Customer Request
A multimodule system that can accommodate both uHTS and HCS in one, integrated platform.

Configuration Requirements
- Fully integrated screening platform to support:
  - 96, 384, 384 low volume and 1536-well plates
  - nL to high μL liquid handling
  - Detection instruments for HCS – image based readouts
  - Cellular and biochemical multimode readouts
- Parallel assay processing and offline use of individual instruments
- Parallel and offline access to both workstation modules

Today’s academic researchers require tools and technologies that can support a broad range of current and future applications including different microplate formats, liquid handling volumes and detection-based read-out methods; cell::explorer HTS pro was designed to fulfill those diverse needs. The configuration was created with four (4) individual workstations, each able to run independent processes, linked via a bi-directional conveyor belt to create a large integrated screening system poised to automate the entire screening process. Through two (2) integrated 500-plate capacity stores, the compound module has access to nearly 600,000 compounds stored in 384-well plates. Compounds can be transferred into assay plate either in nL amounts utilizing a Labcyte ECHO® acoustic dispenser or in μL amounts through a JANUS® G3 -R Automated Workstation fitted with both 96- and 384-well pipetting heads. Precision dispensing of reagent and cells is realized through a Flexdrop® IV and two Thermo Scientific™ Multidrop™ Combi Reagent Dispenser spread over the individual modules. A 198-plate incubator, as well as 40-plate incubator enable plate incubation at different environmental conditions. Assay results are detected either on an EnVision® Multilabel Plate Reader or on an Opera® confocal microplate imaging reader.
Top view of multimodule HTS and HCS platform

Example Assay Flow

Assay plates

1. Incubator 1
2. Image plate
3. Add reagent 2
4. Wash
5. JANUS compound addition
6. JANUS compound addition
7. 1000 DC store

Compound plates

12. Compound store
13. Read barcode
14. Compounds in plate store
15. Compound transfer
16. Incubator

View of system within a research facility

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