Equipment for lab animal housing under controlled atmospheric conditions

Hypoxic unit

The requested equipment must include the below specified components and must meet the following minimal requirements of the contracting party.

1. general information

The equipment is designed for housing of common laboratory animal (mouse, rat) under conditions of controlled atmosphere of oxygen and carbon dioxide concentration. The equipment design allows housing of the regularly sized animal cages.

For the purpose of regulaly sized cage the contractor insists on the following minimal dimensions that reflect the actually and commonly used cages on the contractor’s side.

Width 290mm

Depth 445mm

Heiht 290mm

The part of the equipment designed to house the animal cages (chamber) must be produced of a material that is appropriate to its purpose (glass, stainless steel, durable plastic). Due to the considered purpose of frequent sterilization using active detergents and commonly used polar dissolvent agents, the contractor unconditionally insist on exclusion of a glued construction of the chamber. In case of a glass construction the chamber must be made of hardened/tempered/multi-layer or similar kind of safety glass.

1. Spacial specification

Based on the above specified requirements the contractor demands an equipment of following parameters in order to place minimum 10 regular cages in the chamber.

* Minimal internal dimensions must allow the convenient manipulation of the considered- above specified cage size-and so the 350x480x350mm has been set up for a cage unit space (considering the spacial demands; 30mm sideways, 60mm vertical-for water supply).
* Each cage must be directly physically accessible without a need to touch any other housed cage.
* Each cage must be clearly visually accessible in order to observe the housed animal
* The contractor does not specifically required the overall dimensions of the housing compartment. However, based on the above specified demands, contractor specifies the minimal dimensions as for 600L
* The maximal dimensions-regardless the axial ratio-must not exceed 800L
1. Technical specification
* It allows the oxyen control in the minimum range of 0.1-99,9% within the maximum accuracy of 0.1%.
* It works in normobaric setup so no pressure fluctuation inside the housing chamber occurs (avoidance of housed animal stress)
* It allows to actively control/eliminate the amount of built-up gases (CO2,NH3 etc.) and humidity
* Minimal range of CO2 control is 10-10 000ppm (step 10ppm)
* It works arbitrarily with any sort of gas source (gas cylinders, liquid, gas generators).
* The avoidance of built-up gases is strictly done maintence-free. (No need to cartridge exchange, recuperation, use of ab/adsorbents, etc.)
* It includes a system for a forced air circulation within the housing chamber.
* It allows a future expansion for the hypercapnic studies (CO2; 0.0-20.0%).
1. Data logging
* It allows data logging in the extend of O2 and CO2 concentrations.
* Operating unit (PC, Laptop, Integrated control software) must work in a commonly used operational system (preferably Windows) or to be fully compatible with it.
* Logged data must be accessible to the commonly used tolls (Excel, etc.)
* If the data logging system applies to a producer’s software and licencing, the contractor requires an open licence unlimited to minimum 10 years.