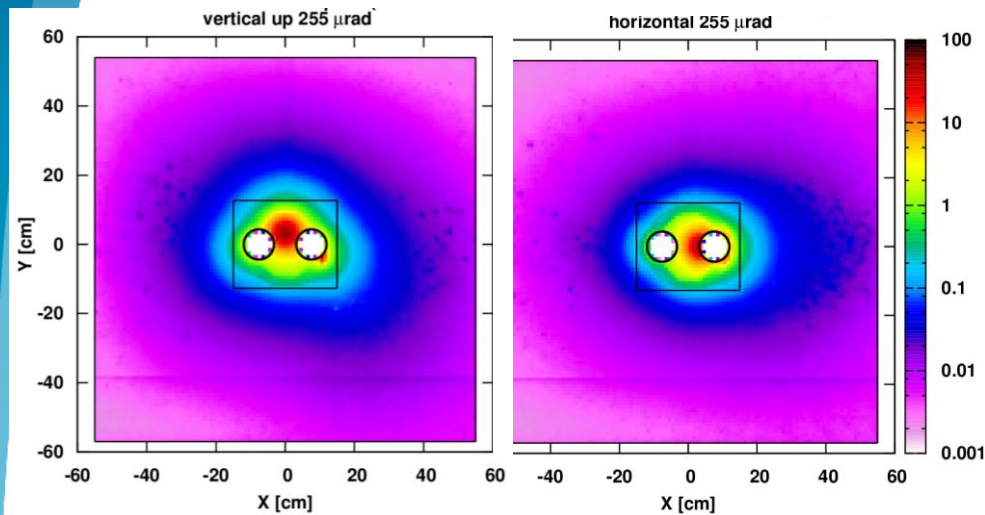


MATCHING SECTION



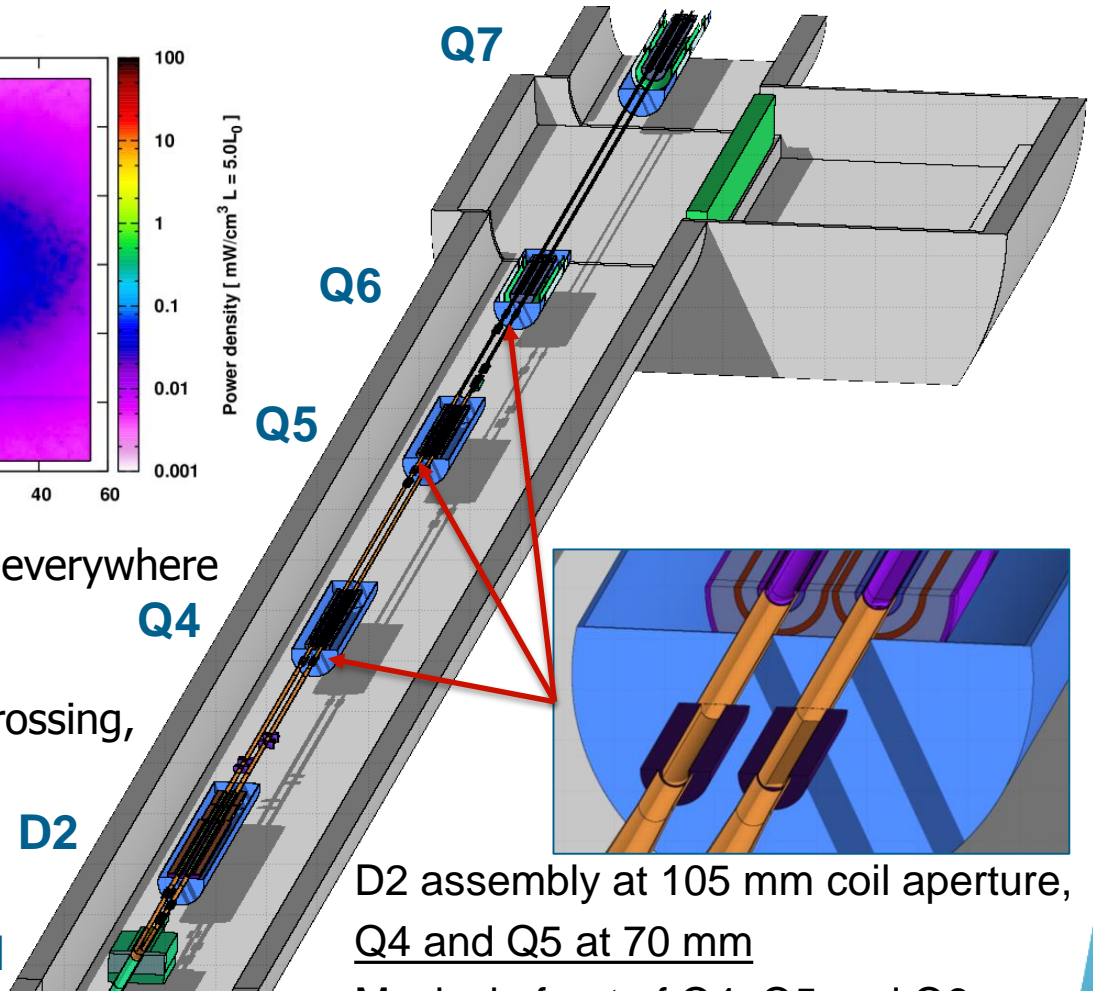
@ $5L_0$ peak power density $< 1 \text{ mW/cm}^3$ everywhere

and 33 W in the **D2** cold mass for **hor** crossing,

155 W in the most exposed **TCL4** jaw

and 20 W in the **TCLM4**;

up to 12 MGy after 3 ab^{-1} on the D2 IP end coils



D2 assembly at 105 mm coil aperture,
Q4 and Q5 at 70 mm

Masks in front of Q4, Q5 and Q6
 3 TCLs @ $14 \sigma^*$ and 4 TCTs

* for $2.5 \mu\text{rad}$ emittance

PEAK VALUES

Magnet assemblies	Horizontal crossing	
	power density [mW/cm ³ @ 5L ₀]	dose [MGy after 3 ab ⁻¹]
D2	0.8	12
Q4	0.5	7
Q5 (70 mm)	0.2	3 (4 W)*
Q6	0.2	3
Q7	0.5	7

with TCL at 14 σ for 15 cm β *
(21 – 7 – 3 mm halfgaps)

* total power in the Q5 assembly cold masses at 5L₀

Horizontal crossing	
dose [MGy after 3 ab ⁻¹]	
12	6
7	20
6 (4 W)*	3 (2 W)*
3	< 2
7	< 2

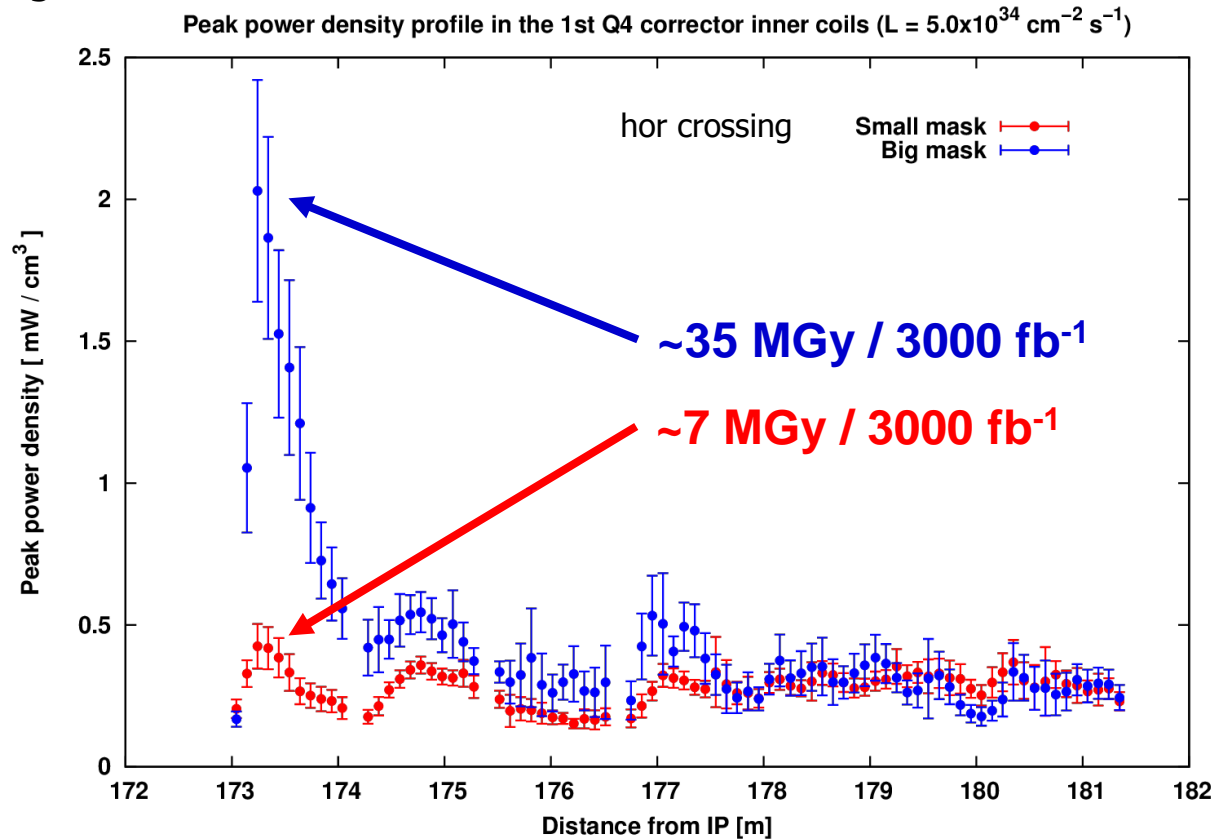
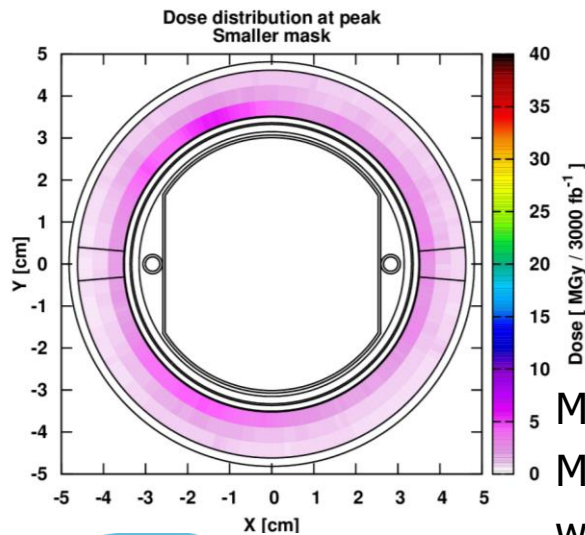
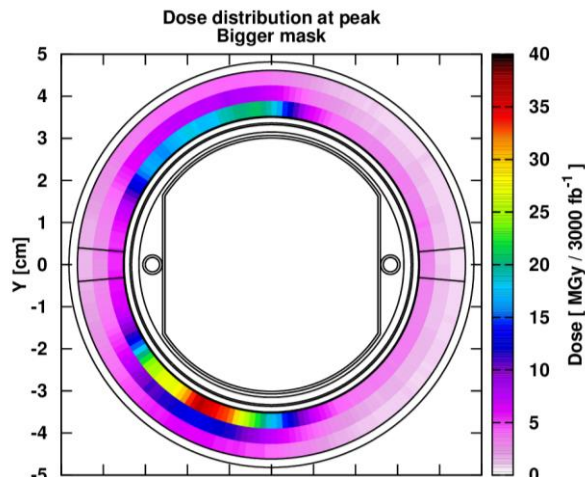
(56 mm)

for 50 cm β *
(TCL gap decreased
by a factor 1.8)

TCL4 jaw
up to **215 W**

SENSITIVITY TO MASK APERTURE/MISALIGNMENT

The warm masks are designed to match the beam screen aperture of the respective magnet
Assuming a 2 mm radial enlargement:



Major increase of the peak dose on the IP face of the first Q4 MCBYV
Max power density value of 2 mW/cm³ @5L₀ still acceptable,
with small impact on the total heat load