



### The Power of Experience

With over forty years of experience in every form of high-voltage application — from radar to rail guns to X-rays — Universal Voltronics is truly one of the pioneers in high voltage design. Our extensive experience influences every aspect of our design processes, and has provided us the expertise to be innovative in customizing supplies to a particular need.

### Assured Quality

Every Universal Voltronics power supply conforms to a stringent Quality Assurance process that ensures the consistent performance and long life of each power supply. All supplies have been designed to meet the most stringent international standards, many certified to specific UL, CSA, and IEC/CE standards.

### High Construction Standards

Universal Voltronics systems are assembled in rugged, heavy gauge aluminum chasses. Structural elements have been selected both for their mechanical attributes and their endurance at high voltages. Thermal management is achieved using extruded heatsinks with advanced fin design and efficient multi-pass coldplates with low pressure drops. Our in-house transformer fabrication department enables us to achieve our customers' unique electronic and mechanical specifications.

### Conservative Electrical Design

All supplies incorporate conservative electrical design with all components used well below their specified ratings. Great emphasis has been placed on the power supply's ability to withstand arcs and short circuits. Customers can be assured of an ample amount of margin when specifying Universal Voltronics supplies. Each supply is subjected to rigorous test procedures before shipment.

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## X-Ray Series XRL Low Power 200W to 1kW, up to 225kV

*A versatile range of Power Supplies suitable for many industrial, analytical, NDT and medical X-ray applications*

XRL Series power supplies from Universal Voltronics combine a stable .01%, low-ripple high voltage power source with a filament power source in one versatile, low risk, well-proven package. This series has been designed to be a versatile, low power platform that can address a wide variety of medical and industrial applications which require lightweight, compact packaging. This modular platform also lends itself to scalability and servicability. Most ratings can be supported with the same spare parts.

Two key strengths of Universal Voltronics X-Ray power supplies are versatility and stability. A broad range of control architectures permit controlling the device using front panel, remote switch, serial buss, or other custom interface. In addition, modular circuit architectures benefit from UVC's 40+ years of high-voltage experience. Another contributor is the use of a proprietary solid high-dielectric encapsulation medium in most units, thus reducing weight and footprint. Finally, a deliberate "guard band" approach to the design uses components and systems with ratings that substantially exceed their typical in-service loads. A standard Labview GUI is also available for low cost, plug and play operation of any UVC X-Ray power supply.

#### FEATURES:

- **Highly Stable**
- **Compact, Lightweight Design**
- **Wide Range of Control Architectures**
- **Low Stored Energy**
- **Superior Arc Management with Configurable Arc Handling**
- **Over Voltage Protection**
- **High Reliability: 15,000 hours MTBF**
- **Compatible interface to UVC Series XRS, XRC 3-4.5kW line of X-Ray generators**



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# Specifications

(Standard unless otherwise specified)

## OUTPUT:

Parameters	Specifications
kV	0-160
mA	12mA
Power	1kW contact factory for higher power req.
Duty Cycle	Continuous
Polarity	Negative
Efficiency	> 85%
Output Voltage Regulation	
kV Ripple (Vp-p)	0.1% < 1kHz, 1% > 1kHz Vrms
Repeatability	0.03%
Absolute Output Voltage Accuracy	0.5% of set value +/- 1kV
Long Term Drift	0.01% over 10hrs after 10 min warm up
Temperature Drift	0.05% over 10hrs after 30 min warm up
Temperature Coefficient, Vout	50ppm/°C
Stability	< 0.5% of set value after warm up period at full load
Noise Rejection	
Long Term Stability	0.01% over 10hrs after 30 min warm up
Line Regulation	0.005% High to Low Line
Load Regulation	0.01%
Voltage Ramp Up	0.1 to 10sec adjustable
Arc Protection	Programmable
Emission Current Regulation	
Emission Current Line Regulation	0.005% over specified input range
Emission Current Load Regulation	0.005% of rated output for full load change

## INPUT:

Parameters	Specifications
Input Voltage/Power	85-265Vrms
# Phases	1
Auxiliary Power	85-265 Vrms
Frequency	50/60Hz
Power Factor Correction	0.9 or better, Active PFC
Input Current	< 20 Arms @ 85VAC

## FILAMENT: Constant current DC filament supply with closed loop current feedback

Parameters	Specifications
Voltage	10VDC
Current	6A
Voltage Ramp Up	20mS to 10sec
Switching Frequency	50khz
Ripple	< 1%

## MECHANICAL/ENVIRONMENT:

Parameters	Specifications
Mechanical Size	19"W rack mount x 4U x 23"
Weight	< 150lbs
Ambient Temperature	0 to 40°C
Humidity	10 to 95% RH non condensing
Control Interface	Analog and RS232
HV Interconnect	R-24 tapered cable well
Interlock	standard X-Ray configuration

## OPTIONS:

Parameters	Specifications
<b>- Floating Grid/Bias Power Supply</b>	<b>To control tube emission current in a closed loop regulation design</b>
Voltage	0 to 2000V
Current	1mA
Ripple	< 1V rms at any frequency

- Filament PS #2 SAME AS FILAMENT #1

- Analog Signals Interface (local setting)

- Relay contact connector

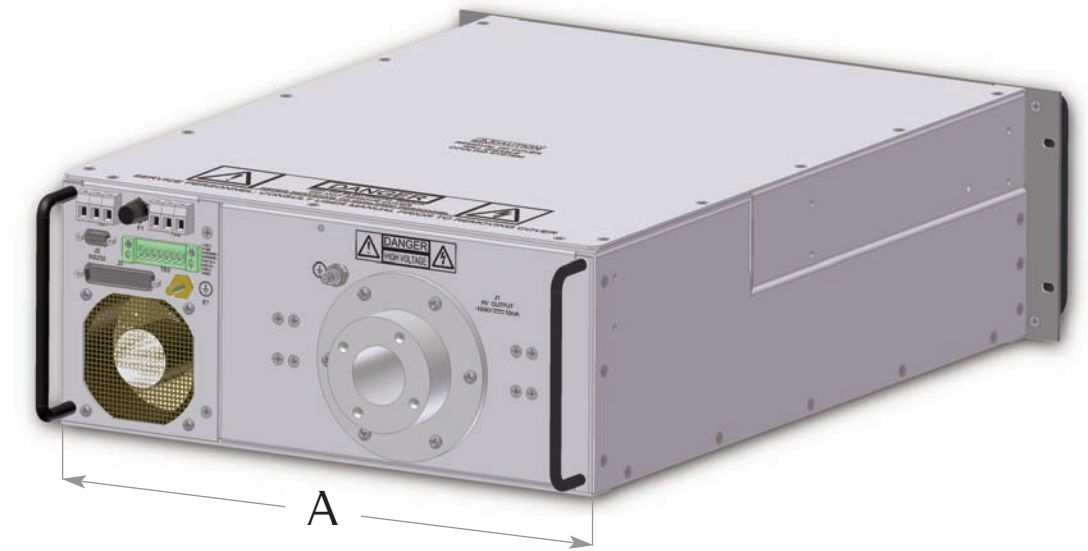
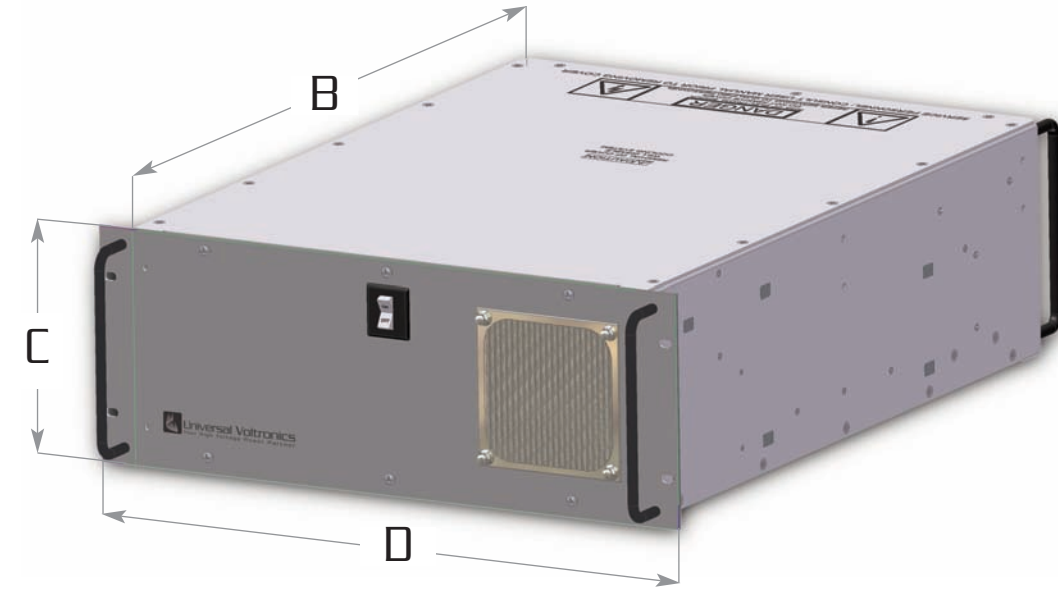
- Analog Signals Interface (Remote Setting)

- LED Indicators

- Bi-Polar Models available

- Additional kV Models available from 50-225kV

# Dimensions



	Dimensions			Cable Well	
	Width	Depth	Height		
kV	A	B	C	D	
60	17"	18	3U	19"	FS-03
100	17"	19	3U	19"	R-10
120	17"	20	3U	19"	R-24
160	17"	23	4U	19"	R-24
225	17"	33	7U	19"	R-28

