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LTQ Orbitrap XL Performance Specifications

General Description

LTQ Orbitrap XL is a hybrid mass spectrometer incorporating the LTQXLTM linear trap and the OrbitrapTM. The LTQ Orbitrap XL consists of four main components, which are described in the following topics:

- A linear ion trap (Thermo Scientific LTQXL) for sample ionization, selection, fragmentation, and AGCTM.
- An intermediate storage device (curved linear trap) that is required for short pulse injection.
- An Orbitrap analyzer for Fourier transformation based analysis.
- A collision cell for performing higher energy CID experiments.

Wheels at the bottom side of the instrument facilitate positioning the LTQ Orbitrap XL at the intended place in the laboratory. The instrument is designed to be placed with its rear panel against a wall. To ensure a sufficient air flow for cooling the instrument, spacers on the rear panel provide for minimum distance to the wall.

The mains inlet as well as a power outlet for peripheral devices (data system, for example) are located at the right side of the instrument. Rotary pumps are hidden under the linear trap and accessible from the front. The left side panel and the front panel are mounted on hinges and the right side panel is removable.

The top lid opens upwards to allow easy access for Field Engineers from the top. A stand-alone recirculating water chiller is delivered with the instrument. It is connected to the right side of the instrument.

Specifications

The LTQ Orbitrap XL has the following measuring properties:

Resolution (apodized): 60000 (FWHM) @ m/z 400, with a scan repetition rate of 1 second, Minimum resolution 7500, maximum resolution 100000 @ m/z 400

Cycle Time: 1 scan at 60000 resolution @ m/z 400 per second

Mass Range: m/z 50–2000; m/z 200–4000

<u>Mass Accuracy</u> <3 ppm RMS for 2 h period with external calibration using defined conditions, <2 ppm RMS with internal calibration

<u>Dynamic Range:</u> >10000 between mass spectra, >4000 between highest and lowest detectable mass in one spectrum

MS/MS: MS/MS and MSn scan functions

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