



Equipment Requirements

Ductless Filtering Fume Hoods:

3-standard Erlab Captair DFH 392

2- Erlab Captair DFH 714 with modified rear panels for liquid handling apparatus.

Products Expectations

Conversion of a clinical processing lab into a large scale COVID-19 testing facility on a fast-track schedule.

CASE STUDY

Fast Track Conversion from Clinical Processing Lab to Large Scale COVID-19 Testing Facility.



Project Background

Based in Cambridge, MA, this prestigious research institute is an international leader in the field of genomics, chemical genetics, and cell biology, conquering major challenges inherent in molecular medicine. Scientists from many fields collaborate with shared experiences to transform and advance research projects. Their goal includes accelerating the pace at which the world conquers disease – no small task!

The Institute's scientific areas include: Chemical Biology and Therapeutics Science, Drug Discovery, Genome Regulation, Cellular Circuitry and Epigenomics, Immunology, Medical and Population Genetics and Metabolism. Their technology areas include; Data Sciences, Genetics Perturbation, Genomics, Imaging, Metabolomics, Proteomics and their disease areas include; Cancer, Cardiovascular Disease, Diabetes, Infectious Disease and Microbiome, Kidney Disease, Obesity, Psychiatric Disease and Rare Diseases.

Addressing the current pandemic need for testing, the Institute joined forces with major local universities, hospitals, and ambulance

services to test all residents and staff members at homeless shelters, and nearby nursing and assisted living facilities for COVID-19. These test results give the city the ability to quickly respond to outbreaks. It was decided that the CLIA-certified lab could process test samples with the goal of returning results back to physicians. Originally the scientists followed the CDC's testing protocol, which was designed for labs to perform manually at a low throughput, so that it could be run on the facility's automated liquid-handling machines.

As tests take approximately 12 hours to complete and 24 hours to return results, it became clear that the institute, who converted a clinical processing lab into a large scale COVID-19 testing facility, needed more equipment and instrument enclosures - fast. Specifically, the liquid handlers they owned needed to be up and running in quality safety enclosures with HEPA filtration - delivered quickly and without HVAC requirements. Getting the necessary quantity of high-quality ductless filtration fume hoods, also known as Containment Ventilated Enclosures (CVE's), would give their team the ability to process 2,000 samples a day, or more, adding to the capacity of testing labs across New England and reducing the time it takes to turn results around from several days to several hours.

The Challenge

The Institute was in dire need of instrument enclosures that fit the parameters of their equipment and specifications for safety, as well as timely installation. Their initial search for a solution proved frustrating with less than satisfactory options. Proposals were rejected due to long delivery times, inability to provide the type of custom design, or modification capability to retrofit equipment for use with their existing liquid handlers. In the course of their vendor search however, they reached out to New England Laboratory Systems, one of Erlab's partners, who brought the plight of their challenge to our attention.

The Solution

Within 24 hours the project's inherent issues had been reviewed and a quote had been offered, and accepted, that provided a solution meeting all the Institute's criteria. Collaboration is key in successful business strategies and working with experienced, like minded companies ensures that a strong network of support is ready for emergency situations where response time is critical. In this instance Erlab teamed up with Plastic Concepts of North Billerica, MA, to design and produce the modified enclosures. In the short span of five business days, the Institute received three standard Captair 392's for their Agilent Bravo liquid handlers and within seven business days they received two Captair 714's with modified rear panels to house the Institute's Hamilton Micro Lab liquid handlers. What would typically require a turnaround of at least fourteen business days was accomplished within seven days through the collaborative efforts of Erlab, PCI, and New England Laboratory Systems.

Determination beats 'Murphy's Law'

If we are discussing Murphy's Law (the saying that: anything that can go wrong will go wrong) the reader can assume that circumstances beyond human control attempted to derail the mission. As it happened, the freight company delivering three of the Captair units suffered an outbreak of COVID19, and as a result, the Erlab equipment had to be quarantined at a transfer station, with the very real possibility of being held over one week past anticipated delivery. This was not acceptable to the Erlab team who were determined to deliver as promised. The decision was made to pull three new units from inventory, calibrate them and devise a plan with the Institute and their installation team to pick up the units from the Erlab facility the very next day after the quarantine lock down was announced. Calling once more on the installation team at New England Laboratory Systems, the units were delivered on-time and set-up for operation in the Institute's facility in two hours.

