

Tag:basic

Vessel major radius: $R_0 = 0.4$ [m]
Vessel minor radius: $r_0 = 0.1$ [m]
Maximum plasma current: $I_p^{\max} < 8$ [kA]
Effective ion charge: $Z_{\text{eff}} \approx 2.5$
Maximum toroidal magnetic field: $B_t^{\max} < 0.5$ [T]

Tag:diagnostics

Chamber+plasma current: $I_{\text{ch+p}}$ [kA]
Plasma current: I_p [kA]
Bt coil calibration: $K_{\text{BtCoil}} \approx 70.42$ [T/Vs]
(Electron) energy confinement time: $\tau_e \approx 50$ [us]
(Electron) energy confinement time: τ_e [us]
Poloidal magnetic field: B_p [T]
Toroidal magnetic field: B_t [T]
Loop Voltage: U_l [V]
Chamber current: I_{ch} [kA]
Plasma resistivity: R_p [Ω]
Heating power: P_{OH} [kW]
Plasma energy volume: W_p [kJ]
Electron temperature: T_e [eV]
Ion temperature: T_i [eV]
Maximum ion temperature: $T_i^{\max} < 50$ [eV]
Discharge duration: τ_p [ms]
Plasma potential: Φ [V]
(Electron) energy confinement time: τ_e [us]
Floating Potential: U_{fl} [V]
BallPen Collector Depth: $d_{\text{CollectorDepth}}^{\text{BallPen}} = 4.6$ [mm]
BallPenProbe Manipulator Length: $l_{\text{manipulator}}^{\text{BallPen}} = 232$ [mm]
Inductance of the vacuum chamber: $L_{\text{ch}} \approx 0.55$ [μH]
Rogowski Coil Calibration: $K_{\text{RogCoil}} \approx 5300000$ [A/Vs]
Resistance of the vacuum chamber: $R_{\text{ch}} \approx 9.7$ [m Ω]
Safety factor: q [-]

Tag:technology

Inductance of the toroidal magnetic field coil: $L_{B_t} = 0.0019$ [H]
Primary Transformer Coil Inductance: $L_{\text{CD}} = 0.0000018$ [H]
Primary Transformer Coil Resistance: $R_{\text{CD}} = 3.5$ [Ω]
Resistance of the toroidal magnetic field coil: $R_{B_t} = 41.9$ [m Ω]

Tag:vessel

Vessel major radius: $R_0 = 0.4$ [m]
Vessel minor radius: $r_0 = 0.1$ [m]
Aspect ratio: $\varepsilon = 0.25$ [-]
Limiter radius: $r_a = 0.085$ [m]
Chamber surface: $S_{\text{ch}} = 1.58$ [m^2]
Chamber volume: $V_{\text{ch}} = 0.079$ [m^3]
Inductance of the vacuum chamber: $L_{\text{ch}} \approx 0.55$ [μH]
Resistance of the vacuum chamber: $R_{\text{ch}} \approx 9.7$ [m Ω]

Tag:DAS

Loop Coil DAS Raw voltage: U_{LoopCoil} [V]
Rogowski Coil DAS Raw voltage: $U_{\text{Rogowski coil}}$ [V]
Bt Coil DAS Raw voltage: U_{BtCoil} [V]
Leybold Photodiode Whole Spectrum DAS Raw voltage: $U_{\text{PhotodLeybWhSpec}}$ [V]
Leybold Photodiode Halpha Filter DAS Raw voltage: $U_{\text{PhotodLeybHalp}}$ [V]

Tag:infrastructure

Capacity of the Current drive field capacitor: $C_{\text{ch}} = 0.0125$ [F]

Recommended Helium Working pressure range: $p_{\text{WG}}^{\text{He} < \text{recommend} >} \in (0, 40)$ [mPa]
 An Argon Working gas pressure: $p_{\text{WG}}^{\text{Ar}}$ [mPa]
 A Deuterium Working pressure range: $p_{\text{WG}}^{\text{D} < \text{min}, \text{max} >} \in (0, 60)$ [mPa]
 Recommended Argon Working pressure range: $p_{\text{WG}}^{\text{Ar} < \text{recommend} >} \in (0, 40)$ [mPa]
 A Deuterium Working gas pressure: p_{WG}^{D} [mPa]
 A Deuterium Working pressure range: $p_{\text{WG}}^{\text{D} < \text{min}, \text{max} >} \in (0, 60)$ [mPa]
 Recommended Deuterium Working pressure range: $p_{\text{WG}}^{\text{D} < \text{recommend} >} \in (0, 40)$ [mPa]
 Current Drive Trigger: $t_{\text{CD}} = 5$ [ms]
 Current Drive Trigger Range: $t_{\text{CD}}^{< \text{min}, \text{max} >} = (0, 100)$ [ms]
 Current Drive Trigger Recommended: $t_{\text{CD}}^{< \text{recommend} >} = (5, 50)$ [ms]
 Toroidal Magnetic Field Trigger: $t_{\text{Bt}} = 5$ [ms]
 Toroidal Magnetic Field Trigger Range: $t_{\text{Bt}}^{< \text{min}, \text{max} >} = (0, 100)$ [ms]
 Toroidal Magnetic Field Trigger Recommended: $t_{\text{Bt}}^{< \text{recommend} >} = (5, 50)$ [ms]
 DAS Trigger: $t_{\text{DAS}} = 0$ [ms]
 Recommended voltage to charge the Current drive field E_t capacitor: $U_{E_t}^{< \text{recommend} >} \in (400, 700)$ [V]

Tag:plasma

Maximum plasma current: $I_{\text{p}}^{\text{max}} < 8$ [kA]
 Central Electron temperature: $T_{\text{e}}^{\text{Spitzer}}$ [eV]
 Effective ion charge: $Z_{\text{eff}} \approx 2.5$
 Typical electron density: $\langle n_{\text{e}} \rangle \in (0.2, 3)$ [$\text{E}+19 \text{ m}^{-3}$]
 Maximum electron temperature: $T_{\text{e}}^{\text{max}} < 80$ [eV]
 Maximum discharge duration: $\tau_{\text{p}}^{\text{max}} < 25$ [ms]
 Plasma minor radius: $a \approx 0.06$ [m]
 Plasma volume: $V_{\text{p}} \approx 0.057$ [m^3]

Tag:stabilisation

Inner Quadrupol Resistance: $R_{\text{stab}}^{\text{InnerQuadr}} = 0.1$ [Ω]
 Inner Quadrupol Inductance: $L_{\text{stab}}^{\text{InnerQuadr}} = 0.000006$ [H]
 Outer Horizontal Stabiliation Quadrupol Resistance: $R_{\text{stab}}^{\text{OuterHorQuard}} = 3.4$ [Ω]
 Outer Horizontal Stabiliation Quadrupol Inductance: $L_{\text{stab}}^{\text{OuterHorQuard}} = 0.000130$ [H]
 Outer Vertical Stabiliation Quadrupol Inductance: $L_{\text{stab}}^{\text{OuterVerQuard}} = 0.000105$ [H]
 Outer Horizontal Vertical Quadrupol Resistance: $R_{\text{stab}}^{\text{OuterVerQuard}} = 2.18$ [Ω]