

## TRACE MOISTURE ANALYZER

Full-featured TDLAS Moisture Analyzer for critical H<sub>2</sub>O measurements in gas streams

### TYPICAL APPLICATIONS

UPSTREAM NATURAL GAS

MIDSTREAM NATURAL GAS

BIOGAS

CUSTODY TRANSFERS

### OPTIMIZED DESIGN

- ▶ Low Volume, Multi-pass Laser Herriott Cell Optimized for Rapid Readings

- ▶ Patented ELIMINATOR CELL BLOCK Includes a Complete Sample System

### UNMATCHED RELIABILITY

- ▶ Built-in Analyzer Guardian Technology Protects Against Liquids & Particulates

- ▶ Compact Size and Low Power for Easy Installation

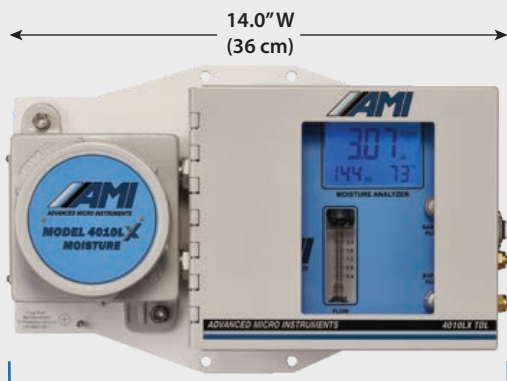
- ▶ Approved for Class I, Division 1, Groups B,C,D Installations

### SUPERIOR VALUE

- ▶ Includes COMMAND CENTER Software for Advanced Configurations

# MODEL 4010LX DESIGN

The **BARRACUDA MODEL 4010LX** TDL Moisture Analyzer has significantly raised the bar for measuring water vapor in a natural gas stream.



IP65-rated Enclosure  
(certified against water entry  
from the environment)



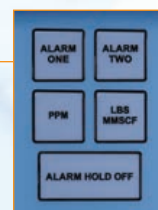
Exhaust Port

Sample Gas  
Inlet Port

Bypass Gas /  
Liquid Drain

## SUPERIOR VALUE

The **BARRACUDA MODEL 4010LX** is a fraction of the size and cost of other TDL analyzers and comes fully loaded with features and tools that make performing moisture measurements far easier.



### EASY ACCESS CONTROL PANEL

- 2 INDEPENDENT ALARMS
- PPM DISPLAY OPTION
- LBS H<sub>2</sub>O DISPLAY OPTION
- ALARM BYPASS



Backlit LCD  
(for easy viewing)

Sample Gas  
Metering Valve

Bypass Flow  
Metering Valve

USB Computer  
Connection

½" NPT Machined  
Access Openings (x2)

(permits separating electrical connections  
of power and alarm relays from analog  
output and RS485)

Flow Meter

## DESIGNED FOR DIFFICULT FIELD INSTALLATIONS

The **MODEL 4010LX** compact design and light weight of only 17 lbs allow for easy installation in tight areas by a single technician. An IP-65 rating permits installations for indoors or outside in harsh elements. Available in AC or DC power. Low DC power requirements allow for operation using a solar panel. Finally, the unit can be installed in our Extreme Weather Enclosure for additional protection.



Remote Installation powered by a standard solar panel

## LOADED WITH ADVANCED FEATURES

The Analyzer can be connected to AMI's powerful **COMMAND CENTER** software, providing operators access to the unit's more advanced settings. This included software allows for customization of alarm configurations, download of time stamped data log information, setting analyzer security, review of error codes, and realignment of the laser absorption peaks using our **SMART ALIGNMENT** protocol.



Connected to the  
**COMMAND CENTER** Software

## APPROVED GLOBALLY FOR HAZARDOUS AREAS

Class I, Div 1, Groups B,C,D



# MODEL 4010LX ADVANCED TECHNOLOGIES

The **ELIMINATOR HERRIOTT CELL BLOCK with ANALYZER GUARDIAN** **PATENTED** integrates a low volume sample gas measurement laser cell, flow meter, metering valves, and Analyzer Guardian liquid rejection technology into a compact-stacked block. Our innovative design keeps the total analyzer size small, eliminates the use of leak-prone fittings and tubing, and makes the **MODEL 4010LX**'s gas path short to provide fast and accurate moisture readings.

## OPTIMIZING MEASUREMENT IN A COMPACT LASER CELL

**THE BEER-LAMBERT LAW** shows that a longer laser path will yield greater sample gas absorbance, resulting in a more accurate & precise moisture measurement.

$$A = \log_{10} (I_0/I) = \epsilon lc$$

Absorbance

Absorption Path Length

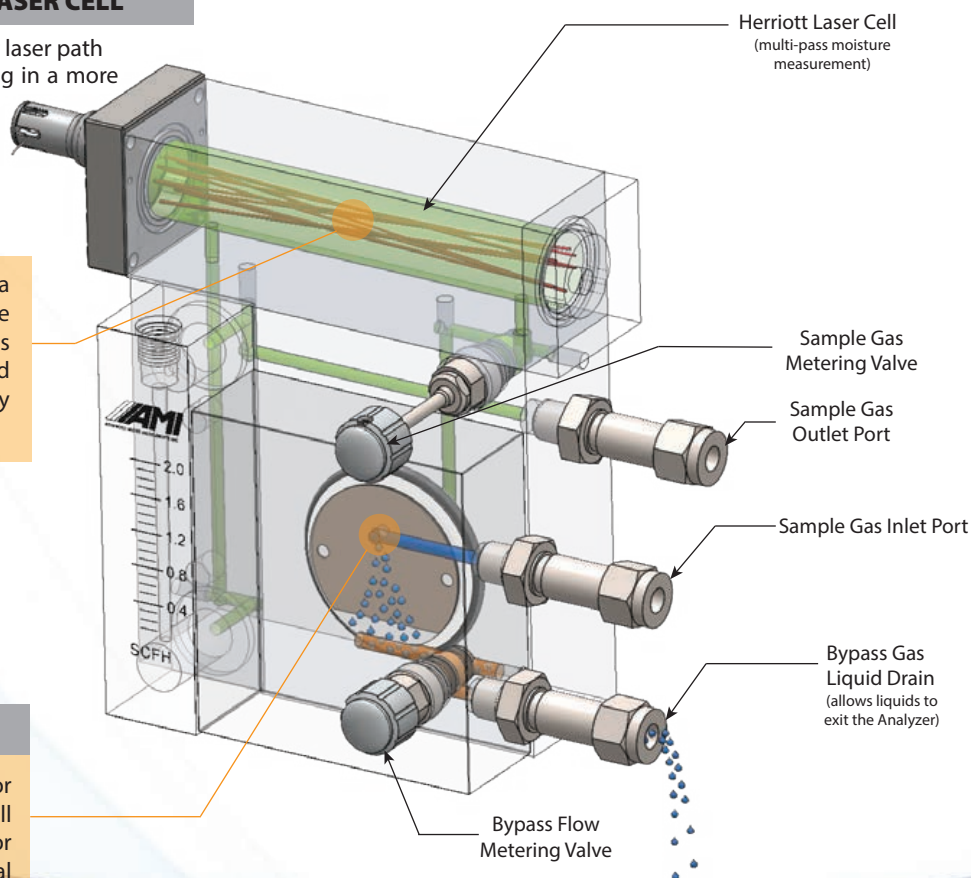
AMI's uniquely small Herriott Laser Cell Design utilizes a multi-pass laser path, providing significantly more measurement capabilities compared to a single-pass cell design. This results in an incredibly accurate and precise moisture measurement in an extremely compact laser chamber.

## PROTECTION AGAINST WATER SLUGS

**ANALYZER GUARDIAN** Technology allows for sample gas to pass through the Herriott Cell while rejecting particulates, water, compressor oils, and glycols. This design will completely seal off and protect the **4010LX** if a large liquid slug reaches the analyzer.

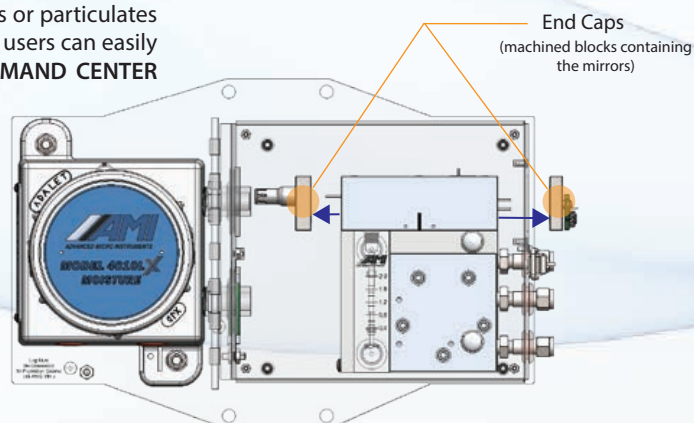
## FIELD SERVICABLE DESIGN

The **4010LX** design allows for the user to clean the reflective mirrors of the Herriott Cell in the field in the unlikely event liquids or particulates break through our protective membrane. Additionally, users can easily re-align the laser absorption peaks using AMI's **COMMAND CENTER** software.



## FASTEST RESPONSE TIMES

The entire gas path is contained within our patented **ELIMINATOR CELL BLOCK**. The gas travels a short 4 inches from the Sample Gas Inlet before entering the laser measurement cell, resulting in a fast, accurate, and stable reading.



# BARRACUDA MODEL 4010LX

## PHYSICAL & ELECTRICAL SPECIFICATIONS

WEIGHT	MOUNTING	GAS CONNECTIONS	WETTED PARTS
17.0 lbs (7.7 kg)	Wall Mount or 2.0" Pipe	¼" 316 S.S. compression fittings	316 S.S. fittings, electro-less nickelplated cell blocks, Teflon®-based liquid rejection membrane, acrylic flow meter, & O-rings (Viton and Buna-N)

### POWER

DC	AC
10 – 24 VDC 1.0 A @12V max* 0.14 A @12V continuous	100 – 240 VAC, 50/60Hz 500 mA max

\* max power only during start-up




Pictured: MODEL 4010LX in Extreme Weather Enclosure protects against harsh elements and freezing temperatures

Each unit undergoes a rigorous quality inspection, ships quickly to the customer and is backed by AMI's industry-leading Service & Support.

## OPERATIONAL SPECIFICATIONS

MEASUREMENT RANGE (UNITS SELECTABLE)	AMBIENT OPERATIONAL TEMPERATURE	FLOW RATE (RECOMMENDED)	INLET GAS PRESSURE
0.25 – 20.0 lbs or 0 – 420 ppm	20°F to 149°F (–6.7°C to 65°C)	1.0 to 2.0 SCFH (0.5 – 1.0 Lpm)	1.0 – 20.0 psig (0.07 – 1.4 bar)

## ANALYZER PERFORMANCE SPECIFICATIONS

90% RESPONSE TIMES	MINIMUM DETECTON LIMIT	REPEATABILITY	ACCURACY	GLOBAL REGULATORY APPROVALS
<2 sec	0.25 lbs (5.25 ppm)	±0.25 lbs (±5.25 ppm)	±0.25 lbs (±5.25 ppm)	Class I, Division 1, Groups B, C, D, T4 Class I Zone 0/1, AEx ia op is/db IIB+H2 T4 Ga/Gb IECEx: Ex ia op is/db IIB+H2 T4 Ga/Gb ATEX/UKCA:  II 1/2 G Ex ia op is/db IIB+H2 T4 Ga/Gb Ingressed Protection: IP65

## ANALYZER KEY FEATURES

ELIMINATOR CELL BLOCK™	With a Complete Integrated Sample System (including flow meter, sample metering valve, bypass metering valve, liquid rejection membrane, and Laser Measurement Cell)
ALARMS	2 fully adjustable concentration alarms with configurable Alarm logic and Relay Contacts, featuring: ▶ Alarm Bypass                      ▶ Alarm Delays                      ▶ Alarm Above or Below Setpoint ▶ Latching/Non-latching            ▶ Failsafe/Non-failsafe            ▶ Open or Close on Alarm
ANALOG OUTPUTS	1 – 5 VDC and 4 – 20mA isolated output signals and Modbus bi-directional RS485 communication
COMMAND CENTER	Software that works across AMI's Analyzers and gives users access to advanced functions: ▶ Error Status Display              ▶ SMART REALIGNMENT of signature H <sub>2</sub> O and methane peaks ▶ Alarm Configurations              ▶ Data Logger with time-stamped records of moisture readings, temperature, brown-outs and pressure as well as security settings
ACCESSORIES	▶ Extreme Weather Enclosure      ▶ Mirror Cleaning Kit
WARRANTY	▶ 2 Years for Parts & Labor for any defects in materials or workmanship

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**AMI**  
ADVANCED MICRO INSTRUMENTS  
An ENPRO Company

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