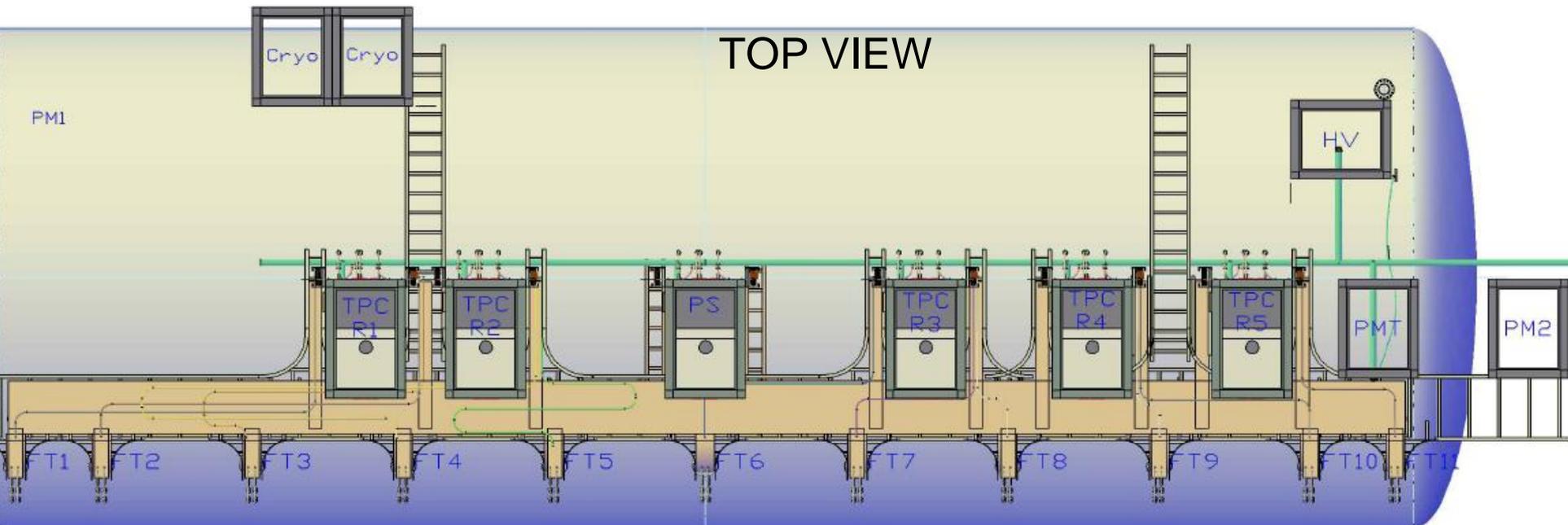
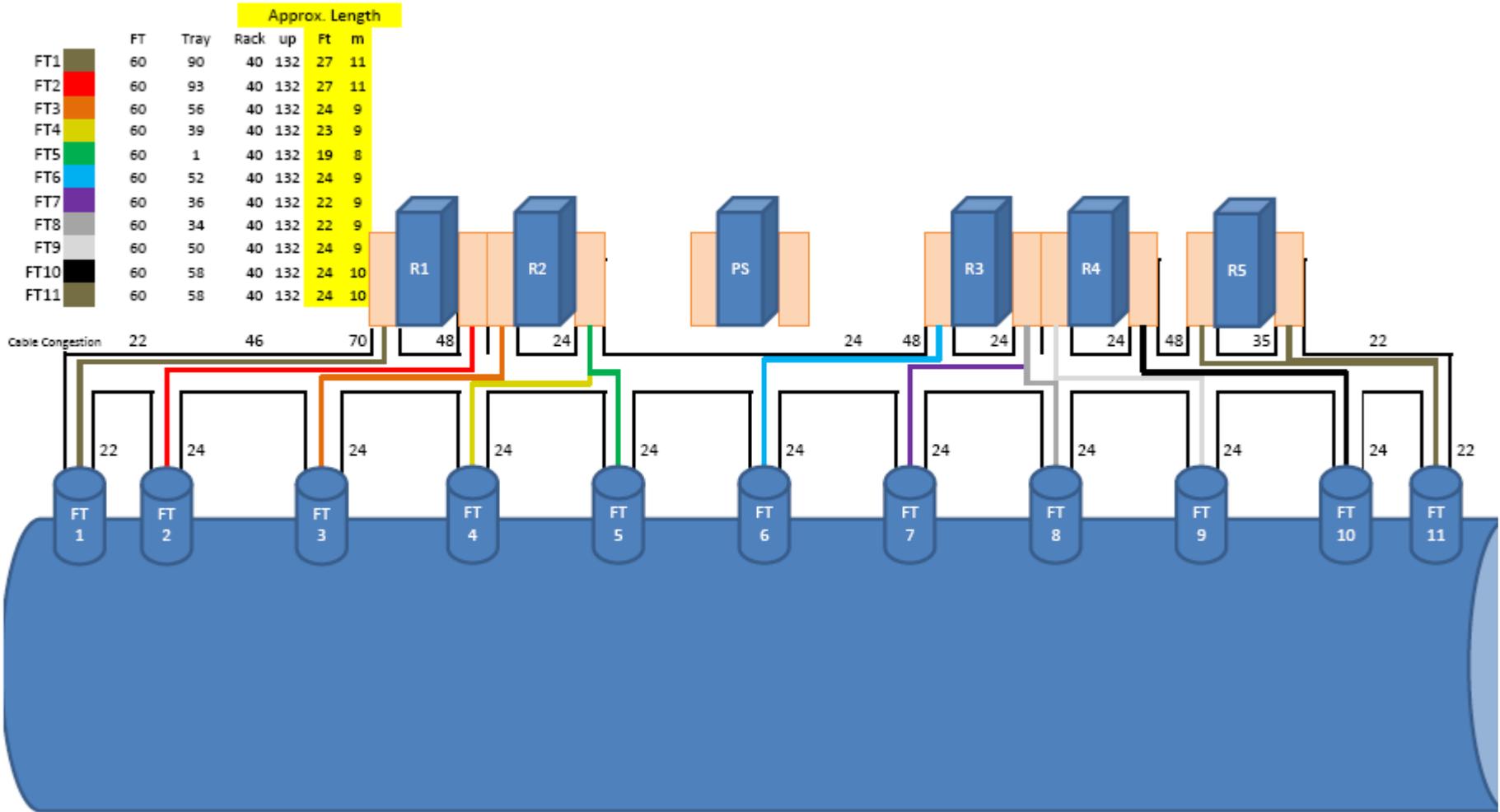


## FE Electronics CableTrays

- There will be two main cable tray runs along the length of the cryostat
  - The trays are non-conductive (fiberglass)
  - Access to the trays should be as open as possible
    - Might to have to trim the grating to the back of the rack

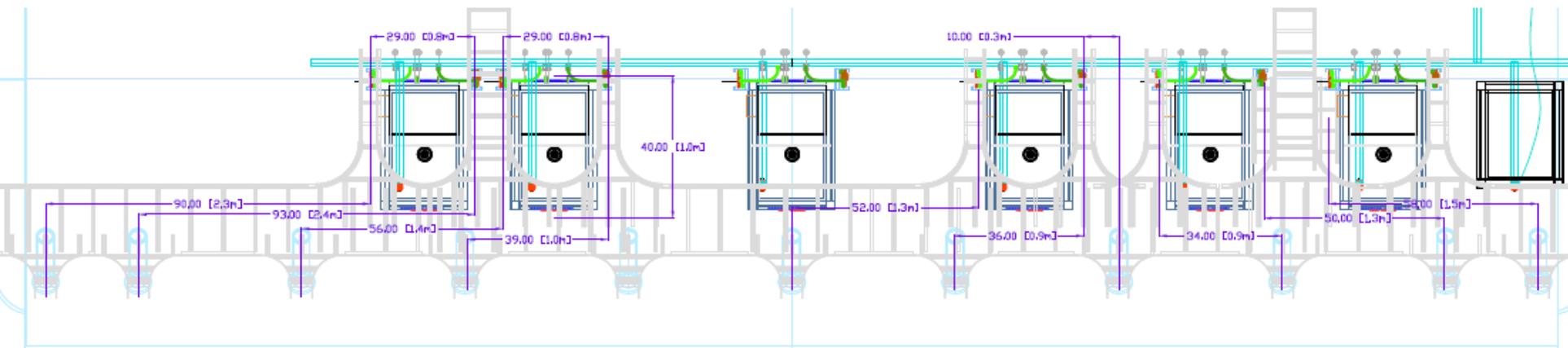




Feed-thru to center of tray = 60" (1.5m)

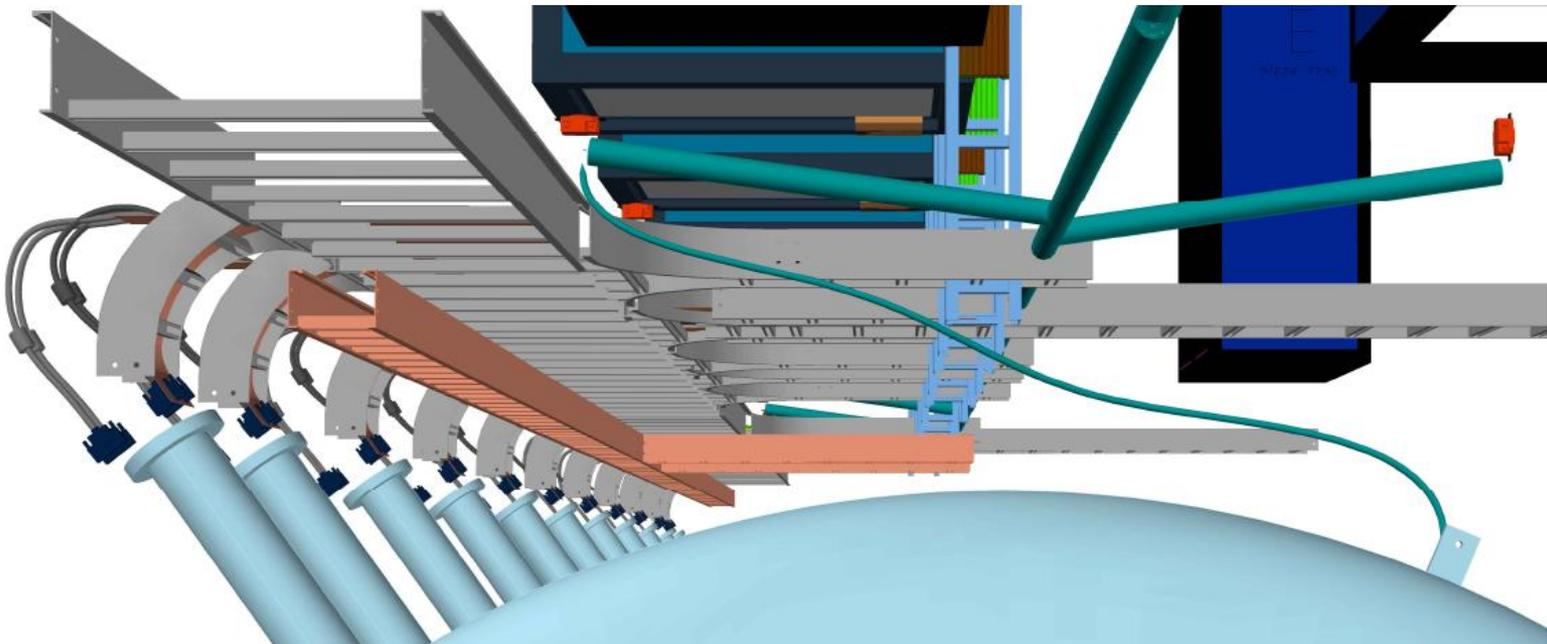
Center of tray to vertical tray = 40" (1m)

Vertical run to card\* = 132" (3.4m)

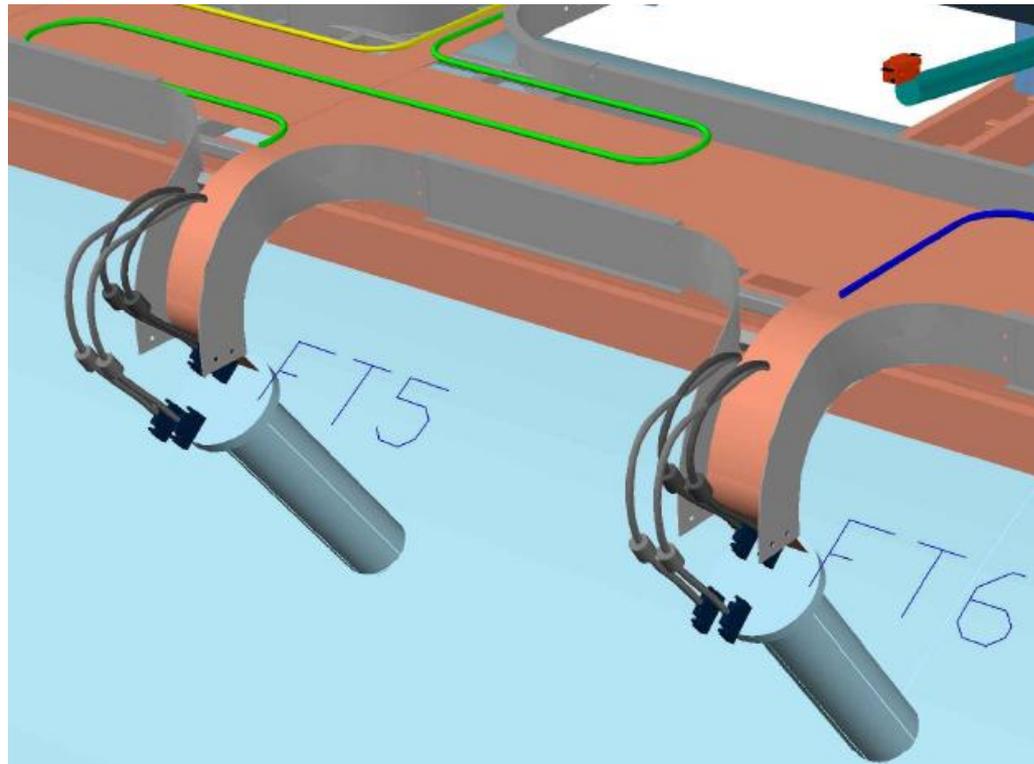


\* Longest run

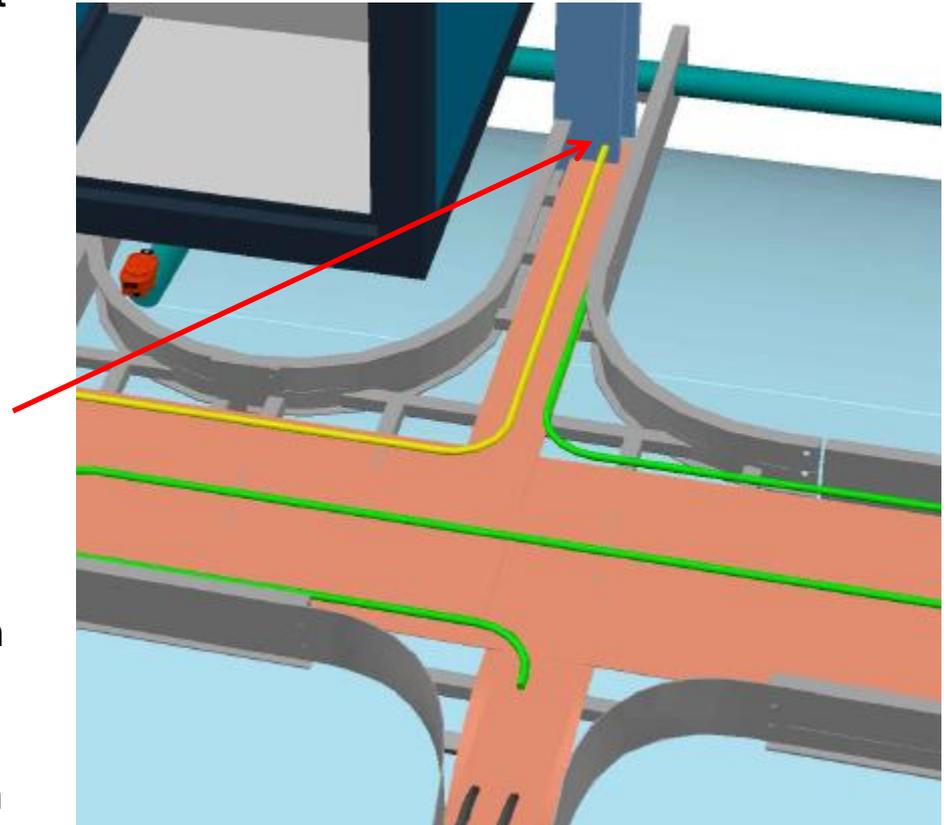
- The top tray is 5x18"
  - Fill only to 50% to allow for crossing cables.
  - The most congested section has 70 cables but crossing is minimal at that point.
  - The upper tray holds ONLY the signal cables
- The bottom tray is 4x6"
  - Can be wider for more cables if necessary
  - The bottom tray is divided and holds the optical fiber and power supply cables



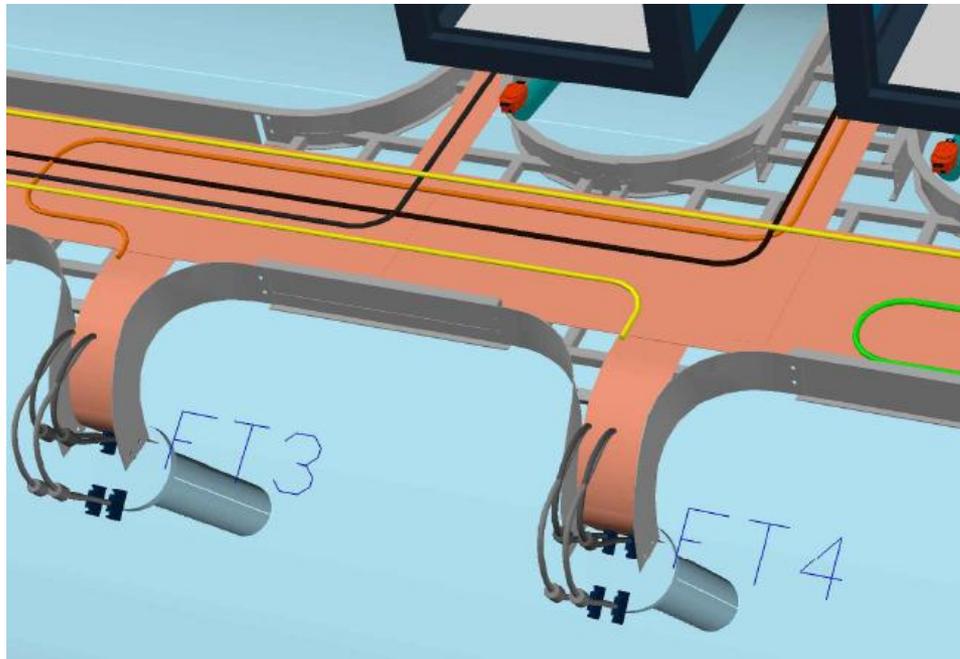
- Each port has a vertical drop from the main run to help with cable support
  - Maximum number of signal cables at the port is 24 which should fit in a 6" wide tray drop



- Racks have two vertical trays that attaches to the front edge of the rack allowing removal of the side panels
  - These vertical trays extend down to the horizontal sections under the grating
    - It would be desirable to have a radius transition from horizontal to vertical
  - Cables are neatly dressed at the port and crate ends. Excess cable will be taken up in the main tray
  - Cables must not to be coiled, rather they should be gathered in a serpentine



- Copper\* ribbon 6" or wider is laid under the signal cables and used to connect the feed-through port to the relay rack. The ribbon goes in the bottom of the tray following the signal cables
  - A 6-inch wide 10mils thick ribbon will have almost half the inductance of a wire 1/2" in diameter.
    - Ribbon ~ 625nH/m verses ~1000nH/m



Copper ribbon will connect to the Faraday shield on the port and the bottom of the relay rack.

\* Tin plated Copper

- Each rack needs isolated 20Amp 208VAC 3Phase power receptacles
- The AC distribution plugs into these outlets
- Receptacles should be underneath the rack

