The MKS ASTRON® ex reactive gas generator is our highest output, self-contained reactive species source for chamber cleaning and other reactive gas applications. The ASTRONex reactive gas generator uses patented Low-Field-Toroidal plasma technology to efficiently dissociate input gas to produce downstream reactive chemistries. The unique high power design effectively dissociates alternative gases such as C₃F₈ and CF₄. The increased flow capability provides sufficient reactive gas production for cost-effective use of these alternative process gases.

Relative to other plasma generating technologies, the ASTRONex reactive gas generator is more efficient, has lower cost of ownership and is capable of producing high flows from O₂, H₂, C₃F₈, CF₄, NF₃ or other gases. The design architecture integrates the power source, control module, and plasma chamber into a single compact module. Due to its simple interface, the ASTRONex reactive gas generator is easily integrated onto both new and existing production tools.

The primary application for the ASTRONex reactive gas generator is as a remote source of reactive gas to clean deposits from interior walls of process chambers using alternative gases; or where high fluxes of a reactant species are required. By generating atomic fluorine that reacts with deposits in the chamber, new gases are formed that are easily scrubbed to minimize the environmental impact. In addition, the remote location of the plasma source reduces wear and tear on the process chamber compared to in situ RF methods.

Features & Benefits

- No Argon required during operation
- Higher reactant flow supports:
  - Alternate source gases
  - Large chamber configurations
  - Increased performance and throughput
- Continuous operation (CW), not duty cycle limited
- Compact, lid-mount design
- Reactive gas delivery at point of use
- High reliability
- No consumables, low CoO
### Specifications and Ordering Information

#### Gas Supply
- 100% Ar required for ignition only
- Up to 6 slm of NF₃ (after plasma ignition NF₃ can be added and the Ar removed)
- N₂, H₂, O₂, C₃F₈*, CF₄* (*with O₂)

#### Operating Pressure
- 1 to 4 Torr during ignition measured at ASTRON outlet
- 1 to 10 Torr post ignition measured at ASTRON outlet once flow is stabilized

#### Reactant Output
- >95% dissociation up to 6 slm NF₃ at 5 Torr (0.5 slm to 6.0 slm typical)

#### Wetted Materials
- 6061-T6 Aluminum hardcoat anodized
- 6061-T6 Aluminum, Chemraz®, Alumina

#### Control Interface
- 9 and 25 pin D connectors, opto-isolated I/O

#### Inputs
- AC line
- Plasma On

#### Outputs
- On/Off
- AC line
- Plasma On

#### Utilities
- Power 187 to 228 VAC, 50/60 Hz, 60A, 3 phase
- Cooling water 2.0 gpm, < 30°C
- Ambient 40°C max.

#### Physical
- 74 lb. (33.5 kg)
- 16.7"L x 14.5"W x 10.1"H (424 x 368 x 26 mm nominal)

#### Compliance
- S2-0200
- CE, NRTL, F47

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**Dimensional Drawing**

*Note: Unless otherwise specified, dimensions are nominal values in inches.*

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**Ordering Information:**

ASTRON®ex Reactive Gas Generator Type AX7685

Alternative Source Gas, Highest Output Reactive Gas Generator

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Specifications are subject to change without notice.

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