ORIGINPRO® 2020

Much Faster Data Import
Much Easier Graph Customization

Key Features

Use the following tables to check what new features have been added to Origin, compared to your version.

PROJECT MANAGEMENT	2020	2019*	2018*	2017	2016	9.*
Object Manager for Workbook Window	✓					
List View in Template Library	✓					
Template Library Search by Keyword	✓	✓				
Preview and Thumbnail of Workbooks and Matrices in Windows Explorer and Project Explorer	✓	+	✓			
Backup Folder and Individual Backup File for Each Project for Recovery	✓	✓	✓			
Save Files to or Open Files from Google Drive	✓	✓	✓			
Automatic Audit Log for All Newly Created Projects	✓	✓	✓			
Auto Save Files User Chooses Not to Save And Access Them From Origin Central	✓	✓	✓			
New project file structure (OPJU) with significant improvement in project size	✓	✓	✓			
Unsaved Projects Auto Saved for 7 days	✓	✓	✓			
Graph Preview, Comments Tooltip in Project Explorer	✓	✓	✓	✓	✓	
Find String anywhere in Project	✓	✓	✓	✓	✓	
Lock Worksheet	✓	✓	✓	✓	✓	✓
Project Explorer Support for Left/Right Split of Panels	✓	✓	✓	✓	✓	✓
Auto-Hide for Project Explorer and other Dockable Windows	✓	✓	✓	✓	✓	✓
Password Protection for Project/Worksheet/Files, and Audit Log of Project Save with Optional Password Protection	✓	✓	+	✓	✓	+
Project Explorer Add Window Shortcut to Favorites Folder	✓	✓	✓	✓	✓	✓
Add Comment to Origin Window/Folder	✓	✓	✓	+	+	✓
Project Explorer(PE) to Help Organize Origin Data	✓	+	+	+	+	✓

BATCH PROCESSING	2020	2019*	2018*	2017	2016	9.*
Combine All Word Files into One File After Batch Processing	✓					
Clone Current Project	+	✓				
Support Excluding Specified Operation when Click Recalculate Button	✓	✓				
Support to Add Data from Many Sheets/Books into a Combined Graph or an Existing Graph	✓	✓	✓			
Allow Importing Data Directly into Embedded Matrix in Worksheet when Performing Batch Processing	✓	✓	✓			
Smart Plotting with Cloneable Graph Templates	✓	✓	✓	✓	✓	
Clone Workbook/Worksheet during Import for Batch Procesing	✓	+	✓	✓	✓	
Word Template for Report Creation in Batch Process	+	✓	✓	✓	✓	
Duplicate Workbook/Sheet Without Data	+	✓	✓	✓	✓	✓
Batch Plotting - Duplicate Graphs Using Data from Different Sheets/Columns/Matrics	+	✓	+	+	+	✓
Generate Gadget Output for All Data Plots in the Graph	✓	✓	✓	✓	✓	✓
Copy & Paste Formula and Labels between Columns	✓	✓	✓	✓	✓	✓
Copy & Paste Fitting Operation	✓	✓	✓	✓	✓	✓
Repeat Analysis on All Plots in Graph or All Columns in Worksheet	✓	✓	✓	✓	✓	✓
Batch Processing with Summary Report Using Analysis Templates™	✓	✓	+	+	+	✓
Batch Peak Fitting of Multiple Datasets Using Peak Analyzer Theme	PRO	PRO	PRO	+	+	PRO

9.* is for Origin 9 and Origin 9.1 | 2018* is for versions 2018 and 2018b | 2019* is for Origin 2019 & 2019b | + indicates feature improved in version

EASE OF USE	2020	2019*	2018*	2017	2016	9.*
Mini Toolbar for Easy 2D Graph Customization	✓					
Copy Paste Data Plots between Graph Layers	✓					
Compact Popup for Font and Line Format	✓					
Add a Find Apps… menu under Fitting, Peak Analysis, and Statistics menu	✓					
HTML/Markdown-based Reports for Repeat Analysis and Publishing	✓	✓				
Font Control for Notes Window	✓	✓				
Reorganized Plot Menu with More Appealing Icons	+	✓				
Most-Recently Used Fonts Availble in Font Control	+	✓				
Improving Group Folder Sharing with Better Support for Multiple Groups	✓	✓				
Windows-like Search	✓	✓				
New Workbook dialog with many build-in tempaltes,plus ability to add user-template and set as default template	✓	✓				
Support Numeric Units, pi, km, % etc in Worksheet and Graph	✓	✓				
Data Point Tooltip: Mouse over data points in graph to view useful information of data point	✓	✓				
Data Highlighter: Highlight data points in all open graph that originate from same row of worksheet	+	✓				
Plot Highlighting: Highlight data plot in graph, other plots fade away, corresponding worksheet column is highlighted	+	✓				
Enhanced Master Page	✓	✓	✓			
New Fit Layers to Page and Set Scale Factor to adjust all layers to have tight fit to page	✓	✓	✓			
Customize Properties Across Graph Layers	✓	+	✓			
Active Window Indicator	✓	✓	✓			
Enlarged graph using scale-in tool supports multiple overlapped layers	✓	✓	✓			
Enhanced Custom Formatting to Support Displaying Numbers in Percent, Fractions, Degrees etc.	✓	✓	✓			

EASE OF USE (CON'T)	2020	2019*	2018*	2017	2016	9.*
App Center for Easy APP Access and Maintenance	✓	+	✓			
Version-independent Folders for UFF, Licensing, Autosave etc, For Easier Migration to Future Versions	✓	✓	✓			
Several Pre-installed Apps for Publishing and Curve Fitting	✓	✓	✓			
Enter Unicode Character by Typing Code and Pressing ALT+X	✓	✓	✓			
Ignore Hidden Ccolumns/Plots From Analysis	✓	✓	✓			
Customize Default Digits for Analysis Output in Each Analysis Tool	✓	✓	✓			
Learning Center Dialog which Helps User to Get Start from Origin	✓	✓	+	✓		
Mouseover of Data Plot Shows Tooltip of Source Data	✓	✓	✓	✓		
Switching Layers in Axis dialog	✓	✓	✓	✓		
Provide Option to Use English in Analysis Report	✓	✓	✓	✓		
Better Color Control to Pick more Colors and Define Custom Colors	✓	✓	+	+	✓	
Object Manager to Easily Turn On/Off Plots and Layers	+	✓	✓	+	✓	
Apps Gallery for Managing Apps Installed from File Exchange	✓	+	✓	+	✓	
Improve Curve Fitting and Statistics Dialogs to be Tab-based for Easy Navigation	✓	✓	✓	✓	✓	
Collapsible Menus and Context Menus	✓	✓	✓	✓	✓	
F(x) Column Label Row for Column Formula	✓	✓	✓	+	✓	✓
Set Multiple Column Values	✓	✓	✓	✓	✓	✓
Copy, Paste and Apply Graph Format and Theme	✓	✓	✓	+	✓	✓
Analysis Templates™ with Custom Report Sheets for Repeat Analysis	✓	+	✓	✓	✓	✓
Consolidated Reports with Collapsible Tables	✓	✓	✓	✓	✓	✓
Save Analysis Dialog Settings as Theme for Future Use	✓	✓	✓	✓	✓	✓
Recalculation of Results on Data or Parameter Change	+	✓	✓	✓	✓	✓

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ADDITIVE
SOFT- & HARDWARE FÜR TECHNIK & WISSENSCHAFT

GRAPH TYPES	2020	2019*	2018*	2017	2016	9.*
Donut Charts and Improved Pie Charts	✓					
Sankey Diagram	✓					
Alluvial Graph	✓					
Kite Diagram	✓					
Density Dots and Color Dots for Large Data	✓					
Before - After Plot	✓					
Population Pyramid	✓					
Rug Plots	+	✓				
3D Parametric Plot	✓	✓				
XY and XYZ Heatmap, Split Heatmap, Heatmap with Labels	✓	✓				
Parallel Plot	✓	✓				
Violin Plot	✓	✓				
Cluster Plot	✓	✓				
Row-wise Line Series with Error Bars	✓	✓				
Tetrahedral Scatters/Lines/Line+Symbols	✓	✓				
Stacked Histogram	✓	✓				
Contour with Categorical Z Values	✓	✓				
Trellis Plot: Stacked Column, 100% Stacked Column and Box Chart	✓	+	✓			
Bridge Chart (McKinsey-Style Waterfall)	✓	✓	✓			
Double Y Box Chart	✓	✓	✓			
Multi-Y Color Mapped Line Series	✓	✓	✓			
4D XYZ Surface with Custom Boundary	✓	✓	✓			
Trellis Plot with Flexible Customization Options: Wrap Panels, Overlap Panels, Add Gap Between Panels	✓	✓	✓	✓		

GRAPH TYPES (CON'T)	2020	2019*	2018*	2017	2016	9.*
Line Series, Statistics Bars	✓	✓	✓	✓		
3D Stacked Bars, 100% 3D Stacked Bars with new Bar Shapes	✓	✓	✓	✓		
Interval Plot	✓	✓	✓	✓	✓	
Heat Map	✓	✓	✓	✓	✓	
Column Scatter Plot With or Without Jitter	✓	✓	✓	✓	✓	
Kernel Density Plot	+	✓	✓	✓	✓	
Grouped Column Plots, Grouped Box Chart	✓	✓	✓	+	+	✓
Variable Column/Bar Width	✓	✓	✓	✓	✓	✓
100% Stacked Column/Bar Plots	✓	✓	✓	✓	✓	✓
3D OpenGL Waterfall	✓	✓	✓	✓	+	✓
3D Ternary Surface	✓	✓	✓	✓	✓	✓
Piper/Trilinear Diagram	✓	✓	✓	✓	✓	✓
Marginal Histogram/Box Chart	✓	✓	✓	✓	✓	✓
3D Surface/Bar Plot From Worksheet XYZ Columns	✓	✓	✓	✓	✓	✓
3D Bar Plot with Z Error Bars	✓	✓	✓	✓	✓	✓
3D Parametric Function Plot	✓	✓	✓	✓	✓	✓
Radar/Spider Chart	✓	✓	✓	✓	✓	✓
2D/3D Function Plot and 2D Parametric Function Plot	✓	✓	✓	✓	✓	✓
Multiple Intersecting Surfaces	✓	✓	✓	✓	✓	✓
3D Vector Plot	✓	+	✓	✓	✓	✓
3D Bar Plot	✓	✓	✓	+	✓	+
Image/Contour Profile Plot	✓	✓	✓	✓	✓	✓
Scatter Matrix	✓	✓	✓	✓	+	✓
Contour Plot	✓	✓	✓	+	+	+
Basic 2D, 3D, and Statistics Graphs	✓	✓	✓	+	✓	✓

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GRAPH CUSTOMIZATION	2020	2019*	2018*	2017	2016	9.*
Indicate the selected graph in preview of Merge Graphs dialog	✓					
Faster Scatter and Contour Drawing Speed for Large Data	✓					
Offset Data Points in Box Chart and Alternating the Offset in Pairs	✓					
Supersubscript and Align Columns Control in Text Object Properties Dialog	✓					
Support Dense Data Mode to Allow Quick Changes for Large Data Plot	✓					
Skip Points (or Speed Mode) Keeps Last Point by Default	✓					
Plot Data Organized as X,XErr,Y,YErr, Z as a 3D Graph with X and Y Direction Error	✓					
More Options in Windrose Plot	✓					
Color Scale Improvements: Show Subrange of Color, Formula for Tick Labels, Show Major Levels Only, Show Min and Max Levels Only	✓					
Stack Lines by Y Offsets Supports Grouping by Label Row Data	✓	✓				
3D Waterfall Support for Label at Specified Indices	✓	✓				
Support Remove Line Between Two Points on Line + Symbol Plots	✓	✓				
Support Specified Color List for Color Mapping	✓	✓				
Support Compound Line Style for Line Plot	✓	✓				
Support 3-Color Limited Mixing for Color Mapping	✓	✓				
Object Manager Improvements: Move Plot tto Other Layer/Y Axis, Remove a Plot from a Group, Rename plot group's long name	✓	✓				
New Legend Type: Categorical Legend for 3D XYtZ Bar, New Legend for Fill Area Plot	✓	✓				
Add Independent Color Scale on Layout Window	✓	✓				

GRAPH CUSTOMIZATION (CON'T)	2020	2019*	2018*	2017	2016	9.*
Connect Control in 3D Waterfall which Enables Smooth Waterfall Lines	✓	✓	✓			
Provide Option to Put Axis Title to be in the Beginning/End of Axis	✓	✓	✓			
Support Special Point for 3D XYZ Bar Graph	✓	✓	✓			
Total Label for 3D Stacked Column/Bar Plots	✓	✓	✓			
2D Vector Plot: Support Line Style Customization, Adding Label	✓	✓	✓			
Create Custom Legend Entries	+	+	✓			
Statistics Reference Lines on Graph with Full Customization	✓	✓	+			
Arrows at Axis Begin or End and can be Put Outside of Layer Frame	✓	✓	+			
Column Gap control for Double-Y Column Plot	✓	✓	✓			
Lighting Effect for 3D Wall Plot	✓	✓	✓			
Distribute Selected Layers/Graphic Objects Horizontally or Vertically	✓	✓	✓			
Symbol Size Increment For Each Plot in Group	✓	✓	✓			
Axis Break Supports Proportional Unit for Each Segment	✓	✓	✓			
Pick Data Points from Graph	✓	✓	✓			
New Annotation Dialog with More Controls for Object Customization	✓	✓	✓	✓		
More Hatch Patterns, including Geology Patterns	✓	✓	✓	✓		
Dropline Direction Control in 2D/3D Graphs	✓	✓	✓	✓		
Support More Bar Shapes for 3D Bars	✓	✓	✓	✓		
Histograms: Label with Bin Counts, Percentage or Both	✓	✓	✓	✓		
Grouped Plots: Unbalanced Subgroups Can Display Grid Line Separators, Set Gaps by Dataset	✓	✓	✓	✓		
Support for all 2D objects in 3D graphs: Table, Image, Drawn Objects, Bubble Scale, OLE Object	✓	✓	✓	✓		

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GRAPH CUSTOMIZATION (CON'T)	2020	2019*	2018*	2017	2016	9.*
Axis Improvements: Multiple Reference Lines and Shading Between in 2D Graphs; More Rescale Options, Tick Labels Combine Column Labels, Leader Lines For Special Ticks, Wrap Tick Labels for 3D Plots	✓	✓	✓	✓		
New System Colors Give Your Graphs a Fresh Look	✓	✓	✓	✓		
Skip Weekend and Holidays in Financial Plot	✓	✓	✓	✓	✓	
Text and Legend Improvements: Multi-line Spacing, Annotation Customization, Legend Text Color same as Legend Symbols	✓	✓	✓	+	✓	
Show Symbol in 3D XYY Waterfall, Walls and Ribbons	✓	✓	✓	✓	✓	
Position Label/Metadata Anywhere on Data Plot	✓	✓	✓	✓	✓	
Align Layers at Specified Value, Share Common Scale among Layers	✓	✓	✓	✓	✓	
New Tab-based Axis Dialog with Multi-axis Selection and Easy Navigation	✓	✓	✓	✓	✓	
Wrap Axis Tick Labels, Customize Individual Special Ticks, Custom Axis Scale Formula for 3D OpenGL Axis	✓	✓	✓	+	✓	
Boundary Customization in Contour Plot	✓	✓	✓	✓	✓	
More Customization of Color Scale in Contour Plot	✓	✓	✓	✓	+	
Linear and Nested Bubble Scale for Bubble Plot	✓	✓	+	✓	✓	
Drag Legend to Multiple Columns, Hide Legend of Hidden Plots, Reverse Order of Legend	✓	✓	✓	✓	✓	

GRAPH CUSTOMIZATION (CON'T)	2020	2019*	2018*	2017	2016	9.*
Custom Percentile and Jitter Points in Box Chart	✓	✓	✓	✓	✓	
Plot: User Defined Menu to Access Customized Templates	✓	✓	✓	✓	✓	✓
Smart Labels - Auto Position of Data Labels	✓	✓	✓	✓	✓	✓
User Defined Axis Scale Type	✓	✓	✓	✓	✓	✓
Multiple Axis Breaks with No Gap	✓	✓	✓	✓	✓	✓
Multiple Special Tick Labels	✓	✓	✓	✓	✓	✓
Isometric - Link Axis Length to Scale by X/Y Ratio	✓	✓	✓	✓	+	✓
More Legend Types: Box Chart Components, Point by Point, Categorical Values	✓	✓	✓	✓	+	✓
Customized Color/Shape/Interior Increment List for Plot	✓	✓	✓	+	+	✓
3D Surface Improvements: Lighting Effect, Mesh, Flatten, Shift	✓	✓	✓	✓	✓	✓
Zoom and Pan inside Graph Layer	✓	✓	✓	✓	✓	+
Customizable Data Info. Window to Read Coordinates and More	✓	✓	✓	✓	✓	✓
Transparency and Gradient Fill Control in Graphs	✓	+	✓	✓	✓	✓
Embed and Edit Microsoft Word, Excel and Equation Objects Inside Graphs and Layouts	✓	✓	✓	✓	✓	✓
Non-Linear Z-Axis, and Y- and Z-Value Colormap Support for Waterfall Plots	✓	✓	✓	✓	✓	+
Move, Rotate, Skew and Resize 3D Graphs	✓	✓	✓	✓	✓	✓
Axis Tick Locations Controls	✓	✓	✓	+	✓	+
Box Chart with Box/Whisker/Outliers Controls	✓	✓	✓	+	+	+
Fill Area Under/Between Line Plots	✓	✓	✓	✓	+	+
Polar Plot with Azimuth and Radial Axis Controzls	✓	+	✓	+	✓	+

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DATA MANAGEMENT	2020	2019*	2018*	2017	2016	9.*
Copy and Paste Data as HTML/EMF Table to Other Applications such as MS Word	✓					
Excel Like Absolute Cell Reference in Cell Formula	✓					
Support Copy Subrange of Data with Column Label Rows	✓					
Duplicate Project or Workbook preserves cell formula	✓					
Support Copy/Paste of Folders and Workbooks across Origin Sessions	✓	✓				
Filter Columns by Label Row	✓	✓				
Support Splitting Columns by Specified Separator or Interval	✓	✓				
Extract Worksheet Rows by Random Sample	✓	✓				
Copy Cell(s) and Paste to a Range	✓	✓				
Conditional Formatting: Highlight Cells by Rules, Highlight Duplicate Cells, and Heatmap	✓	✓				
Column List View for Worksheet to Display Only a Column List	+	✓				
Copy and Paste Filter from One Column to Another	✓	✓				
Support Press Mouse Wheel in Worksheet to Scrol	✓	✓				
Auto Fill Column Label Row Contents to the Right	✓	✓				
Support copying/pasting sheet across Origin sessions	✓	✓	✓			
Cell Formula Support for for Data and Label Row Cells	+	✓	✓			
X-Function to Set Format of Selected Cells	✓	✓	✓			
Maximum Number of Worksheets/MatrixSheet in Workbook/MatrixBook Increased to 1024	✓	✓	✓			
Simpler Spreadsheet Cell Notation for Column Formulas	✓	✓	✓	✓		
Ability to Include LaTeX in Text Labels/Legends, and in Worksheet Header Rows etc.	✓	✓	✓	✓		

DATA MANAGEMENT (CON'T)	2020	2019*	2018*	2017	2016	9.*
Embed Layout Window in Worksheet	✓	✓	✓	✓		
Select or Hide Columns in Worksheet by Column Label	✓	✓	✓	✓	✓	
Append Worksheet tby Matched Column	✓	✓	✓	✓	✓	
Search & Insert Function and Show Function Syntax Hint in Set Column Values Dialog Box	✓	✓	✓	✓	✓	
Customize Categorical Data Order and Apply it to other Columns	✓	✓	✓	✓	✓	
Append Worksheet Row-wise or Column-wise	✓	✓	✓	✓	✓	
Generate Patterned Data	✓	✓	✓	✓	✓	✓
Sort Column by Values in Column Label Rows, Reduce Columns	✓	✓	✓	✓		✓
Lock Filter Condition in those Columns Linked to Source Columns	✓	✓	✓	✓	✓	✓
Excel-Like Data Filtering	+	✓	✓	+	✓	✓
Floating Graphs/Layout in Worksheet	✓	✓	✓	✓	✓	✓
Split a Worksheet into Multiple Worksheets by Number of Columns/Rows, or by Column Label	✓	+	✓	✓	✓	✓
XYZ Gridding in Linear or Logarithmic Scale	✓	✓	✓	✓	✓	✓
Reduce XY Data by Group, Reduce Data to Evenly Spaced X	✓	+	✓	✓	✓	PRO
Reduce Each Column in Worksheet by Combining Duplicate Rows	✓	✓	✓	✓	✓	✓
Pivot Table	✓	✓	✓	✓	✓	+
Stack Columns and Unstack Columns	✓	✓	✓	✓	✓	+
Reduce Duplicate X Data, Reduce Data by Skipping Every N Points	✓	✓	✓	✓	✓	✓
Worksheet Query (Extract Values from Worksheet)	✓	+	✓	✓	✓	✓

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IMPORTING	2020	2019*	2018*	2017	2016	9.*
Multi-threaded ASCII import	✓					
10x Faster Import of Large Text Files	✓					
Drag and Drop support of Data Connector	✓					
Query and Pull Columns from OPJU Files	✓					
Support Partial Import, Data Block Marker and Preview for CSV Data Connector	✓					
Specify Long name, Units and Comments in Excel Connector	✓					
Data Connector maintain connection with web file or local file as data source (CSV, HTML, JSON, MS Excel, Origin Project and more)	+	✓				
Set Origin as Default Program to Open Data Files	✓	✓	✓			
Import Specified Column/Rows only in Excel and CSV	✓	✓	✓			
Source File Header Row to Show Imported File Name	✓	✓	✓			
Undo Import of ASCII, Excel and CSV	✓	✓	✓			
New Excel Import Dialog without Using COM Support	✓	✓	✓	✓		
More 3rd-Party Import Formats: ISF, SAS, BRUKER OPU	✓	✓	✓	✓	✓	
Script after Import and Column Plot Designation for More Import Routines	✓	✓	✓	✓	✓	
Import SPSS Data Files	✓	✓	✓	✓	✓	
Importing OPJ	✓	✓	✓	✓	✓	✓
Import Mat File Structure	✓	✓	✓	✓	+	✓
Specify Channel When Import MDF, NITDM, DIADem, Prism, pClamp, Matlab Data	✓	✓	✓	✓	✓	✓
File Import Menu Customization Dialogue	✓	✓	✓	✓	✓	✓
Import TDMS 2009, MZXML and Prism Files	✓	✓	✓	✓	✓	✓
SQL Editor for Database Import	✓	✓	✓	✓	✓	✓
Import Excel, Multi-Line CSV and Binary 2D Array	✓	✓	+	+	+	+
3rd Party Formats Support for pCLAMP 2.0, NI DIAdem/TDM, ETAS MDF,JCAMP-DX, NetCDF, HDF5 etc.	✓	✓	✓	+	+	+
Graphically Construct SQL Queries	✓	✓	✓	✓	✓	✓

IMPORTING (CON'T)	2020	2019*	2018*	2017	2016	9.*
ASCII and Binary Import Wizard Provides Visual Feedback during Import	✓	✓	+	✓	✓	+
Import Images (PNG, GIF, TIF, TGA, PCX, PSD, WMF ect (Convert to Raster))	✓	✓	✓	✓	✓	✓
Drag-and-Drop Data File from Windows Explorer into Origin	✓	✓	✓	✓	✓	✓
Import Wizard Filter for Repeat Import of Similar Data	✓	✓	✓	✓	✓	✓

MISCELLANEOUS	2020	2019*	2018*	2017	2016	9.*
Much Faster Import, Drawing, Data Manipulation, Analysis and Recalculate Speed for Large Data	✓					
Unicode(UTF-8) Support	✓	✓	✓			
Connection to OriginLab website using secure connection (https)	✓	✓	✓			
Zoom and Pan on Graphs, Worksheets, Matrices and Layouts	✓	✓	✓	✓	✓	✓
Native 64-Bit and 32-Bit Applications	✓	✓	✓	✓	✓	✓

MATHEMATICS	2020	2019*	2018*	2017	2016	9.*
Simple Curve Math Supports Custom Formula	✓					
Show Polygon Area of Selected Contour Line in Data Display	✓	✓	✓	✓	✓	
Akima Spline in Interpolation	✓	✓	✓	✓	✓	✓
2D Interpolation and Extrapolation	✓	✓	✓	✓	✓	✓
Compute Polygon Area	✓	✓	✓	✓	✓	✓
Compute Surface Area and Matrix Area	PRO	PRO	PRO	PRO	PRO	PRO
2D Volume Integration	PRO	PRO	PRO	PRO	PRO	PRO
3D Interpolation	✓	✓	✓	✓	✓	PRO
Trace Interpolation on XY Data	PRO	PRO	PRO	PRO	PRO	PRO
1D Interpolation and Extrapolation	✓	✓	✓	✓	✓	+
Interpolation and Extrapolation of Y From X	✓	✓	✓	✓	✓	+
Trace Interpolation on XYZ Data	✓	✓	✓	✓	✓	✓
Normalization Across Multiple Columns or Curves	✓	✓	✓	✓	✓	✓
Set Column or Matrix Values by Using Mathematics Operations	✓	✓	✓	+	+	+

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EXPORTING & PRESENTATION	2020	2019*	2018*	2017	2016	9.*
Export Mulit-sheet Workbook as Excel File	✓	✓				
Copy Graph and Paste Directly to Online Documentation Tools such as Confluence Page	✓	✓				
Option to export multiple graphs as a single multi-page PDF file	✓	✓	✓			
Export graphs with PE folder name included in the name of the exported file	✓	✓	✓			
Copy / Export User-defined Area of Graph Page	✓	✓	✓			
Ignore Hidden Columns in ASCII Export	✓	✓	✓			
Export Graphs to Auto-Created Windows Explorer Folders that Parallel your Project File's Folder Structure	✓	✓	✓	✓		
Send Graph to PowerPoint Improvements: Specify Graph List and Order, Specify Slide Layout and Style	✓	✓	✓	✓	✓	
Creating Movies from Origin Windows using GUI Tool or Script	✓	✓	✓	✓	✓	✓
Graph Export Supports Transparency for PDF and EPS Format	✓	✓	✓	✓	✓	✓
Export All Graphs to PowerPoint	✓	✓	✓	✓	+	+
Export ASCII Data to Existing File by Appending or Replacing	✓	✓	✓	✓	✓	✓
Slide Show Graphs and Layouts	✓	✓	✓	✓	✓	✓
Export Worksheet as Image, WAV, NI TDM/TDMS File or Multi-Page PDF Document	✓	✓	✓	✓	✓	✓
Graph Export Formats Include: CGM, EPS, TIFF, PDF, JPEG, EMF, PSD, etc.	✓	✓	+	+	✓	✓
Export Image to Raster File Format	✓	✓	+	✓	✓	✓

GADGETS	2020	2019*	2018*	2017	2016	9.*
Vertical Cursor Gadget: Compare Two Cursors, Show All Info in One Label	✓	✓				
Allow to clear category settings for some points with Cluster Gadget	✓	✓	✓			
Integrate Gadget now supports marking of Fill Area under multiple curves	✓	✓	✓			
Curve Translate Gadget	✓	✓	✓	✓	✓	
Profile Gadget	✓	✓	✓	✓	✓	
Surface Integration Gadget	PRO	PRO	PRO	PRO	PRO	PRO
Global Vertical Cursor Gadget Across Graphs	✓	+	✓	✓	✓	✓
Intersect Gadget	✓	✓	✓	✓	✓	✓
Quick Sigmoidal Fit Gadget	✓	✓	✓	✓	✓	✓
Cluster Gadget	PRO	PRO	+	PRO	+	PRO
Differentiate Gadget	✓	✓	✓	✓	✓	✓
Interpolate Gadget	✓	✓	✓	✓	✓	✓
Quick Peaks Gadget	+	✓	✓	✓	✓	✓
Digitizer	✓	✓	✓	✓	✓	+
Quick Fit Gadget	✓	✓	✓	✓	✓	✓
Rise Time Gadget	PRO	PRO	PRO	PRO	PRO	PRO
Integrate Gadget	✓	+	+	✓	✓	✓
FFT Gadget	✓	✓	✓	✓	✓	✓
Statistics Gadget	✓	+	✓	+	✓	✓

CONNECTIVITY WITH OTHER APPLICATIONS	2020	2019*	2018*	2017	2016	9.*
Communicate with Individual Mathematica V8 or Later	✓	✓	✓	✓		
R Console and support for Rserve to exchange data between Origin and R	✓	✓	✓	✓	✓	
MATLAB Console with GUI Support to Transfer Data Between Origin and MATLAB	✓	✓	✓	✓	✓	✓
LabVIEW Connectivity	✓	✓	✓	✓	✓	✓
Automation Server Support	✓	✓	✓	✓	✓	✓

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CURVE FITTING	2020	2019*	2018*	2017	2016	9.*
Include Standard error on derived parameters in the parameter Summary table	✓	✓	✓			
Add two new implicit fitting functions for diode and solar cell data	✓	✓	✓			
Support Integral in Implicit Function	✓	✓	✓			
< and > Two buttons on Parameters tab of Nonlinear Curve Fit dialog to switch between sets of parameters to compare fitting result	✓	✓	✓	✓		
Provide selection of Parameter Initialization formula when defining fitting functions	✓	✓	✓	✓		
More Built-in Fitting Functions Such as Photosynthesis Irradiance (PI) Curve, 3D Curves etc.	✓	✓	✓	✓		
Provide Deming Method in Fit Linear with X Error	PRO	PRO	PRO	PRO	PRO	
Customize Parameter Table in Graph for LR/PR/NLFit and Peak Fitting	✓	✓	✓	✓	✓	
Zoom on Preview tab of Nonlinear Curve Fit	✓	✓	✓	✓	✓	
Improved Fitting Results: Add Normal Probability Plot of Residuals, Put Residual Plots in a Single Graph	✓	✓	✓	✓	✓	
Fit and Rank All Functions in a Category	PRO	PRO	PRO	PRO	PRO	PRO
Orthogonal Regression for Implicit/ Explicit Functions	PRO	PRO	PRO	PRO	PRO	+
Calculate Standard Error for Derived Parameter	✓	✓	✓	✓	✓	✓
Linear Fit with Support for X Error	PRO	PRO	PRO	PRO	PRO	+
Surface Fit with Multiple Peaks	PRO	PRO	PRO	PRO	PRO	PRO
New Fitting Function Builder for Fitting Function Creation	✓	✓	✓	✓	✓	✓
Graphical Residual Analysis for Fitting	✓	✓	✓	✓	✓	✓
Find-X/Find-Y Tool for Linear, Polynomial, and Nonlinear Fit	✓	✓	✓	✓	✓	✓
New Find-Z Tool for Nonlinear Surface/Matrix Fit	PRO	PRO	PRO	PRO	PRO	PRO
Fitting Comparison	PRO	PRO	PRO	PRO	PRO	PRO

PEAK ANALYSIS	2020	2019*	2018*	2017	2016	9.*
Peak Analyzer: Support Output Baseline Subtracted Peaks Information after Finding Peaks, Report Baseline Mode in Notes node, Add Hint Tab in Fit Control Dialog	✓	✓				
New method for peak detection: Fourier Self Deconvolution	✓	✓	✓			
Auto Bound Setting for Positive-Only and Negative-Only Peaks	✓	✓	✓			
Sequentially Initialize Parameter Values in Batch Peak Analysis	✓	✓	✓	✓		
Multiple Peak Fit Tool	✓	✓	✓	✓	✓	✓
Batch Peak Fitting	✓	✓	✓	+	+	PRO
Peak Analyzer: Peak Fitting	PRO	PRO	PRO	PRO	PRO	PRO
Peak Analyzer: Fit Baseline with Peaks	PRO	PRO	PRO	PRO	PRO	PRO
Peak Analyzer: Peak Integration	✓	✓	✓	✓	+	✓
Peak Analyzer: Peak Finding	✓	✓	✓	✓	+	✓
Peak Analyzer: Baseline Detection	✓	✓	✓	✓	+	✓
Peak Analyzer: Baseline Subtraction	✓	✓	✓	✓	+	✓

SIGNAL PROCESSING	2020	2019*	2018*	2017	2016	9.*
Support Binomial Filter for Smoothing	✓	✓	✓	✓	✓	
LOWESS and LOESS Smoothing	✓	✓	✓	✓	✓	✓
IIR Filter Design	PRO	PRO	PRO	PRO	PRO	PRO
2D FFT Filter	PRO	PRO	PRO	PRO	PRO	PRO
Signal Envelope	PRO	PRO	PRO	PRO	PRO	PRO
Coherence	PRO	PRO	PRO	PRO	PRO	PRO
Signal Decimation to Reduce/Resample Data	PRO	PRO	PRO	PRO	PRO	PRO
1D FFT, Inverse FFT and 1D FFT Filter	✓	✓	✓	✓	✓	✓
2D FFT and 2D Inverse FFT	PRO	PRO	PRO	PRO	PRO	PRO
Short-Time Fourier Transform (STFT)	✓	✓	+	PRO	PRO	PRO
Wavelet Analysis	PRO	PRO	PRO	PRO	PRO	PRO
Hilbert Transform	PRO	PRO	PRO	PRO	PRO	PRO
2D Correlation	PRO	PRO	PRO	PRO	PRO	PRO

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STATISTICS	2020	2019*	2018*	2017	2016	9.*
Support Combine Multiple Dataset as a Single One to Normalize	✓					
Support Grouping for Statistics on Rows	✓	✓	✓			
Support Means Plot in Two-Way ANOVA	+	✓	✓	✓		
3-way ANOVA	PRO	PRO	PRO	PRO	PRO	
Partial Correlation	PRO	PRO	PRO	PRO	PRO	
Cross Tabulation	PRO	PRO	PRO	PRO	PRO	
Distribution Fit	PRO	PRO	PRO	PRO	PRO	
t-Tests on Rows	PRO	PRO	PRO	PRO	PRO	
One/Two-Proportion Testing	PRO	PRO	PRO	PRO	PRO	PRO
More Power & Sample Size Tests (One/Two-Proportion, One/Two Variance)	PRO	PRO	PRO	PRO	PRO	PRO
Grubbs Test and Q-test to Detect Outliers	✓	✓	✓	✓	✓	+
Multivariate Analysis: Cluster, Principal Component, Discriminant, , Partial Least Squares Regression etc.	PRO	PRO	+	PRO	PRO	PRO
ROC Curve	PRO	PRO	PRO	PRO	PRO	PRO
Survival Analysis: Kaplan-Meier, Cox Proportional Hazard ,Log-Rank, etc.	PRO	+	PRO	PRO	PRO	+
Nonparametric Tests: Mann-Whitney Test, etc.	PRO	PRO	PRO	PRO	PRO	PRO
Power and Sample Size	PRO	PRO	PRO	PRO	PRO	+
One- and Two-Way Repeated Measures ANOVA	PRO	PRO	PRO	PRO	+	PRO
Hypothesis Testing	✓	✓	✓	✓	+	+
Correlation Coefficient	PRO	PRO	PRO	PRO	PRO	PRO
Normality Test	✓	✓	✓	✓	✓	✓
Basic Descriptive Statistics, 1D and 2D Frequency Count, Discrete Frequencies, One/Two-Way ANOVA	+	✓	+	✓	+	✓

PROGRAMMING	2020	2019*	2018*	2017	2016	9.*
Labtalk Option to Generate Gadget Output for All Curves, All Layers, etc.	✓					
Faster Date and Time Labtalk functions	✓					
Control Polygon or Polyline object thru LabTalk	✓					
Origin C Access to Full NAG Mark 26.1 Library	✓					
Preshipped Python 3.7.2	✓					
Multi-sheet Range Support	✓	✓				
Provide Python Package OriginExt to Access Origin Functionality from External Python through COM	+	✓				
Provides LabTalk functions for Linear Fit	✓	✓				
Origin API for calling Origin from outside Python	✓	✓	✓			
Unicode (UTF-8 Encoded) Text Strings Support in LabTalk and OriginC	✓	✓	✓			
Graph Object Properties Access From LabTalk	✓	✓	✓			
NAG Mark 26.1 Functions Aaccessible from Origin C	+	✓	✓			
Support for HTML Dialog with Java Script	✓	✓	✓	✓		
Origin C Access to Full NAG Mark 25 Library	+	✓	✓	✓		
Integrate Python as a Scripting Language in Origin	✓	✓	✓	✓	✓	
Ability to Encrypt OC code	✓	✓	✓	✓	✓	
Code Builder has New Editor Based on Scintilla Code, which Supports Code Folding, etc.	✓	✓	✓	✓	✓	✓
Origin C Access to Full NAG Mark 9 Library	✓	✓	✓	✓	✓	✓
Generate LabTalk Script Command from Current Dialog Box Settings	✓	✓	✓	✓	✓	✓
X-Function: Easy Creation of Custom Tools with Automatic GUI by X-Function	✓	✓	✓	✓	✓	✓
X-Function: Execute X-Function from LabTalk Script and Menu	✓	✓	✓	✓	✓	✓
Command Window: Auto-Complete Support for Scripting	✓	✓	✓	✓	✓	✓

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