

MAXSTREAM 300

LOW FLOW CHAMBER CLEAN REMOTE PLASMA SOURCE

The MAXstream™ 300 is a compact, reliable, and cost-effective remote plasma source (RPS) solution for low flow (2 to 3 SLPM) NF_3 chamber clean applications. The MAXstream 300 is 18% smaller than the Xstream RPS unit to save valuable tool space and offers drop-in compatibility with traditional RPS tools, allowing customers an easy upgrade path to improved performance and reliability. Market leading power accuracy of 2% for improved process repeatability along with AE's proprietary aluminum (Al) substrate with Type 3 hard anodization combine to make it one of the most consistent and reliable RPS units on the market.



PRODUCT HIGHLIGHTS

- Compact, low cost-of-ownership solution for 2 to 3 SLPM chamber cleaning processes
- Industry-leading power accuracy of 2% for consistent, repeatable performance
- Proprietary high-purity Al substrate with Type 3 anodization for longer chamber life
- Unique dual ignition core design ensures virtually 100% ignition reliability
- Drop-in compatibility with traditional RPS systems to enable simple design-in compatibility as well as seamless field upgrades to a reliable, repeatable, and low cost-of-ownership solution

TYPICAL APPLICATIONS

- NF_3 chamber clean

MAXSTREAM 300 REMOTE PLASMA SOURCE

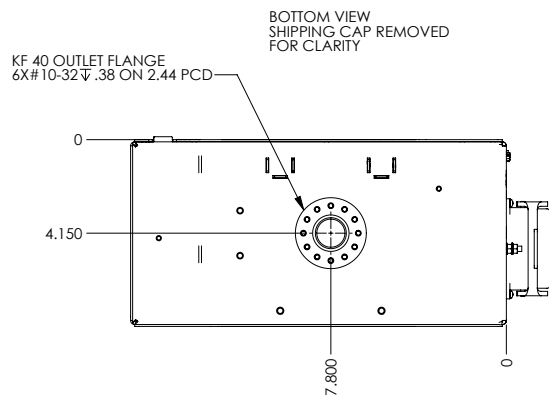
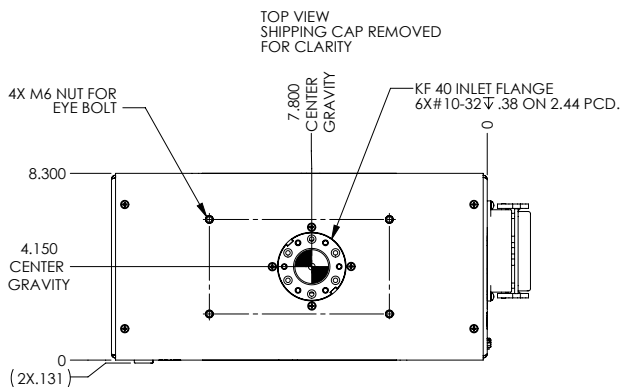
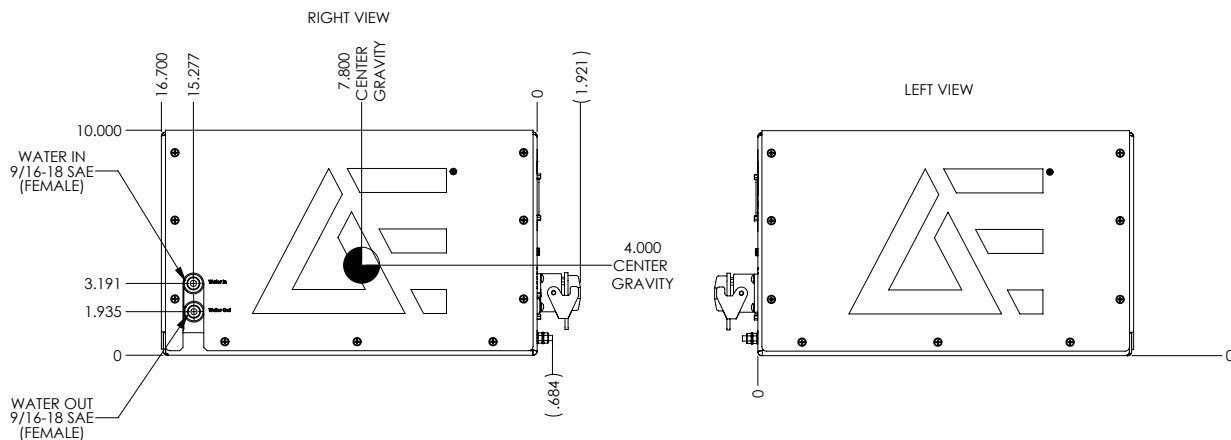
PROCESS AND ELECTRICAL SPECIFICATIONS

General Operating Parameters	
Plasma Power Range	300 to 6000 W, continuous
Process Applications	Remote delivery of activated gases for downstream processing (i.e. chamber cleaning, reactive etching processes, and reactive deposition processes)
Ignition	100 mTorr to 4 Torr up to 2 SLPM of Ar, <1% poisoned by NF ₃
Power Accuracy	±2% or 15 W, whichever is greater
Chemical Compatibility	This unit is intended for use with selected gases such as Ar, O ₂ , H ₂ , N ₂ , F ₂ , H ₂ O, NF ₃ , Cl or NH ₃ CxF _y .
NF ₃ Operating Specifications	
Flow Range	Up to 3 SLPM at 10 Torr
Dissociation Efficiency	> 98% disassociation up to 3 SLPM at 10 Torr
Operating Specifications	
Duty Cycle	Continuous operation within specified operating range
Cooling Flow Rate	1.5 GPM at +5°C to +35°C non-condensing input water temperature
Ambient Air	+5°C to +40°C, non-condensing humidity <75%
AC Electrical Requirements	
Input Voltage	187 to 229 VAC, no neutral, 3 phase with PE ground (phase insensitive)
Line Frequency	47 to 63 Hz
Input Current	< 24 A AC

MECHANICAL SPECIFICATIONS

Mechanical and Physical Specifications	
Dimensions	25.4 cm (H) x 21 cm (W) x 42.4 cm (D)
	10" (H) x 8.3" (W) x 16.7" (D)
Weight	21 kg (45 lb)
Vacuum	Input: KF40 flange on top side of the unit
	Output: KF40 interface on bottom of unit
Ground Connection	Chassis ground stud 1/4"-20 x 3/4" near AC input connector
USB Connection	USB Type A female
Ethercat Connection	RJ45 female
Water Connections	Stainless steel Female SAE 9/16" - 18 straight-thread

MECHANICAL DRAWINGS



Dimensions in inches

MAXSTREAM 600, 800, 1000, AND 1200

MID-FLOW CHAMBER CLEAN REMOTE PLASMA SOURCE

The MAXstream™ 600, 800, 1000, and 1200 are reliable and cost-effective remote plasma source (RPS) solutions for mid-flow (6 to 12 SLPM) NF_3 chamber clean applications. The MAXstream has smaller footprint than the Xstream RPS unit to save valuable tool space and offers drop-in replacement capabilities for traditional RPS tools for easy integration. Market-leading power accuracy of 2% for improved process repeatability along with AE's proprietary aluminum (Al) substrate with Type 3 hard anodization combine to make it one of the most consistent and reliable RPS product on the market.



PRODUCT HIGHLIGHTS

- Higher power and flow for maximum chamber cleaning efficiency and less production downtime for cleaning
- Industry-leading power accuracy of 2% for consistent, repeatable performance
- Proprietary high-purity Al substrate with Type 3 anodization for longer chamber life
- Unique dual ignition core design ensures virtually 100% ignition reliability
- Drop-in compatibility with traditional RPS systems to enable simple design-in compatibility as well as seamless field upgrades to a reliable, repeatable, and low cost-of-ownership solution

TYPICAL APPLICATIONS

- NF_3 chamber clean

MAXSTREAM 600 TO 1200 REMOTE PLASMA SOURCE

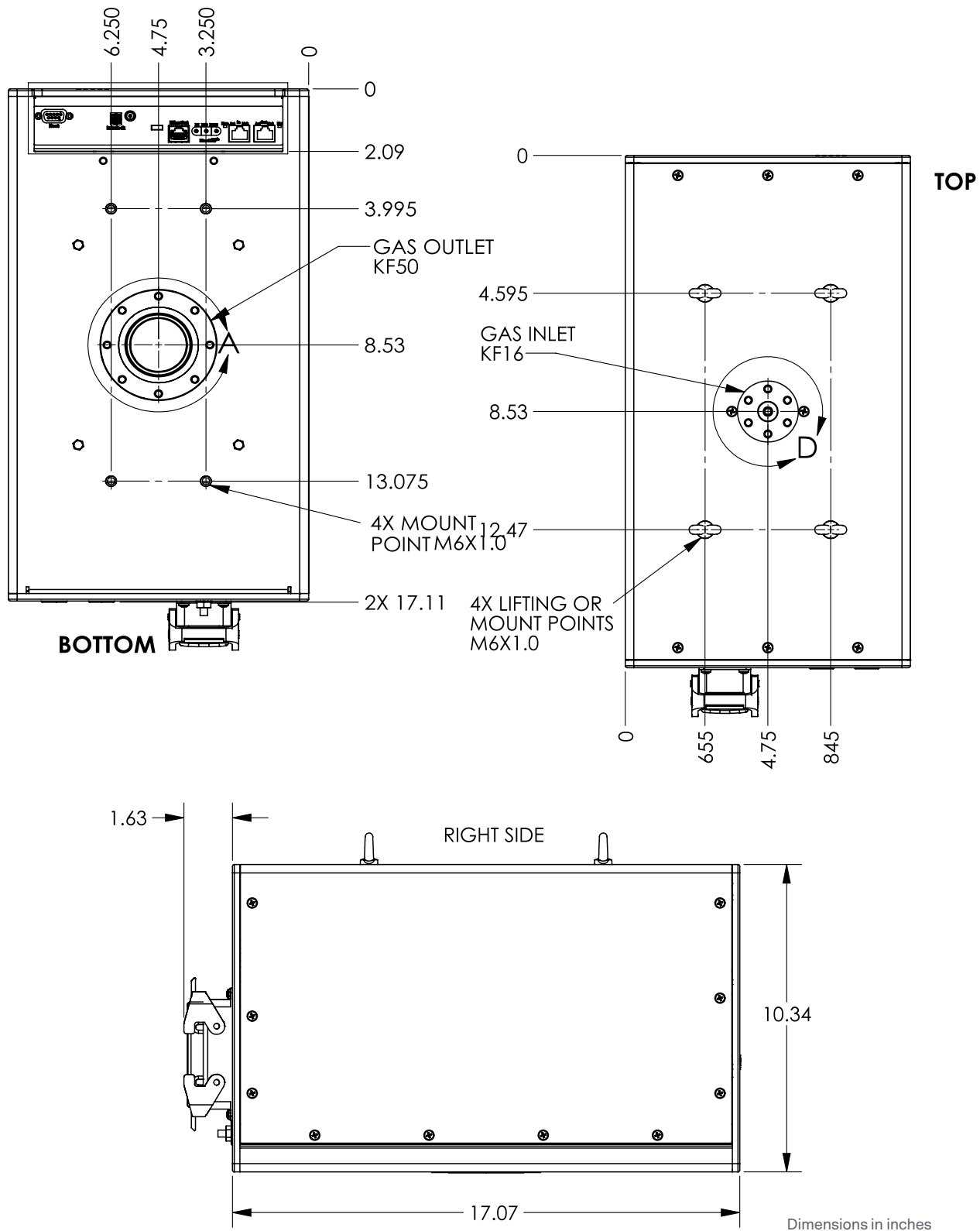
PROCESS AND ELECTRICAL SPECIFICATIONS

Model	MAXstream 600	MAXstream 800	MAXstream 1000	MAXstream 1200
General Operating Parameters				
Plasma Power Range	500 to 8000 W	500 to 9000 W	500 to 10,000 W	500 to 12,000 W
Process Applications	Remote delivery of activated gases for downstream processing (i.e. chamber cleaning, reactive etching processes, and reactive deposition processes)			
Ignition	100 mTorr to 4 Torr of Argon up to 1 SLPM			
Power Accuracy	±2% or 15 W, whichever is greater			
Chemical Compatibility	This unit is intended for use with selected gases such as Ar, O ₂ , H ₂ , N ₂ , F ₂ , H ₂ O, NF ₃ , Cl or O ₂ : CxFy			
NF₃ Operating Specifications				
Flow Range	Up to 6 SLPM at 15 Torr	Up to 8 SLPM at 20 Torr	Up to 10 SLPM at 25 Torr	Up to 12 SLPM at 30 Torr
Dissociation Efficiency	> 96%			
Operating Specifications				
Duty Cycle	Continuous operation within specified operating range			
Cooling Flow Rate	2 GPM at 30°C input water temperature			
Ambient Air	+5°C to +40°C, non-condensing humidity <75%			
AC Electrical Requirements				
Input Voltage	200 to 208 VAC ±10% (180 to 229 VAC), no neutral, 3 phase with PE ground (phase insensitive)			
Line Frequency	50 to 60 Hz nominal; 47 to 63 Hz range			
Input Current	< 35 A AC			

MECHANICAL SPECIFICATIONS

Mechanical and Physical Specifications	
Dimensions	26.3 cm (H) x 24.1 cm (W) x 43.4 cm (D)
	10.3" (H) x 9.5" (W) x 17.1" (D)
Weight	30 kg (66.1 lb)
Vacuum	Input: KF40 flange on top side of the unit
	Output: KF40 interface on bottom of unit
Ground Connection	Chassis ground stud 1/4"-20 x 3/4" near AC input connector
USB Connection	USB Type A female
Ethercat Connection	RJ45 female
Water Connections	Stainless steel Female SAE 9/16" – 18 straight-thread

MECHANICAL DRAWINGS





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ABOUT ADVANCED ENERGY

Advanced Energy (AE) has devoted more than three decades to perfecting power for its global customers. AE designs and manufactures highly engineered, precision power conversion, measurement and control solutions for mission-critical applications and processes.

AE's power solutions enable customer innovation in complex semiconductor and industrial thin film plasma manufacturing processes, demanding high and low voltage applications, and temperature-critical thermal processes.

With deep applications know-how and responsive service and support across the globe, AE builds collaborative partnerships to meet rapid technological developments, propel growth for its customers and power the future of technology.

PRECISION | POWER | PERFORMANCE

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