

TRITIUM ULTRA LOW RANGE MONITOR

Model ~ TLON-LR

PWR & BWR Produce Tritium-
10 Curie/Giga-Watt/Year

FEATURES:

- SENSITIVE TO:
 - H-3 5×10^{-8} $\mu\text{Ci/cc}$
 - $^{14}\text{CO}^2$ 10^{-8} $\mu\text{Ci/cc}$ (Optional)
- READS DIRECTLY IN $\mu\text{Ci/cc}$ or Bq/l or MBq/m³
- AUDIO & VISUAL ALARM
- DYNAMIC BACKGROUND COMPENSATION
- CLEANS GAS STREAM OF PARTICULATES AND IONS
- MICRO PROCESSOR OPERATION
- DATA ARCHIVE & RETRIEVAL STANDARD
- HARD COPY PRINTER –(optional)
- EASY INTEGRATION WITH FACILITY DATA SYSTEM
- USB & ETHERNET PORTS
- DIGITAL ACCURACY
- **OPTIONAL:**
 - ACTUATE REMOTE CONTROLS
 - OPERATE IN PRESENCE OF OTHER RADIOACTIVE GASES



THESE LEVELS NOT PREVIOUSLY ATTAINED IN AN AUTOMATIC ONLINE MONITOR.

DESCRIPTION

TLON-LR is a highly, sensitive, rugged stack or effluent monitor for designed and built for **Nuclear Power Plant** use to measure ultra low range Tritium.

Inlet and outlet hoses allow the return of monitored air to source: interiors of fume hoods and exhaust stacks, etc.

All instruments are calibrated at the factory. Calibration check may be performed in the field with a license exempt μCurie level Beta-Gamma source.

TLON-LR utilizes dual ION chambers with both Radon and Gamma rejection for measuring mid-to-high tritium levels, plus dual proportional detectors for measuring ultra low levels of Tritium.

A unique proprietary Tritium concentrator stage precedes the proportional chambers substantially increasing system sensitivity.

Commercial version available for research labs, room air, glove boxes, fusion research, and other applicable uses.



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Divisions of



US NUCLEAR CORP

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SPECIFICATIONS:

Measurement Ranges of Optional Detectors	From	4 Decade Model	6 Decade Model
Tritium	5x10 ⁻⁸	5x10 ⁻⁴	10 ⁻² uCi/cc
Inorganic C-14 (¹⁴ CO ₂)	10 ⁻⁸	10 ⁻⁴	10 ⁻² uCi/cc

Background: Essentially eliminated by subtractive balanced chambers with Radon Rejection.

Smoke, Dust & Ion Elimination: Filter and deionizer reduce effects to negligible levels.

Circuit: Electrometer circuit amplifies net difference between a tritium internal chamber and a background chamber of similar size and configuration.

Calibration: Can be calibrated internally with Tritium (or HTO) and ¹⁴CO₂ gas, or on a Gamma calibration course; or can be checked at a single point with an external (not provided) Beta-Gamma source.

Output: USB Port is standard ethernet port is optional
Optional 0-5 volt or 4-20 mA.

Alarm: High Level: Red flashing light plus warbling sound
System Fault Alarm: White steady light

Remote Alarm: 3 Relays provided for operators use

Data: Data Archive & Retrieval via USB & Ethernet ports

WEIGHT & DIMENSIONS:

Dimensions: 23" wide x 66" high x 36" deep.

Shipping Weight: 700 lbs.

OPTIONAL: Remote alarm (audible & visual) (including 2 feet of cable).
Optional 500 feet cable. User Specified.
Interconnection to inlet or outlet port of other gas or particulate monitor.
Greater Gamma rejection via more lead shielding
Convert 2nd proportional detector from background rejection to become a 2nd Tritium detector thus improving Tritium sensitivity. **Only advisable when the background Gamma is low.**

Qty	Type	Volume Each	Detectors Range	Background Subtract	Response
2	Proportional	2.5 Liter	Ultra Low Range	Yes	Slow
2	Ion Chamber	2 Liter	Mid to High Range	Yes	Fast



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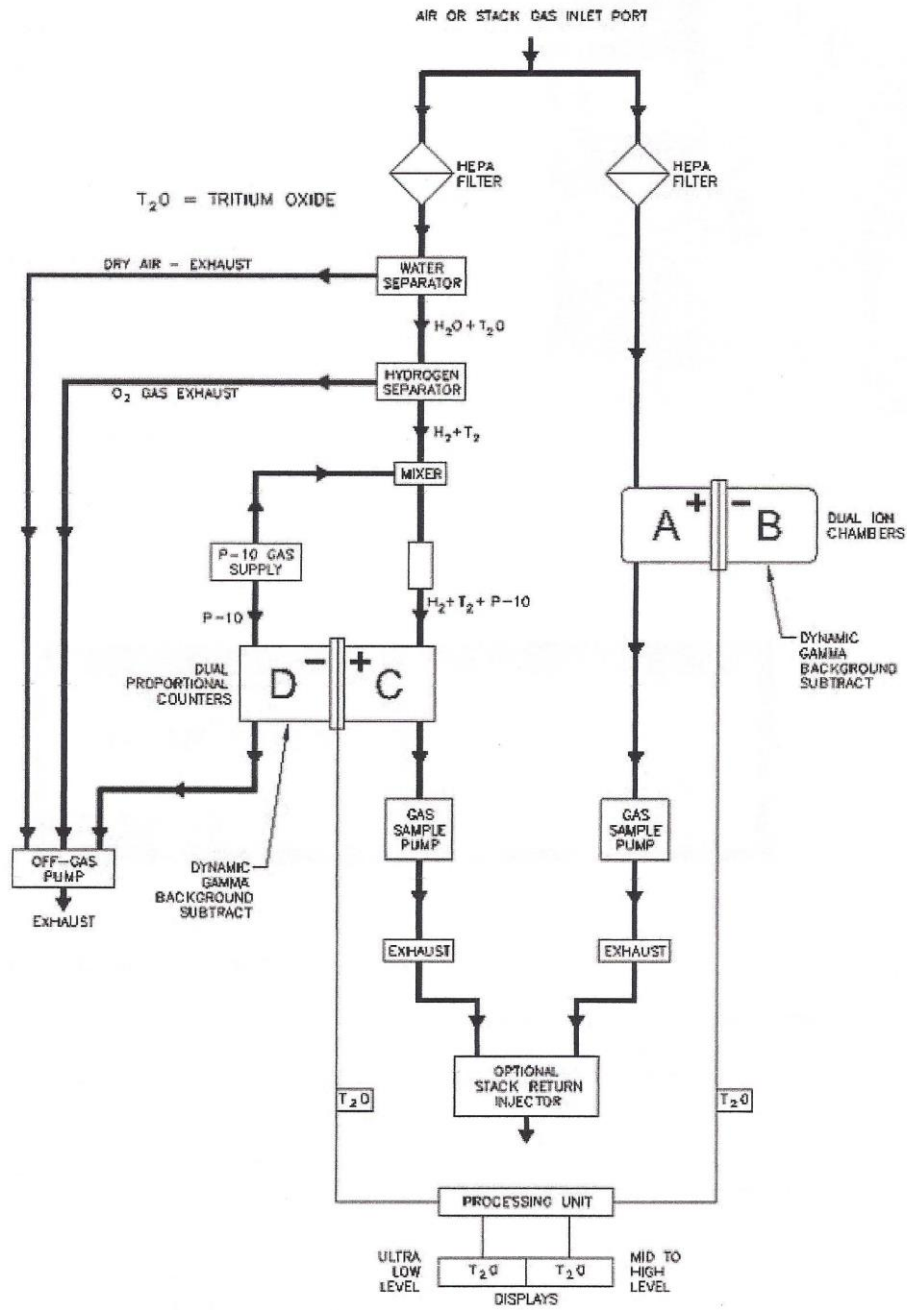
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TLON-LR FLOW DIAGRAM
ULTRA LOW RANGE TRITIUM MONITOR



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