



**ENTECH**  
INSTRUMENTS

*See What's Really There™*



# 2022 CATALOG

Solutions for Chemical Monitoring & Analysis

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## President's Letter



Entech Instruments is continuing its tradition of providing the most advanced and accurate sample preparations systems available for headspace and gas sample analysis by GC and GCMS. Our new Multi-Capillary Column Trapping Systems (MCCTS) are transforming the way that gas phase sample preconcentration is performed prior to GC injection, all without the use of liquid nitrogen or even electronic cooling systems. These "fan cooled", extremely robust and reliable multi-stage capillary column traps manage water and CO<sub>2</sub> hundreds of times better than any packed trap system. This means much faster release for better chromatography, supporting "faster" GC methods, while also demonstrating far better immunity to contamination when exposed to high concentration

samples. Our MCCTS traps have been implemented in a full cryogen free TO15 solution with much faster GC injections and shorter run times than other TO15 systems on the market. Other applications using this revolutionary capillary trapping technology will also soon be announced.

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Entech's patent pending Sorbent Pen™ technology takes SPME to the next level by providing enhanced sensitivity, improved quantitation, and greater robustness than its fiber-based predecessor. Sorbent Pens utilize a unique flow through cartridge that forms a seal on a vial allowing a vacuum to be created within the vial. This new technique called VASE (Vacuum Assisted Sorbent Extraction) has been demonstrated to cover the entire range of analytes from the lightest volatile compounds (Freon 12/Vinyl Chloride and others) to very heavy 5-6 ring PAH compounds, while remaining in the headspace to avoid actual contact with the sample matrix. With 50-150x higher phase loading and the use of traditional adsorbents with thousands of times more surface area than SPME, the Sorbent Pen™ can fully extract difficult compounds from complex matrices providing superior sensitivity and reproducibility. Sorbent Pens are also available for performing Diffusive and Active air monitoring, making the Sorbent Pen technique extremely versatile. Our newly released SPR40 -Sample Preparation Rail promises to be a game changer for headspace sample preparation and general thermal desorption methods. Rather than desorbing a TD tube into a completely different instrument with separate traps, transfer lines, and rotary valves to have to clean and maintain, the SPR40 allows thermal desorption of Sorbent Pens directly into a GC or GCMS to allow dramatically improved recovery, consistency, and easy of maintenance. Watch for a new wave of applications coming out in 2019-2020 using the SPR40 Robotic inlet.

Our unmatched Silonite™ surface coatings continue to be perfected, resulting in the most consistent, durable, and inert coatings available for GC inlet systems and for mercury vapor handling without surface interactions. Silonite™ surface treatments play a vital role in achieving our ultimate goal; to provide our customers with complete solutions for "analytical grade" VOC and SVOC handling and inlet systems that can sample, store, and recover virtually all GCMS compatible compounds.

Finally, for US EPA Method TO-15 and China HJ-759, Entech is proud to be the only supplier that manufacturers and supports the complete solution for sampling and analysis of airborne contaminants using Silonite™ coated stainless steel canisters. Entech has assembled an extraordinary and talented team of Chemists and Service Engineers with a combined knowledge of over 200 years of laboratory and field experience – to provide our clients with premier customer service and on-site support. To our valued customers we would like to say thank you for your patronage through the years and we look forward to servicing your analytical needs for many years to come.

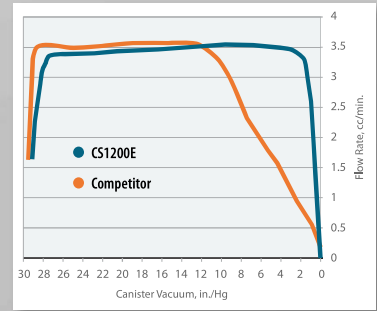
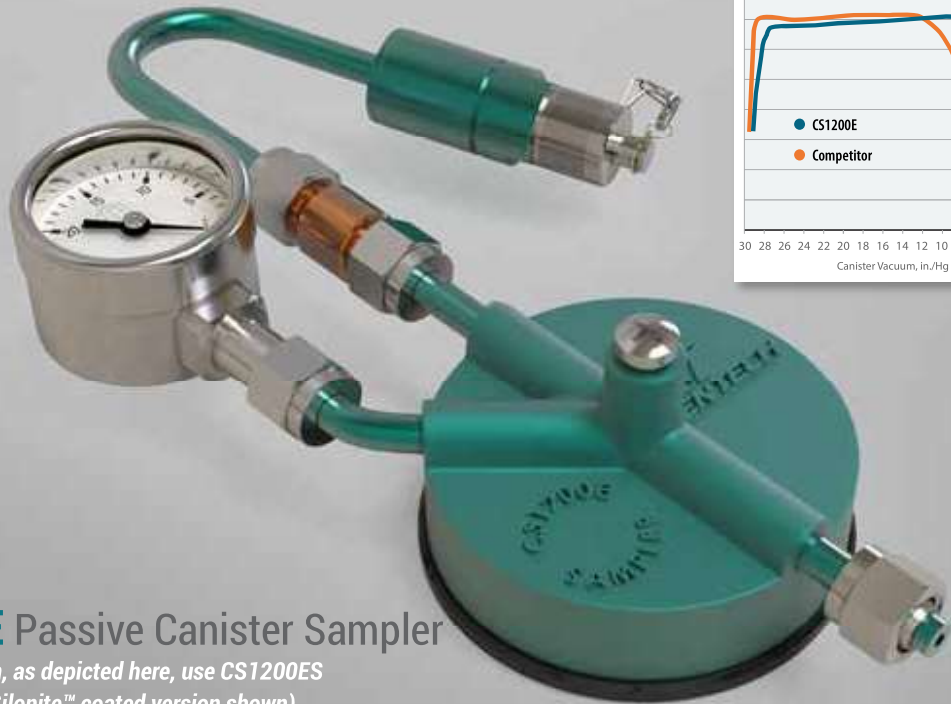
Sincerely,  
Daniel B. Cardin – President



Entech Instruments is a leading developer and manufacturer of analytical instrumentation that supports professionals around the world in the Environmental, Industrial Hygiene, Food & Beverage, Product Testing, Forensics, and Clinical Analysis markets.

To provide solutions for such a diverse set of industry applications, Entech has assembled an extraordinary and talented team – a combined knowledge of over 200 years of laboratory and field experience – to provide our clients with premier customer service and on-site support. We invite you to share your application challenges and requirements so we can create a customized solution just for you.

~ The Entech Team



## CS1200E Passive Canister Sampler

For coated version, as depicted here, use CS1200ES  
39-CS1200ES3 (Silonite™ coated version shown)

Featuring an inert, compact, and reliable flow path with superior low flow stability.



PN: 39-92204S – Silonite™ Filter Inlet w/  
Rain Guard



PN: 39-CS12-KIT2 – Low Flow Stability  
Upgrade Kit



## CS1200E – Passive Canister Sampler

Low Level TO-15 monitoring requires consistent analyte recovery while collecting the maximum sample volume possible to support larger preconcentration volumes or repeat analyses from the same canister. The CS1200E will reliably fill canisters at a constant rate with better demonstrated recovery of TO-15 compounds than any other sampler.



## Silonite™ Filter Inlet Kit with Rain Guard

PN: 39-92204S – Silonite™ Coated Filter Inlet w/ Rain Guard

*An important component for Low Level TO-15.*



Untreated 300 series stainless steel is 67–70% iron, which is very reactive toward many TO-15A compounds. In addition, untreated stainless tubing has an internal oxide layer that readily adsorbs polar and heavier VOCs. The standard CS1200E inlet now comes internally polished, passivated, and Silonite™ coated to insure maximum recovery of all target compounds – virtually eliminating losses and carryover. The Silonite™ coated filter is placed on the inlet to completely eliminate dust and particulate intrusion during sampling. No need to worry about debris or anything including “insects” in the inlet tubing, a concern specifically mentioned in TO-15A when filters are not placed at the very inlet to the sample train. The inlet is capped off to avoid any contamination risk during shipping.



# CS1200E Passive Canister Sampler

Time integrated VOC concentrations can easily be determined by sampling into canisters at a constant flow rate. Precise and inert restrictors, combined with the inert pressure regulation offer by the CS1200E provides superior flow stability when compared to other regulated controllers. Different restrictors are available to fill a 6L canister over 0.25, 1, 3, 8, 24 hours, or 1, 2, or 4 weeks (1 month). Part numbers for CS1200E flow controllers are separated by flow range. Flow ranges can be easily changed by swapping out the flow restrictor (see *previous page*) and the performing an automated precise calibration using the Flow Professor (*shown on next page*).

## CS1200E (Options & Accessories)

| Description                                 | Unit | Part #        |
|---|------|---------------|
| CS1200E Time Integrated Passive Sampler     | EA   | 39-CS1200Ex   |
| Silonite™ CS1200E Time Integrated Sampler   | EA   | 39-CS1200ESx  |
| Female MicroValve™ Adapter                  | EA   | FQT-400       |
| Silonite™ Female MicroValve™ Adapter        | EA   | FQT-400S      |
| Low-Profile Male Micro-QT Valve™            | EA   | MQT-ST400     |
| Silonite™ Low-Profile Male Micro-QT Valve™  | EA   | MQT-ST400S    |
| Replacement Threaded Inlet Line             | EA   | 39-92210      |
| Replacement Silonite™ Coated Filter         | EA   | 39-92150      |
| Replacement 30-0"Hg Gauge                   | EA   | 39-27560      |
| Sampling Enclosure                          | EA   | 39-50000      |
| Long Inlet for Sampling Enclosure           | EA   | 39-92212S     |
| Silonite™ Filter Inlet Kit w/ Rain Guard    | EA   | 39-92204S     |
| Silonite™ Rain Guard w/ Shipping Cap        | EA   | 39-92196      |
| Low Flow Stability Upgrade Kit              | EA   | 39-CS12-KIT2  |
| Silonite™ Dual 6L Canister Sampling Adapter | EA   | 39-99006      |
| Silonite™ Dual MiniCan™ Sampling Adapter    | EA   | 39-99032      |
| 1.5 - 3m Canister Stand                     | EA   | 29-stand-1-3m |
| 6L Can Secure Enclosure                     | EA   | 29-CANSTATION |

**Important!** Calibrate your CS1200E using the latest flow table online. Visit [www.entechinst.com/CS1200E/](http://www.entechinst.com/CS1200E/) Or, let the Entech Flow Professor™ handle all the calibrations automatically! Visit [www.entechinst.com/FlowProfessor](http://www.entechinst.com/FlowProfessor)

| CS1200E   Restrictors |              |                   |                               |           |
|-----------------------|--------------|-------------------|-------------------------------|-----------|
| Part #                | Flow Range   | Code              | Replacement Restrictor Part # |           |
| Silonite™ Coated      | Uncoated     |                   | Silonite™ Coated              |           |
| 39-CS1200E50          | 39-CS1200E0  | 150 – 450 cc/min. | 0                             | 39-23000S |
| 39-CS1200E51          | 39-CS1200E1  | 50 – 150 cc/min.  | 1                             | 39-23010S |
| 39-CS1200E52          | 39-CS1200E2  | 25 – 75 cc/min.   | 2                             | 39-23030S |
| 39-CS1200E52+         | 39-CS1200E2+ | 12 – 36 cc/min    | 2+                            | 39-23060S |
| 39-CS1200E53          | 39-CS1200E3  | 6 – 18 cc/min.    | 3                             | 39-23080S |
| 39-CS1200E53+         | 39-CS1200E3+ | 4 – 12 cc/min.    | 3+                            | 39-23160S |
| 39-CS1200E54          | 39-CS1200E4  | 2 – 6 cc/min.     | 4                             | 39-23240S |
| 39-CS1200E54+         | 39-CS1200E4+ | 1 – 3 cc/min.     | 4+                            | 39-23480S |
| 39-CS1200E55          | 39-CS1200E5  | 0.5 – 1.5 cc/min. | 5                             | 39-24010S |
| 39-CS1200E56          | n/a          | 0.2 – 0.6 cc/min. | 6                             | 39-24020S |
| 39-CS1200E57          | n/a          | 0.1 – 0.3 cc/min. | 7                             | 39-24040S |

# Tool-Free Field Sampling

Entech is proud to be the exclusive provider of "validated" tool-free solutions for the collection of time integrated canister samples. Simply add our new low profile male Micro-QT™ fitting onto the top of your TrueSeal™, Nupro®, or other canister valve, pair the Micro-QT™ fitting with a female MicroValve™ adapter attached to the CS1200E, and make sampling a "snap" for your customers. Ditch the tools and all the headaches of over-tightened fittings. The Micro-QT™ valve was chosen by NASA for the collection of air samples on the International Space Station, and with 10 years of field testing, don't risk your reputation on anything else.



**Rain Guard / Shipping Cap**  
PN 39-92196

**MicroValve™ Adapter**  
PN FQT-400S

**Low-Profile Micro-QT Valve™**  
PN MQT-ST400S

**Silonite™ Sapphire Restrictor**  
PN 39-24010S

**Replacement Silonite™ Filter and O-Ring**  
PN 39-92150

**1.5–3m Canister Stand**  
PN 29-stand-1-3m /  
PN 39-99032

**6L Can Secure Enclosure**  
PN 29-CANSTATION

| Fill Duration | Recommended Restrictor for Volumes and Fill Times |       |    |      |      |      |      |    |     |
|---------------|---|-------|----|------|------|------|------|----|-----|
|               | 450mL   | 600mL | 1L | 1.4L | 2.5L | 2.7L | 3.2L | 6L | 15L |
| 15 min.       | 2+  | 2     | 1  | 1    | 1    | 0    | 0    | 0  | —   |
| 1 hr.         | 3+  | 3+    | 3  | 2+   | 2    | 2    | 2    | 1  | 0   |
| 3 hrs.        | 4+  | 4     | 4  | 3+   | 3    | 3    | 3    | 2+ | 1   |
| 8 hrs.        | 5   | 5     | 4+ | 4+   | 4    | 4    | 3+   | 3  | 2+  |
| 12 hrs.       | 6   | 5     | 5  | 4+   | 4    | 4    | 4    | 3+ | 2+  |
| 1 day         | 6   | 6     | 5  | 5    | 4+   | 4+   | 4+   | 4  | 3+  |
| 2 days        | 7   | 7     | 6  | 6    | 5    | 5    | 5    | 4+ | 4   |
| 7 days        | —   | —     | —  | 7    | 7    | 7    | 7    | 6  | 5   |
| 14 days       | —   | —     | —  | —    | 7    | 7    | 7    | 7  | 5   |
| 30 days       | —   | —     | —  | —    | —    | —    | —    | 7  | 6   |

Assuming canisters are filled to 4" Hg below atmosphere