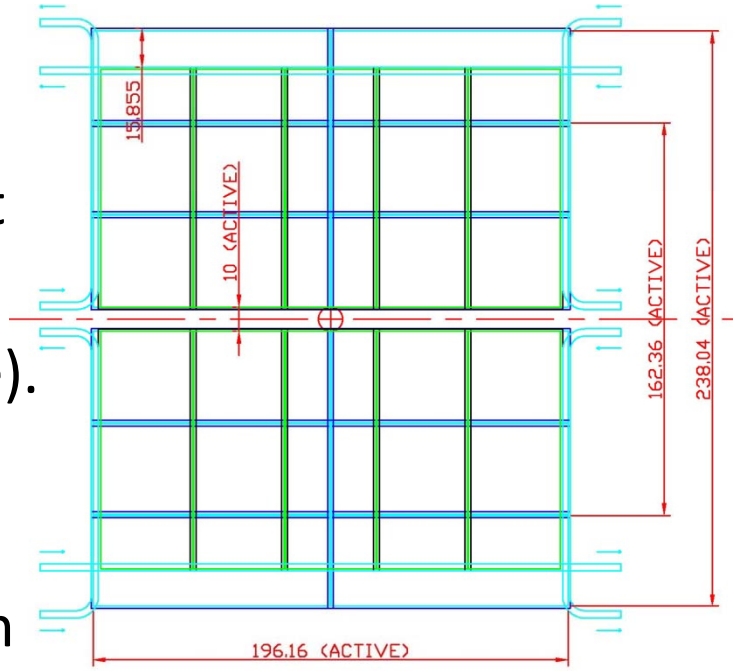
- Sensors are located so that active regions overlap 0.5 mm both horizontally and vertically.
- Twelve sensors run horizontally, ten vertically.
- The gap for beam background is 10 mm from active silicon to active silicon (8 mm from cut edge to cut edge).
- Two identical modules would be made, one for the top and a second for the bottom.



- Sensors and their cooling tubes are shown, but not hybrids, hybrid cooling tubes, or support structures.

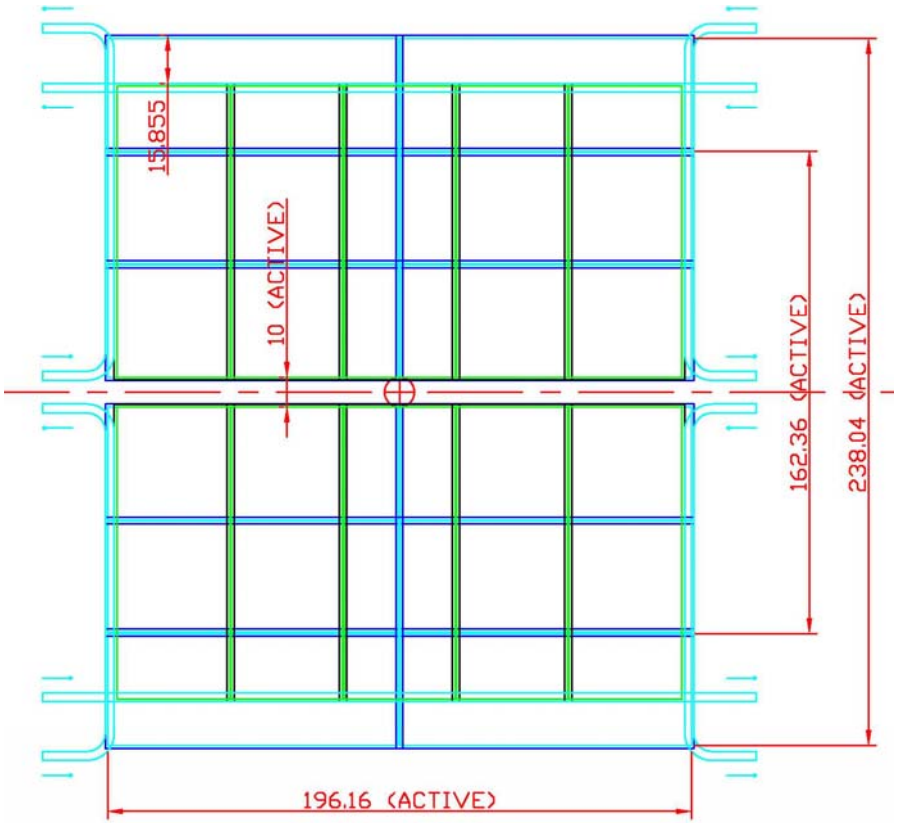
Sensor Layout

- As drawn, the larger sensor planes would occupy 9.8” vertically.
- That could be reduced to roughly 8.5” if the uppermost and lowermost sensors running horizontally were eliminated (with a loss of acceptance).
- Clearance and additional support structures will be needed.
- Top and bottom plates of the vacuum enclosure should be 0.5” thick if they are full length and width, rectangular flat plates.
- Thickness per plate could be reduced to roughly 3/8” if the plates were trapezoidal so that the enclosure is wider downstream than upstream.



Sensor Layout

- The bottom line is that, as drawn, the magnet gap would need to be roughly 11”.
- Given that some support and vacuum vessel features still need to be investigated, 12” would be more comfortable.



Sensor Layout

- For completeness, a portion of a sensor module side elevation is shown.
- Horizontal and vertical sensors are supported separately on carbon fiber – foam – carbon fiber cores, then combined to form a module.
  - Cooling tubes are imbedded in the core.
  - Copper mesh on kapton can be used for grounding and to provide bias connections.
  - Portions of the foam and carbon fiber would be cut out to reduce material.
  - Details for mechanical connections between planes of a station remain to be determined, as do connections to the outside world.