

SensAble Technologies, Inc.
FreeForm Modeling Systems Feature Comparison Chart

	Product Design	
Primary Application		
Product Name	FreeForm® Modeling™	FreeForm® Modeling Plus™
Software version number	v9.0	v9.0
Haptic Device		
PHANTOM® Desktop™	✓	✓
PHANTOM® Omni™	✓	
32-bit edition	✓	✓
64-bit edition - designed to run on Windows® XP x64 OS	✓	✓
New User Interface	✓	✓
Voxel Modeling Tools		
Curve Tools		
Copy Curve from Parasolid Edge		✓
Surface to Clay Intersection Curve		✓
Flatten Curve		✓
Automated Split or Join Curve (including ability to heal curves)	✓	✓
Project Curve to Plane, Intersect Sketches, Copy Curve from Sketch Plane, Offset Curve, Curve Helix, Sub-divide Curve Loop	✓	✓
Select, Draw Curve, Project Sketch, Fit Curve, Split Curve, Join Curve, Mirror Curve, Slice Curve, Smooth Curve, Copy from Reference Group	✓	✓
Plane Tools		
Orient Plane Through Three Points, Orient Plane to Curve, Copy Profile	✓	✓
Create Plane, Reposition Plane, Orient Plane Flat to View, Import 2D Art to Plane	✓	✓
Sketch Tools		
Pencil, Erase Pencil, Rectangular Array	✓	✓
Select, Line, Arc, Round Corner, Circle, Ellipse, Rectangle, Freehand Curve, Curve by Control Points, Trim, Mirror, Offset, Move, Rotate, Scale, View Flat to Sketch Plane	✓	✓
Construct Clay Tools		
Basic Shapes	✓	✓
Loft Clay, Toothpaste, Pipe	✓	✓
Offset Piece	✓	✓
Revolve, Inflate, Connected Spheres ("Add Clay"), Mirror, Wire Cut	✓	✓
Sculpt Clay Tools		
Carve with Cube, Carve with Angle, Carve with Loop, Carve with Razor, Carve with Knife	✓	✓
Custom Tool	✓	✓
Carve with Ball, Corndog, Scraper, Smudge, Attract, Spike, Smooth, Smooth Area	✓	✓
Detail Clay Tools		
Variable Round Edge, Bevel Edge	✓	✓
Groove, Emboss with Curve, Emboss Area, Emboss with Image, Emboss with Wrapped Image	✓	✓
Deform Clay Tools		
Shape Tool, Deform Box	✓	✓
Tug, Tug area	✓	✓
Select and Move Tools		
Select Clay with Plane, Select Clay with Box	✓	✓
Select with Ball, Lump Select, Select with Profile, Separate with Curve, Mask	✓	✓
Utility Tools		
Hide Show Patches and Solids		✓
Object List Notes	✓	✓
Hide Show Curves, Fit to View, Perspective View	✓	✓
NURBS Surfacing Tools (patches can be created in 3D space or fit to clay)		
Semi-automatic Patch Creation		✓
Select All Patches		✓
Find Folded Patches		✓
Measure Fit of Patches to Clay		✓
Refit Curves and Patches		✓
Copy Patches from Piece		✓
Shape, Trim, and Mirror Patch		✓
Split Mesh		✓
Creation of Voxel Solids from NURBS Patches		✓
Environment and Zebra Mapping		✓
NURBS Solids Tools		
Wire Cut, Spin, Loft and Sweep Solids		✓
Mirror Solid		✓
Creation of Voxel Solids from NURBS Solids		✓
Stitch Patches into NURBS Solids		✓
Import/Export File Formats		
Native Parasolid® Solids and Patches		✓
STEP Solids and Patches		✓
IGES Solids and Patches		✓
Buck Support	✓	✓
IGES Curves	✓	✓
STL, OBJ, PLY, ZCP	✓	✓
Export TextureKlin™	✓	✓
Polygon Support		
Import, Convert to Clay, Decimated Export	✓	✓
Dimensional Control		
Dimension Parasolid Edges		✓
Tug with Ruler	✓	✓
Piece Density	✓	✓
Mass Properties	✓	✓
Show Center of Gravity	✓	✓
Ruler	✓	✓
Haptic Guides	✓	✓
Evaluation Views		
Parting Line Color	✓	✓
Cutaway View	✓	✓
Paint and Render		
Voxel Paint (Paint Brush, Air Brush)	✓	✓
mental ray® Rendering Engine	✓	✓
Moldable Part		
Blocking		✓
Parting Line Color		✓
Parting Line Exploration		✓
Parting Line Definition		✓
Parting Line Smoothness & Curvature Evaluation		✓
Automatic Smoothing of Parting Line		✓
Automatic Draft Fixing		✓
Shelling		✓
Split Line Curve Definition		✓
Split Joint Design		✓
Referencing Import Geometry from CAD		✓
Tug To Smooth Parting Line		✓
Smooth & Smudge		✓
Holes & Cutout Design		✓
Previewing & Preparing Parts For Mold Design		✓
Mold Insert Design for Tooling		
Pull Direction		✓
Insert Block Extents		✓
Planar Parting Line Sections		✓
Extruded Parting Surface Creation		✓
3D Offset Parting Surface		✓
Simple Parting Surfaces		✓
Multiple Component Creation		✓
Previewing & Creating Core & Cavity Inserts		✓