

Solutions for Innovation

JMS-T100LP AccuTOF™ LC-Express

Simple, robust, and versatile atmospheric pressure ionization high-resolution time-of-flight mass spectrometer with variety of optional ion sources including DART™ and ColdSpray.



JEOL Ltd.

Quick and easy accurate mass measurements

AccuTOF™ LC-Express

The AccuTOF™ LC-Express is the fourth generation of the successful AccuTOF™ LC series, a robust and easy-to-maintain, high-throughput mass spectrometer aiming for high productivity with multiple ionization methods.

JEOL's unique ionization technology, DART™ (Direct Analysis in Real Time) can rapidly provide accurate mass information. It is also easy to replace the ion source with the electrospray ionization (ESI) source for LC/MS operation, or with ColdSpray ionization (CSI) source.

Thus, the AccuTOF™ LC-Express can satisfy a variety of research needs in organic chemistry and material science.

DART™(option)

You can acquire high mass-resolution, accurate mass spectra in real time by simply presenting samples of various shapes and states to the DART™ ion source without any sample preparation. DART™ can handle samples with arbitrary shapes or "dirty" sample that conventional analytical method cannot deal with.



LC-MS

With the standard electrospray ionization (ESI) source, the AccuTOF™ LC-Express can be used as an LC-MS system. In addition, applications can be expanded by adding an optional atmospheric pressure chemical ionization (APCI) source.

ColdSpray

With the optional ColdSpray ionization (CSI) source, thermally labile analytes, including self-assembling supramolecular complexes, some classes of organometallic complexes, and short-chain double stranded DNAs, can all be analyzed intact.

DART™, the pioneering ambient mass spectrometry source

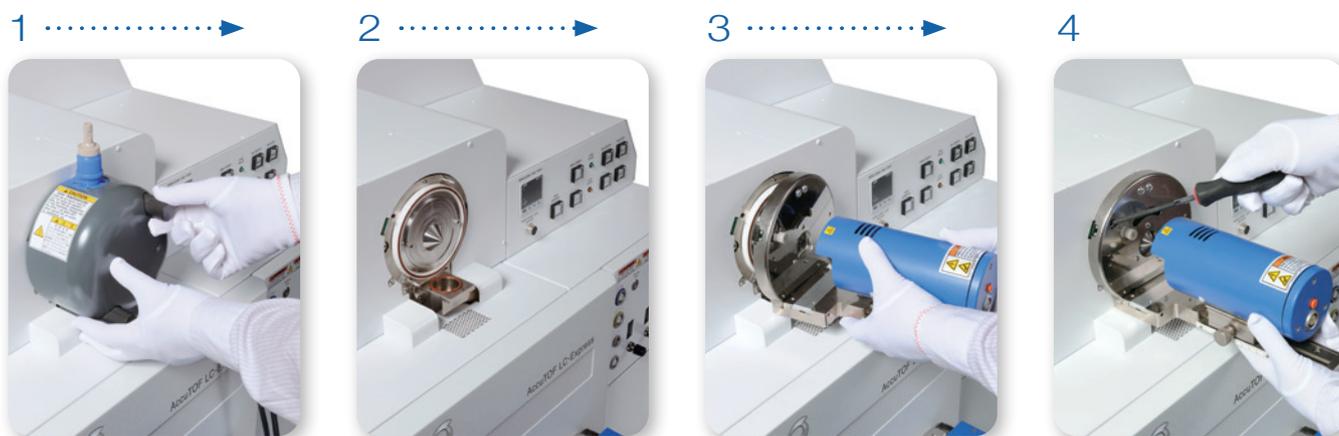
With the optional DART™ ion source, samples with various states and shapes can be analyzed directly with little or no sample preparation.

DART was born in 2003 at the mass spectrometry applications laboratory of JEOL USA, Inc. Among a series of new ionization techniques, which were later termed “ambient ionization,” DART was the first to be invented and the first to be commercialized in 2005. Since DART™ was developed for JEOL AccuTOF™ series of mass spectrometers, it provides the best performance when attached to AccuTOF™ LC-Express.



Easy and quick ion source exchange to support multiple ionization methods

Switching from ESI to DART™ is easy and quick on the AccuTOF™ LC-Express since no additional interface for DART™ needs to be installed due to a high-capacity vacuum pumping system. The combination of AccuTOF™ LC-Express and DART™ ion source is able to detect a wider range of polar and nonpolar compounds than any other DART™ MS system. With no additional interface, there is virtually no carryover from one analysis to another, even for ‘dirty’ and ‘sticky’ samples.

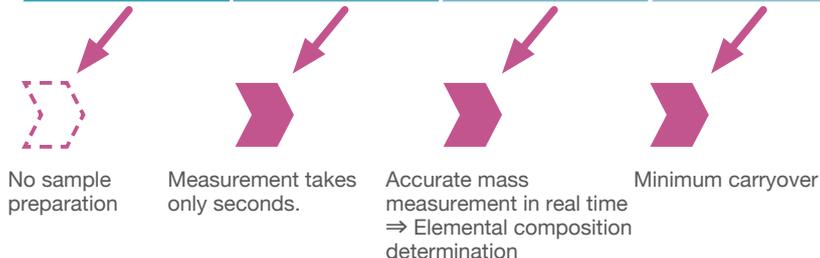


High productivity enabled by DART™

Ordinary mass spectrometric analysis



AccuTOF™ LC-Express + DART™



Major Optional Attachments

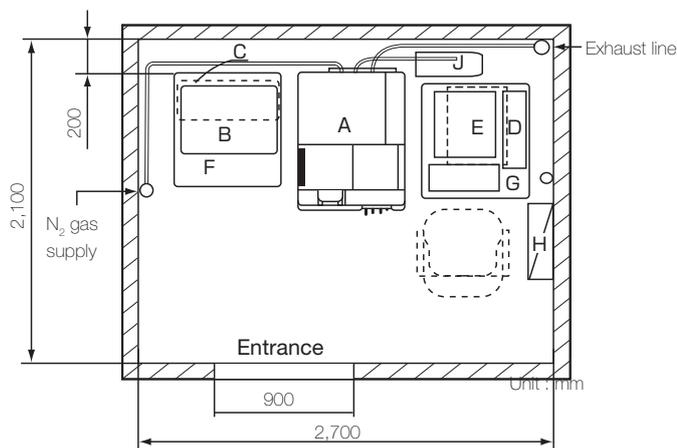
DART Ion Source
 TLC Sampler SVP
 APCI Ion Source
 Coldspray Ion Source

Installation requirements

Power supply	
Main console	Single phase AC 190-210 V or 220-240 V, 50-60 Hz, 20 A*
Liquid chromatograph	Single phase AC 100-120 V, 20 A or 200-240V, 10 A*
DART™ ion source	
Data system	Single phase AC 100-120 V, 15 A or 200-240 V, 7.5 A*
Grounding	100 Ω or less
Nitrogen gas	
Main console	700 kPa (10 L/min) , 97 % or better purity
DART™ ion source	550 kPa (10 L/min) , 97 % or better purity
Helium gas	
DART™ ion source	550 kPa (10 L/min) , 99 % or better purity
Installation room	
Varying magnetic field	1 × 10 ⁻⁶ T or less
Static magnetic field	5 × 10 ⁻⁴ T or less
Floor vibration	Amplitude (p-p) 25 μm or less, acceleration 0.1 m/s ² or less
Room temperature	20 ~ 27 °C
Temperature fluctuation	± 3°C/h or less
Humidity	30 to 70% (no condensation)
Maximum heat generation	28,800 kJ/h with liquid chromatograph
Ventilation facility	Ventilation facility for solvent vapor (from ion source) and rotary pumps is required.

* Power supply requirement depends on a specific configuration sold in each territory. Please inquire at a local sales office for details.

Example of an installation room (with liquid chromatograph)



	Unit	W (mm)	D (mm)	H (mm)	Mass (kg)
A	Mass spectrometer	690	905	1156	305
B	Liquid chromatograph	645	470	1150	63
C	N ₂ gas tank	250	660	170	15
D	Computer	176	345	335	10.6
	LCD monitor	520	166	351	4.8
E	Laser printer	-	-	-	-
F	Table for LC	-	-	-	-
G	Table for PC	-	-	-	-
H	Switch board	-	-	-	-
I	N ₂ gas supply	-	-	-	-
J	Rotary pump	160	430	230	22

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