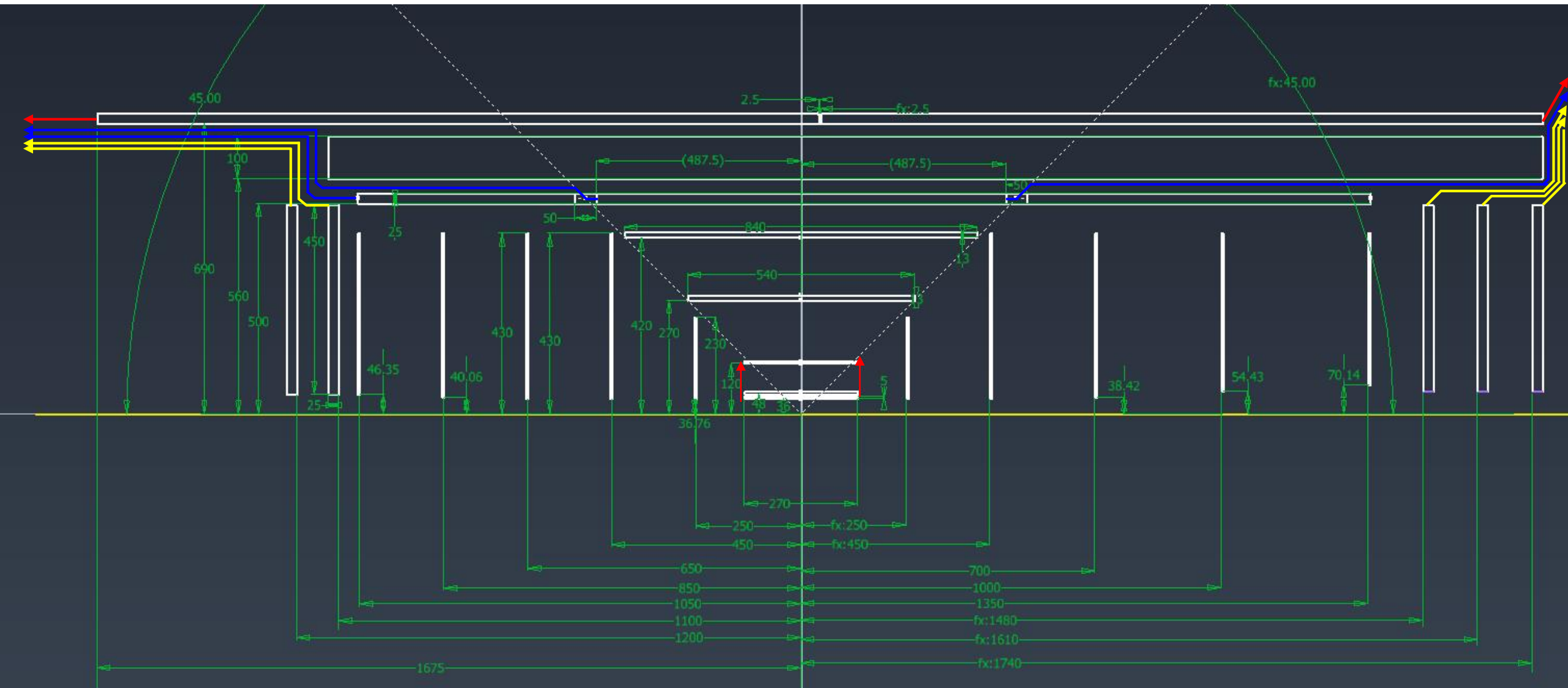


# ePIC MPGD trackers cables & services routing

Red: Outer MPGD barrel

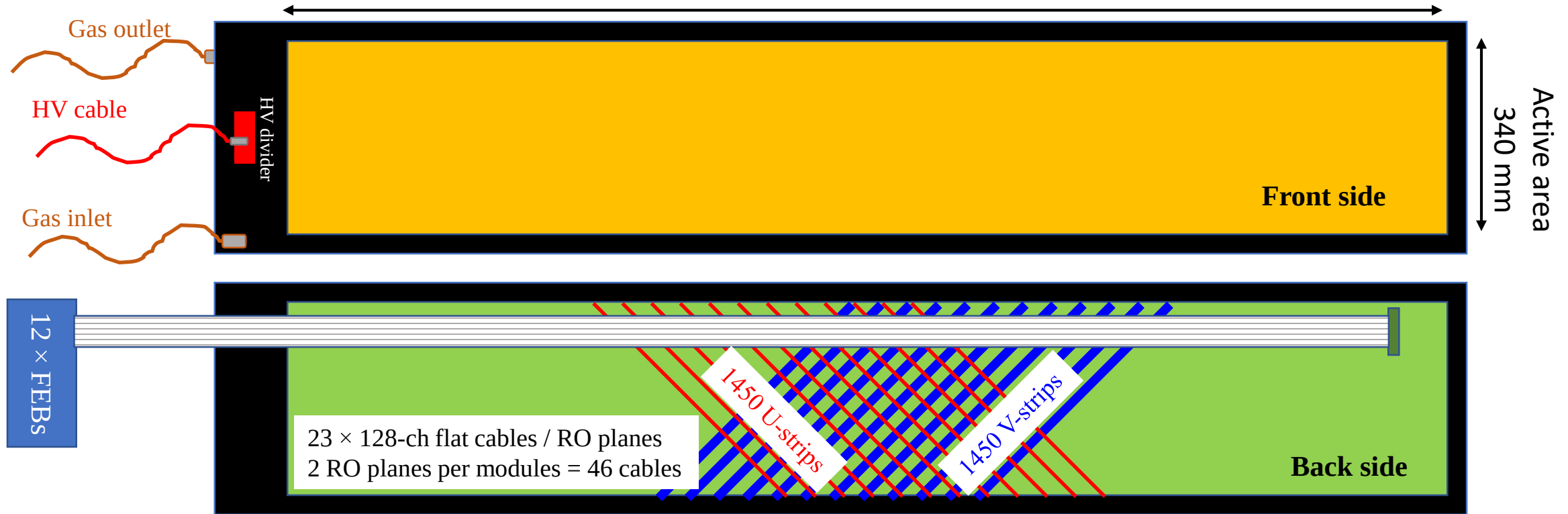
Blue: Inner MPGD barrel

Yellow: HE and EE end cap discs



# ePIC Outer MPGD module – (double-sided hybrid thin-gap GEM- $\mu$ RWELL)

Active area 1740 mm



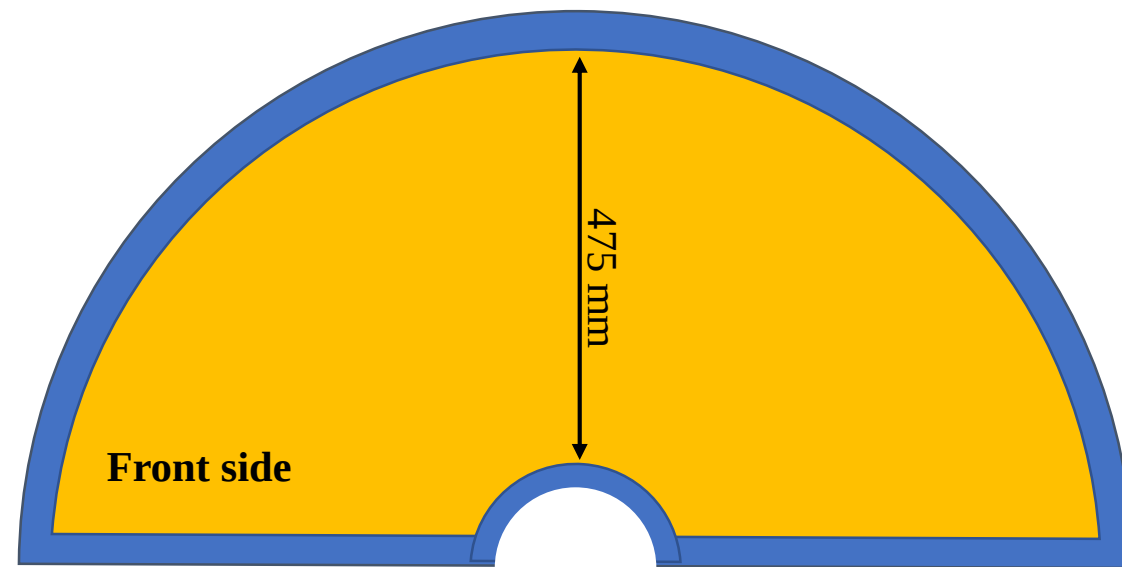
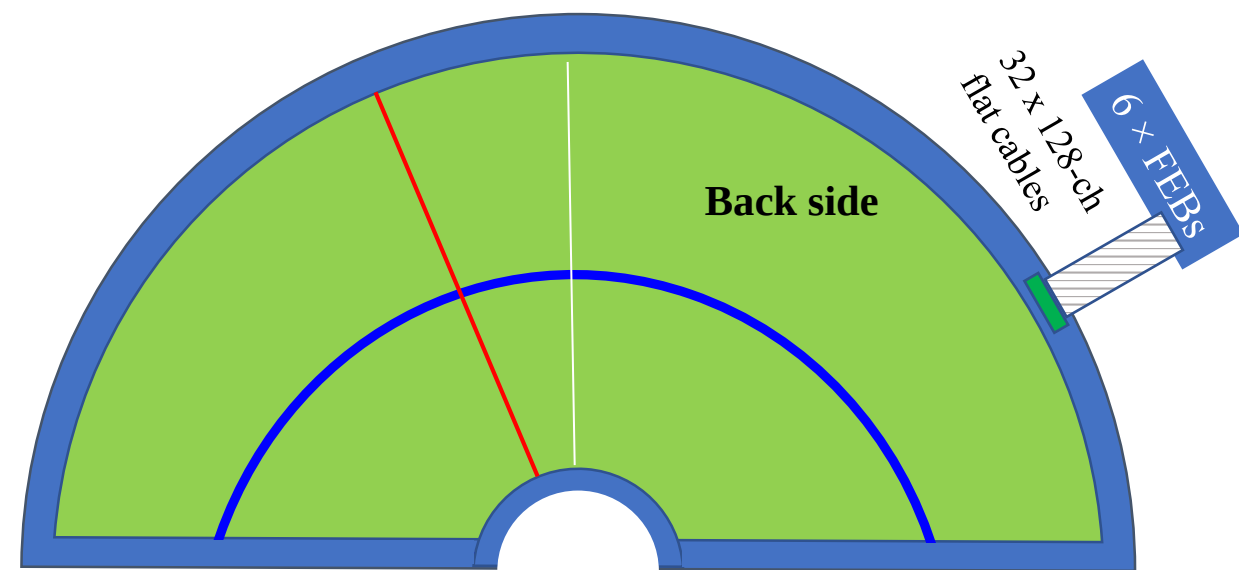
## Outer MPGD module:

- Readout strips: Capacitive-sharing 45-degree U-V strips
- Pitch: 1.2 mm pitch
- 2 (double-sided modules)  $\times$  2  $\times$  1450 U-V strips = **5800 strips**
- 46  $\times$  128-pins flat cables + connectors on the back of the chamber
- 12 FEBS (assuming 8 SALSA chips / FEB)  $\rightarrow$   $\sim$  6000 channels
- 2 gas lines (inlet and outlet)
- 1  $\times$  HV cable for (2 kV, 1 mA)

## Outer MPGD tracker: $\rightarrow$ 2 $\times$ 12 modules (24 modules)

- 2  $\times$  12  $\times$  12  $\times$  FEBS = 144 FEBS
- 2  $\times$  12  $\times$  46 = **1104  $\times$  128-pins flat cables** / connectors
- **142,312 readout channels**
- 48 gas lines
- 24 HV cables

# ePIC Hadron Endcap MPGD disc – (double-sided hybrid thin-gap GEM- $\mu$ RWELL)



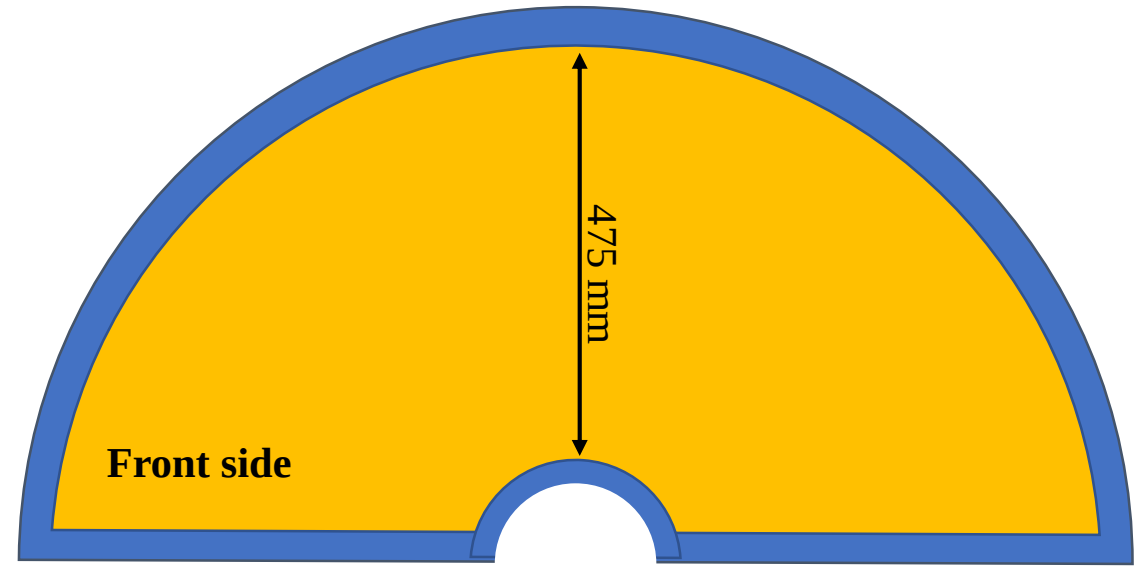
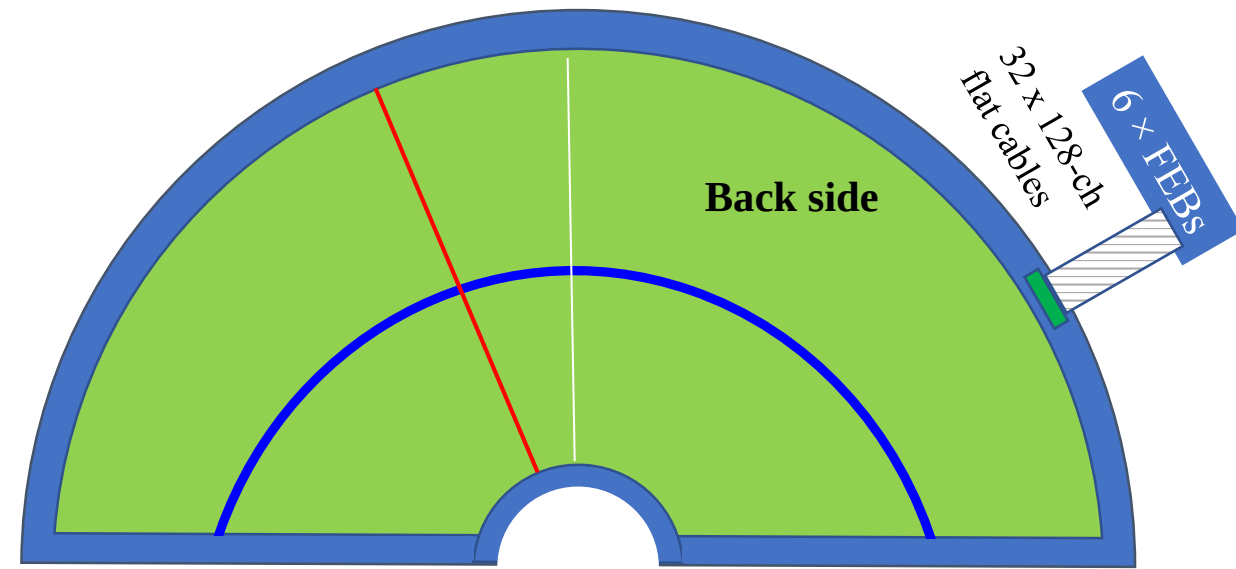
## Endcap MPGD disc module: (double-sided hybrid)

- Readout strips: Capacitive-sharing 45-degree **r-phi** strips
- Pitch: 1.2 mm pitch
- $\sim 2 \times 1570$  phi-strips +  $\sim 2 \times 400$  r-strips =  **$\sim 4000$  strips**
- $\sim 2 \times 16 \times 128$ -pins flat cables + connectors on the back of the chamber
- $2 \times 4$  FEBs (assuming 8 SALSA chips / FEB)  $\rightarrow \sim 4000$  channels
- 2 gas lines (inlet and outlet)
- HV cable for (2 kV, 1 mA)

## 3 ePIC Hadron Endcap MPGD disc trackers: $3 \times 2$ half-discs

- $3 \times 2 \times 8 \times \text{FEBs} = 48 \text{ FEBs}$
- $3 \times 2 \times 2 \times 16 = \mathbf{192 \times 128\text{-pins flat cables}}$  + connectors at the edge of the
- **$\sim 25\text{k}$  readout channels**
- 12 gas lines
- 6 HV cables

# ePIC Electron Endcap MPGD disc – (double-sided hybrid thin-gap GEM- $\mu$ RWELL)



## Endcap MPGD disc module: (double-sided hybrid)

- Readout strips: Capacitive-sharing 45-degree  $r$ - $\phi$  strips
- Pitch: 1.2 mm pitch
- $\sim 2 \times 1570$   $\phi$ -strips +  $\sim 2 \times 400$   $r$ -strips =  **$\sim 4000$  strips**
- $\sim 2 \times 16 \times 128$ -pins flat cables + connectors on the back of the chamber
- $2 \times 4$  FEBs (assuming 8 SALSA chips / FEB)  $\rightarrow \sim 4000$  channels
- 2 gas lines (inlet and outlet)
- HV cable for (2 kV, 1 mA)

## 2 x ePIC Endcap MPGD disc trackers: EE (2 x 2 half-discs)

- $2 \times 2 \times 8 \times \text{FEBs} = 32$  FEBs
- $2 \times 2 \times 2 \times 16 = 128 \times 128$ -pins flat cables + connectors
- **$\sim 16k$  readout channels**
- 8 gas lines
- 4 HV cables