

3kW

Dual  
frequency



The CDX series is the industry-leading dual RF plasma generator. This unique design is the culmination of more than 40 years of XP RF amplifier engineering knowledge, integrating two different RF outputs into one single, compact, high-performance package.

When it comes to serviceability and integration, the CDX generator is the most cost-effective and flexible RF solution, designed to meet future market requirements.



Features

- ▶ Available frequencies 400kHz, 2MHz, 13.56MHz, 27.12MHz, 40.68MHz, or 60MHz (any two)
- ▶ Regulated switch-mode DC section
- ▶ Up to 1.5kW per output - water cooled
- ▶ Class C amplifier & class D amplifier (all FED or LDMOS)
- ▶ 3U 19" rack mount
- ▶ DeviceNet, EtherCAT, RS232

Applications

Custom power

High power E-beam

RF power

Semiconductor manufacturing

Dimensions

483 x 133 x 457mm (19.0" x 35.25" x 18.00")

More resources

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Electrical specification

Description	Specification
AC input voltage	208, 400, or 480VAC; no neutral; 3 phase with ground. (1 phase available in some configurations)
AC Line Frequency	50/60Hz nominal.
AC Input Current	7.5A/phase (480V) typical, depends on output specification.
Output Characteristics	Up to 1500W continuous forward power at the unit's rear bulkhead RF connector into a 50Ω load. The forward power out is to track the command set-point for any load conditions where the reflected power is less than 150W.
Accuracy/Regulation	±2W or ±2.0% of set-point, whichever is greater, from 10% to 100% max output, as measured by either the actual output power and/or the forward analog readback signal.
Short Term Stability	±1.0% for output power set-point (10-100%) during one continuous hour of output.
Long Term Stability	±3.0% for output power set-point (10-100%) during 3 years of continuous output.
Rise Time	Less than 200ms; from leading edge of enable signal to 90% of power level requested.

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## Electrical specification

Description	Specification
Zero set-point	Less than 1.0W actual output power and less than 1.0W read back power when setpoint signal is at zero or negative voltage.
Available frequencies	400kHz, 2MHz, 13.56MHz, 27.12MHz, 40.68MHz, 60MHz
Frequency stability	7.5A/phase (480V) typical, depends on output specification.
Output filtering (for full power into 50Ω)	Harmonic Signals: Less than -40dBc.
	Spurious Signals: Less than -40dBc.
	AM & FM Noise (@ 50kHz offset): Less than -40dBc

## Typical control signals and rear panel electrical connections

Description	Specification
Signal input impedance	10KΩ, minimum.
Signal input Isolation	2300VDC minimum to the A/C supply line.

Rear panel electrical connections	
Input power connection	Harting HAN Modular 40A series rear panel mounted connector
Suggested (supplied) Mating connector	Shell: Harting 19300060546, Strain Relief: Harting 19000005092, Frame Insert (2): Harting 09140022701, Frame: Harting 09140060313
Output power connector	Two female coaxial connectors. (Available type N, HN, C, 7/16, etc.)
DeviceNet connector	5 pin micro style (male, one connection for both sides).
S232 connector	9 pin sub miniature "D" type (female) receptacle (each side).
Signal input isolation	2300VDC minimum to the A/C supply line.

## Mechanical specification

Description	Specification
RF unit dimensions	483 x 133 x 457mm (19"W x 5.25"H x 18"D) maximum chassis dimension.
Weight	18kg (39lbs) maximum
Mounting	Standard 19" EIA rack mounting.
Color and finish	All surfaces painted or have a coated finish such as zinc trivalent chromate, or equivalent.
Front panel indicators	AC on LED RF ON LED Interlock status LED Fault status LED All operating parameters will be displayed on a 20 X 2 -character alphanumeric display
Handles	Front Panel: Two handles (left & right) mounted on the front panel exterior, evenly spaced on center.
Warning labels	Safety Labels for hazardous voltages, Heavy Object, and Caution for lifting by water fittings are to be provided on operator visible areas of the generator. IEC standard symbols in user visible areas for start, stop, enable and cautionary conditions, PE ground, high temperatures and RF energy present.

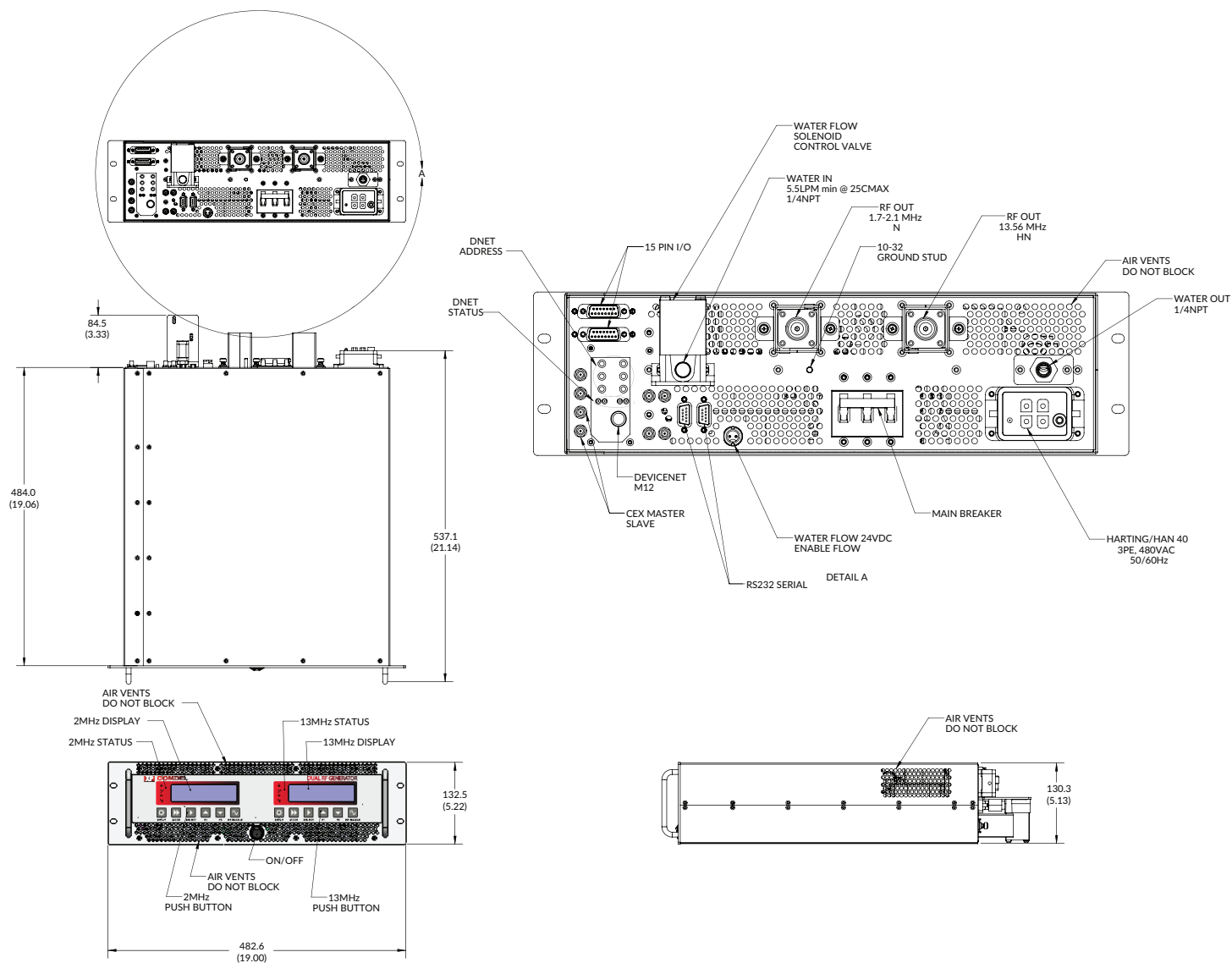
## Environmental specifications

Operating temperature & humidity	
Operating ambient Temperature/humidity/air pressure	+10 to +40°C (50 to 104°F) ambient, 5-85% R.H. (non-condensing, no formation of ice), 86-106kPa. Temperature, humidity and air pressure operating range class 3K3 per prEN50178.
Inlet air requirements	5-30°C max (41-95°F)
Inlet water cooling requirements	8.6l/m (2GPM) @ 414kPa (60psi) max, +5° to max 25°C (40°F to 77°F)
Coolant type	Water
Storage and transportation	
Storage temperature/humidity/air pressure	-25 to +70°C (class 1k4 per prEN50178), 5 - 95% humidity (non-condensing, no formation of ice, class 1k3), 70-106kPa (class 1k4).
Transport temperature/humidity/air pressure	-25 to +70°C, 5 - 95% humidity, 70-106kPa (class 2k3).
Optional features	Description
Pulsed mode operation	Single level, multilevel, synchronized, Advanced envelope control.
Frequent agile	Automatic frequency tuning to minimize reflected power.
Fast shutdown	Fast power shutdown for arc management.
Common exciter (CEX)	Operate multiple supplies from a common clock source.
Available communication interface	Analog, RS232, DeviceNet, EtherCAT.

## Regulatory compliance

This unit is designed to meet the safety compliance requirements of EN 61010-1:2010, UL 61010-1:2012, and CSA C22.2 No. 61010-1:2012. Certified compliant systems carry the TUV mark for safety and/or EMC to all appropriate latest international standards. This unit is designed and tested for full functionality through all SEMI F47-0200 voltage sag immunity events. The unit is designed to meet Samsung Power Vaccine requirements.

## Mechanical details



### Notes:

1. Dimensions shown in mm (inches).

2. Weight: 18kg (39lbs)