Laparoscopic Smoke Filtration System

The Laparoshield Laparoscopic Smoke Filtration System is a passive smoke evacuation system which removes particulate, cells, virus and odor causing chemicals from surgical smoke generated in laparoscopic procedures while maintaining a clear field of vision. It is indicated for use during any minimally invasive surgery involving insufflation, electrocautery, laser, or ultrasonic scalpel use.

According to the company’s website, features include:

- The ability to maintain continuity of surgical procedures. During tissue ablation, smoke accumulates in the peritoneal cavity obscuring the surgeon’s vision. Interruption of surgical procedures to clear the field of vision can cause delays to re-acquire the pneumoperitoneum and reposition instruments. The flow through the Laparoshield Filtration System can be adjusted, using the roller clamp, to maintain a clear field of vision during tissue ablation.
- The ability to reduce odor and mutagenic chemicals. Smoke, created in the burning of tissue with both laser and electrocautery, contains toluene, xylene, styrene, acetaldehyde, acrolein, polyaromatic hydro-carbons (PAH’s), benzene and formaldehyde. In addition to contributing to the noxious odor of the smoke, these chemicals are known irritants and, in the case of PAH’s, benzene and formaldehyde, known carcinogens. The Laparoshield Filtration System contains activated carbon, which reduces these chemicals and odor in the smoke.
- The ability to remove cells and virus. Viable cells and virus exist in electrocautery and laser smoke. The Laparoshield Filtration System will remove 99.999% of all cells and virus from surgical smoke.
- Ease of use. The universal luer connector meets ISO standards for leak free connection to the trocar. The rotating hub prevents twisting of the tubing

during connection.

- The ability to remove particulate. Surgical smoke from both lasers and electrocautery contains particles ranging in size from 0.1 µm to 1 µm. These particles are the size classified as hazardous to breathe, i.e., 0.5 – 5 µm. Studies show both laser and electrocautery plume produce pathologic changes in the lungs of rats and are too small to be filtered by surgical masks. The Laparoshield Filtration System removes 99.999% of the 0.02 µm MS-2 virus.
- The ability to protect patients. Surgical smoke is cytotoxic. Absorption into the patient's blood, causing elevated methemoglobin and carboxyhemoglobin levels, is also possible. It can contribute to headaches, double vision, muscle weakness, nausea and vomiting in patients recovering from laparoscopic procedures. The Laparoshield Filtration System allows safe and rapid evacuation of smoke throughout the surgical procedure, minimizing the patient's exposure to potentially harmful surgical smoke.
- Unobtrusive. A lightweight, low profile construction makes efficient use of materials providing a non-obtrusive, cost-effective solution to laparoscopic smoke removal.
- The ability to the easily presented into the sterile field. The Laparoshield Filtration System is packaged and sterilized in a double peel-pouch configuration allowing easy presentation into the sterile field.

For more information, visit www.pall.com [1]

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