

OPERATING INSTRUCTIONS FOR THE X-RAD320.

ONLY PERSONNEL WHO HAVE RECEIVED OFFICIAL TRAINING MAY OPERATE THE X-RAD 320.

AN IACUC APPROVED AUF IS REQUIRED FOR ALL ANIMAL IRRADIATION STUDIES.

CAUTION: THE DOOR TO THE X-RAD 320 IS VERY HEAVY, BE CAREFUL NOT TO CATCH YOUR FINGERS IN IT.

1. Turn the X-RAD 320 on by turning the key to the STAND BY position. The power supply for control and computer is switched on. The cooler will begin to run. Due to the Dose Measurement and Control option the screen message will progress from "INITIALIZING..." to "NULLING OFFSET". This indicates that the dose measurement system is self adjusting any offset measurement.
2. Log in with your user name and password which was setup during training. The main menu will appear.
3. Touch RECALL PROGRAM and select the appropriate program noting the filter type.
4. Press CONTINUE
5. Turn the key to the ON position. The screen will indicate whether the system requires a warm-up. The door should be closed and the chamber empty before touching X-RAYS START to initiate the warm-up. X-RAYS ARE PRODUCED DURING WARM-UP.

Note: Warm-up times vary from 5-6 minutes (no use overnight) to 72 minutes (no use for 1 month) depending on how often the machine has been used

6. After warm-up is complete, turn the key back to STAND BY, place the correct filter in the slot.
F1: for cell culture, 2.0mm Aluminum (HVL \cong 1.0mm Cu)
F2: for animals, 0.75mm Tin + 0.25mm Copper + 1.5mm Aluminum (HVL \cong 3.7mm Cu).
There is no interlock system for the filter, be sure to push it in place securely. The beam will run even if the filter is not properly placed.
7. Place the specimen on the table and close the door.
8. Turn the key to the ON position.
9. Touch the green X-RAY START button on the screen.
If you need to stop the program before it is done, touch the X-RAYS STOP button. Touching the X-RAY START button will continue the program where it left off. To start over, exit this screen and select the program again.
10. To repeat an exposure touch X-RAYS START again once the program has ended
11. If an error occurs follow the prompts on the screen. Touch the CLEAR button to continue.
12. The EMERGENCY STOP button can be used to immediately terminate an exposure. To reset it twist counter clockwise so it springs outward.
13. To return to the main menu screen, touch EXIT.
14. When you are finished turn the key to OFF. The TouchRAD computer will safely terminate the program and the x-ray unit will shut down. The cooling pump will continue to operate to allow the x-ray tube to cool. It automatically shuts down.

IMPORTANT: YOU MUST ARM THE DOOR USING YOUR ASSIGNED PIN NUMBER ONCE YOU LEAVE THE ROOM AFTER IRRADIATING YOUR SAMPLES. INSTRUCTIONS ARE POSTED BY THE KEYPAD.