

## RF Parameters for different DR options

with:  $V \leq 1.5$  MeV per cavity  
 $P_{in} \leq 300$  kW max RF input per cavity

### DR Options

1. Low power 5 Hz :1305 bunches, positron damping time  $\leq 26$  ms
2. High power 5 Hz :2610 bunches, positron damping time  $\leq 26$  ms
3. Low power 10 Hz :1305 bunches, positron damping time  $\leq 13$  ms,  
electron damping time  $\leq 18$  ms

**Table SB2009 - RF Parameters Options**

	SB2009 Low Power 5Hz	SB2009 High Power 5Hz	SB2009 Low Power 10Hz	
	e <sup>+</sup> /e <sup>-</sup>	e <sup>+</sup> /e <sup>-</sup>	e <sup>+</sup>	e <sup>-</sup>
Particle				
Circumference (m)	3238	3238	3238	3238
N bunches	1305	2610	1305	1305
N part./bunch	$2 \times 10^{10}$	$2 \times 10^{10}$	$2 \times 10^{10}$	$2 \times 10^{10}$
Damp. time $\tau_x$ (ms)	24	24	13	18
Emittance $\epsilon_x$ (nm)	0.53	0.53	0.57	0.45
Emittance $\epsilon_y$ (pm)	2	2	2	2
En. loss/turn (MeV)	4.5	4.5	8.4	6.2
Energy spread	$1.2 \times 10^{-3}$	$1.2 \times 10^{-3}$	$1.5 \times 10^{-3}$	$1.4 \times 10^{-3}$
Momentum comp.	$1.3 \times 10^{-4}$	$1.3 \times 10^{-4}$	$1.3 \times 10^{-4}$	$1.3 \times 10^{-4}$
B wiggler (T)	1.6	1.6	2.4	2.0
Wiggler period (m)	0.4	0.4	0.28	0.28
Wiggler length (m)	2.45	2.45	1.72	1.72
Tot. wigg. len.(m)	78	78	75	75
Numb. of wigglers	32	32	44	44
Bunch length (mm)	6	6	6	6
Overvoltage	1.7	1.7	1.6	1.7
RF Voltage (MV)	7.5	7.5	13.4	10.4
Average curr. (A)	0.39	0.78	0.39	0.39
Beam Power (MW)	1.76	3.51	3.28	2.42
N. of RF cavities	6	12	12	9
Power/cavity (kW)	293	292	273	269
Voltage/cav. (MV)	1.25	0.63	1.12	1.16
Klystron/ring	2	4	4	3
Power/klystron (kW)	880	880	820	807

**Summary Table - RF System for 2 rings (e<sup>+</sup>/e<sup>-</sup>)**

	<b>SB2009</b>		
	<b>Low P. 5Hz</b>	<b>High P. 5Hz</b>	<b>Low P. 10Hz</b>
Circumf. (m)	3238	3238	3238
N bunches	1305	2610	1305
Damp. time $\tau_x$ (ms)	24	24	13/18
<b>Num. of RF cavities (2 rings)</b>	<b>12</b>	<b>24</b>	<b>21</b>
Power/cavity (kW)	<b>293</b>	<b>292</b>	<b>273/269</b>
Voltage/cavity (MV)	<b>1.25</b>	<b>0.63</b>	<b>1.12/1.16</b>
Tot. numb. of kly's	<b>4</b>	<b>8</b>	<b>7</b>