

# MAX300-IGX Product Note GP-214A

## Extrel® MAX300™-IGX Process Mass Spectrometer

The MAX300-IGX Industrial Gas Analyzer is the ATEX version of the Extrel MAX300 industrial quadrupole mass spectrometer. This version is designed to meet the ATEX Zone 1 area classifications typically found in European Union pharmaceutical and petrochemical plants. A version is also available for use in Class 1, Division 1 hazardous areas.

The MAX300-IGX analyzer can be customized to meet your application and site's needs. The process mass spectrometer is available with either an air conditioned or a water cooled stainless steel enclosure. To complement your MAX300-IGX system, Extrel offers the widest and most flexible array of inlet systems, including solenoid and rotary valves. For pharmaceutical drying applications, the analyzer can be coupled with our Actively Controlled Sample System (ACSS) designed to handle the analysis of multiple dryers or lyophilizers at various pressures.



### Ambient Requirements:

**Area Classifications:** ATEX Zone 1, Group II B + H<sub>2</sub>, T3/T4 or Class 1 Division 1 Groups B,C,D T3

**Ambient Temperature:** -4°F to 120°F (-20°C to 49°C) with A/C cold start  $\geq$  54°F (12°C)

### MAX300-IGX Applications

#### *Petrochemical*

Acetic Acid  
Acrylonitrile  
Ambient Air Monitoring  
Ammonia  
Catalysis Research  
Ethylene  
Ethylene Oxide  
Fuel Gas/Natural Gas  
Hydrogen  
Methanol  
Polyethylene/Polypropylene  
Vinyl Chloride

#### *Pharmaceutical*

Ambient Air Monitoring  
Dryers/Vacuum Dryers  
Fermentation Headspace  
Lyophilizer Monitoring  
Solvent Recovery  
Waste Water Analysis

### Hardware Specifications:

<b>Mass Analyzer:</b>	3/4" (19 mm) High Transmission Quadrupole Mass Filter
<b>Mass Range:</b>	2 - 250 amu standard, 2 - 300 amu optional
<b>Detectable Components:</b>	Any gas or vapor with a molecular weight or fragment ion within the mass range
<b>Number of Components:</b>	Unlimited
<b>Masses per Component:</b>	Unlimited; allows multivariate analysis
<b>Upper Detection Limit:</b>	100%
<b>Lower Detection Limit:</b>	For components with no interference Faraday: 10 parts per million (ppm) Electron Multiplier: 10 parts per billion (ppb)
<b>Dynamic Range:</b>	Faraday: 5 orders of magnitude ( $10^5$ ) Dual Faraday/Multiplier: 8 orders of magnitude ( $10^8$ )
<b>Analysis Rate:</b>	Typically 400 milliseconds per component
<b>Analysis Precision:</b>	+/- 0.0025 absolute, based on a 1% Argon concentration with no interferences
<b>Analysis Stability:</b>	+/- 0.005 absolute, over 30 days, on a 1% Argon concentration with no interferences
<b>Filaments:</b>	Two, one active and one spare with automatic switchover for continuous operation
<b>Sample Streams:</b>	Unlimited

# Extrel MAX300-IGX Process Mass Spectrometer

## Typical Physical Dimensions:

### With A/C and Cart:

Weight: 560 lbs (254 kg)  
 Height: 75" (190 cm)  
 Depth: 25" (64 cm)  
 Width: 52" (133 cm)

### With Water Cooler and Cart:

Weight: 500 lbs (227 kg)  
 Height: 75" (190 cm)  
 Depth: 25" (64 cm)  
 Width: 43" (109 cm)

### Cart Weight: 44 lbs (18 kg)

## Utility Requirements:

### Power:

**Power Supply:** 198-253V, 50/60 Hz, 20 Amp circuit

### Purge System:

**Compressed Air Supply:** Clean dry instrument air

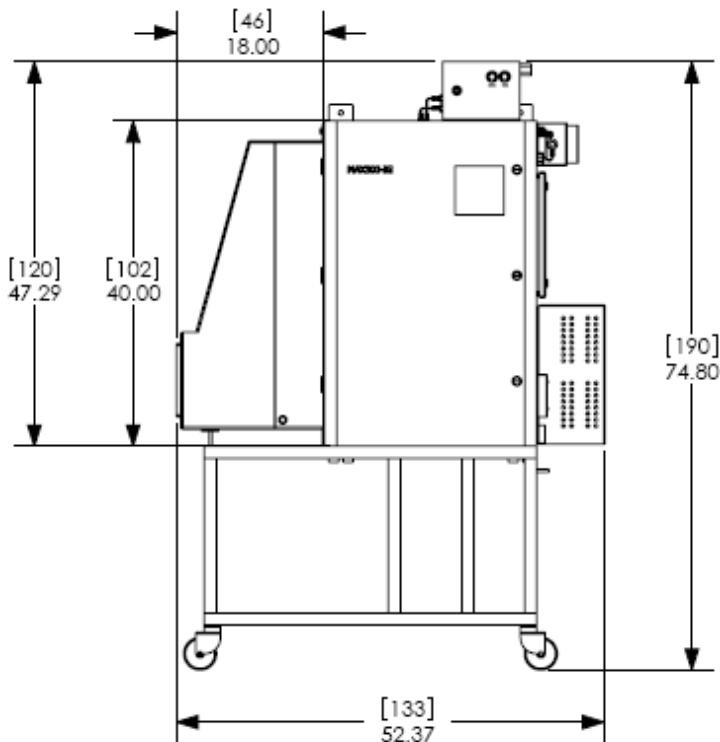
**Air Pressure:** 90-120 psig (6-8 barg)

**Fast Purge Minimum Air Flow:** 225 NL/min

**Recommended Supply Tube:** 1/2" pipe or larger

**Air Inlet Connection:** 1/2" female NPT fitting

Figure 1: Front View MAX300-IGX w/AC and Cart



### Water Cooled Enclosure Option:

**Cooling Water Supply:** Clean water or antifreeze solution

**Coolant Max Temp:** 71° F (22°C)

**Coolant Pressure:** 90-120 psig (1-5 barg)

**Coolant Standard Connections:** 1/2" female NPT fittings

## Data System, Software and Communications:

<b>Software:</b>	Extrel Questor® 5 Process Control Software, a web-based user interface
<b>3 User Security Levels:</b>	Administrator, User, Viewer
<b>Display Unit:</b>	Information and control is transmitted and displayed via Ethernet to a PC with Microsoft Windows® XP operating system and Internet Explorer® browser
<b>Analog Inputs and Outputs:</b>	Unlimited
<b>Digital Inputs and Outputs:</b>	Unlimited
<b>Communications:</b>	Ethernet, Bi-directional Modbus® RTU or TCP/IP, OPC, and Analog Outputs

**Extrel CMS maintains sales and service offices around the world. Please contact us for the office nearest you or visit our web site at [www.extrel.com](http://www.extrel.com)**

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