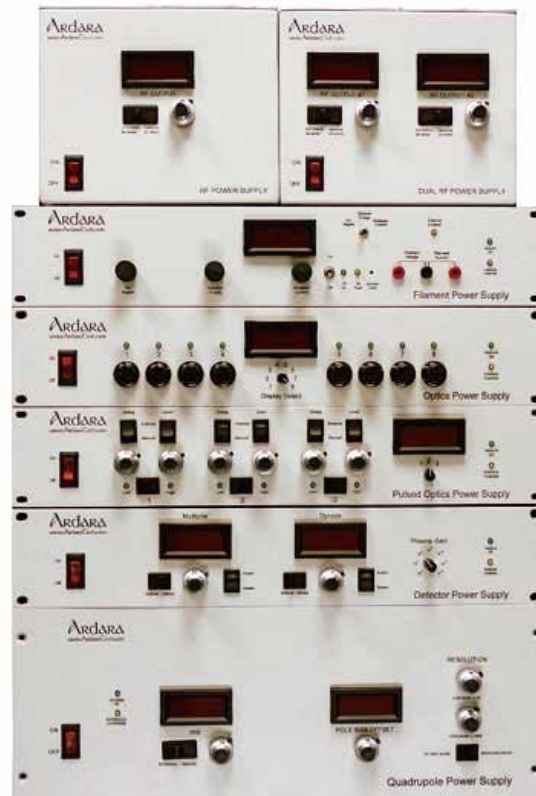


MASS SPECTROMETERS and COMPONENTS



Ardara Technologies L.P. is a leading designer and supplier of mass spectrometers and components that go into custom mass spectrometer systems.

We offer a full line of products and services, including electronics modules such as Optics Power Supplies and RF Power Supplies and Quadrupole Power Supplies, as well as vacuum hardware such as Quadrupoles, Ionizers, Chambers and Flanges.

We also design and fabricate integrated systems such as our benchtop quadrupole gas analyzer, and custom ESI-q-TOF systems.

The figure to the right shows a sample design, as well as the finished product for one of our rectilinear quadrupole ion guides.

About Us

Ardara Technologies L.P. was founded in April of 2004 by Randall E. Pedder, Ph.D., with a stated purpose of designing, manufacturing, and distributing mass spectrometers and associated components for our customers to integrate into their own custom systems.

The founder gained considerable experience in mass spectrometer design and manufacture through his previous fifteen year career working, first as a summer intern at Finnigan MAT (now Thermo Fisher Scientific) and then as a Product Specialist at Leybold Inficon (now Inficon) and then in various roles at Extrel Mass Spectrometry (Millipore Extrel, ABB Extrel and now Extrel CMS).

Currently numbering more than a dozen employees, Ardara Technologies staff is dedicated to continuous improvements of our designs with an emphasis on customization to support our customers' diverse requirements. For example, our RF power supply has been modified to drive frequencies below 100 kHz for high mass quadrupole applications, to 5 MHz for high transmission RF-only ion guides. Most of the products we ship are customized in some way at our manufacturing site to meet a customer's specific needs.

We believe that a key element of our growth over the last five and a half years has been through strategic partnerships with companies who manufacture complementary technologies, including Analytica of Branford (now part of Perkin Elmer) with whom we have been collaborating since our founding, providing their electrospray ionization products for us to distribute and support, as well as Jordan TOF Products company, with whom we have also had a continuing collaboration, jointly developing custom Q-TOF systems.

Our company focuses on all aspects of engineering, manufacturing and distribution of mass spectrometers and related products. Our business model includes design engineering, both of our own products as well as contract engineering and consulting for other mass spectrometer and analytical instrumentation companies. We manufacture products of our own design as well as perform contract manufacturing of our customers' designs. We market, sell, and support, our own products, as well as complementary products from other vendors. Through this business model, we have developed robust OEM relationships where we provide engineering services, contract manufacturing services, as well as customized instances of our own products, with startup companies and larger instrument companies alike.

What's in a name? Our company is named after the village in Western Pennsylvania where our founder grew up, the same village where his father and his father's father were born and raised, which coincidentally is the village where the company currently resides. If the former mass spectrometer company Balzers (now part of Inficon) can name themselves after their hometown, why can't we? The 'Technologies' portion of our company name serves to emphasize that we specialize not just in mass spectrometers but in a variety of technologies that go into the design and manufacture of mass spectrometer systems and related products.

Applications

Applications where our components and systems are used by our customers include:

Gas analysis systems: One of our systems is currently in use checking for leaks during space shuttle launches. We also have developed molecular beam systems for monitoring reaction products in radical-neutral reactions in flow tubes. We recently introduced a low-cost benchtop Quadrupole Gas Analyzer System with atmospheric sampling inlet which has been optimized for use as a training tool in undergraduate chemistry laboratories.



Cluster deposition systems: Our extended mass range quadrupoles have been configured to 100,000 amu, limited only by the mass range of ions that the customer was able to generate. We have also developed novel flanges with radial mounted feedthroughs to allow suspension of a quadrupole within an ion beam line, without blocking the entrance or exit to the quadrupole.

Peptide and protein research: We have built turn-key electrospray Q-TOF systems as well as provided electrospray ion sources, electronics for ion funnels, as well as custom chamber configurations, ion guides and collision cells. We collaborate with Jordan TOF Products to develop custom interfaces for orthogonal extraction TOF systems as well as 3D ion trap TOF systems.



Hydrogen research: We have configured a special ultra-high sensitivity, low mass range, Flange Mounted Mass Filter System using a 20 mm quadrupole with jumbo cross beam ionizer and high frequency quadrupole power supply for analysis of hydrogen atoms and molecules.

New instrumentation development: We work closely and confidentially with our OEM customers as well as academic researchers in developing innovative new mass analyzer systems, based on the customers' inventions and intellectual property. For example, we have designed and manufactured custom mass analyzer electrode geometries on a contract manufacturing basis. As well, we typically customize our electronics designs to meet the needs of our customers who are developing the next generation of mass analyzers.

Upgrades to older systems: We recognize that not every researcher has the budget to purchase shiny new complete systems. We have a strong history in working with a customer's existing system and engineering upgrades that adapt to their existing components. Examples include upgrading the quadrupole power supply to extend the mass range, changing the frequency of an ion guide to optimize its mass range bandpass, or simply replacing aging electronics with newer, more stable designs.

Products

From Flange-Mounted Mass Filter systems, to RF Power Supplies for driving customer-designed ion funnels, to turnkey ESI-Q-TOF systems with integral linear ion traps for photodissociation, Ardara Technologies has provided a wide range of products.

Our specialty is in customization, providing our design engineering expertise to help our customers use our off-the-shelf component designs in new and different ways.

We also spend a fair amount of time helping our customers conceive of new system configurations, often in the grant proposal stage, where we often provide 3D models of proposed systems.

Systems

Ardara Technologies offers the following system products:

Quadrupole Gas Analyzer System :

Integrated benchtop mass spectrometer with atmospheric pressure inlet.

- The Ardara Technologies QGA system was designed with easy-to-use software, ideal for the undergraduate chemistry laboratory.
- While inexpensive, the QGA offers mass spectrometer features at an entry level price.



Flange Mounted Mass Filter Systems :

Mass spectrometer system complete with software, ready to insert into your vacuum system.

We offer a range of ionizer, quadrupole deflector and focus lens options.

We offer resolving quadrupoles with rod diameters including 6 mm, 9 mm, 12 mm, and 20 mm, as well as collisional damping ion guides, including hexapoles, octopoles and rectilinear quadrupoles.

We offer flange and detector options including our radial flange design that allows you to insert a quadrupole in situ in an ion deposition system, with the electrical connections mounted radially, allowing for unimpeded access to the entrance and exit of the quadrupole.

Time Of Flight Mass Spectrometers :

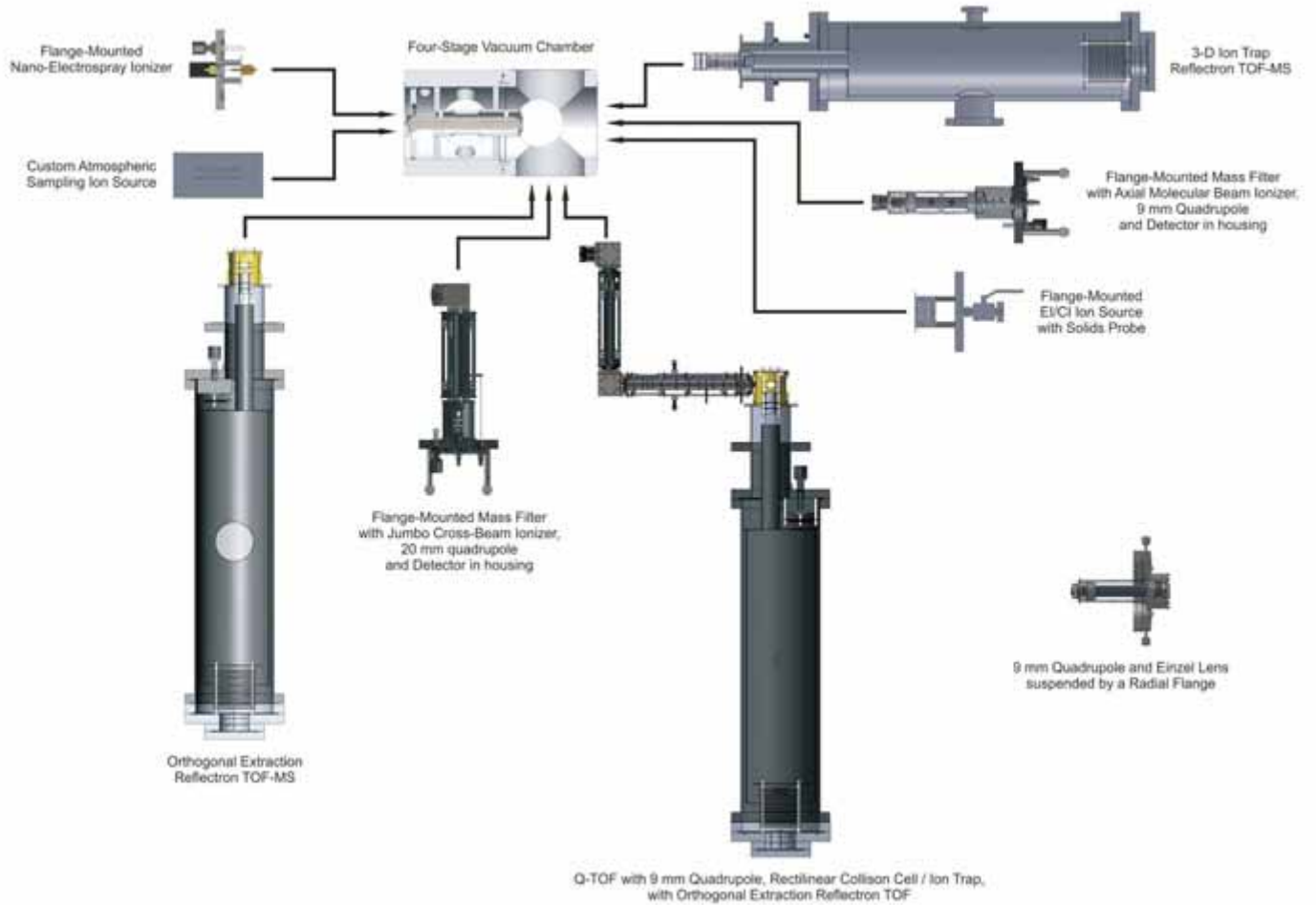
Integration of components from Jordan TOF Products, including 3D ion trap and orthogonal extraction Reflectron TOF mass spectrometers with specialized ionizers, inlets and ion guides.



Custom Systems :

Integrated custom systems including vacuum chambers and pumps.

Custom System Configurations



Electronics

Ardara Technologies offers a wide range of electronics to power and control your mass spectrometry system.

RF Power Supplies have long been a staple of Ardara Technologies. Through its self-oscillating design, the Ardara RF Power Supplies, dramatically decreases the complexity of powering RF-only ion guides, capable of driving high voltages to capacitive loads ranging from ten picofarads to over a thousand picofarads, without customer intervention. Simply connect the cables and adjust the command dial.



The **Filament Power Supply** was designed to provide stable emission-regulated electron current from a heated filament for use with electron impact ionizers such as Ardara technologies' Axial Molecular beam ionizers and Cross Beam Ionizers.

The **Optics Power Supply** provides stable high voltages (± 400 V) suitable for up to eight independently controlled optics elements, including lenses, ion guide offset potentials, pre-filters offset potentials and other ion optics devices.



The **Pulsed Optics Power Supply** provides three independent 'fast' (sub microsecond rise time) ± 200 V outputs.

The **Detector Power Supply** was designed to provide stable high voltages suitable for supplying power to both a detector Multiplier and Dynode, as well as preamplifier control.



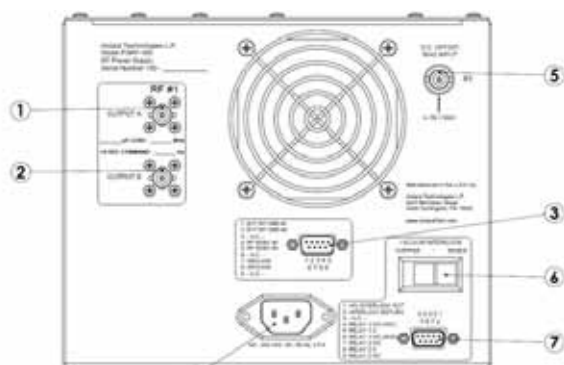
Quadrupole Power Supply offer operating frequencies from 100 kHz to 4 MHz and system mass ranges from 0 to 5 amu for ultra-sensitive analysis of hydrogen and helium, to beyond 100,000 amu for cluster analysis.

The **Vacuum Controller** is capable of distributing power to your entire MS system, as well as offer integral safety interlock of Gate Valves, and Ion Gauge control.

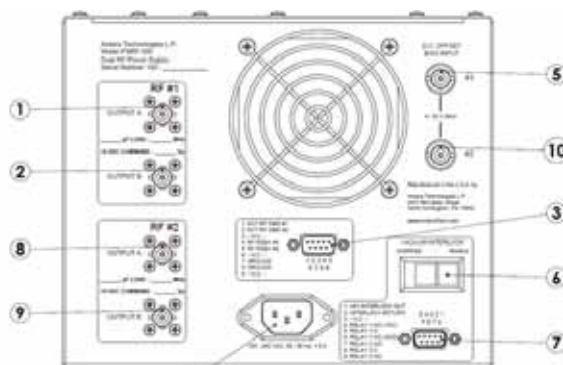


RF Power Supplies

- For RF-only ion guides: Quadrupoles, Hexapoles, Octopoles, and Ion Funnel.
- Up to 2000 Vpp RF amplitude at nominal frequencies of 100 kHz to 4 MHz with capacitive load. (Dual RF configurable for two different frequencies.)
- Oscillates with capacitive loads as high as 1,000 pF, configurable to drive loads as high as 5,000 pF.
- RF Amplitude can be set manually via a potentiometer on the front panel, or from an external input connection on the rear panel.
- Self-oscillating RF supply with variable operating frequency.
 - Automatically varies frequency to match capacitive load, eliminating the need for messy matching networks.
 - Ready to connect up to your vacuum flange with the supplied MHV cables. Vary the cable length or capacitive load to vary frequency.
- DC Bias Offset Input supports pulsed modes of operation.
- Front panel digital voltmeters show peak-to-peak RF voltage for each RF power supply.
- Vacuum interlock input on back panel to disable high voltage in vacuum fault conditions.
- Universal AC input (100-240VAC, 50-60 Hz)



Back Panel View of RF Power Supply



Back Panel View of Dual RF Power Supply

Table 1. RF Power Supply Back Panel Controls

Balloon Number	Function	Description
1	RF#1 Output A	MHV connector which supplies one phase of the RF output #1.
2	RF#1 Output B	MHV connector which supplies opposite phase of the RF output #1.
3	External Control Input	Male DB9 connector which allows external RF amplitude commands, as well as RF amplitude readbacks.
4	Universal AC Power Input	100 to 240VAC. 50-60Hz universal power input.
5	DC Offset Bias Input #1	BNC connector to allow externally generated -50 to +50volt pole bias offset voltage to drive the DC offset of the RF power supply output #1. An Internal 10K resistor to ground pulls DC offset down in the absence of an external command.
6	Vacuum Interlock Enable	Controls whether the vacuum interlock feature is enabled. When set to `Override` . the RF voltage is always enabled when AC power is turned on. When set to `Enable` . RF voltage is enabled only when +5 volts is presented to pin 2 of the Vacuum Interlock Connector.
7	Vacuum Interlock Connector	Female DB9 input that allows external enabling and disabling of the RF power supply. Enables or disables RF voltage depending on whether there is +5 volts presented to pin 2 from an outside source.
8	RF #2 Output A	MHV connector which supplies one phase of the RF output #2.
9	RF #2 Output B	MHV connector which supplies opposite phase of RF output #2.
10	DC Offset Bias Input #2	BNC connector to allow externally generated -50 to +50 volt pole bias offset voltage to drive the DC offset of the RF power supply output #2. An Internal 10K resistor to ground pulls DC offset down in the absence of an external command.

Filament Power Supply

The Ardara Technologies Filament Power Supply was designed to provide stable emission regulated electron current from a heated filament for use with electron impact ionizers such as Ardara Technologies' Axial Molecular Beam Ionizers and Cross Beam ionizers.



- Rated at up to 100 Watt output (up to ten amperes filament current with up to ten volts across the filament).
- Ion Region power supply can be adjusted from -100V to +100V via front panel potentiometer.
- Electron Energy factory configured for 15 to 100 eV electron energy relative to the ion region potential, adjusted via front panel control.
 - Lower electron energies possible with factory adjustment.
 - Filament current limit adjustable via front panel potentiometer.
- Emission current control via front panel potentiometer to 5 mA, regulated as the electron current leaving the filament circuit to reach the ion region circuit.
- Front panel Voltmeter with selector switch shows actual Ion Region potential, Electron Energy, and Emission Current.
- Front panel connectors allow monitoring of filament voltage and filament current with external voltmeter.
- Front panel filament On/Off switch enables the emission current; when emission is off, the electron energy supply is still enabled.
- Front panel LED's indicate filament enabled and filament failure states.
- Front panel 'Computer' switch supports external control via back panel connection of Ion Region Potential (-10 to +10 volt command yields -100 to +100 V), Electron Energy (0 to +10 V command yields 15 to 100 eV electron energy), and Emission Current (0 to +10V command yields 0 to 5 mA emission current).
- Dimensions: 19 inch rack mount front panel, 3.5 inches tall, 14 inches deep.
- Universal AC input (100-240VAC, 50-60 Hz)

Optics Power Supply

The Ardara Technologies Optics Power Supply was designed to provide stable high voltages suitable for up to eight optics elements, including lenses, ion guide offset potentials, pre-filter offset potentials and other ion optics devices.



- Eight +/-400 volt outputs standard.
 - Individual outputs can be factory configured for +/-50V, +/-100V or +/-200 V
 - 2 MOhm output impedence.
- Features front panel ten-turn potentiometers for fine control of each output.
- Front panel display select switch allows direct measurement of each individual output voltage using front panel digital voltmeter.
- Back panel DB25 connector features external command input for each of the eight outputs.
 - +/-5.0V command yields +/-400 V output, 1 MOhm input impedence.
 - Unit automatically switches between front panel control and external command if pins 24 and pins 25 of the external connector are shorted.
- External Master Command offers the control of any or all of the optics voltages to float off of a Master.
 - Master Command can be chosen either externally or one of the 8 Optics outputs can serve as the Master Command.
 - Slave outputs can be selected by the addition of a jumper wire on the internal optics board.
 - Any output can be turned into a slave or can be left independent.
 - This enables downstream voltages to float off the Master, automatically being adjusted by changes made upstream.
 - The Master Command can also be outputted to other electronics from the Optics Power Supply.
- Supported by a wide range of cable options.
- Dimensions: 19 inch rack mount front panel, 3.5 inches tall, 15 inches deep.
- Universal AC input (100-240VAC, 50-60 Hz)

Pulsed Optics Power Supply

The Ardara Technologies Pulsed Optics Power Supply provides three independent fast response +/-200 volt Optics power supplies to drive lenses and RF Power Supply offsets that need to have pulsed voltages.



- With 200 volts per microsecond slew rate, and typical rise times less than a microsecond, it is ideally suited for trapping and releasing ions in linear ion traps prior to injecting them into an orthogonal extraction TOF mass spectrometer.
- Each of the three pulsed optics circuits is effectively a broadband amplifier with a gain of 40, and can drive fairly high frequencies (hundreds of kilohertz) even into fairly high capacitive loads (performance was recently tested with a capacitive load of 3 nanofarads to ground).
- For those customers who have fast acting DAC's or waveform generators, there is a connector in the back to bring a command into each channel of the Pulsed Optics Power Supply, to use it simply as a broadband amplifier.
- In addition, the Pulsed Optics Power Supply can be operated with two independent DC (-5V to +5V) command inputs, with a third TTL pulse to select which of the two command states the output should follow.
- For convenience, front panel controls are also provided to allow ease of tuning and diagnostics. Each channel of the Pulsed Optics Power Supply can be considered to have six modes of operation, depending upon how you configure the switches on the front panel, and depending on what kinds of voltages you connect to the back panel.

Mode 1: Front panel level control with front panel level state selector - useful for tuning the system up with manual selection of output level.

Mode 2: Front panel level control with external TTL state selection connected to the back panel. - For when you want to have manual control of the two output levels, but want to synchronize with an external device.

Mode 3: Back panel level control inputs with front panel level state selector. - Useful for manually verifying the exact voltages on front panel voltmeter for the two external level command inputs.

Mode 4: Back panel level control inputs with external TTL state selection connected to the back panel. - Complete external control of the two output levels as well as their states.

Mode 5: Same as mode 3, only with a dynamically programmed level (sine wave or arbitrary waveform) programmed into one of the external level inputs, with the front panel switch always selecting the programmed input.

Mode 6: Same as mode 4, but with external TTL state selection that allows you to quickly disable the arbitrary waveform, and substitute either a static or different arbitrary waveform.

Note that this power supply is not intended to be fast enough to be used as the high voltage pulser for a TOF system, rather it was designed to be synchronized with the high voltage pulser, to gate ions into the pulsed extraction region from a linear ion trap prior to the high voltage TOF extraction pulse.

Detector Power Supply

The Ardara Technologies Detector Power Supply was designed to provide stable high voltages suitable for supplying power to both a detector Multiplier and Dynode, as well as Preamp control.



- Multiplier output ranging from 0 to -3kV and Dynode output ranging from -5 kV to +5kV (through zero), standard.
- The front panel display allows for direct measurement of each individual output voltage using the two front panel digital voltmeters.
- The front panel also features 2 ten-turn potentiometers for fine control of both Multiplier and Dynode voltages. Combined, these offer an easy, fast, and efficient voltage adjustment.
- Preamp Gain controlled from the front panel allows for easy adjustment of Internal Preamp from 106 to 1012.
- Front panel and back panel switches allow any of the multiplier or dynode voltages or enables to be controlled externally through a back panel connector.
- Dimensions: 19-inch rack mount front panel.
- Universal AC input (100-240 VAC, 50-60 Hz)

Quadrupole Power Supply

The Ardara Technologies Quadrupole Power Supply was designed to provide an easy-to-install self-oscillating RF power supply for powering quadrupole mass spectrometers.



- Frequency range of 100 kHz to 4 MHz.
- Compatible with a wide variety of capacitive loads.
 - 20 pF to 500 pF standard configuration.
 - Extendable configuration allow for loads over 5,000 pF.
- Self-oscillating design allows the power supply to self-resonate on a variety of loads, without user intervention, therefore there is no tuning procedure.
- Front panel potentiometers control voltages for:
 - Resolving RF (m/z)
 - Pole Bias Offset
 - Low Mass Resolution
 - High Mass Resolution.
- Male DB-9 connector on the back panel provides external commands for the Mass Command, Low Mass Resolution Command, and Pole Bias Offset Command.
- Vacuum Interlock input, disables RF voltages output under conditions where the vacuum pressure is too high for safe operation.
- Dimensions: 19-inch rack mount front panel.
- Universal AC input (100-240VAC, 50-60 Hz)

Vacuum Components

Ardara Technologies product line is equipped with a full line of vacuum hardware and accessories, specializing in custom system and add-ons. Our focus is developing interesting mass spectrometer component technologies, which can be mixed and matched to create custom crazy mass spectrometer systems.

The team at Ardara Technologies is assembled of experienced scientist, design engineers, manufacturing engineers and technicians, specializing in designing and manufacturing custom components and systems for mass spectrometric analysis.

With our years of experience, and wide range of technologies available, we can help guide out customers to an optimized system design, and then build it for them.

Teamed with our manufacturing partners, we have the capacity to design and fabricate quite elegant and functional custom vacuum systems, including innovative custom ion optics hardware, and RF-only ion guides, multi-staged aluminum vacuum chambers, optimized for split-flow turbomolecular vacuum pumps, as well as traditional tubular stainless steel vacuum chamber designs.

Electrospray Components :

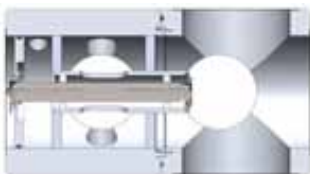
Ardara Technologies has created a family of products for configuring our Nano-Electrospray ion source components into custom ESI-MS systems. All of the components were designed to be interchangeable modules for the ultimate in flexibility in customization.

The Ardara Technologies **Nano-ESI ion source** is configured as a flange mounted atmospheric pressure ionization source.

The 8 inch ConFlat flange-mounted Nano-Electrospray ion source is mounted into a short nipple with integral skimmer exit aperture, the internal volume of which is pumped by a mechanical pump to around a torr operating pressure.



Built into this robust nano-electrospray design is a stainless steel capillary for pressure reduction.



The skimmer of the Nano-Electrospray ion source is concentrically aligned to an aluminum vacuum chamber, bringing the total number of pumping stages to four pressure regions, with three of those regions pumped by a split flow turbomolecular pump.

A rectilinear quadrupole ion guide is used to collisionally damp the ion beam sampled from inside the skimmer through to a conductance limited exit aperture in the fourth stage.

The fourth stage has symmetric 8 inch ConFlat flange ports on three sides as well as the top, providing the capability to bring the electrospray ions through to a wide variety of analyzer combinations.

This flexible chamber design can also be configured with skimmers and no RF-only ion guide to maintain temporal resolution when sampling ions from an ion mobility system.

Typical configurations utilize a quadrupole deflector energy filter to allow selective deflection of the electrospray ions in multiple directions, or to allow multiple ion sources share the same mass analyzer.

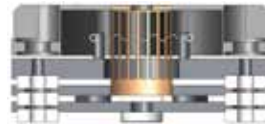
To the right are shown a flange-mounted 20 mm quadrupole mass filter with jumbo cross beam ionizer and quadrupole deflector energy filter, and an orthogonal extraction TOF system, ready to insert into the side port of the Four-Stage Chamber.



Ionizers and Ion Optics

Ardara Technologies has developed a product line of innovative ion optics for molecular beam sampling and ionization, including:

- Molecular Beam Ionizers
 - Axial Molecular Beam
 - Jumbo Molecular Beam
 - Cross Beam Ionizer with integrated Quadrupole Deflector Energy Filter
 - In-Line
 - Slim-Line



Quadrupole Mass Filters

- Wide range of sizes available:
 - 6 mm quadrupole with mass range to 10,000 amu.
 - 9 mm quadrupole with mass range to 4400 amu.
 - 12 mm quadrupole with mass range to 2500 amu.
 - 20 mm quadrupole with mass range to 900 amu.
- Quadrupoles come equipped standard with pre-filters for enhanced performance, with post-filters optional.
- Quadrupoles are equipped with isolated entrance and exit lenses, which utilize our standard 1.25-inch bolt circle, for compatibility with our full range of ionizers and ion optics, as well as for mounting to detector assemblies.
- Standard quadrupole lengths:
 - Analytical Quadrupole Length = 8 inches standard.
 - Pre-Filter Length = 1 inch standard.
- Quadrupole design is customizable for OEM applications, with custom rod diameters and custom analyzer lengths possible.
- Standard quadrupole housing has vent holes for gas conductance.
 - Super-vented housings are available as custom configurations.
- Materials of construction include stainless steel, aluminum oxide ceramic, glass-encapsulated vacuum-compatible resistors, and annealed nickel wire, for vacuum compatibility to 10⁻¹¹ torr.
- RF-only quadrupoles are also available in various lengths and rod diameters.



Ion Guides: Quadrupole, Hexapole, Octopole

- Ardara Technologies offers a variety of ion guides, including:
 - Quadrupoles
 - Hexapoles
 - Octopoles
 - Rectilinear Quadrupoles
- Our Ion Guides come in 6 inch length standard, with longer lengths available by lining up shorter lengths in series. Custom lengths are available as well.
- Effective inscribed diameters are 4 mm standard, for collisional damping ion guides, and 8 mm and 12 mm standard for collision cells.
- Ion Guides are typically equipped with isolated entrance and exit lenses, which utilize our standard 1.25-inch bolt circle, for compatibility with our full range of ionizers and ion optics, as well as for mounting to detector assemblies.
- The typical ion guide housing is customized to suit the application, with our collision cell housings conductance limited with and with gas inlet ports.



Flanges and Detectors

Ardara Technologies offers a variety of custom flange solutions including:

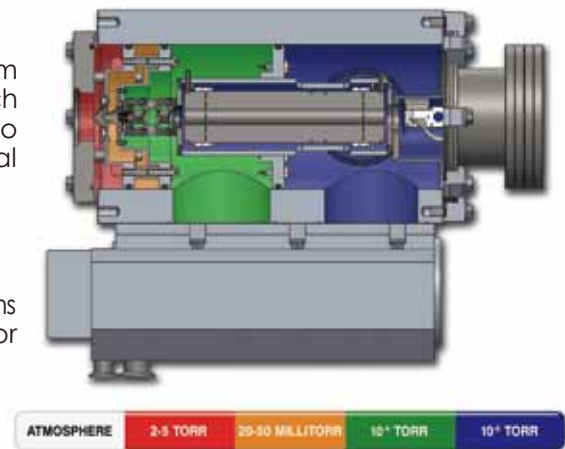
- Detector Mounting Flanges
 - Available as 6-inch and 8-inch ConFlat flanges with convenient support handles
 - Electron multiplier is mounted within in stainless-steel housing (custom length housings are available).
 - Detector Flanges come with 5 standard build-in MHV connections for powering electron multiplier, with a mini-ConFlat flange at the center of the flange, suitable for mounting a sight glass or additional high voltage feedthrough.
 - Our 8-inch ConFlat Detector Flange offers 8 additional Mini-ConFlat connections, which can support:
 - High voltage coaxial connectors (MHV, SHV, BNC)
 - 10-pin connectors for Ion Optics
 - Gas Inlet Ports
 - The flange shown to the right is equipped with a ten-pin feedthrough, and two SHV RF feedthrough's, along with a multiplier housing and electron multiplier detector.
- Radial Flange
 - 8 inch double-sided ConFlat flange configured with radial feed-through's.
 - Allows for in-situ suspension of a quadrupole or other ion optics within an optics train, with conductance limiting mounting plate.
 - Standard configuration includes eight SHV-5 high voltage electrical connections and two 4-VCR gas ports, with 1/8 inch tubing inside.
 - Also useful in mounting optics in situ in front of a gate valve.
 - Shown to the right is a radial flange with a 9 mm quadrupole and entrance optics, mounted onto a conductance-limiting top hat with a quadrupole centering fixture.
 - Also available with ten SHV-5 high voltage electrical connections.
 - Can be configured with an in situ electron multiplier with einzel lens for detection and diagnostics of an ion beam line.
 - When the high voltages are enabled, the electron multiplier serves as a detector.
 - When the detector voltages are connected to a lens supply, the optics serve as an einzel lens.



Customizable Vacuum Chambers

Ardara Technologies L.P. offers a wide variety of custom vacuum chamber options, including this 4-Stage Vacuum chamber, which allow end-users to bring in sample from atmospheric pressure to high vacuum in less than 4 inches, while maintaining temporal integrity of the high pressure sample.

- Differential Pumping
- Various Detector Options
- Ideal interface between Ion Mobility and Mass Spectrometer Systems
- Other configurations are available with RF-only ion guides for collisional damping and enhanced sensitivity.



Custom Racks

Ardara Technologies provides custom designed mounting racks for support of our various chambers and electronics.

Modular in design, these racks are easily extensible at the customer site as your system design evolves.

Custom V-block support structures with adjustable heights allow for easy alignment of different vacuum chamber sections.

Adjustable wheel heights allow for uneven laboratory floor surfaces.

Rack dimensions are optimized for inclusion of 19 inch rack-mounted electronics.

