

# Low-Cost Class 100 Clean Room

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THIS REPORT DESCRIBES the evaluation of a mass air displacement clean-room unit (See Fig. 1). This unit costs substantially less than other preassembled commercial units. It suitably provides economical, quality space for viral antibody-free animals.

## Materials and Methods

The BioBubble® Clean Room is simply constructed of an aluminum tubing frame with a heavy-duty, tear-proof vinyl skin. The vinyl has a 20-year life span. A high efficiency particulate air (HEPA) filter comes to you preassembled.

To evaluate our clean room, we constructed it in an animal room.

Within the room, there was sufficient space for a six-shelf rack 60 in. long, 30 in. wide, and 72 in. high. We received 20 virus antibody-free female Sprague Dawley rats weighing 175–200 g each. We housed these rats, two per cage, in 19 in. long, 10.5 in. wide, 8 in. deep polycarbonate cages with stainless steel tops. We used hard wood bedding in these cages. We autoclaved the

food, cages, bedding, water bottles, and water before using them.

We housed ten of the rats in the portable clean room, and ten outside the unit in the same animal room. Whenever we handled the rats, we wore sterile gowns, gloves, and masks. The animal room was environmentally controlled at  $22\pm 2^{\circ}\text{C}$  and  $50\pm 5\%$  humidity with 12 hours of



Please note that the majority of our Clean Rooms, including this photo reproduction, are Class 100 air in with Class 1,000 operating conditions.

light every 24 hours. We wanted to keep the noise level in the clean room below 85 dB, so we measured the noise level at a height of 3 ft. off the floor with a #1565-B sound level meter. We performed all our manipulations of the rats housed in the clean room unit while we were in the unit.