Q9: Positron PreDamping Ring? No

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on behalf of

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Q9: Is a positron predamping ring required?

- Damping ring acceptance: All particles at the entrance of the damping ring should satisfy:

  $\gamma A_x + \gamma A_y < 0.09$ m-rad

  $|\delta|<0.5\%$

  where:

  $A_x = \gamma_x x^2 + 2\alpha_x x p_x + \beta_x p_x^2$

  i.e. the transverse acceptance involves a triangular cut, and the full-width energy acceptance is 1%.

- This is the acceptance discussed between WG3a and WG3b on August 22, 2005. This value has been adopted by WG3b.

- No positron predamping ring is required. If the acceptances are reduced then this question should be revisited.

ILC Source Requirements:

All 3 Proposals Meet Design Intensity Specs; Conv. Needs Replacement for Polarization

Parameter	**Symbol**	**Value**	**Units**
Particles per bunch	n_b	$2x10^{10}$ ($1x10^{10}$)†	e^+
Bunches per pulse	N_b	2820 (5600) †	number
Bunch Spacing	T_b	~300 (~150) †	ns
Pulse Repetition Rate	f_{rep}	5	Hz
Energy	E_0	5	GeV
DR Transverse Acceptance	$A=2J$	**0.09**	m-rad
DR Energy Acceptance	$\Delta E/E$	1	%,FW
Overhead Factor	Fc	1.5	number
Positron Polarization (option)	P_p	~60	%

†Lo Q Parameters