

	equipment cost		power consumption		R&D effort		complexity		risk		comment	
	704 MHz	1408 MHz	704 MHz	1408 MHz	704 MHz	1408 MHz	704 MHz	1408 MHz	704 MHz	1408 MHz	704 MHz	1408 MHz
SC cavities @ 25 MV/m	↓	↑	↑40 mA: ↑20 mA:	↓-16/-33% ↓-26/-44%	↑	↓	↓	↑	↑	↓	2 β families	3 β families, ~10% more cavities
field control	↓	↑	•	•	↓	↑	↓	↑	↓	↑		
power coupler	•	•	•	•	↓	↑	•	•	↓	↑	similar to SNS	extrapolation from TTF type
HOM coupler	•	•	•	•	↓	↑	•	•	↓	↑↑		
beam dynamics	•	•	•	•	•	•	↓	↑	↓	↑	less long. em-growth	more sensitive to jitter
klystrons	↑	↓	↑	↓	↑	↑	•	•	•	•	assuming that we get higher power out of 1408 MHz klystrons	
RF transmission	•	•	•	•	↓	↑	↓	↑	↓	↑	due to power density limitations at 1408 MHz it is likely that circulators, phase shifters, loads, etc will have the same size	
cryomodules	↑	↓	•	•	↑	↓	•	•	•	•		
winner	--		1408 MHz		704 MHz		704 MHz		704 MHz			

	704 MHz	1408 MHz	comment
linac length	↓	↑+10%	
tr. beam loss	•	•	both apertures are sufficiently large
opt. temp. (cryo inst. cost)	2 K	2 K	At 2K helium bath pressure is more stable, but compensation is possible at higher temperatures. Temperatures around 2.5 K imaginable (close to op. cost minimum)
power conv. size	↑	↓-30% in volume -16% in tr. dim.	due to different filling time
klystron size	↑	↓	no major difference
RF transmission size	•	•	smaller ducts between the tunnels, but otherwise same size due to power density limitations at 1408 MHz
cryomodule size	•	•	minor difference
possibility for collaborations	ESS, Eurotrans, EURISOL	ILC (?), XFEL	collaboration with proton machines seems more attractive

↓ - advantage
↑ - disadvantage