

TITOLO $e^{\pm}$ INJECTION SYSTEMS

	TS	ESRP	ARSONNE	LEP
<u>LINAC - LOW ENERGY/HIGH CURRENT</u>				
E_{e^-} (unloaded) (MeV)	140	160 (slep)		
(full load) "	100		200	200
$q_{\Delta t}^-$ (nC)	100	≤ 100	50	30
i^- (peak) (A)	10 (250)	≤ 20	16.5	12
	10	5	3	2.5
$\eta_{\text{conversion}}/E^-$ (GeV $^{-1}$)	$2 \cdot 10^{-2}$	$1.5 \cdot 10^{-2}$	$1.65 \cdot 10^{-2}$	$4 \cdot 10^{-2}$
<u>HIGH ENERGY/LOW CURRENT</u>				
q_{i^-} (nC)	3.5			.72
i_{i^-} (peak) (mA)				.60
q_{i^+} (peak) (nC)	20 (.8)	≤ 12.5	10	12
q_{i^+} (nC)	.2	$\leq .25$	.165	.14
E^+ (MeV)	250	250	450	600
E^- (mrad)		$1.5 \cdot 10^{-6}$	$1.2 \cdot 10^{-6}$	$\leq 10^{-6}$
E^+ (mrad)	10^{-5}	10^{-5}	$6.6 \cdot 10^{-6}$	$\leq 4 \cdot 10^{-6}$
γE^- (mrad)				
γE^+ (mrad)	$6 \cdot 10^{-3}$	$5 \cdot 10^{-3}$	$6 \cdot 10^{-3}$	$\leq 4.8 \cdot 10^{-3}$
f_{rep} (Hz)	≥ 40	≥ 40		100
<u>DAMPING RING</u> q^+/t (nC/s)	8	≤ 10	1.1	
(100% eff.)	@ 40 Hz	@ 40 Hz	(7 bunches)	
<u>BOOSTER REP RATE</u> (Hz)	10	10	1	
$\eta_{\text{LINAC - MAINRING}}$ (overall)	.25	.25	.72	
<u>Overall injected charge/s</u> (e^-) (nC/s)	8.75			
(e^+) (nC/s)	.5 2	.6 2.4	.8	
<u>Time to inject 100 mA</u> (e^-) (s)	10.3			
(e^+) (s)	180 45	430 110	340	