

# Model IPS-4 IR/UV Full Spectrum Analyzer

The IPS-4 analyzer utilizes both NDIR and UV optical benches to enable unparalleled high quality process gas analysis.

Infrared analysis is a powerful tool in on-line component concentration measurement, but can be limited in accuracy due to cross interference in complex streams; many gases exhibit multiple absorptions in the IR. The IPS-4 IR/UV enables measurement of up to eight components using the most favorable absorptions in both spectral areas and eliminating cross sensitivity concerns. Measurements are made simultaneously in the UV using diode array detection and in the IR using single beam

multiwavelength technology, and the readings cross correlated. The UV readings are further verified (Optical Bench Electronic Verification) by evaluating detector response to known change in lamp intensity.

The single beam/multiple wavelength IR technology ratios the output signal of desired component to reference, minimizing common mode errors.

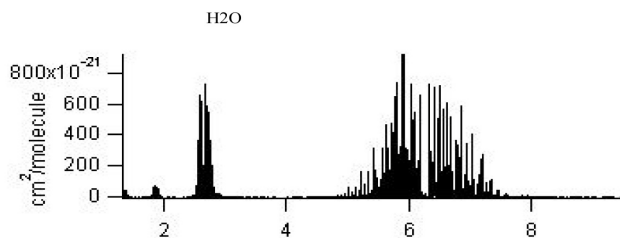
The combination bench unit offers a very robust process analytical solution utilizing long lifetime optical components.

The unit is web-enabled and a heated oven for sample conditioning components where necessary is included as part of the analyzer package.

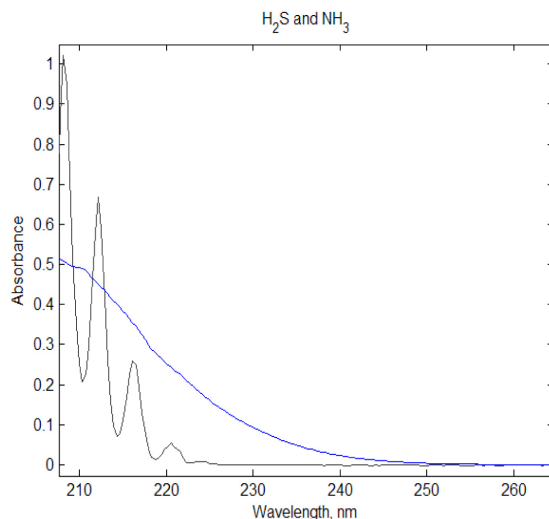
## Features

- ▶ **Multiple Gas Capability**  
typically CO, CO<sub>2</sub>, H<sub>2</sub>O, NH<sub>3</sub>, H<sub>2</sub>S, Cl<sub>2</sub>, halogens and halides, individual hydrocarbons and total hydrocarbons
- ▶ **Analog and Digital Connectivity**  
Modbus, Ethernet and Web browser-based interface
- ▶ **NEMA 4X Enclosure Houses All Components**  
Designed for outdoor installation; no exposed components
- ▶ **Fully Integrated Sample Conditioning**  
No need for site integration

### INFRARED



### PLUS UV



ATEX Version

# Model IPS-4 IR/UV Full Spectrum Analyzer

## Performance Specifications

**Analyzer Range:** ppm to 100% depending upon specific application

**Linearity (independent)<sup>1</sup>:** <1% full scale range

**Measurement Accuracy<sup>1</sup>:** UV

Vis: typically 1% full scale range (application dependent)

IR: Total hydrocarbons 2% full scale range, generally 1% full scale range (application dependent)

**Repeatability<sup>1</sup>:** UV Vis and IR:

<1% full scale range (application specific)

IR Total Hydrocarbons: <2% full scale range

**Stability<sup>1</sup>:** 0.5% of full scale range

**Zero Drift:** <1.0% of full scale range over 24 hours

**Response Time:** <2 seconds

photometric response, <30 seconds to T90

**Components:** up to 8 components can be measured

**Inputs:**

2 non-isolated analog inputs (0-5V, 0/4-20mA)

2 optically isolated discrete DC inputs

22 key piezoelectric keypad

**Outputs:**

265 x 64 pixel vacuum fluorescent display with multi-lingual capability (language options include English, Spanish, French, German, Russian. This is a partial listing. Contact AMETEK for more information)

4 isolated outputs (standard: 0/4-20 mA) (Eight isolated outputs optional)

8 dry relay contacts (NO, 100VA, 240 V)

RS485 isolated (supports MODBUS RTU)

RS232 non-isolated

Fast Ethernet (IEEE802.3)

**Sample System Limits:**

Sample Pressure: Up to 100 barg (1450 psig) for some configurations

Oven Temperature: Oven heater capable of maintaining 150°C (300°F)

**Utility Requirements:**

Electrical:

120 VAC (105 to 132 VAC), 47 to 63 Hz

240 VAC (209 to 264 VAC), 47 to 63 Hz

**Power Consumption:**

<700 W with oven heater

<300 W without oven heater

**Instrument Air:** 4.8-6.9 barg (70-100 psig)

**Environmental Requirements:**

Ambient Temperature: -20° to 50°C (-4° to 122°F)

Ingress protection:

IP65 and Type 4X

Enclosure Material: stainless steel

**Physical Dimensions:**

*General purpose model:*

(W x H x D): 95 cm x 66 cm x 30 cm for basic analyzer

Back panel, where supplied: typically 122 cm x 122 cm

Weight: 80 kg for base system

**Approvals and Certifications**

**(pending):**

NEC/CEC and CE General Safety requirements.

Hazardous area requirements:

*General purpose model:*

NEC/CEC Class I Div 2

Groups ABCD, Class II Div 2

Groups F,G, and Class III

NEC CL I Z2 AEx nA IIC T3

CL II Z2 AEx nA T3

CEC Ex nA IIC T3

*Div 1 option:*

NEC/CEC Class I Div 1

Groups ABCD, Class II Div 1

Groups F,G, and Class III

*Zone 1 option:*

NEC CL I Z1 AEx d px IIC T3

CEC Ex d p IIC T3

II 2 G ATEX Ex d px IIC T3

1. These specifications are based on normal operation of the analyzer as described in the manual supplement. Normal analyzer operation may include periodic zeroing and spanning.

**AMETEK**  
PROCESS INSTRUMENTS

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F-0310 Rev 6 (1014)

One of a family of innovative process analyzer solutions from AMETEK Process Instruments.  
Specifications subject to change without notice.

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PROCESSES