

TRITIUM IN WATER MONITOR REAL TIME CONTINUOUS

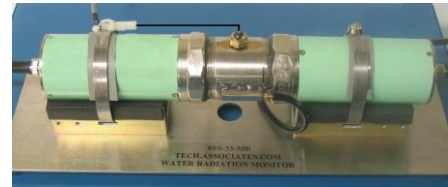
LIQ-X- (H3) Series ~ Mid to High Level
Models ~ LIQ-X- (H3) LO ~ LIQ-X- (H3) HI

FEATURES:

- ON-BOARD COMPUTER
- REAL TIME - AUTOMATIC
- CONTINUOUS MONITORING
- NOT INFLUENCED BY OTHER NUCLIDES
- NO LIQUID SCINTILLANT REQUIRED
- EASY CALIBRATION
- SENSITIVE TO 20 $\mu\text{Ci/l}$ TRITIUM OR UP TO 30 Ci/l OR MORE
- NEW STATISTICAL SIGNIFICANCE DISPLAY
- DATA ARCHIVE & DATA RETRIEVAL
- USB / ETHERNET PORTS
- RUGGED IP65
- TABLE MOUNTED
- **OPTIONAL - CART MOUNTED)**
- **IP32 – ELECTRONICS**
- **IP66 - DETECTOR**



**COMPLIES WITH
RELEVANT SECTIONS OF
ANSI 42.17A & N42.18**



APPLICATION:

- MONITOR HEAVY WATER LEAKS IN CANDU TYPE REACTORS
- MONITOR LABORATORY OR PLANT LIQUID WASTE STREAM.
- THORIUM REACTOR RESEARCH
- FUSION REACTOR RESEARCH

DESCRIPTION:

This system consists of a small light tight detector assembly which is interfaced with the sample via male 1/4" pipe fittings with the readout and processor assembly via two BNC connectors.

The sample is passed through a deionizer and filter and thence to the detector assembly, where it is viewed by a matched pair of photo multiplier tubes.

The table top or rack mounted processor and display portion of this system conditions and analyzes the output from the photo multiplier tubes by pulse height and coincidence, thereby permitting the system to eliminate counting most background (noise) counts.

LIQ-X (H3) includes unique statistical Significance Display.

- This function rates strength of the data preventing most false positives or negatives:
 - Significance: **HIGH, LOW, or NOT SIGNIFICANT.**



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Divisions of  US NUCLEAR CORP

Ticker UCLE

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LOW END SENSITIVITIES		
LIQ-X-H3-LO - LOW Activity Mode	LIQ-X-H3-HI - MID Activity Mode	LIQ-X-H3-HI - HIGH Activity Mode
30 µCi/l in 2 minutes	5 mCi/l in 2 seconds	
20 µCi/l in 30 minutes	1 mCi/l in 10 seconds	
10 µCi/l in 2 hours	0.2 mCi/l in 2 minutes	
Display update every 2 minutes	Display update every 1 to 3 seconds	
RANGE	RANGE	RANGE
10 µCi/l – 500 µCi/l	0.2 mCi/l – 10 mCi/l	10 mCi/l – 3 Ci/l
		100 mCi/l – 30 Ci/l

FOR LOW LEVEL TRITIUM MONITORING PLEASE SEE MODEL ~ NEX-TRITIUM

SPECIFICATIONS:

Display Update:	User Adjustable
Tritium Sensitivity:	See chart above
Range:	OPTIONAL : Other ranges higher or lower.
FLOW RATE:	
Minimum:	1 ml/min
Maximum:-	100 ml/min
TEMPERATURE:	
Sample Temperature:	Standard: < 90°F (liquid); OPTIONAL - to 115°
Ambient Temperature:	Detector: < 90°F OPTIONAL - to 115°F Readout: < 115°F
Lead Shielding:	OPTIONAL 1" thick or 2" thick
DIMENSIONS:	Detector: 4" Dia x 19" Long Electronics: 10" H x 16" L x 19" W
WEIGHT (Standard Unit):	Detector Housing: 20 lbs. Electronics Housing: 40 lbs.
Shipping Weight:	90 lbs.
1" Shielding:	65 lbs.
Display:	5" color monitor

NEX-TRITIUM LOW Activity
2.0 µCi/l in 2 minutes
0.5 µCi/l in 20 minutes
0.2 µCi/l in 3 hours
0.1 µCi/l in 48 hours
0.02 µCi/l in 7 days
Display update every 2 minutes

OPTIONS:

- **Enhanced LIQ-X (H3)**
 - 4 Decades
 - 10⁻³ Ci/l to 10 Ci/l
- Remote readout via Ethernet
- Network reporting & communication via the ORO overdrive software.



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**IF YOU HAVE TRITIUM IN WATER & OIL MIXTURES:
WE RECOMMEND THIS STRATEGY FOR MEASUREMENT OF TRITIUM**

STRATEGY

Tritium is radioactive hydrogen, and hydrogen atoms regularly jump or exchange between different adjacent molecules.

In a mixture of normal water mixed with tritiated oil, both components will, over time, share the Tritium equally.

In **LIQUID** Samples, this allows a separation strategy, in which we,

1. Pull a sample from the mixture
2. Run this sample through a oil-water separator
3. Collect the relatively clean water
4. Pull this water into the SSS-33M81 tritium measurement flow cell
5. Get a good reading
6. Without contaminating or degrading the cell

In **GASEOUS** Samples, the same principles apply.

1. A vapor separation system is utilized.
2. A [PTG-9](#) Tritium Measurement Ion Chamber is used to make the measurements.

**PLEASE CONTACT US WITH INFORMATION ON YOUR SITUATION.
WE WILL ADVISE &/OR QUOTE ON A SUITABLE SYSTEM TO OBTAIN YOUR OBJECTIVE.**



LIQ-X SYSTEM



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