

# Advanced laser technology for high-content imaging and analysis

## Introducing the CellInsight CX7 LZR High-Content Analysis Platform.

Since the introduction of Thermo Scientific™ high-content imaging and analysis systems in 1999, over 1,000 peer-reviewed publications attest to Thermo Fisher Scientific's legacy of innovation in high-content screening (HCS) and high-content analysis (HCA). This legacy continues with the introduction of the Thermo Scientific™ CellInsight™ CX7 LZR High-Content Analysis Platform, an updated version of our CellInsight CX7 instrument with advanced laser technology.

High-content analysis comprises a combination of fluorescence microscopy, image processing, automated cell measurements, and informatics tools that has enabled significant progress in both basic research and drug discovery. Providing the resolution of microscopy with the statistical power inherent in a highly quantitative analysis, HCA platforms have been fundamental in applications ranging from toxicology assays to cell phenotyping.

### Meet the CellInsight CX7 LZR HCA Platform

The CellInsight CX7 LZR HCA Platform (Figure 1) delivers superior performance for the diverse set of experiments and cell types that are emerging in cell-based assays and provides a broad set of tools for quantitative imaging and analysis. This integrated benchtop system offers widefield, confocal (critical for 3D acquisition), and brightfield imaging with extremely bright illumination to penetrate thick samples. It also provides fast image acquisition with shorter exposure times and laser autofocus capabilities. Live-cell imaging and analysis benefit from the expanded multiplexing options provided by the near-infrared (785 nm) laser, and from advanced features that allow you to control the amount of light reaching the sample, helping to minimize photo-bleaching and phototoxicity. In addition, the CellInsight CX7 LZR HCA Platform has been designed to provide:

- Microscope objectives from 2x to 60x
- A broad range of compatible plate formats and types
- Seamless data sharing and storage using Thermo Scientific™ Store Image and Database Management Software
- Optional onstage incubation and robotic plate handling

### Take advantage of the onboard HCS Studio software

Thermo Scientific™ HCS Studio™ Cell Analysis Software is the engine behind all of our high-content imaging and analysis systems, including the CellInsight CX7 LZR HCA Platform. The HCS Studio software allows

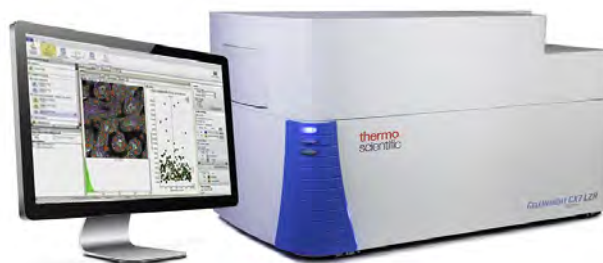


Figure 1. CellInsight CX7 LZR High-Content Analysis Platform.

access to all instrument configuration and control functions, working in concert with Store Image and Database Management Software to analyze and store the resulting high-content images and data. Data acquisition with the HCS Studio software is intelligent, collecting data cell by cell until statistically relevant results can be reported for the assay parameters.

This intuitive, icon-driven tool helps to manage the experimental design and workflow, starting with plate maps and protocol setup, all the way through image acquisition and data analysis. You can configure your assay quickly using the simple, icon-based interface, and image acquisition is fully automated even when multiple channels and imaging modes are required. Once images are acquired, users can leverage the software's suite of available bioapplications, purpose-built for specific biological areas such as proliferation, translocation, neurite outgrowth, apoptosis (Figure 2), and autophagy. Data are processed in real time with no manual intervention required, allowing you to go from image collection to tabulated results and population statistics in minutes.

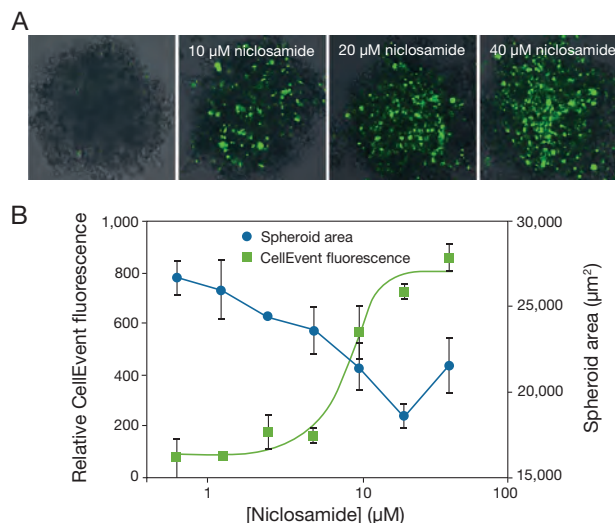
### HCA Onstage Incubator for live-cell imaging

The Invitrogen™ HCA Onstage Incubator is an optional accessory that allows you to equip your CellInsight instrument with live-cell imaging capabilities, enabling quantitation of biological processes in a controlled environment over an extended period of time. The HCA Onstage Incubator allows precise control of temperature, humidity, and CO<sub>2</sub> levels. It also contains integrated scheduling software for kinetic and motility measurements, as well as robot compatibility for fixed-endpoint assays and the capability to generate multicolor movies.

**Add high-content capabilities to your lab**

The CellInsight CX7 LZR HCA Platform provides an integrated benchtop instrument that interrogates multiple sample types with a wide range of techniques and takes advantage of next-level image acquisition and analysis software. This high-content imaging and analysis technology builds on a 20-year legacy of instrument and software development and over 40 years of fluorescence imaging and probe development in our cell and protein analysis laboratories. To find out more about our high-content imaging and analysis platforms, software, applications, and analysis reagents, or to request an in-lab demonstration, visit [thermofisher.com/hcabp77](http://thermofisher.com/hcabp77). ■

| Product                                                                                                                   | Quantity | Cat. No.    |
|---------------------------------------------------------------------------------------------------------------------------|----------|-------------|
| CellInsight™ CX7 LZR High-Content Analysis Platform                                                                       | 1 each   | CX7A1110LZR |
| CellInsight™ CX7 LZR High-Content Analysis Platform and Store Standard Edition (SE) software                              | 1 each   | CX7B1112LZR |
| CellInsight™ CX7 LZR High-Content Analysis Platform with Store Standard Edition (SE) software and Orbitor™ RS Plate Mover | 1 each   | CX7C1115LZR |
| HCA Onstage Incubator for CellInsight™ CX7 and CX7 LZR instruments                                                        | 1 each   | NX7LVE001   |



**Figure 2. Detection of apoptosis in A549 spheroids treated with niclosamide.** A549 cells were plated in 96-well U-bottom plates for spheroid growth and left in the CO<sub>2</sub> incubator for 24 hr. The resulting spheroids were left untreated or treated with niclosamide (0.3 μM to 40 μM) for 24 hr. To detect apoptosis, spheroids were stained with 2 μM CellEvent Caspase-3/7 Green Detection Reagent (Cat. No. C10423) for 1 hr and imaged on a Thermo Scientific™ CellInsight™ CX7 LZR HCA Platform using brightfield and confocal modes with a 10x objective. **(A)** The images are the maximum intensity projections of 16 different Z slices. **(B)** CellEvent fluorescence and spheroid area were plotted against niclosamide concentration.

**Versatile western blot transfer system: Performance coupled with flexibility**

The Invitrogen™ Power Blotter System is a flexible solution for western blot transfer, from interchangeable blotting cassettes to suit your required throughput, to multiple transfer stack choices. The Power Blotter utilizes an integrated power supply, LCD touchscreen, and preprogrammed, optimized protocols for rapid, efficient semi-dry transfer of proteins from gels to membranes. For transferring up to 2 mini gels or 1 midi gel simultaneously, choose the standard Power Blotter System; for greater transfer capacity, choose the Power Blotter XL System, which can transfer up to 4 mini gels or 2 midi gels at once. Learn more about adding the Power Blotter to your western blotting workflow at [thermofisher.com/powerblotter](http://thermofisher.com/powerblotter). In addition, see "Innovative western blotting from start to finish" on page 28.

| Product                                                                                                              | Quantity | Cat. No. |
|----------------------------------------------------------------------------------------------------------------------|----------|----------|
| Power Blotter System (Power Blotter Station and Power Blotter Cassette)                                              | 1 system | PB0012   |
| Power Blotter Welcome Pack, including Power Blotter System and transfer stacks, membranes, filters, and buffer       | 1 kit    | PB0112   |
| Power Blotter XL System (Power Blotter Station and Power Blotter XL Cassette)                                        | 1 system | PB0013   |
| Power Blotter XL Welcome Pack, including Power Blotter XL System and transfer stacks, membranes, filters, and buffer | 1 kit    | PB0113   |



**Power Blotter System (top) and Power Blotter XL System (bottom).**