FACSTruQ™ Technology

Advanced standardization built into the BD FACSDiscover™ Platform

What is FACSTruQ™ Technology?

FACSTruQ™ Technology is a suite of advanced standardization innovations purpose-built into the BD FACSDiscover™ Platform that allow researchers to generate highly reproducible spectral flow cytometry data across instruments, operators, sites, and timepoints.

Why is advanced standardization important?

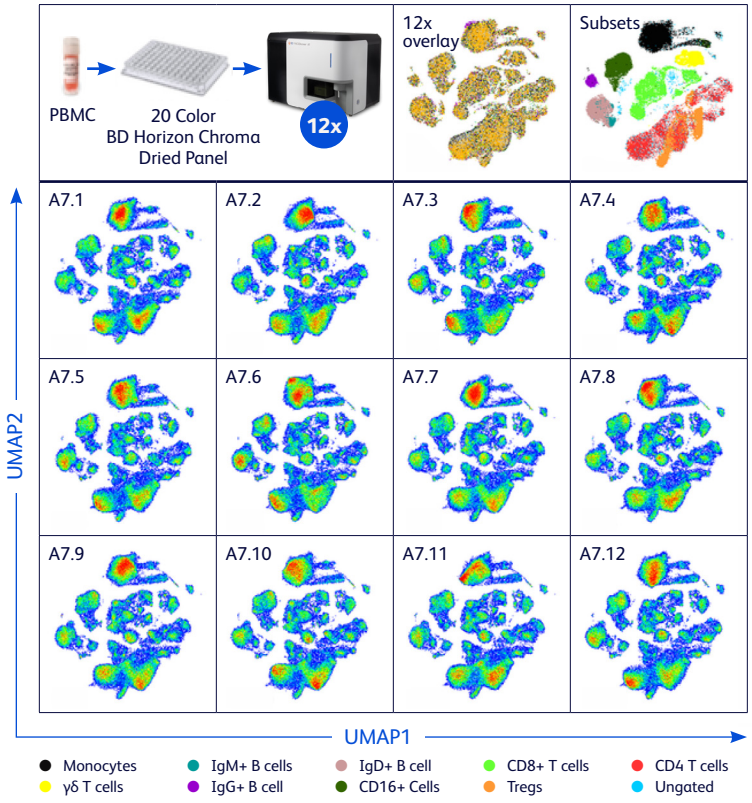
For decades, flow cytometry users have faced a fundamental challenge: measurements are often reliable within a single experiment but difficult to compare across days, instruments, operators, and sites. As a result, researchers frequently rely on the same instrument, extensive controls, repeated calibration, and manual data normalization to maintain confidence in their results. This lack of standardized measurements makes it difficult to reproduce published findings across studies, creating significant challenges for longitudinal studies, multi-site collaborations, and clinical trials. FACSTruQ™ Technology addresses this challenge by enabling consistent, reproducible data over time and across systems, while increasing confidence that observed differences reflect biology, not instrument variability.

How does FACSTruQ™ Technology work?

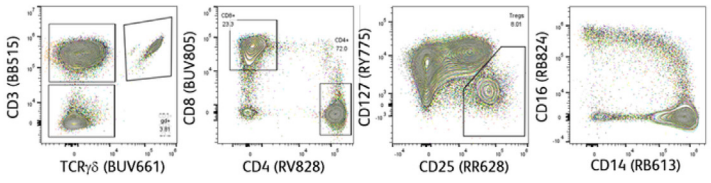
FACSTruQ™ Technology is purposely built into the foundations of the BD FACSDiscover™ Platform. It combines automated detector calibration, next-generation setup and quality control, and Detector Setting Independent (DSI) Scaling to enable standardization by design. In doing so, FACSTruQ™ Technology helps ensure consistent measurements across experiments that more accurately reflect biology rather than instrument variability.

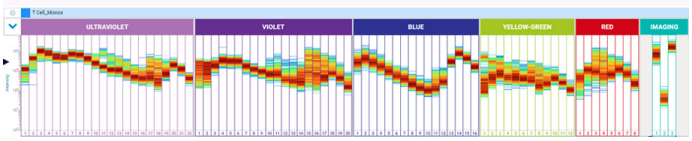
- **Automated Detector Calibration:** The BD FACSDiscover™ Platform's integrated LED calibration system automatically characterizes detector performance and gain behavior as part of daily setup and QC.
- **Instrument-to-Instrument Standardization:** Standardized setup beads and detector-level calibration help maintain consistency within and across instruments.
- **Detector Setting Independent (DSI) Scaling:** DSI Scaling calibrates the reported data scale itself, transforming fluorescence signals into standardized measurements even when detector settings are adjusted.

UMAP Comparison of a 20 Color panel across 12 BDFACSDiscover™ A7 Cell Analyzers

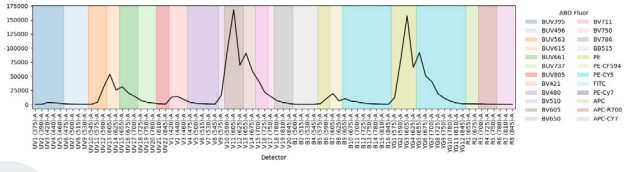


Selected plots: all 12 data sets overlaid





On-board LED results in highly predictable and consistent detector settings through comprehensive automated detector calibration and unique to BD FACSDiscover™ Instruments



BD FACSDiscover™ Setup Beads is the basis of instrument-instrument standardization through per-detector calibration.

What does Detector Setting Independent (DSI) Scaling unlocks

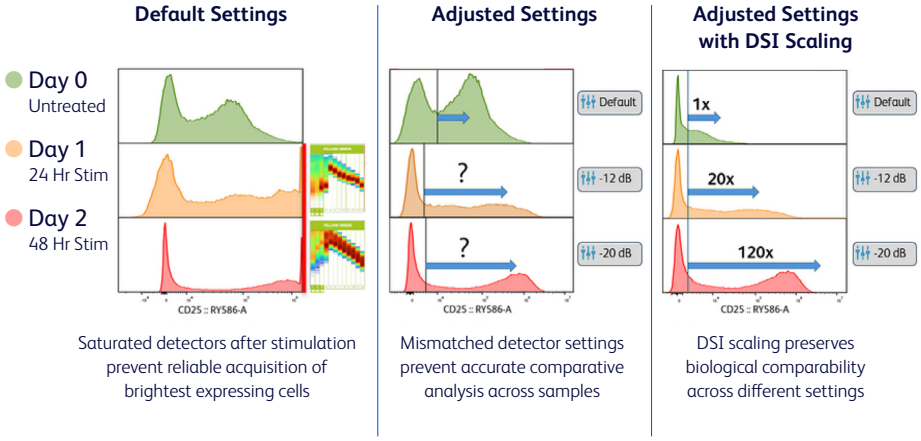
- **Universal Gating Templates:** Cell populations remain in consistent locations despite detector setting changes.
- **High Dynamic Range Biology:** Researchers can optimize acquisition settings while preserving meaningful biological comparisons.
- **Cross-Day and Cross-Lab Comparability:** Measurements remain comparable across instruments, operators, and timepoints.

Reproducibility you can trust

FACSTruQ™ Technology is supported by studies demonstrating highly consistent performance across multiple BD FACSDiscover™ Instruments. Internal evaluations have shown consistent fluorescence measurements across multiple instruments including reproducible high-dimensional analyses using 20-color, 24-color and 50-color panels.

The FACSTruQ™ Difference

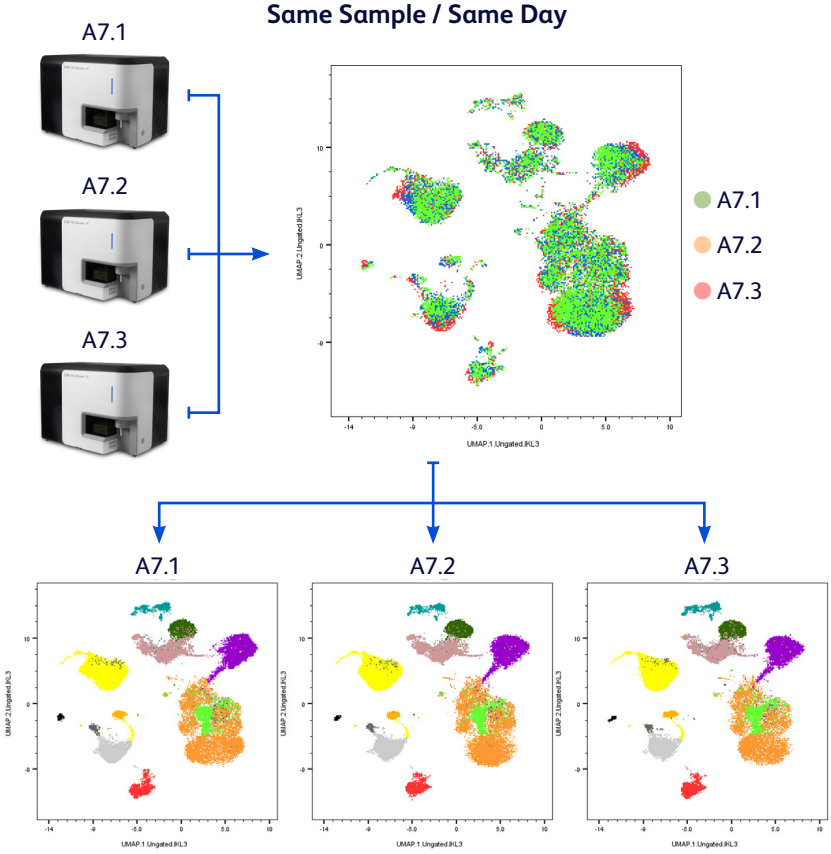
Traditional standardization approaches control instrument settings to maintain data consistency. FACSTruQ™ Technology takes a different approach by combining automated detector characterization, system calibration, and DSI Scaling to help data reflect real biology rather than instrument variation.



Saturated detectors after stimulation prevent reliable acquisition of brightest expressing cells

Mismatched detector settings prevent accurate comparative analysis across samples

DSI scaling preserves biological comparability across different settings



FACSTruQ™ Technology: Performance with Ease and Unprecedent Flexibility. Discover advanced standardization on the BD FACSDiscover™ Platform

BD FACSDiscover™ A7 Cell Analyzer

BD FACSDiscover™ A8 Cell Analyzer

BD FACSDiscover™ S8 Cell Sorter

BD flow cytometers are Class 1 Laser Products. For Research Use Only. Not for use in diagnostic or therapeutic procedures.

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