LAUNDRY MONITORING SYSTEM
Model ~ LIM-21GFA (BETA) & Model ~ LIM-21GFAT (BETA / GAMMA)

FEATURES:

- SINGLE CONVEYOR BELT
- BENCH TOP WITH 8 DETECTORS
- LIM-21-GFA - BETA DETECTION
- LIM-21-GFAT – BETA/GAMMA DETECTION
- FULL DYNAMIC BACKGROUND SUBTRACT
- HIGH SENSITIVITY TO FISSION PRODUCT SPECTRUM
- ADVANCED "N OF 8" FAST ALARM
- 8 CHANNELS OF COUNTING ELECTRONICS
- SEPARATE ALARMS FOR EACH CHANNEL
- AUDIO AND VISUAL RADIATION ALARMS
- HIGH BACKGROUND ALARM
- LOSS OF SIGNAL LIGHTS
- FAST FLOW THROUGH OF LAUNDRY
- EASY TO READ ALARM PANEL FOR WALL OR PORTAL MOUNT

APPLICATION:

The **LIM-21GFA & LIM-21GFAT** examines each garment for radioactive contamination. A large throughput can be attained with a minimum amount of supervision.

DESCRIPTION:

- Single conveyor belt.
- Rack mountable electronics.
- Eight gas flow radiation detectors
- Eight channels
- One motion detector

➢ The eight radiation detectors are divided into eight separate read-out channels, one for each detector. This feature makes it easier to locate and remove contamination, and increases sensitivity by lowering the background count per channel.

➢ When unoccupied, the **LIM-21GFA** averages background radiation over 20 second intervals.

➢ When the belt is occupied, the electronics compare the background plus 1, 1.4, or 2 times the background standard deviation, to the laundry radiation count.

➢ This comparison is made every 50, 100, or 200 milliseconds depending upon the front panel sample setting time.

➢ The level of confidence (N of 8) can be set for each channel using the eight position switches on the electronics console.

➢ Separate alarms are provided for each channel.

Please see the LIM (Laundry Monitor) Comparison Chart

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SPECIFICATIONS:

SENSITIVITY:	80 nanoCi Cs^{137} is detected with 95% confidence in 0.4 sec.
GAS FLOW DETECTORS:	**LIM-21GFA**.
Sensitivity:	20% of 4 π Cs^{137} Betas. Detectors can detect lower energy Betas down to .05 MeV.
Sensitive area:	400 square centimeters per detector.
Operating Voltage:	Typically 1900 V with P-10 gas or 2800 V (optional) with Propane.
Window Thickness:	5 mg/cm^2 (other thicknesses optional).
GAS FLOW SYSTEM:	Flow meter and micro metering valve are included. Gas tank and pressure regulators are normally supplied by user. Timer and solenoid operated valve is available as an option to further minimize gas usage.
OPTIONAL:	**LIM-21GFAT** for enhanced Gamma sensitivity.

Conveyor Specifications:

Conveyor System:	1 conveyor
Belt:	6 ft. long, belt carries clothes under detector.
Useful Width:	24" (610 mm).
Conveyor Speed:	Variable, user controlled. 150 mm/sec typical.
System Weight:	175 kg plus shielding.

Environmental Conditions:

Temperature:	32°F to 122°F, (0° to 50°C).
Humidity:	10% to 95% relative humidity, non-condensing.

Electronic Chassis:

Power Supply:	100-120 VAC or 220 V 50/60 hz with UPS.
Front Panel Controls:	Sigma Multiplier (each channel): 1, 1.4, 2. of 8 Alarm Set (each channel): 1, 2, 3, 4, 5, 6, 7, 8. Sample Time: 50, 100, 200 milliseconds.
	Overflow Alarm (for background): 10, 20, 40, 80.
	Reset push button.
	Alarm Disable.
Rear Panel Controls:	Power on-off
	High Voltage Adjust: 0-2000 V for P-10 or Geiger gas. (0-3000 V for propane optional)
Front Panel Indicators:	Average Background Display (each channel): "N of 8" Display each channel
	Contamination Alarm LED (each channel): RED. No Signal Alarm LED (each channel): YELLOW.
Rear Panel Indicators:	Power on/off lamp: RED.
	High Voltage Meter, 0-2000 volts, (0-3000V **Optional**).

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Rear Panel Outputs: Remote Alarm Output Terminals (each channel plus common bell and lamp)

Alarms Contamination: 2000 Hz alarm and flashing RED beacon.

Power Requirements: 110 V, 60 Hz, 1 A (220 V and 50 Hz optional).

Dimensions: 19"W x 20"D x 11"H - Electronics Console.

Weight: 45 lbs - Electronics Console.

Shipping Weight: 65 lbs - Electronics Console.

ALARM PANEL: Wall mountable, silhouette with lights indicating location of contamination, plus sonalert and flashing RED light.