DRAFT

DAMPING RING LOAD ESTIMATE AS OF OCT 16 2006 (..still changing…)

For Central DR with single e+ring (use numbers from Electron Ring and multiply by 2)

Electron Ring

	Input kW		Duty	Output kW				
	wallplug	from beam	factor	to beam	to water	to air		
RF Power (base value)	6300	0	1.00	3500	2240	560	alcoves	
RF Power (peak overhead)	700	0	0.10	0	0	70	tunnel	beampipe
Water-Cooled Magnets	1099	0	1.00	0	879	220	tunnel	dipoles + quadrupoles + septa
Air-Cooled Magnets	109	0	1.00	0	0	109	tunnel	sextupoles + orbit correctors + skew quadrupoles
Cables	1377	0	1.00	0	1102	275	tunnel	
Magnet Power Supply Losses	364	0	1.00	0	0	364	alcoves	
Injection/Extraction Kickers (average power)	443	0	1.00	0	354	89	tunnel	pulsed power - 443 kW average
Radiation	0	3500	1.00	0	2800	700	tunnel	
total (peak input, and average output)	10392				7375	2387		

Positron Rings (total for two rings)

	Input KW		Duty	Output kW				
	wallplug	from beam	factor	to beam	to water	to air		
RF Power (base value)	6300	0	1.00	3500	2240	560	alcoves	
RF Power (peak overhead)	700	0	0.10	0	0	70	tunnel	beampipe
Water-Cooled Magnets	2198	0	1.00	0	1758	440	tunnel	dipoles + quadrupoles + septa
Air-Cooled Magnets	218	0	1.00	0	0	218	tunnel	sextupoles + orbit correctors + skew quadrupoles
Cables	2754	0	1.00	0	2203	551	tunnel	
Magnet Power Supply Losses	728	0	1.00	0	0	728	alcoves	
Injection/Extraction Kickers (average power)	886	0	1.00	0	709	177	tunnel	pulsed power - 886 kW average
Radiation	0	3500	1.00	0	2800	700	tunnel	
total	13784				9710	3444		