

# Fast HCl and HF measurements

## Anywhere.



## HCl/HF Analyzer (hydrogen chloride, hydrogen fluoride, water vapor)

### Features and Benefits

- Fastest response: 1-Hz continuous measurements allow observation of transient and time varying flows
- Measures a wide range of concentrations
- High-resolution absorption spectra always viewable
- Low power: ideal for field applications
- New Enhanced Performance model provides ultra-low drift and unsurpassed precision

LGR's new HCl/HF Analyzer (hydrogen chloride, hydrogen fluoride) measures HCl, HF and water vapor in ambient air or in industrial process flows with extremely high precision and sensitivity. No longer do you have to spend a lot of money or wait a long time to measure hydrogen chloride and hydrogen fluoride simultaneously with high sensitivity – LGR's HCl/HF Analyzer provides measurements every second with ppb-level precision. In addition, the analyzer can report measurements (on a dry and wet basis) quickly over a wide range of mole fractions.

LGR's HCl/HF Analyzer is available in different packages to allow users to select the configuration most suitable for their needs. LGR's standard rackmount package fits in a 19"-wide instrument rack and requires an external keyboard, mouse, and video monitor. For highest performance, the HCl/HF Analyzer is available in LGR's "Enhanced Performance" package. The EP package incorporates proprietary internal thermal control for ultra-stable measurements with unsurpassed precision, accuracy and drift.

The HCl/HF Analyzer uses LGR's patented Off-axis ICOS technology, a fourth-generation cavity enhanced absorption technique. Off-axis ICOS has many advantages over conventional cavity ringdown spectroscopy (CRDS) techniques such as being alignment insensitive, having a much shorter measurement time, and not requiring expensive and complex auxiliary components.

As with all LGR instruments, the HCl/HF Analyzer includes an internal computer (Linux OS) that can store data practically indefinitely on its internal hard drive (for unattended long-term operation), and that can send real-time data to a data logger through its analog, digital (RS232) and Ethernet outputs.

Furthermore, the HCl/HF Analyzer may be controlled remotely via the Internet. This capability allows the user to operate the analyzer using a web browser anywhere Internet access is available. Furthermore, remote access allows full control of the instrument and provides the opportunity to obtain data and to diagnose the instrument operation without being on site.

## HCl/HF Analyzer (hydrogen chloride, hydrogen fluoride, water vapor)

### Performance Specifications

Precision (rackmount packages, 1 $\sigma$ , 1 sec / 10 sec / 100 sec):

HCl: 0.4 ppb / 0.2 ppb / 0.1 ppb  
HF: 0.1 ppb / 0.05 ppb / 0.025 ppb

Maximum Drift (Enhanced Performance model)  
(15 min average, at STP, over 24 hrs):

HCl, HF: 1 ppb

Measurement Range (100 seconds):

HCl, HF: 0.3 – 2000 ppb

Operational Range

(external calibration may be required):

HCl, HF: 0 – 10 ppm  
H<sub>2</sub>O: 10-20,000 ppm

Measurement Rates (User Selectable):

0.01 – 1 Hz  
(external pump required for < 6 second flow response)

Response Times (10%-90%, 90%-10%):

HCl: < 60 seconds  
HF: < 90 seconds  
(measurements reported at user-selected rates to 1 Hz)

Sampling Conditions:

Sample Temperature: -10 – 80 °C  
Operating Temperature: 0 – 45 °C  
Ambient Humidity: 0 – 100% RH non-condensing

Outputs:

Digital (RS232), analog, Ethernet, USB

Power Requirements:

115/230 VAC, 50/60 Hz or 12 VDC  
Standard model: 100 W  
Enhanced Performance model: 150 W (steady state)

Dimensions:

Rackmount - Standard model:  
8.75" × 19" × 24", 29 kg  
Rackmount - Enhanced Performance model:  
15.75" × 19" × 24", 40 kg



### Ordering Information

907-0038: Standard rackmount model

911-0038: Enhanced Performance rackmount model

### Accessories

908-0003-9001: Multiport Inlet Unit –  
Automated control of up to 16 inlet ports

908-0003-9002: Multiport Inlet Unit –  
Automated control of up to 8 inlet ports

908-0001-9011: N920 Pump –  
Flow-through time = 1.2 seconds (note that the standard  
internal pump provides < 8 seconds 1/e flow response time)

904-0002: Data Logging System – multi-channel data logging  
system records and synchronizes serial (RS-232) outputs from  
multiple LGR analyzers and other devices (GPS, anemometers)



上海汇分电子科技有限公司  
上海市闸北区天目西路511号锦程大厦1408室  
联系方式: 400-660-9565  
网站: www.19mro.com