# The Ultima® XI Gas Monitor

## Infrared technology for combustible gas detection


**The Ultima XI Gas Monitor** is a digital signal processor-based, infrared point gas detector for continuous monitoring of combustible gases and vapors. Designed around a rugged 316 stainless steel enclosure, the Ultima XI Monitor is a completely self-contained, explosion-proof unit that is dependable in harsh environments.

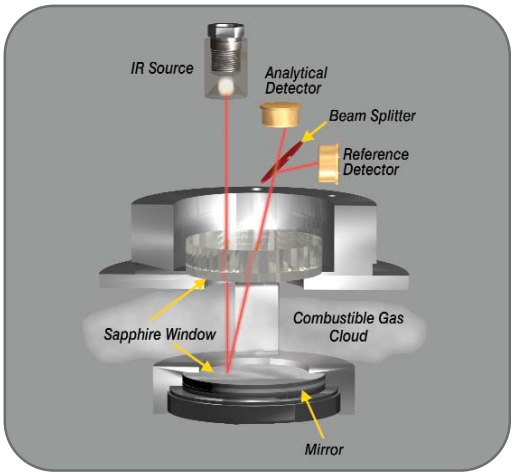
The Ultima XI Monitor operation is based upon dual wavelength-heated optics technology, providing definitive compensation for temperature, humidity, and aging effects. IR technology offers excellent long-term stability, eliminates the need for frequent calibrations, and reduces overall cost of ownership.

### Features

- DuraSource Technology offers improved sensor life
- No-gas calibration; zero adjustment provides reliable accuracy
- Selectable algorithms for a variety of hydrocarbon-based gases
- 4-20 mA output
- Fail-to-safety operation
- Designed without a sintered disk for optimum performance in harsh offshore environments
- Operates over extended temperature ranges
- Extreme speed of response
- Immune to poisoning
- Operates in high-gas and low-oxygen environments

DURA™ SOURCE TECHNOLOGY 10-YEAR WARRANTY

MSA
The Safety Company




## Principles of IR Technology

The Ultima XI Gas Monitor uses an electronically modulated infrared energy source and two detectors that convert infrared energy into electrical signals. Each detector is sensitive to a different range of wavelengths in the infrared portion of the spectrum.

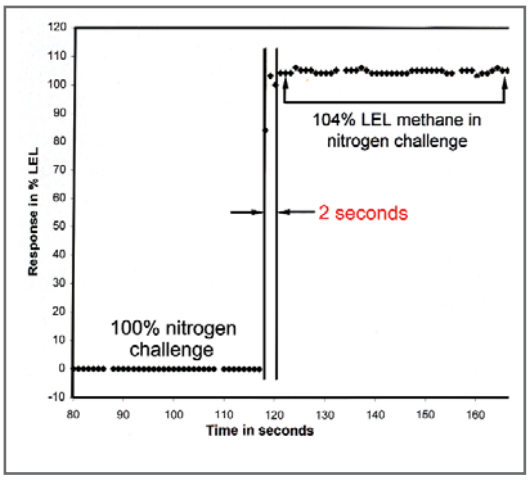
The source emission is directed through a main enclosure window into an open volume. A mirror at the end of this volume, protected by a second window, directs the energy back through the main enclosure window and onto the detectors.

The presence of combustible gas in the open volume will reduce the source emission intensity reaching the analytical detector, but not the source emission intensity reaching the reference detector. The microprocessor monitors the ratio of these two signals and correlates this ratio to a %LEL combustible reading.

## Ordering Information

All Ultima X Series Gas Monitors are manufactured using MSA's Assemble-To-Order (ATO) process. For further information on the Ultima X Series Gas Monitors, see bulletins 07-2051-MC and 07-2054-MC.


*Ultima XI Accessories*




*Extremely fast response speed (T90 < 2 sec.)*

## Specifications

| | |
|---|---|
| Gas Types and Ranges | Combustible gases & vapors; 0-100% LEL<br>$CO_2$ 0-5%, 0-2%, 0-5000 ppm |
| Temperature Range | -40˚C to +60˚C (-40˚F to +140˚F) |
| Stability | ± 2% full scale/year |
| Repeatability | ± 1% full scale |
| Accuracy | ± 3% full scale (≤ 50% LEL)<br>± 5% full scale (> 50% LEL) |
| Response Times (without sensor guard) T90 | < 2 sec. |
| Humidity | 0%-95% RH, non-condensing |
| Sensor Warranty | 10 years for IR source |
| Power Input | 8-30 VDC, 5 watts |
| Current Draw | 290mA maximum @ 24 VDC |
| Wiring Requirements | 3-wire |
| Signal Output | 4-20mA 3-wire current source |
| Conduit Entries | One entry, 3/4" NPT (19.05 mm) with optional conduit |
| **Physical**<br>Weight<br>Dimensions | 316 stainless steel<br>6 lbs. (2.7 kg)<br>2.5" dia. x 8" long (64 x 203 mm) |
| Approval Ratings | $_cFM_{us}$, $_cUL_{us}$, CSA<br>Class I, Div. 1 and 2, Groups B, C, & D<br>Class II, Div. 1, Groups E, F, & G<br>Class III<br>ANSI/ISA 12.13.01<br>CSA C22.2 No. 152 Combustible Gas Performance<br>CE EMC Directive: 89/336/EEC<br>CE ATEX Directive: 94/9/EC II 2G EEx d IIc T5 (Tamb -40˚C to +60˚C)<br>TYPE 4X, IP 66 |

**Note:** This bulletin contains only a general description of the products shown. While uses and performance capabilities are described, under no circumstances shall the products be used by untrained or unqualified individuals and not until the product instructions including any warnings or cautions provided have been thoroughly read and understood. Only they contain the complete and detailed information concerning proper use and care of these products.

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