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Capability Comparison of PTC Creo® Parametric™ 3.0

PTC Creo Parametric offers powerful, reliable, yet easy-to-use modeling tools that accelerate the product design process. The software lets you design parts and assemblies, create manufacturing drawings, perform analysis, create renderings and animations, and optimize productivity across a full range of other mechanical design tasks. PTC Creo Parametric will help you design higher quality products faster and allow you to communicate more efficiently with manufacturing and your suppliers.

This table highlights the primary product capabilities delivered in PTC Creo Parametric 3.0 compared with PTC Creo Parametric 2.0 and Pro/ENGINEER® Wildfire® 5.0:

Short Description	Pro/ENGINEER Wildfire 5.0	PTC Creo Parametric 2.0	PTC Creo Parametric 3.0
User Experience			
Real-time dynamic feature editing	●	●	●
Enhanced real-time photorealistic shadows and reflections, perspective views, and exploded-state animations rendering	●	●	●
Graphical browsing and thumbnails of files so users can find the right file fast	●	●	●
Open last session option to fully restore models from the last session	●	●	●
Named views with thumbnails to quickly reach different views of models	●	●	●

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User Experience (continued)			
Streamlined, familiar ribbon interface		●	●
Optimized, consistent user interface and workflows across sketching, part modeling, assembly modeling, drawing, 3D annotations, and a 3D dragger for moving components as desired		●	●
Embedded command finder for quickly locating capabilities in Pro/ENGINEER and SolidWorks®		●	●
Expanded real-time dynamic feature editing for workflows and usability		●	●
Tutorials and help topics with the integrated PTC Learning Connector™, all available in context as needed		●	●
200+ free tutorials, available online through the PTC Learning Connector		●	●
Ribbon, hotkeys, and environment settings for configuring work space to individual preferences		●	●
Measurement tool for From Axis to automatically determine dimensions		●	●
Options for measuring From Axis, As Plane, and As Normal		●	●
Full screen anti-aliasing option for improved display options		●	●
Install Assistant to streamline license acquisition, license installation, product acquisition, and installation		●	●
"Typical user" defaults within Install Assistant for easier installations		●	●
Dedicated "Getting Started" experience displaying e-learning and tutorials when product is started, without installation			●
Help content indexed on Google® and searchable via web			●
Automatic window activation			●
User configured RMB commands supporting individual setups			●

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User Experience (continued)			
Enhanced graphic performance and quality out-of-the box			●
Notification Center to provide single access point to quickly track, sort, and fix common modeling issues			●
Sketching			
Geometry coordinate system within sketcher	●	●	●
Ellipse, Parallelogram, and Offset sketching options	●	●	●
Streamlined and familiar ribbon interface within Sketching mode		●	●
Intelligent right-click mouse mapping for fast menu picking		●	●
Direct loading of data from PTC Creo Sketch for creating new models		●	●
Improved action/object-based dimensioning for sketching		●	●
Center rectangle, Fillet with construction lines, and Construction mode options in Sketching mode		●	●
Sketching mode accessible by selecting an existing sketch, planar face, or datum		●	●
Section orientation tool		●	●
Context-sensitive ALT key options for adding references to sketches		●	●
Dimension draggers for isolating and changing individual dimensions within sketching when previewing features		●	●
Part Modeling			
Real-time dynamic feature editing to make onscreen changes simply by grabbing and moving a drag handle	●	●	●
Real-time repositioning of user-defined features with simple mouse dragging	●	●	●

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Part Modeling (continued)			
Consolidated part properties menu	●	●	●
Improved plastic design with point patterns and intelligent rib feature	●	●	●
Weld features for design of welded structures	●	●	●
Streamlined and familiar ribbon interfaces in Part Modeling mode; commands are faster to access and use		●	●
Improved and intelligent workflows for Helical Sweep, Curve from equation, Curve from cross-section, and Curve through points		●	●
Tapered extrude option		●	●
Intelligent cosmetic thread		●	●
Improved Parallel and Rotational Blending, plus options for creating sketches in 3D space, using geometry to define the axis of revolution, setting the start point of a section at the feature level, and selecting non parallel sections		●	●
Track changes feature available when loading models created in PTC Creo Parametric that were modified in PTC Creo Direct™ (review, accept/reject, preview, and inspect)		●	●
Dynamic definition of cross sections via draggers to dynamically control and view cross sections		●	●
On-the-fly selection of planes for a cross section		●	●
Real-time precise preview of resulting feature (including cut-outs and through-cuts)		●	●
Autogeneration of feature when creating real-time changes to sketches		●	●
Updated freestyle design features for creating free form shapes and surfaces		●	●
Multilevel subdivisional modeling in Freestyle for more control to the surface mesh, enabling finer detailing without altering the existing shape		●	●
Features within Freestyle to dynamically extrude, revolve, or scale the control mesh to add detail		●	●

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Part Modeling (continued)			
Ability to drive freeform geometry parametrically in Freestyle			●
Join edges with external geometry including: positional, tangent, or normal with Freestyle			●
Chordal round option			●
Define round transitions using circular, conic, and C2 continuous cross sections			●
Ability to un-trim a surface or quilt			●
Connection analysis tool to analyze position, tangency, and curvature continuity of curve and surface connections			●
3D thickness check tool to analyze mold geometry			●
Draft analysis enhancements to make results easier to interpret			●
Redesigned reroute functionality			●
Assembly Modeling			
Direct dragging to easily position components in exploded views	●	●	●
Automatic real-time animation of components as they move into exploded view	●	●	●
Assembly restructuring with simple drag-and-drop of parts and subassemblies	●	●	●
Streamlined new component placement constraints		●	●
Fast loading of assemblies as lightweight graphics representation		●	●
Lightweight graphics representation for quickly restructuring, reordering, and renaming components in assembly designs		●	●
Additional constraint types (normal constraints for surfaces, distance, angle offset, and normal constraints for points and lines)		●	●

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Assembly Modeling (continued)			
Dynamic definition of cross sections via draggers to dynamically control and view cross sections		●	●
On-the-fly selection of planes and automatic detection and visualization of interference in cross sections		●	●
Cross section creation by simply selecting geometry in a model; Dynamically edit cross sections by dragging with the mouse		●	●
Cross sections accessible directly from the Model Tree		●	●
Improved performance and user experience in "Chooser" tool			●
Simplified regeneration states			●
Sheet Metal			
Sheet metal wall patterns: Create	●	●	●
Sheet metal wall patterns: Mirror	●	●	●
Streamlined and familiar ribbon interface in Sheet Metal mode for faster access to commands		●	●
Dynamic real-time editing and preview of sheet metal parts, corner reliefs, etc.		●	●
Streamlined workflows in common tools such as bend and wall creation		●	●
Flat pattern preview and feature including highlighting of overlapping geometry		●	●
Form feature creation (with optional rounds and taper) or a partial piercing from a sketch		●	●
Sheet metal walls from two intersecting walls with a bend between them		●	●
Automatic creation of a flat pattern family table instance from a sheet metal model		●	●
User interface and workflow for Die form			●

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Sheet Metal (continued)			
Flatten geometry attached to forms			●
Bend tool enhancements including the ability to bend multiple planes, bend line relief placements, and create multiple bend reliefs			●
Detailing			
Improved user interface and workflows for key stages of detailing drawings	●	●	●
Direct selection of annotation items from the new Drawing Tree	●	●	●
Precise print preview, including pen mappings and line weights	●	●	●
Streamlined and familiar ribbon interface in Drawing mode for faster access to commands		●	●
Optimized drawing tables workflow focused on most common user interactions		●	●
Improved workflow for creating and inserting tables		●	●
Tables Gallery for previews of predefined tables		●	●
Properties dialog for tables and BOM balloon regions		●	●
Text wrapping in table cells		●	●
Extended controls and setting for BOM balloons, including type and reference text		●	●
Dynamic repositioning of dimensions by freely dragging the dimension text		●	●
Dynamic repositioning of dimensions and snap to the center of witness lines or adjacent dimensions		●	●
Dynamic repositioning of dimensions by locking dimension lines, while still freely moving dimension text		●	●
New note creation user interface and format tab			●
New dimension creation user interface and workflow			●

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3D Annotations			
Streamlined and familiar ribbon interface in 3D Annotation mode for faster access to commands	●	●	●
Tools to set and manage annotation plane orientations	●	●	●
Streamlined tools for creating and manipulating annotation content		●	●
Tools to create and manage combination states		●	●
Tools to create 3D annotations based on existing model dimensions		●	●
3D Detail options to control cosmetic appearance of annotations on models		●	●
3D Detail options to control appearance of annotations per 3D standards (ASME Y14.41-2003, ISO 16792, etc.)		●	●
Options to dynamically reposition dimensions in 3D drawings just like dynamic dimension repositioning in 2D drawings		●	●
Dynamic dragging of dimensions in 3D with intelligent snapping to center of witness lines and adjacent dimensions		●	●
Selection of endpoints of edges as references for dimension annotations in 3D		●	●
Selection of edges as edge references for dimensions if they are normal to the annotation plane		●	●
Symbols in 3D notes support model based definition			●
Print and Print Preview User Interface			●

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Data Exchange (included in PTC Creo Parametric)			
Associative Solid Shrink-wrap for sharing the volume envelope of models with third parties	●	●	●
AutoCAD® 2012 drawing import*		●	●
Non-geometric data import from PTC Creo Elements/Direct®, including PMI across assemblies and mapping of docuplanes		●	●
Open CATIA®, Siemens® NX™, and SolidWorks files (maintain data natively)			●
Import CATIA, Siemens NX, SolidWorks, AutoDesk Inventor, and SolidEdge			●
Update and Export CATIA, Siemens NX, and SolidWorks files**			●

*Installation of relevant libraries required
**Requires PTC Creo Collaboration Extensions

PTC Creo Parametric offers optional 3D CAD, CAID, CAM, and CAE extensions to allow you to design faster than ever, while maximizing innovation and quality to ultimately create exceptional products.

For more information, visit: PTC.com/product/creo/parametric or contact a PTC sales representative.

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