

Protective solutions

System Description

The LSS-FBU is a complete Nuclear, Biological and Chemical (NBC) Filter-Blower Unit designed for use in shelters and protected rooms. The LSS-FBU provides clean, NBC filtered air for 5 to 10 persons making possible an extended stay in the shelter.

The LSS-FBU Filter Blower Unit is based on the acknowledged Temet shelter technology originally developed for the comprehensive Civil Defense shelter program in Finland. The Blower and the NBC Filter of the unit are standard components designed according to the Specific Provisions for small K-class shelters issued by the Finnish Ministry of the Interior. The blower and the filter are both type tested and approved by the Ministry and issued official approval code numbers K/420 respectively K/419.

Design criteria of the NBC Filter are as follows:

- **removal of all biological warfare agents dispersed in solid powder or aerosol form including Anthrax**
- **removal of all blister, nerve and generally poisonous gases potentially used in chemical warfare or terrorist actions**
- **removal of radioactive Iodide ($^{131}\text{I}\text{CH}_3$) gas potentially released in an Nuclear Power Plant accident**

The Filter-Blower Unit is powered by an electric motor and equipped with a manual hand crank back-up drive easily operable by one person. Additional feature is an Emergency Light functional in manual operation. The unit is packed in a special container made of aluminum reinforced plywood for easy transportation, storage and rapid deployment.



The LSS-FBU Filter-Blower Unit packed in transport container (left) and deployed (right)

LSS-FBU Technical Specification

NBC Filter Performance

- Nominal air flow 50 m³/h (29 cfm) in electric motor operation
- Nominal air flow 35 m³/h (20 cfm) in manual operation
- Total gas filter capacity for Blister Agents (such as Mustard Gas) minimum 2.2 kg (4.85 lb.).
- Total gas filter capacity for Nerve Agents (such as Sarin, Soman, VX) minimum 0.52 kg (1.15 lb.).
- Total gas filter capacity for Generally Poisonous Gases (such as Hydrogen Cyanide) minimum 0.26 kg (0.57 lb.).
- Gas filter efficiency for removal of radioactive methyl iodide I¹³¹CH₃ 99.995 % for dry air (RH max. 60 %) provided the activated carbon is dry.
- Particle filter efficiency for particles with size distribution between 0.1 and 0.3 µm better than 99.995 % measured in accordance with standard DIN 24183.

Blower Unit Specification

- Blower Unit with electric motor 125 V, 60 Hz (or 230 V, 50 Hz), 190 W, 1-phase.
- Blower provided with hand crank for manual operation. Max. power input in manual blower operation 60 W.
- Blower provided with a 6 V mini-generator feeding a 3 W emergency light in manual blower operation.

Dimensions

- When packed, the size of the container housing the LSS-80 System is 580 x 790 x 980 mm (22.8 x 31.1 x 38.6 in) (w x l x h) with total weight of 55 kg (120 lb.). The container is provided with a set of wheels and handlebars to facilitate the transportation.



The blower is provided with a high quality gearbox for easy hand crank operation



The air flow is monitored from an air flow meter indicating ranges for electric and manual blower operation. Note the incorporated emergency light

Design - Production – Installation – Maintenance - Consultation