

FLUID DYNAMICS ENGINEER DATA SHEET

CAPABILITY	FEATURE	DESCRIPTION
General Solver Capabilities	Comprehensive Inlet and Outlet Conditions	Provides numerous options to specify velocity, mass flow rate, pressure, and other critical quantities.
	Steady-State Flow	Enables computation of steady-state solutions for stable flow conditions.
	Transient Flow	Accurately captures unsteady flow phenomena over time.
	Time-Dependent Boundary Conditions	Allows imposed values to vary with time, reflecting dynamic operational scenarios.
	Customizable Materials Library	Permits users to use, add, and modify properties within the materials database.
	Fan Model	Includes fan boundary conditions, fan interfaces, and internal fan models for comprehensive system simulation.
	Segregated Solver	Solves governing equations individually for robust performance across a range of flow problems.
	Coupled Solver	Solves governing equations simultaneously as a single system, best suited for compressible flow simulations.
Single Phase Flow	Incompressible Flow	Assumes constant density for simplified yet accurate low-speed flow analysis.
	Ideal Gas	Varies density according to the ideal gas law for standard compressible flow applications.
	Real Gas Equation of State	Addresses high-pressure and high-temperature conditions where density does not follow the ideal gas law.
	Compressible Flow	Accounts for compressibility effects for simulations with Mach numbers greater than 0.3.
	Porous Media	Approximates flow resistance in materials with small voids, such as filters, packed beds, and tube banks.
	Non-Newtonian Viscosity	Accounts for variations in viscosity due to shear rate, essential for specialized fluid analysis.
	Turbulence Models	Includes realizable k-epsilon, SST k-omega, and Spalart-Allmaras turbulence models for accurate turbulence prediction.
	Species Transport	Computes the advection and diffusion of multiple passive and active species within the flow.

