

Gen5™ v2.0 and v3.0

Key Features for Non-Imaging Applications

This document summarizes major enhancements and additions to Gen5 software, beginning with v2.0x to the current release, v3.03. The list applies to single-mode and multi-mode detection (imaging features not shown).

Gen5 2.0

New Workflows

- “Read Now” workflow quickly steps you through the procedure definition, read process and export to Excel.
- General Export workflow facilitates automatic export of raw and calculated data in Excel.
- Prime workflow automatically prompts for injector priming at run time if the injection module was not primed.

Improved Navigation

- Task Manager gives quick and easy access to all the major software functions.
- Simplified Tool Bar facilitates navigation and is entirely customizable.
- Tool Tips describe the function of the new icons in the toolbar.
- Text Links replace “...” buttons to facilitate comprehension.
- A descriptive list of protocol types (Standard, Calibrator, Multi-Plate) is displayed when creating a new experiment.
- Expanded Preferences to customize the user experience.

New Functionality in Procedure / Reader Control

- Runtime Selection: this option allows users to select which area of the plate should be processed on every new plate.
- Random well selection, any pattern of wells can be read and processed.
- Area Scanning: more flexibility, more resolution, for a better picture. Up to 99*99 points per well.
- Auto read height (Z) adjustment.

Plate Layout Made Easy

- Plate Layout tool uses a new, easy two-step process: first define the list of samples, controls, standards with their associated properties (concentrations, dilutions, ID fields), then assign to the plate map.

Data Analysis Updates

- New high level functions: Blank, Ratio, Normalize, and Delta to facilitate the creation of standard data reduction steps.
- Standard Curve vs. Dose Response: Curve analysis simplified with pre-set default parameters best suited for the different types of assays.
- Customize data out, while defining data analysis step. You can now set the font, color effect and show/hide status directly in the data analysis step.
- New Excel-like grid behavior: when creating a custom transformation, the grid has been updated to support copy / paste and drag / copy functions similar to Excel to facilitate the assignment process.
- New Formula Editor with Syntax help greatly facilitates the creation of transformation formula.
- New transformation functions: natural Log (Ln) and Z prime.

Report / Export Builders with Auto Content

- New “Automatic content” option: the content of the export (text or Excel) and reports can be defined through the use of check boxes for quick control over the content. (Custom content is still available as in Gen5 1.x.)
- All report / export functions grouped under one functional area, simplifies the overall Gen5 interface.

Improved Visuals

- Gradients / Heat Map: by default, data is reported using a blue gradient for conditional formatting (low wells are light blue, high wells are dark blue). New gradients and a heat map function are available for customization.
- Area scan measurement points are now represented as pixels. With the addition of the new color effects, and higher density scans, this enables the capture of high definition sample “images”.

Result Presentation

- New tool for editing curve fit parameters on-the-fly, while looking at the curve.
- Kinetics and spectral scans: overlay more than 8 wells (no limit), and export an entire plate of data in one click.
- Kinetics: temperature is now reported with each reading interval.
- Spectral scan, kinetic, curve views have been redesigned to improve readability.

Take3™ Micro-Volume Plate

- Support for the Take3 Trio: 48 x 2 µL samples on one plate!
- Blanks and samples can now be measured on the same plate, for an easier workflow.
- Spectral scans of sample for quick control of data quality.
- Additional ratio option (e.g. 230 nm) available.
- Option to add a new (empty) Sample IDs column in the Excel export.

Sample files

- Embedded sample files ship with Gen5, with multiple examples (with data) of different read modes, data analysis steps and export settings.
- On-line sample files are available on biotek.com and are kept up-to-date.
- Users can post their sample files on biotek.com if they wish to share their experience.

Gen5 3.0

Operating System

- Gen5 3.0 is a 64-bit software package, requires 64-bit Windows OS.
- Compatible with Windows 10, Windows 8 and Windows 7 (Pro versions, 64-bit only) for non-imaging applications.

Data reduction

- Conditional operators: IF, AND, OR, NOT, XOR
- Mathematical operators: MEDIAN, COUNT, ABS, EXP
- Probability operators: TTEST and FTEST
- WELLID variable to allow single formula entry for all wells, by applying chosen operator to be calculated for each well's ID (e.g. SPL1, STD2, etc.).
- STATUS operator to allow conditional or custom value or text entry.
- “Data reduction variable” step for the creation and calculation of a single variable.
- “Outlier rejection” step to reject all or iteratively reject outliers.
- Cut-offs improved: allow users to assign what is equal to the cutoff value.
- Validation enhanced: multiple data in and formulas, a custom error message and option to abort data reduction if validation fails.

Fluorophore spectra viewer

- Fluorophore spectra database contains over 100 fluorophore spectra.
- Monochromator fluorescence spectra utility allows user to view fluorophore spectra with recommended or custom excitation and emission wavelengths.

GxP Features

- Excel export protection.
- PDF creation from file and power exports, as well as diagnostics results.
- Audit trail improvement - automatically log the current value of a masked well.
- Case-sensitive user password.

Miscellaneous

- Copy and paste in Procedure and Data reduction.
- Auto scale gain value in automated and custom power export.
- File Open window improvements for ease-of-use: Size, sort order and search tool.
- BioStack mode called Process Stack, which allows the user to assign different protocols to plates in a single stack.