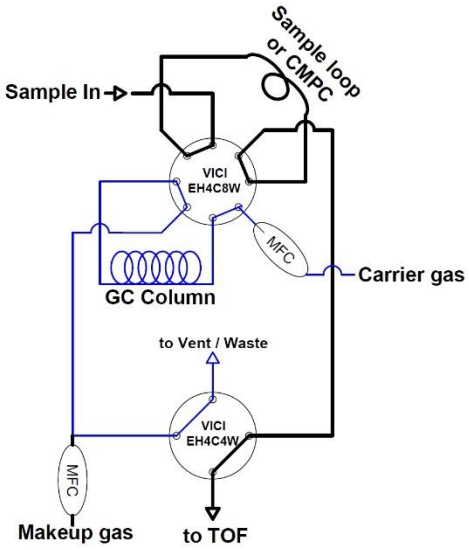
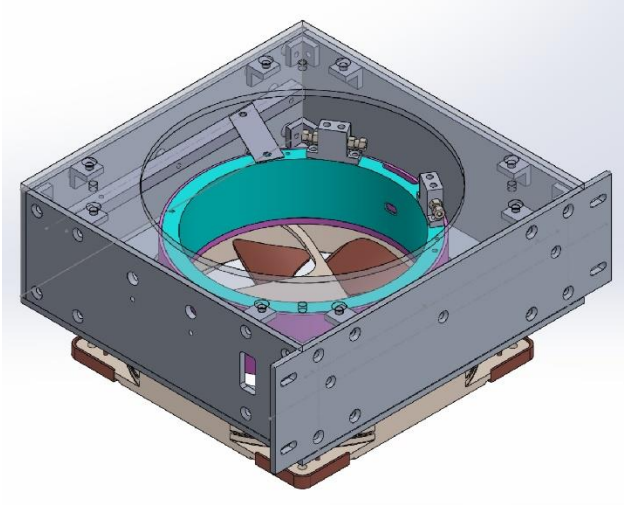
Fast-GC for TOFMS

- *The Fast-GC system is lightweight, compact and customizable with standard capillary columns up to 60-m length. The column oven enclosure size is only 6.7" x 6.7" x 4.6" (168 x 168 x 116 mm) with aluminum construction.*

- *Compatible with Electron Impact, VOCUS PTR and Chemical ionization sources*



Flow schematic of the Fast-GC system, showing the sample passing through sample loop to Vocus PTR-TOFMS

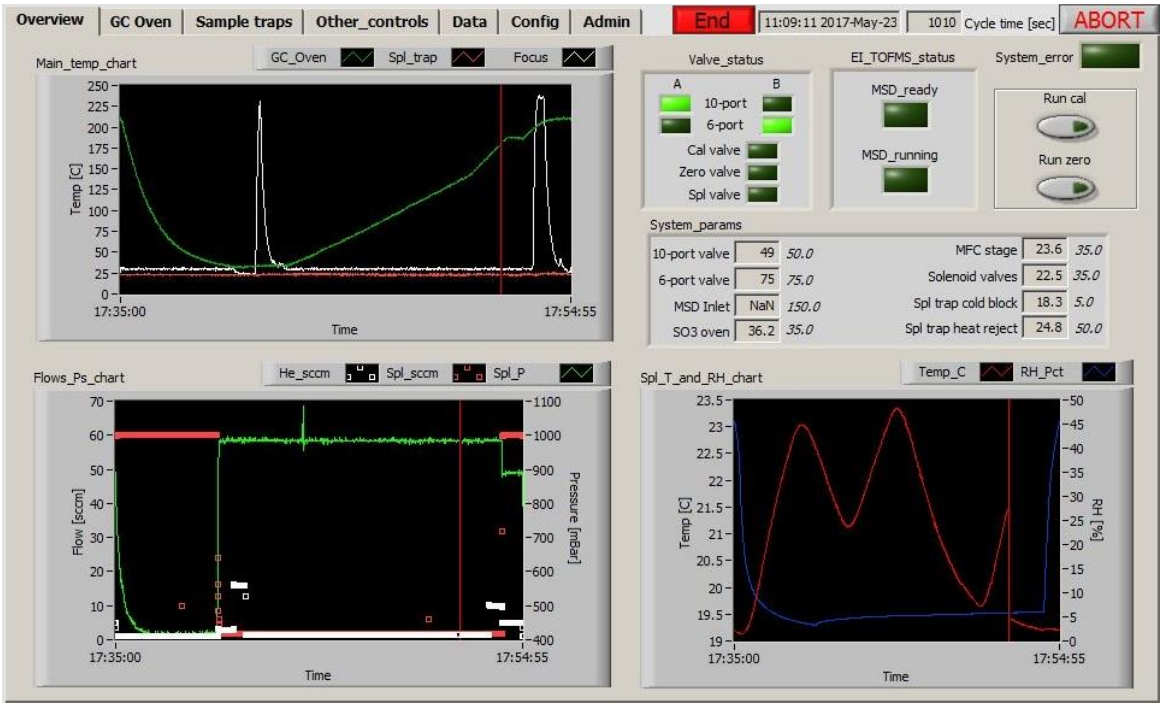


Drawing of Fast-GC enclosure with upper fan assembly removed for clarity

The sample interface uses two 2-position chromatography valves to direct sample flow to or bypassing sample loop, and to select direct sample flow or GC eluent to TOFMS detector. The user is able to select the sample loop size and material as needed to match the specific application. This system is based upon a NOAA field instrument, which has been successfully deployed to multiple campaigns [Lerner et al., 2017; Koss et al., 2017].

The GC system is interfaced to various TOFMS systems at the 4-port valve. Details of this connection can be optimized per customer requirements.

The Fast-GC uses a simple sample-loop injection. System sensitivity can be significantly enhanced by sample pre-concentration. Aerodyne Research Inc. can provide optional adsorbent-based or cryogenic trapping solutions, depending upon customer requirements.



Customizable control software for Windows PC

Fast-GC performance specifications with single column control

Max ramp rate:	130 °C/min (2.1 °C/s)
Max cooling rate:	190 °C/min (3.2 °C/s)
Accuracy:	(Isothermal): 0.5 °C
	(Ramped): 1.25 °C [typical]
Max power:	300 W (heaters and fans)
Max temperature:	230 °C

Physical specifications

Size (w/rack)	23”H x 21”W x 24.5” D (638 x 533 x 622 mm)
Weight	44 lbs (20 kg)
Electrical power	600W (4A @ 120 VAC/60Hz) 120 VAC/60Hz or 230VAC/50 Hz
Column compatibility	All fused silica and metal columns ≤0.53mm ID Max length 60m @ ≤0.25mm ID Max length 30m @ ≥0.32mm ID
Connectivity	USB

Required accessories

- Helium or other carrier gas, nitrogen or other makeup gas (UHP grade or equivalent)
- Gas purifier(s) for carrier gas (e.g. VICI P100)
- Gas regulators, valves, external tubing
- Windows PC