

# Helios

## A CyTOF® system

Helios™ brings high-parameter capabilities to protein research, expanding the breadth and depth of phenotypic and functional profiling in single cells. Helios technology addresses the challenges of high-parameter, single-cell analysis, providing researchers with tools to dissect the complex proteomes of cell systems in normal and diseased states.

Helios analyzes individual cells labeled with stable metal isotopes using state-of-the-art

inductively coupled plasma time-of-flight (TOF) technology. With 135 detection channels, Helios can simultaneously resolve multiple elemental probes at high acquisition rates, thereby maximizing the per-cell information obtained from a single sample. The system's newly designed pneumatic sample introduction system and its new software interface make mass cytometry more accessible than ever.

### Helios Specifications\*

| Description                             | Specification  |
|---|--|
| <b>Channels</b>                         | 135  |
| <b>Mass range</b>                       | 75–209 amu   |
| <b>Abundance sensitivity</b>            | 0.3% for <sup>159</sup> Tb                                     |
| <b>Instrument response</b>              | 600,000 counts/pg <sup>159</sup> Tb                            |
| <b>Detection limit</b>                  | 350 antibodies/cell  |
| <b>Dynamic range</b>                    | 4.5 orders of magnitude  |
| <b>Calibration</b>                      | Automated  |
| <b>Operating system</b>                 | Windows® 7 Pro 64-bit  |
| <b>Data storage</b>                     | 7.2 TB RAID (mirrored)   |
| <b>Sample introduction</b>              | Pneumatic single tube loader with agitation, up to 5 mL volume |
| <b>Peak throughput</b>                  | 2,000 events/sec   |
| <b>Flow rate</b>                        | 30 µL/min  |
| <b>Replicate sample CV (normalized)</b> | <3%  |

| Description       | Specification                |
|-------------------|------------------------------|
| <b>Dimensions</b> | <b>Width</b> 41 in (103 cm)  |
|                   | <b>Height</b> 52 in (132 cm) |
|                   | <b>Depth</b> 35 in (87 cm)   |
| <b>Weight</b>     | 705 lb (320 kg)              |



## Workstation Specifications\*

| Description             | Specification        |
|-------------------------|----------------------|
| <b>Operating system</b> | Windows 7 Pro 64-bit |
| <b>CPU</b>              | Intel® Core™ i7      |
| <b>Hard drive</b>       | 2 x SSD, RAID 1      |
| <b>Data storage</b>     | 7.2 TB HDD, RAID 10  |
| <b>Monitor</b>          | 24 in (61 cm) LED    |
| <b>Dimensions</b>       |                      |
| <b>Width</b>            | 8 in (20 cm)         |
| <b>Height</b>           | 18 in (46 cm)        |
| <b>Depth</b>            | 23 in (58 cm)        |
| <b>Weight</b>           | 77 lb (35 kg)        |

## Data File Size

| File Type | Size                     |
|-----------|--------------------------|
| IMD       | 0.3 MB/sec/channel       |
| FCS       | 12.4 bytes/event/channel |
| TXT       | 2.4 bytes/event/channel  |

## Chiller\*

| Description       | Specification  |
|-------------------|----------------|
| <b>Dimensions</b> |                |
| <b>Width</b>      | 15 in (38 cm)  |
| <b>Height</b>     | 25 in (64 cm)  |
| <b>Depth</b>      | 27 in (67 cm)  |
| <b>Weight</b>     | 178 lb (81 kg) |

## Autosampler (optional)\*

| Description                | Specification                           |
|----------------------------|---|
| <b>Sample volume</b>       | 50–900 µL                               |
| <b>Sample format</b>       | 3 x 96-well plate, up to 2 mL deep well |
| <b>Sample resuspension</b> | Probe pipet motion                      |
| <b>Reagent reservoirs</b>  |   |
| <b>Carrier (DIW)</b>       | 250 mL                                  |
| <b>Wash solution</b>       | 250 mL                                  |
| <b>Rinse</b>               | 250 mL                                  |
| <b>Dimensions</b>          |   |
| <b>Width</b>               | 16 in (39 cm)                           |
| <b>Height</b>              | 10 in (24 cm)                           |
| <b>Depth</b>               | 14 in (36 cm)                           |
| <b>Weight</b>              | 44 lb (20 kg)                           |

\* Specifications for Helios, components and accompanying computer system are subject to change without notice.

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