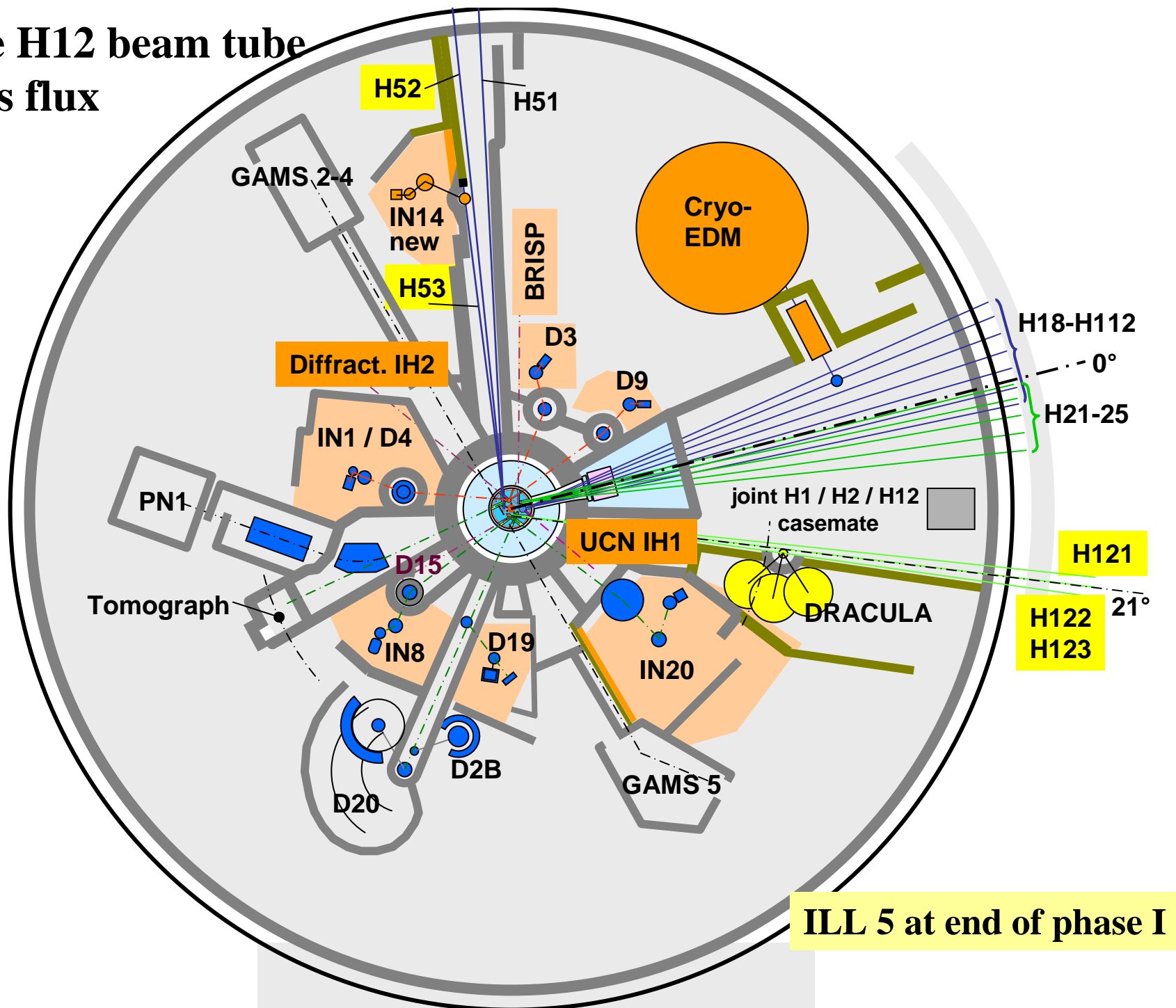
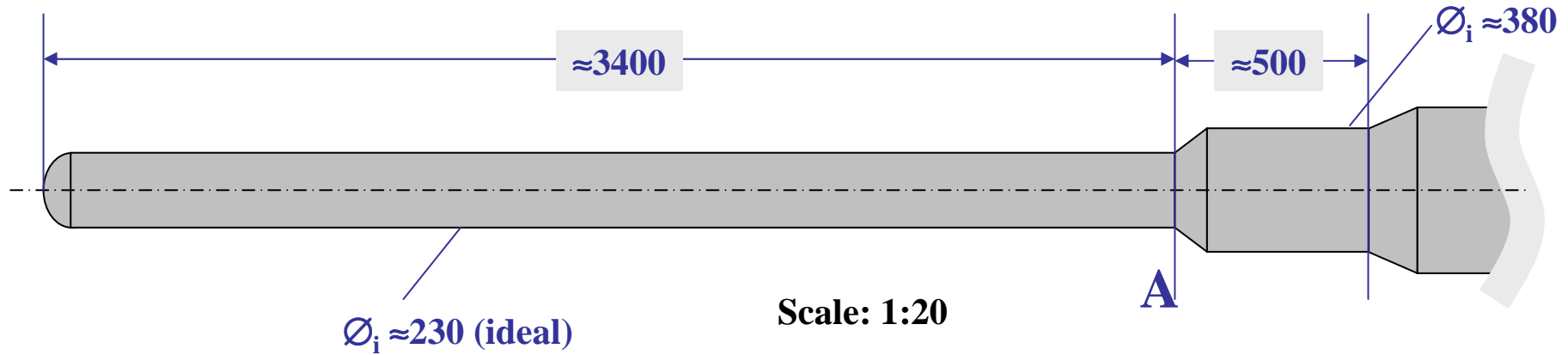
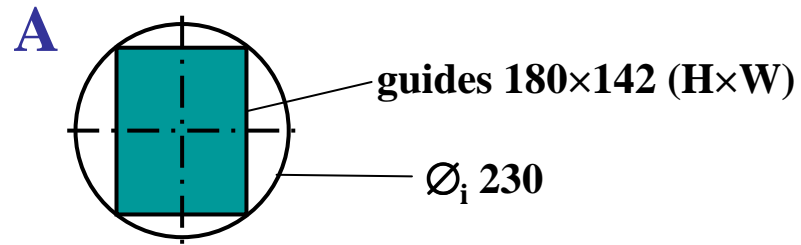


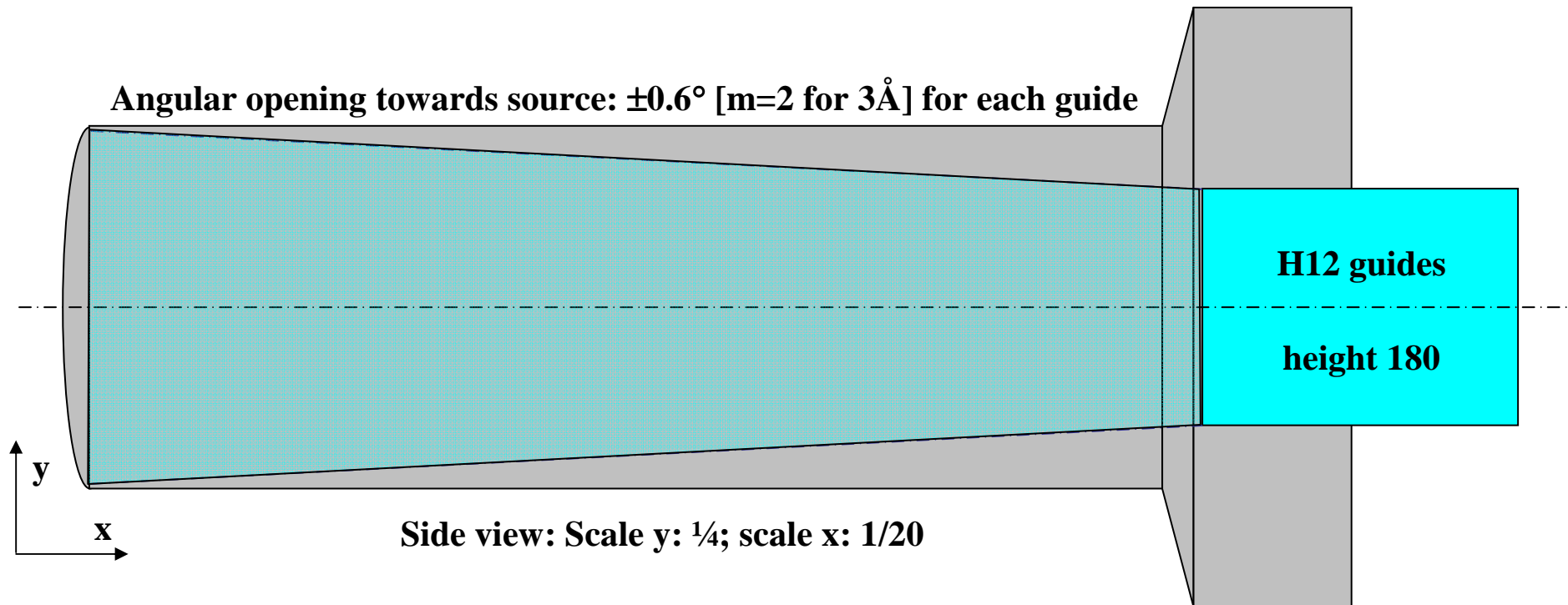
### 3. The H12 beam tube and its flux



The H5 beam tube after enlargement;  
assume H12 new to be similar;

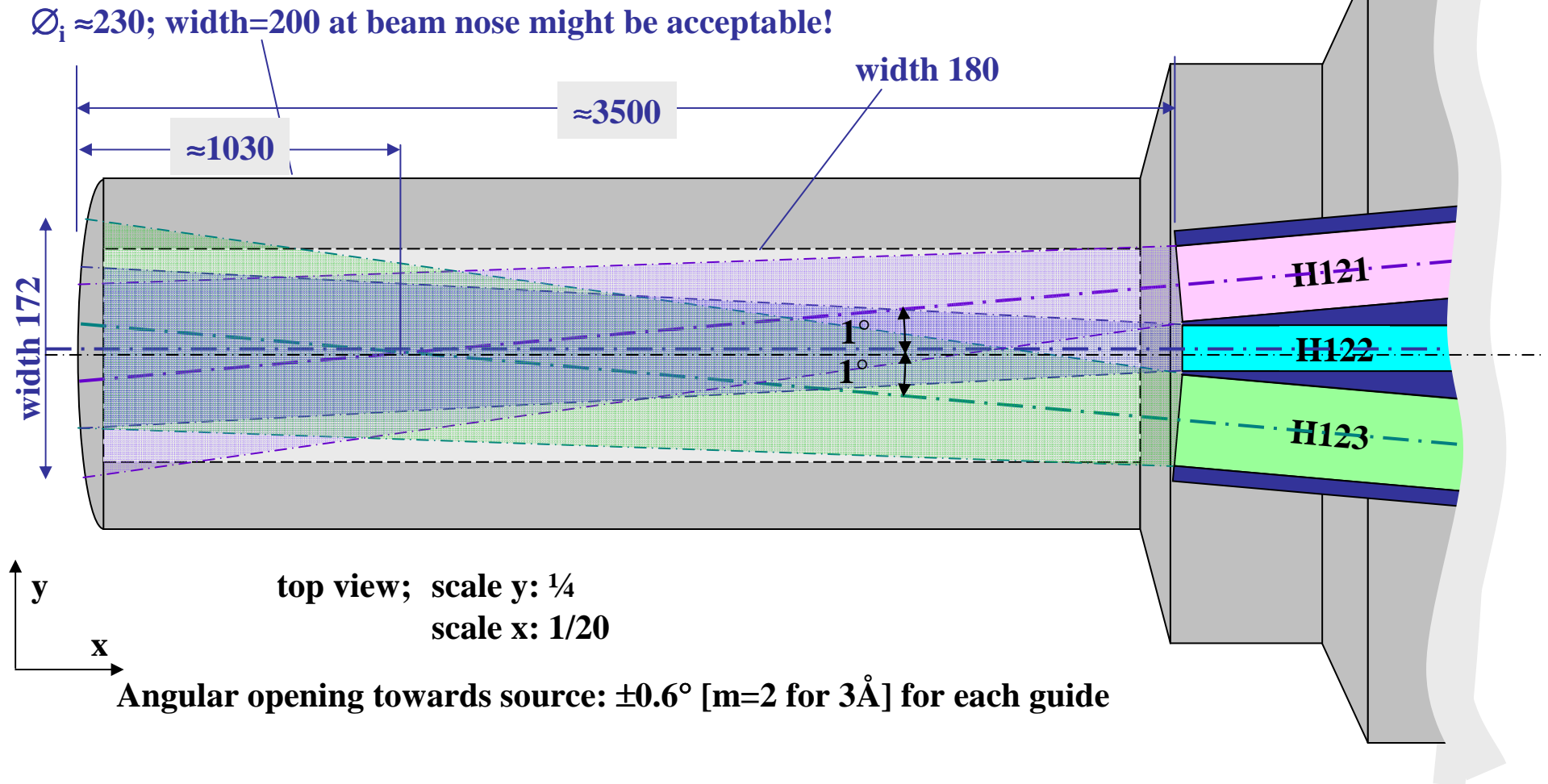


Angular opening towards source:  $\pm 0.6^\circ$  [ $m=2$  for  $3\text{\AA}$ ] for each guide

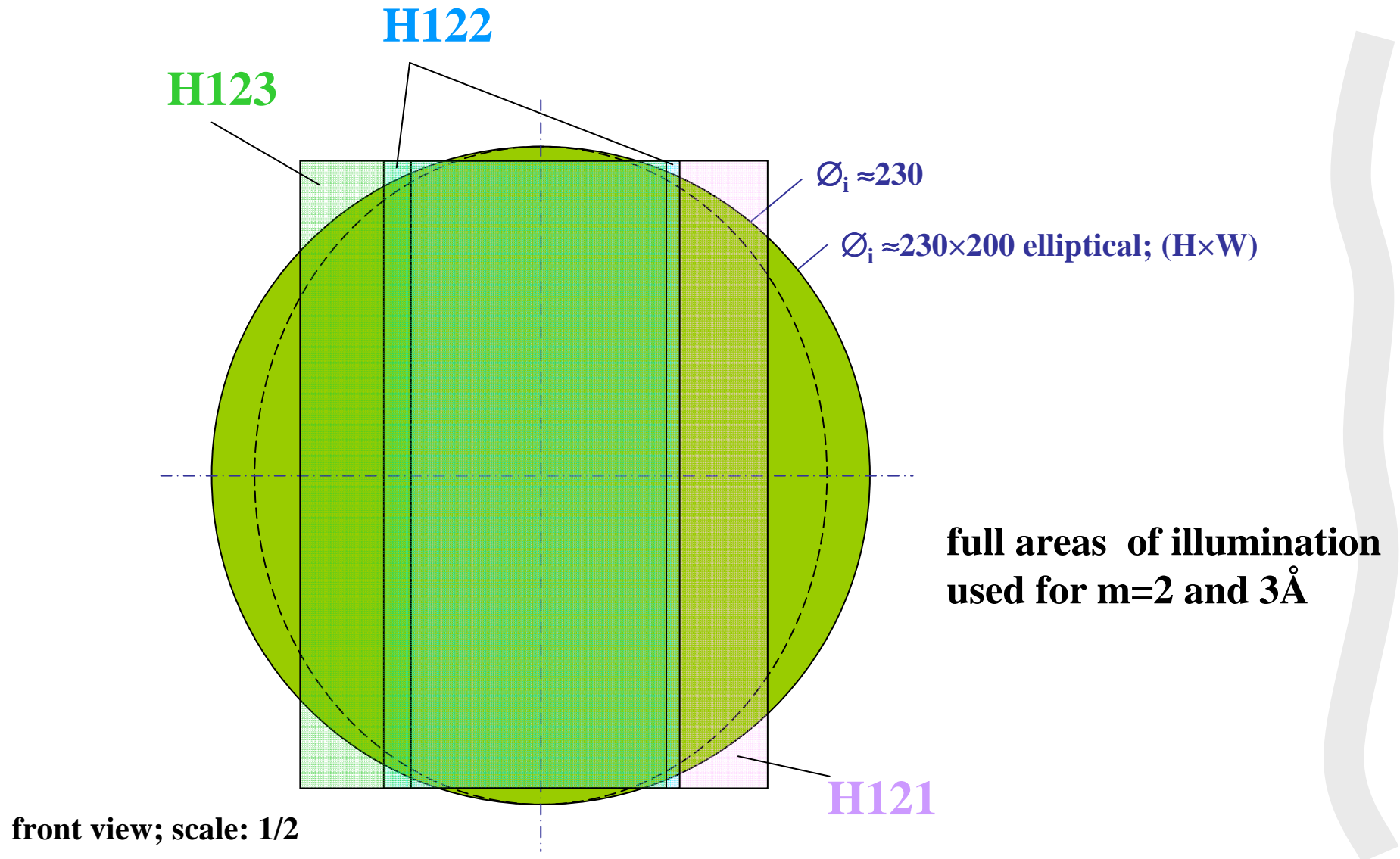


# Top view of widened H12 beam tube

cross sections:  
H121: 180×50;  
H122: 180×30;  
H123: 180×60;



# The beam nose and the used area



## 4. The H12 beam lines and their obstacles

### H12 guide parameters

	Radius $\rho$ [m]	Cross-section W×H [cm]	Length [m]	$\lambda^*$ [Å] ; m =2	Length $L_0$ of direct sight [m]	Lat. separation [m] from centr. axis at 60 m
H121 PASTIS	-6000*	50×180	70	m=3?? 1.2 (m=2)	49	-1.35&
H122 VIVALDI	+10000*	30×180	65	0.72	49	+0.18
H123 DRACULA	+6000	60×180	20 (Dracula) 60 (SALSA?)	(1.3)	53	+1.35&

& likely too large to pass reactor wall

$$L_0^2 = 8W\rho;$$

$$\Delta = W - (L_0/2 - dL)^2 / 2\rho; \quad \Delta = \text{width of direct sight of bent guide};$$

$dL = \text{missing length to } L_0$

$$x_b = L^2 / (2\rho); \quad x_b = \text{lateral deviation from start direction};$$

$$\lambda^* = 2\pi (2W/\rho)^{1/2} / k_{\perp};$$

$$k_{\perp} [\text{Ni}] = 1.07 \cdot 10^{-2} \text{ \AA}^{-1} \quad \star \quad m=1;$$

$$\Rightarrow k_{\perp} = 1.07 \cdot x \cdot 10^{-2} \text{ \AA}^{-1}; \quad [\text{SM}: m=x]$$

$$k_{\perp} [\text{glass}] = 0.63 \cdot 10^{-2} \text{ \AA}^{-1};$$

$$k_{\perp} [\text{Ni-58}] = 1.27 \cdot 10^{-2} \text{ \AA}^{-1};$$

\* agreed by R. Stewart

\*changed compared to orig. proposal

