The Model 329-32 Laundry Contamination Monitor is intended for automatic monitoring of both alpha and beta-gamma contamination on clothing or other light articles presumed to be free of radioactivity, or within release or reuse limits. A conveyor belt carries articles between two gas proportional detector arrays. An audible alarm will sound when contamination exceeds the given alarm setpoint. A light-emitting diode (LED) array spans the width of each end of the laundry monitor. The LEDs show the position of the alarm on the conveyor, and provide the operator with the status of the machine. A dual liquid crystal display (LCD) shows the counts and the current operating conditions, such as conveyor speed and gas flow. A 20-key keypad also allows the changing of alarm setpoints, operating parameters, and other system information. Changing any parameter requires the use of a security code. The entire system is mobile, with lockable casters to prevent unwanted movement of the monitor. Power required is 115 Vac at 2 amps.

Each lower and upper detector array has 16 individual gas proportional probes. The two arrays provide 32 alpha channels and 32 beta-gamma channels for a total of 64 counting channels. A spare detector array (supplied with each system) allows for easy replacement, reducing down time. Each probe in the array has an active open area of approximately 94 cm² (14.6 in²), and the staggering of these probes provide an even response across the conveyor. The usable detection width is 86.4 cm (34 in.) with an overall belt width of 91.4 cm (36 in.). The spare array has its own gas circuit, allowing it to be maintained in a purged state for immediate replacement of the upper or lower detector. All three detectors slide out of the conveyor bed for cleaning and repair. The electronics is microprocessor-based, and housed in two slideout drawers. There are two alarm levels, each fully adjustable. The first alarm level (ALERT) can either pause the conveyor, stop the conveyor, allow the conveyor to continue, or re-scan. Re-scan reverses the belt to clear the probe that caused the alert, and then passes the article through the monitor again. A master yellow alert lamp will light for the duration of any ALERT. The second alarm level (ALARM) can either stop the conveyor and light the red master lamp and audio, re-scan once, twice, always, or it may continue conveyor operation and latch all alarms. Fail detection features include high-voltage failure, low count, and high background. The high voltage, conveyor belt speed, and output gas flows are monitored by the central processor. Pressing the BACKGROUND UPDATE button manually enters the background mode. Automatic background updates allow updating after the conveyor has become free of articles.

The conveyor drive system consists of a 1/8 hp gear motor driving both upper and lower conveyors. An infrared sensor detects articles approaching the detectors. A safety “bump” bar surrounds the perimeter of the conveyor bed, stopping the conveyor belt if bumped. The upper-to-lower conveyor spacing adjusts between 0 and 17.8 cm (0 and 7 in.).