For Your Team and Your Guests

Evolv eXpedite™ Health & Safety Brochure

Evolv eXpedite™ is an X-ray bag scanner that works autonomously to detect concealed threats in bags. Evolv eXpedite works alongside Evolv Express® to help provide a layered security approach to concealed weapons detection. Evolv eXpedite complies with U.S. Code of Federal Regulations (CFRs) on standards for X-ray radiation safety, the applicable US FDA standard.

Safety Tested

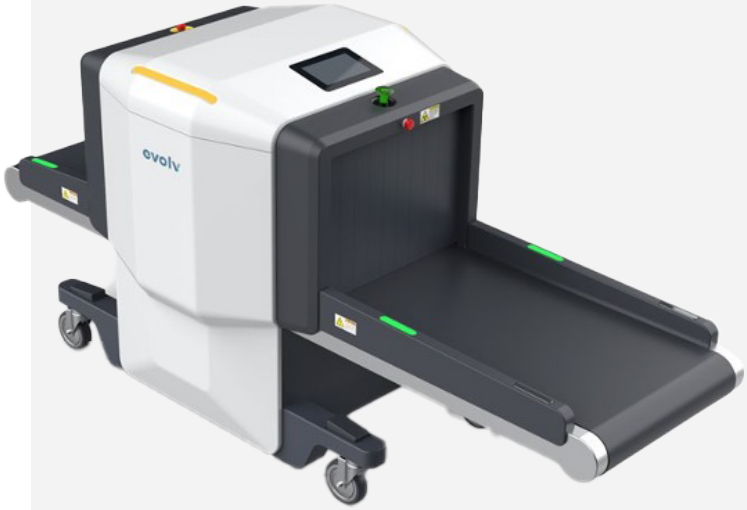
Evolv eXpedite undergoes safety testing during the manufacturing process, in accordance with 21 CFR 1010.2(c), including:

- Leakage Radiation Testing: Leakage tests are conducted to verify that the emitted X-ray radiation does not exceed FDA limits.
- Operational Testing: The machine's safety features, including emergency stops, are tested to ensure they function correctly.

Safety Features

Evolv eXpedite is equipped with the following safety features:

- Radiation Shielding: eXpedite is designed with shielding to prevent excessive X-ray leakage, ensuring that the radiation levels outside the machine are below the limits set by the FDA.
- Emergency Stop Function: Two easily accessible emergency stop buttons are installed, allowing operators to immediately halt the machine's X-ray generation and belt motion.



All X-ray equipment, whether used for airport security, industrial applications or medical use, is subject to approval by the end user's Regulatory Authority. The end user is responsible for applying for a license and obtaining approval to operate the X-ray inspection system.

As with most products, safety depends on proper use. If there is a question or concern regarding health or safety, please contact Evolv and alternative screening should be provided.

Q&A[1]

Q1: How are X-ray products like eXpedite regulated?

A1: Under the FDA's guidance, eXpedite is a cabinet x-ray system. The FDA has responsibility for assuring manufacturers produce cabinet x-ray systems that do not pose a radiation safety hazard. For most electronic products that emit radiation, safety regulation is divided between FDA and state regulatory agencies. Typically, FDA regulates the manufacture of the products, and the states regulate the use of the products.

Q2: Is it safe to stand or walk near a cabinet x-ray system while it is producing x-rays?

A2: Yes. Evolv certifies the eXpedite system meets the Federal radiation safety performance standard for cabinet x-ray systems. Specifically, the standard requires that the radiation emitted from a cabinet x-ray system not exceed an exposure of 0.5 milliroentgens in one hour at any point five centimeters from the external surface. In addition, the standard also requires safety features that include indicator lights, warning labels, and interlocks.

For comparison, the average person in the United States receives a dose of about 360 millirem of radiation per year from background radiation. Background radiation is radiation that is always present in the environment. Eighty percent of that exposure comes from natural sources: radon gas, the human body, outer space, rocks, and soil. The remaining 20 percent comes from man-made radiation sources, primarily medical x rays.

Q3: Is it safe for pregnant people to stand or walk near a cabinet x-ray system while it is producing x-rays?

A3: Yes. The limit on radiation emission established by the performance standard is sufficiently restrictive that there is no additional hazard for specific populations such as children or pregnant women.

Q4: Is it safe to eat food, drink beverages, use medicine, or apply cosmetics if any of these products have gone through a cabinet x-ray system?

A4: There are no known adverse effects from eating food, drinking beverages, using medicine, or applying cosmetics that have been irradiated by a cabinet x-ray system used for security screening.

Q5: Can eXpedite stop if needed?

A5: Yes. Evolv eXpedite is designed with emergency stop buttons to help avoid harm that might come from the emittance of X-ray or the moving belt. If injury occurs, users should follow the emergency procedures established by the specific location/venue.

[1] "Frequently Asked Questions on Cabinet X-ray Systems." FDA, March 9, 2018, https://www.fda.gov/radiation-emitting-products/security-systems/frequently-asked-questions-cabinet-x-ray-systems