

SC Cavity Parameters																
	Parameter	Unit	Single spoke beta 0.35		Single spoke beta 0.15		Triple spoke beta 0.3		Half wave beta 0.31		Half wave beta 0.17		Half wave beta 0.16 low f		Half wave beta 0.09 low f	
			Value	Comment	Value	Comment	Value	Comment	Value	Comment	Value	Comment	Value	Comment	Value	Comment
Electromagnetic Design	Design frequency	MHz	352.2		352.2		352.2		352.2		352.2		176.1		176.1	
	Number of acc. gaps		2		2		4		2		2		2		2	
	$\beta$ (optimum)		0.36		0.2		0.3		0.31		0.17		0.155		0.085	
	Lacc	m	0.297	Lacc = Ngap. $\beta$ . $\lambda$ /2	0.17	Lacc = Ngap. $\beta$ . $\lambda$ /2	0.51	Lacc = Ngap. $\beta$ . $\lambda$ /2	0.224	Lacc = max int. length	0.232	Lacc = max int. length	0.224	Lacc = max int. length	0.232	Lacc = max int. length
	Qo (4.2 K)		1.9 E+9	with Rres = 10 n $\Omega$	1.3 E+9	with Rres = 10 nW	1.7 E+9	with Rres = 10 nW								
	Qo (2K)		8.8 E+9	with Rres = 10 n $\Omega$	6.2 E+9	with Rres = 10 nW										
	r/Q	$\Omega$	220		88				264		201		1055		873	
	G	$\Omega$	101		67		91		66.5		53.2		38.2		31.9	
	Epk/Eacc		4.56	with Lacc = Ngap. $\beta$ . $\lambda$ /2	6.74	with Lacc = Ngap. $\beta$ . $\lambda$ /2	4.12	with Lacc = Ngap. $\beta$ . $\lambda$ /2	3.9	with Lacc = max int. length	6.2	with Lacc = max int. length	4.2	with Lacc = max int. length	5.8	with Lacc = max int. length
	Bpk/Eacc	mT/MV/m	12.33	with Lacc = Ngap. $\beta$ . $\lambda$ /2	14.48	with Lacc = Ngap. $\beta$ . $\lambda$ /2	9.05	with Lacc = Ngap. $\beta$ . $\lambda$ /2	10.4	with Lacc = max int. length	12.0	with Lacc = max int. length	11.7	with Lacc = max int. length	12.4	with Lacc = max int. length
Voltage Gain	MV	1.96	at Epk = 30 MV/m	0.63	at Epk = 30 MV/m			1.3	at Epk = 23.4 MV/m	0.9	at Epk = 31 MV/m					
Physical	Length (flange to flange)	m	0.354		0.354		0.756		0.276		0.232					
	Niobium thickness	mm	3		3		4 and 5		2		2		2		2	
	Beam port aperture	mm	60		56		56		30		30		30		30	
	Coupler port aperture	mm	30		56		56		42		42		30		30	
Experimental	Eacc max (4.2 K)	MV/m	8.5		4.8				8		6.8					
	Bpk max (4.2K)	mT	104		69				83.2		81					
	Qo low field (4.2K)		4.8 E+8		1.2 E+9				1 E+9		1 E+9					
	Qo at Eacc max (4.2K)		3.5 E+8		4 E+8				3 E+8		1.5 E+8					
	Eacc max (2 K)	MV/m	10.9		5.2											
	Bpk max (2K)	mT	134		75											
	Qo low field (2K)		2.6 E+9		6.3 E+9											
	Qo at Eacc max (2K)		1.6 E+9		9 E+8											

Power Coupler Parameters				
	Parameter	Unit	Single spoke beta 0.35	
			Value	Comment
Electromagnetic Design	Design frequency	MHz	352.2	
	Designed Power (CW)	kW	20	
	Ceramic window geometry		disk	
	Coupling mode		capacitive	
	Calculated S11	dB	-58	at nominal frequency
	Bandwith at S11 < -30 dB	MHz	760	
	Impedance	$\Omega$	50	
	Esurf max on window	V/m	1.2 E+5	
	Window thickness	mm	6	
	Losses (% of incident power)	%	0.36	
Physical	Ceramic Window diameter	mm	68	
	Main flanges		DN 63	
	Inner conductor diameter	mm	24.3	
	Outer conductor diameter	mm	56	
	Number of diag. Port		3	

Solid-State RF Amplifier				
	Parameter	Unit	10 kW Unit	
			Value	Comment
RF Design	Operating frequency	MHz	352	
	Max output power	kW	10	
	Individual module power	W	300	
	Number of modules		35	
	Average Gain	dB	75	
	Max Gain	dB	77.4	
	Max current per transistor	A	8.7	
Physical	Rack dimension	L x l x h	0.6 x 1 x 2	
	Weighth	Kg	430	
	Output connector		3" 1/8	