

## Comparison Matrix

Autodesk® Simulation CFD software provides fluid flow and thermal simulation tools for a wide range of applications. Compare the features of Autodesk Simulation CFD, Autodesk® Simulation CFD Advanced, and Autodesk® Simulation CFD Motion computational fluid dynamics software to learn how each aligns with the needs of your product development process.

### LEGEND

✓ Feature supported

	Autodesk Simulation CFD	Autodesk Simulation CFD Advanced	Autodesk Simulation CFD Motion
<b>FLUID FLOW</b>			
Laminar Flow	✓	✓	✓
Turbulent Flow	✓	✓	✓
Incompressible Flow	✓	✓	✓
Subsonic Flow	✓	✓	✓
Steady State (Time-Independent)	✓	✓	✓
2D and 3D Cartesian	✓	✓	✓
2D Axisymmetric	✓	✓	✓
Velocity and Pressure Boundary Conditions	✓	✓	✓
Volume Flow Rate and Mass Flow Rate Boundary Conditions	✓	✓	✓
External Fan Curve with Rotational Speed and Slip Factor	✓	✓	✓
Slip/Symmetry and Unknown (Natural)	✓	✓	✓
Spatially Periodic Boundary Conditions	✓	✓	✓
Velocity and Pressure Initial Conditions	✓	✓	✓
Compressible Flow		✓	✓
Transient (Time-Varying)		✓	✓
Two-Phase Flows (Humidity and Steam)		✓	✓
Height of Fluid		✓	✓
Two-Fluid Scalar Mixing		✓	✓
Compressible Liquid (Water Hammer)		✓	✓
Cavitation		✓	✓
<b>HEAT TRANSFER</b>			
Conduction	✓	✓	✓
Convection (with Automatic Film Coefficient Calculation)	✓	✓	✓
Forced Convection (with Automatic Transition from Flow to Thermal)	✓	✓	✓
Natural Convection (Buoyancy-Driven with Gravity Vector)	✓	✓	✓
Thermal Comfort Calculation	✓	✓	✓
Conjugate Heat Transfer (Simultaneous Conduction and Convection)	✓	✓	✓
Temperature, Film Coefficient, and Radiation Boundary Conditions	✓	✓	✓
Area-Based and Total Heat Flux Boundary Conditions	✓	✓	✓
Volume-Based and Total Heat Source Boundary Conditions	✓	✓	✓
Temperature-Dependent Heat Source Boundary Conditions with User-Defined Sensing Location	✓	✓	✓
Temperature Initial Conditions	✓	✓	✓
Internal Radiation Heat Transfer		✓	✓
Radiation through Transparent Media		✓	✓
Solar Loading		✓	✓
Temperature-Dependent Emissivity		✓	✓
Joule Heating with Temperature-Dependent Resistivity		✓	✓

<b>LEGEND</b>	<b>Autodesk Simulation CFD</b>	<b>Autodesk Simulation CFD Advanced</b>	<b>Autodesk Simulation CFD Motion</b>
✓ Feature supported			
<b>TURBULENCE MODELS</b>			
K-epsilon	✓	✓	✓
Low Reynolds Number K-epsilon	✓	✓	✓
RNG	✓	✓	✓
Eddy Viscosity	✓	✓	✓
Mixing Length	✓	✓	✓
Automatic Turbulence Startup (for Seamless Integration of Turbulence into the Solution)	✓	✓	✓
Laminar	✓	✓	✓
<b>MOTION</b>			
Linear			✓
Angular			✓
Rotating/Turbomachinery			✓
Combined Linear and Angular			✓
Combined Orbital and Angular			✓
Nutation			✓
Sliding Vane			✓
Unconstrained Motion			✓
<b>DESIGN STUDY ENVIRONMENT</b>			
Direct Modeling with Autodesk® Inventor® Fusion	✓	✓	✓
Defeaturing with Inventor Fusion	✓	✓	✓
Multi-CAD Data Exchange	✓	✓	✓
Design Study Automation	✓	✓	✓
Critical Value Decision Center	✓	✓	✓
Multi-Scenario Design Review Center	✓	✓	✓
Model-Centric Interface	✓	✓	✓
Customizable Material Databases	✓	✓	✓
Autodesk® Showcase® Interoperability	✓	✓	✓
<b>INTELLIGENT MESHING</b>			
Automatic Mesh Sizing	✓	✓	✓
Adaptive Mesh	✓	✓	✓
Local Size Adjustment	✓	✓	✓
Geometry Mesh Diagnostics	✓	✓	✓
Boundary Layer Mesh Enhancement	✓	✓	✓
Interactive Mesh Refinement Regions	✓	✓	✓
Extrusion	✓	✓	✓
Volume Mesh Growth Rate Specification	✓	✓	✓
Surface-based Mesh Distribution and Refinement	✓	✓	✓
Gap and Thin Solid Refinement	✓	✓	✓
Mesh Generation Flexibility	✓	✓	✓