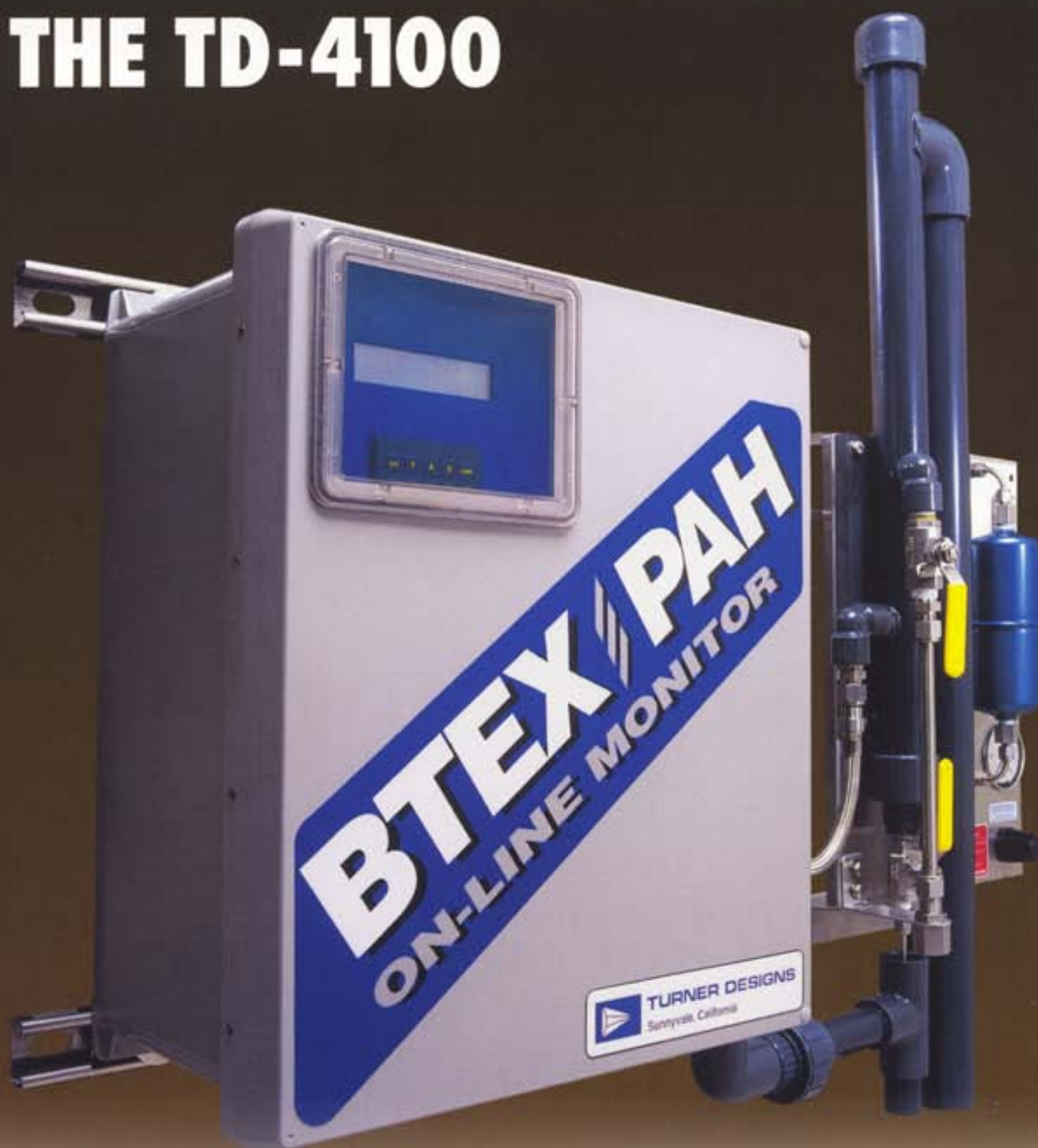


# A LOW-MAINTENANCE, NON-FOULING, ON-LINE MONITOR FOR HYDROCARBONS IN WATER: THE TD-4100



*World's largest manufacturer of field and process fluorometers*

**TURNER**  **DESIGNS**  
Hydrocarbon Instruments

# NON-CONTACT, NON-FOULING FLOW CELL

# HIGH SENSITIVITY AND SELECTIVITY

## NON-CONTACT, NON-FOULING FLOW CELL

The TD-4100 does not have a glass flow cell. Aromatic hydrocarbons are detected in a stream of water which falls through an open chamber; the stream does not contact, dirty or foul the optical windows used for monitoring aromatic hydrocarbons. A proprietary *Air Curtain* system keeps optical windows fog-free in humid environments or hot water applications.

## LOW MAINTENANCE

There are no tubes, pumps or valves to replace. The system's one moving part has a life expectancy of greater than 5 years. Routine maintenance involves changing a lamp twice a year and an air filter periodically.

## DIRECT, CONTINUOUS MONITORING

The TD-4100 monitors a flowing water stream continuously. No chemicals, no pre-treatment and no manual manipulation of the sample are required to monitor aromatic hydrocarbons.

## ACCURATE

The TD-4100 directly measures aromatic hydrocarbons in water with accuracies that consistently correlate to regulated laboratory methods.

## SENSITIVE

BTEX, gasoline, diesel, jet fuel, crude oil, aromatic solvents and refined petroleum products containing aromatics are detected by the TD-4100 from low ppb ( $\mu\text{g/L}$ ) to high ppm ( $\text{mg/L}$ ). For example, the TD-4100 can detect 1 ppb of gasoline or diesel fuel in water free of interfering compounds.

## SELECTIVE

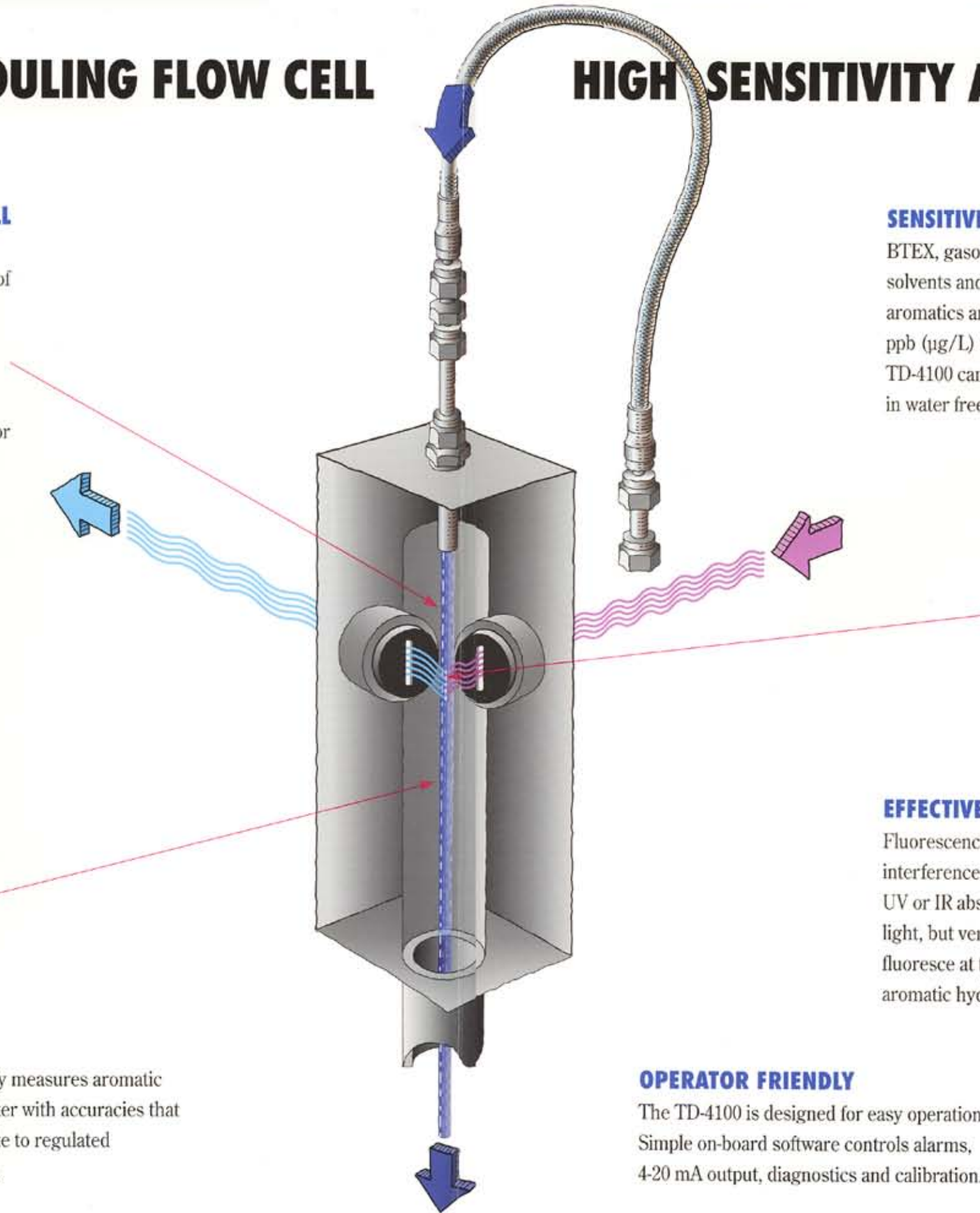
The TD-4100 continuously measures the fluorescence of aromatic hydrocarbon compounds in water. Fluorescence occurs when a molecule absorbs light energy of one specific wavelength and emits light energy of a longer wavelength. Fluorescent compounds each have a unique signature, and these compounds can be displayed as an actual concentration.

## EFFECTIVE MONITORING IN DIRTY WATER

Fluorescence technology makes the TD-4100 resistant to interferences by turbid or dirty water which impact on-line UV or IR absorption instruments. Most substances absorb light, but very few fluoresce; if a substance *does not* fluoresce at the specific wavelengths for the monitored aromatic hydrocarbon, it will not interfere.

## OPERATOR FRIENDLY

The TD-4100 is designed for easy operation. Simple on-board software controls alarms, 4-20 mA output, diagnostics and calibration.



## TD-4100 SPECIFICATIONS

<b>Dimensions:</b>	44.0" x 43.1" x 10.8" (111.8 cm x 109.4 cm x 27.5 cm)
<b>Weight:</b>	64 lbs (29 kg)
<b>Power Requirements:</b>	110 - 240 VAC, 50/60 Hz, 2A. Contact Turner Designs for DC applications.
<b>Plumbing Requirements:</b>	Feed: 0.5 - 2 gpm (2 - 8 L/min), 2" (5.01 cm) unrestricted drain
<b>Air Supply:</b>	Dry Air: 10 - 100 psi (68.9 - 689 kPa), 15 SCFH (246 cm <sup>3</sup> H)
<b>Operating Temperature:</b>	32 - 120° F (0 - 49° C). Contact Turner Designs for configurations in extreme environmental conditions.
<b>Sample Temperature:</b>	< 140° F (60° C) (standard); 190° F (88° C) (optional)
<b>Operational Principle:</b>	Fluorescence
<b>Detection Range:</b>	1 ppb - >1000 ppm*
<b>Calibration Stability:</b>	10% or better over 90 days
<b>Response Time:</b>	< 10 sec
<b>Calibration:</b>	Multi-point calibration
<b>Alarms:</b>	Three alarm trigger points (baseline, early warning, and high alarm): Critical components linked to alarms <i>Local Alarm:</i> Local beep tone; LCD alarm message <i>External Alarm/Device Control:</i> 2 user-settable, independently-fused, solid-state relays (standard AC relays or optional DC relays); relays configurable as Normally Open or Normally Closed; user-settable set point and delays
<b>Outputs:</b>	<i>Signal:</i> 4 - 20 mA, isolated
<b>Diagnostics:</b>	Self diagnostics: Internal failure mode linked to relays and LCD display
<b>Security:</b>	Password protected for Master and User ID; padlockable cabinet
<b>Electronics Cabinet:</b>	Fiberglass reinforced polyester designed for highly corrosive environments
<b>Maintenance:</b>	Lamp (twice yearly); routine cleaning of plumbing
<b>Air Purge (optional):</b>	Class I Division I; Class I Division II (explosion-proofing)
<b>Data Logger (optional):</b>	Contact Turner Designs for detailed specifications.

\* Limits of detection are dependent on target analyte and matrix

