

SAFETY Cabinet X-Ray

To operate cabinet x-ray machinery in an industrial environment, strict guidelines are set forth by each state and the United States Federal Government. Generally speaking, the more stringent federal laws are found in the CFR FDA 1020.40 documentation. In view of that, all of Eriez E-Z Tec Series XR X-Ray machines meet or exceed these regulations for exposure limits, emitted radiation, and mechanical design.

Exposure Limits:

Federal regulation mandates the maximum level of allowed emissions from a cabinet x-ray system to be 5 microsieverts/hour. Eriez units operate at a considerably lower .5 microsieverts/hour, or 1/10 of the guideline. In practical terms most persons receive considerably higher doses of radiation from other sources.

Emitted Radiation:

There are two main sources of radiation, natural and manmade. One source of naturally occurring radiation is found in geographical areas where certain rock or clay deposits have levels of heavy elements such as radon, uranium and thorium. Additionally, another natural source is cosmic radiation. Typically, when flying at altitudes of 30,000-40,000 feet, a person would encounter 3-4 microsieverts/hour, or 8 times the exposure limits of Eriez systems.

Manmade sources would include airport, medical and dental x-ray machines, also nuclear projection televisions and tobacco to name a few. Most of the emissions levels from these sources far exceed the levels emitted from cabinet x-rays. Accordingly, a well designed system from Eriez will have emission levels which are almost immeasurable.

Mechanical Design:

As stated earlier, a well designed x-ray system from Eriez will have virtually immeasurable emissions. Eriez engineers (in accordance with FDA 1020.40) design all E-Z Tec XR X-Ray Systems with the following criteria:

- Shielding
Lead curtains and steel covers virtually eliminate radiation from exiting the system enclosure.
- Safety Interlocks
All doors and covers have safety interlocks that disconnect power to the x-ray generator if opened. As a failsafe, there are two circuits passing through these interlocks, in the event that one becomes inoperable.
- Highly Visible Light Tower

Visible from 360 degrees around the machine, this beacon indicates when x-rays are being generated. If this becomes inoperable, the unit will cease to function.

- Emergency Stops accessible from both sides
- Lock-Out Switch to disable system by authorized personnel

To summarize, Eriez E-Z Tec Series XR X-Ray machines adhere to all guidelines set forth by state and federal agencies for exposure limits, emissions and mechanical design.

