



SPELLMAN INDUSTRIAL X-RAY SYSTEMS

# **XRV** Sub Systems

1.8KW—6.0KW **TURN-KEY** X-RAY SOURCE SOLUTIONS

System Matched Turn-Key X-Ray Sources



# XRV Sub Systems

1.8KW—6.0KW **TURN-KEY** X-RAY SOURCE SOLUTIONS

System matched, integrated, tested, and warrantied... all from One Source

Spellman's XRV X-Ray Sub Systems and XRV high voltage power supplies set the standard for compact 1.8kW to 6.0kW high performance X-Ray inspection requirements. With an output voltage of 320kV our complete XRV320 turn-key sub system shown here.



Tube, generator, HV cable(s), cooler, controller and I/O fully integrated and tested at Spellman High Voltage

Assembly ready; "Plug And Play" out of the box

Cables, hoses, fittings all part of the packaged system

One purchase order

One phone call to Spellman for support

2 year warranty for system exceeds that of individual outsourced components/assemblies.

X-Ray tube warranty is prorated.

Spellman's XRV Series has set new standards for non-destructive testing imaging systems for aerospace, defense and industrial NDT applications



XRV Subsystems

**XRV160**  
**XRV225**  
**XRV320**  
**XRV450**

# Simplify your production process with a turn-key sub system from Spellman



*Typical Turn-Key X-Ray Source Solution from Spellman High Voltage.*



AUTOMOTIVE  
 AEROSPACE  
 MANUFACTURING  
 DEFENSE  
 AVIATION  
 SECURITY CARGO  
 SCANNING  
 MEDICAL X-RAY  
 INDUSTRIAL X-RAY  
 NDT/INSPECTION  
 MEDICAL  
 STERILIZATION

When it comes to dependable HV power for X-Ray applications, Spellman High Voltage leads the way. No other manufacturer builds a more reliable, efficient, stable, or compact X-Ray Generator. Offering negative, positive or bipolar output ranging from 160kV to 450kV, Spellman can deliver an ideal solution for a wide variety of applications.

Today's X-Ray applications demand greater performance, higher reliability, and increased flexibility. Spellman has responded with the compact, powerful, and reliable XRV Series. Consider the benefits of the groundbreaking XRV: Low ripple and active power factor correction result in reduced banding and higher quality images; an encapsulated high-voltage section cuts size and reduces weight, enabling the unit to operate oil-free and with little or no maintenance; an innovative, proprietary inverter topology allows for very high efficiency and power density. By integrating Spellman's world-class XRV series generator with the Industry's best X-Ray tubes and accessories the result is an X-Ray sub system second to none.

*Shown above, with an output voltage of 450kV is our complete XRV450 turn-key sub system.*

# Reliability.

## DESIGN VALIDATION

Industry leading reliability and MTBF. Environmental stress screening, electrical overstress, extended arcing and HALT compliance. Testing conducted on X-Ray tube loads and beta testing in multiple applications.

## ENCAPSULATION

The XRV's oil free design eliminates leaks and environmental concerns. The encapsulated dielectric high voltage section made of our proprietary large-pour formulation provides significantly higher dielectric strength than oil, is more forgiving of field stresses, and eliminates the maintenance and biohazards associated with oil tanks.

## SAFETY AND COMPLIANCE

Complies with International Regulatory requirements for CE/UL/CSA.

# Performance.

## OUTPUT STABILITY AND RIPPLE

Industry best stability and output ripple spec provide superior image quality.

## FAST RAMP UP TIME SPECIFICATIONS

Ramp time is adjustable from 100mS to 30 seconds through the proprietary XRV GUI control.

## FAST DIGITAL CONTROLLER

The XRV utilizes a DSP based microcontroller to monitor and control critical tube and generator parameters. Helps ensure accuracy, repeatability, and dose stability.

# Flexibility.

## SMALL SIZE & LOW COST OF OWNERSHIP

XRV Series models measure and weigh far less than their industry counterparts.

## PLUG-N-PLAY COMPATIBILITY & EASE OF USE

XRV comes with industry standard and custom digital and analog interfaces, including: RS-232, USB; Ethernet. An intuitive Windows- based GUI facilitates set-up, provides diagnostics, status, and control of configuration and operation.

## SERVICEABILITY

The XRV Series has a unique modular design, with four Field-Replaceable Units (FRUs) that minimize MTRR, service inventory and overall repair cycle time. A trouble-shooting tree and fault indicators simplify problem detection for faster, more accurate servicing. And, of course, Spellman's technical support is global, ensuring swift worldwide coverage.

## XRV 1.8kW - 6.0kW X-Ray Generators

...it all starts here



- 160kV to 450kV, negative, positive or bipolar output configurations
- Adjustable arc count, quenching and ramping speeds protect X-Ray tubes
- Lightweight, compact
- The use of terminal blocks for installation offer quick set-up and replacement times
- Dual filament power supplies drive all conventional metal ceramic X-Ray tubes
- Specialized warmup programs optimize tube performance and lifespan

## XRV Controller



- Designed and system matched for all XRV Series X-Ray generators
- Intuitive 7" Touch Screen LCD
- 10/100/1000MBIT Ethernet
- Unlimited storage and recall of X-Ray tube profiles
- Tube database for all standard X-Ray tubes is included
- Auto and customizable tube seasoning profiles
- Bench and rack mount available

## XRV System Interface Box

- Power distribution for system components
- Safety interlocks for doors and tube cooler
- Rack, bench or wall mount IP65 enclosure
- Meets requirements of 21 CFR 1020.40



## Industrial X-Ray Tube Chillers and Coolers

- All chillers and coolers are designed and validated to work with standard metal ceramic X-Ray tubes
- Closed loop X-Ray tube chillers for water and oil when ambient temperature rises to 40 C
- Water/water or oil/water options are available



## Metal Ceramic X-Ray Tubes

- Full range of metal ceramic tubes from industry leading manufacturers
- Water cooled unipolar designs offered in 100kV, 160kV and 225kV configurations
- Oil cooled bipolar designs offered in 320kV, 350kV and 450kV configurations
- Available in a variety of power levels, focal spots and target angles



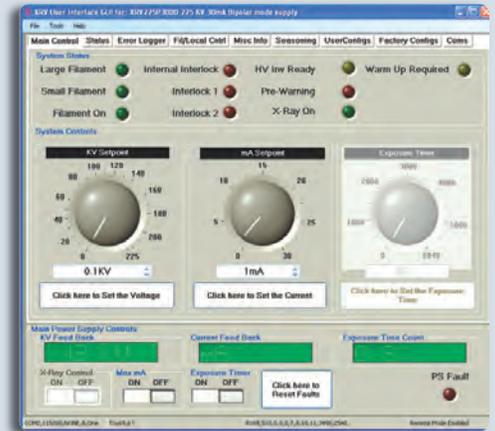
## Standard and Custom HV X-Ray Cables

- Available in custom lengths from Industry leading manufacturers
- Straight and right angle connections available
- Standard or spring loaded connections available



## Optional GUI Control Software for XRV

The GUI is specifically designed for controlling XRV series power supplies. As an alternative to the analog control, the GUI will allow the user to control all necessary functions of the HVPS from a user-friendly windows based menu. Additionally the GUI can be used as a diagnostic tool when the HVPS is controlled via the analog interface.



- Designed and system matched
- Automatic X-Ray tube warm-up
- Max watts operation
- Timed or continuous exposure modes
- Configuration menu for user options
- Fault and status monitor
- Easy set up and integration

**Let us propose a solution ranging from a stand alone XRV to a complete turn-key X-Ray sub system designed to your specifications.**

Call or visit our website to inquire about an X-Ray NDT solution with the worlds' leading XRV generators.



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