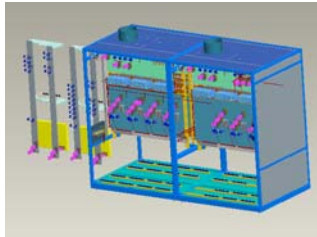


Client: Confidential
Industry: Compound Semiconductor (MOCVD)
Scope: Design; procurement; mechanical assembly; electrical integration and test of “plug and play” gas control systems

Key Notes:
Cambridge Fluid Systems provides continued product engineering support and value adding services to this global client

Cambridge Fluid Systems Glossary: \\Metal Organic chemical Vapour Deposition (MOCVD)

In this compound semiconductor production method, the raw material (metallo-organic compounds) are transformed into gases and then, bound to a carrier gas, are pumped into a reactor. This transformation occurs under reduced pressure, around one tenth of normal atmospheric pressure. MOCVD equipment allows the processing of quite large surface areas and is therefore first choice for the production of compound semiconductors.



The CFS scope of supply includes design configuration utilising Pro Engineer 3D software, purchasing of all components, pipework manufacture, assembly and test.

The Gas systems are constructed with discrete modules, which are built as sub-assemblies in our class 100 cleanroom, prior to fitting to the main framework. Inter-linking manifolds are fabricated to link the modules in accordance with the gas schematic and GA drawing.

The components include metalwork: weld fittings; valves; mass flow and pressure controllers; heater tapes. Custom built mixing chambers; PCB's and various other electrical items. The system is Helium leak checked using the 'inboard' method (vacuum pulled in pipework and Helium sprayed externally around joints). The leak integrity is a minimum of 1.10^{-9} mbar.l/sec.

CFS has also installed a number of systems in Asia for this client. The installation generally includes the positioning the equipment in a cleanroom facility and the installation of pipework services. The tube ranges in size from 1/8" OD to 1" OD and materials include stainless steel gas lines, plastic vent lines and ductwork for air extraction.

CFS has worked closely with the Institute for Manufacturing at Cambridge University to improve the procurement and manufacturing operations associated with this client. Following the implementation of several lean manufacturing techniques, including Kan-Ban; Kaizen and 5 S, we have seen reductions in both cost and lead time which ultimately benefit our client and the end users.



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