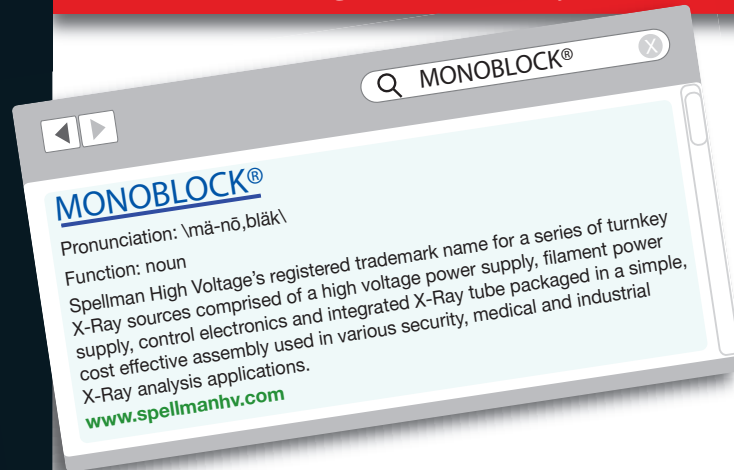
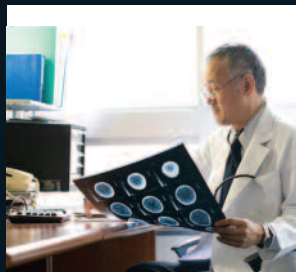
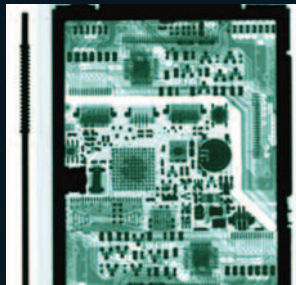
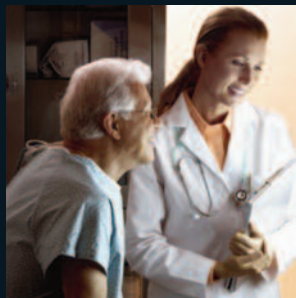


SETTING THE STANDARD  
IN HIGH VOLTAGE  
POWER CONVERSION



POWER SUPPLY & X-RAY TUBE  
IN AN INTEGRATED SUBSYSTEM



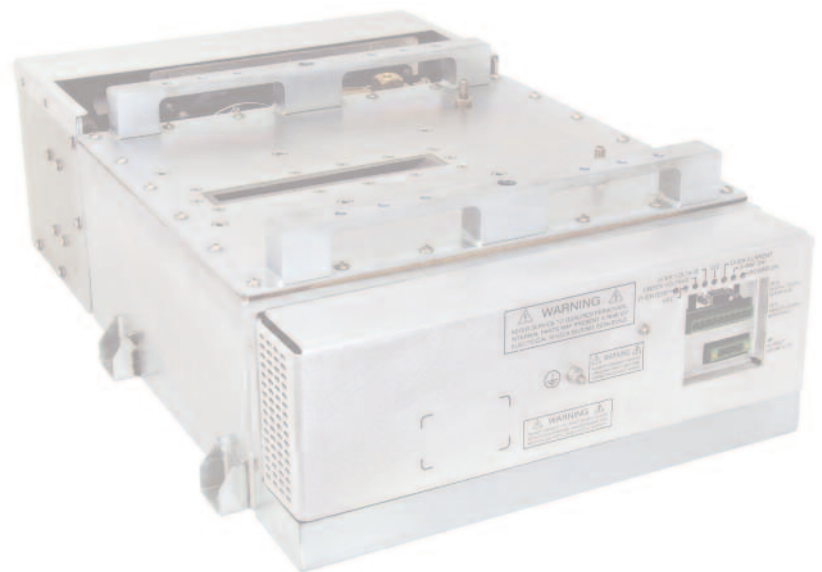
Spellman has set the standard in development of integrated X-Ray sources with its Monoblock<sup>®</sup> series of X-Ray sources. Our custom OEM designs are used in baggage screening, explosive detection, medical imaging, food inspection and non-destructive testing and many other applications.

A Monoblock<sup>®</sup> is typically a single assembly housing both high voltage generation components and an X-Ray tube. The physical compactness and inherent elimination of cabling reduces cost and the risk of breakdown making these products extremely reliable. Monoblocks<sup>®</sup> can be designed in a wide variety of geometries, with beam shape, focal spot size and other critical parameters customized for the application. Digital control via RS232, Ethernet or USB is available.

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*"The physical compactness and inherent elimination of cabling reduces cost and the risk of breakdown making these products extremely reliable."*

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SETTING THE STANDARD  
IN HIGH VOLTAGE  
POWER CONVERSION

## POWER SUPPLY & X-RAY TUBE IN AN INTEGRATED SUBSYSTEM

## **BENEFITS OF SPELLMAN MONOBLOCK® TECHNOLOGY**



Spellman's extensive offering of standard Monoblock® X-Ray Sources provide field-tested solutions for a wide range of applications.

***Internal X-Ray tube eliminates maintenance issues with external HV cables/connectors***

***Power Factor Correction minimizes input power requirements***

***Universal Input circuitry accepts a wide variety of worldwide input voltages***

***Sealed, leak-free tank can be mounted in any physical orientation***

***Unique radiation shielding minimizes weight while ensuring very low X-Ray leakage***

***Standard digital interface simplifies communication and system integration***



### **TYPICAL MONOBLOCK APPLICATIONS**

***EXPLOSIVE DETECTION SYSTEMS***

***CARRY ON BAGGAGE SCREENING***

***CHECKED BAGGAGE SCREENING***

***MEDICAL CT SCANNING***

***DENTAL CT SCANNING***

***BONE DENSITOMETRY***

***FOOD INSPECTION***

***FILL LEVEL CONFIRMATION***

***PRODUCT INSPECTION***

***THICKNESS GAUGING***

***NDT***

## TYPICAL MONOBLOCK® SPECIFICATIONS

### X-Ray Tube Models:

A wide variety of X-Ray tubes from all major tube vendors

### Beam Parameters:

Cone beam: up to 40°  
Fan beam: up to 110° x 10°

### Target Angle:

12° to 45°

### Focal Spot:

35 micron to 3mm x 3mm

### KV Range:

10kV to 200kV

### Emission Current Range:

Up to 10mA

### Duty Cycle:

Pulse and Continuous mode

### Line Regulation (KV):

0.1%

### Line Regulation:

(Emission Current) 0.1%

### Load Regulation (KV):

0.1%

### Load Regulation:

(Emission Current) 0.1%

### Ripple:

0.2% to 1%

### Temperature Stability:

25ppm to 200ppm

### Rise Time:

100mSec to 1 minute

### Regulatory and Safety Standards:

UL, CSA, VDE to EN60601,  
EN60950, EN61010

### Mechanical:

Each monoblock is developed per custom OEM requirements.

### Insulation Media:

Oil and Solid encapsulation

### Operating Temperature:

0°C to 50°C

### Long Term Storage Temp:

-20°C to 70°C

### Humidity, Operating and Storage:

10-95%, non-condensing

## We Offer a MONOBLOCK® Configuration for Virtually Every Application...



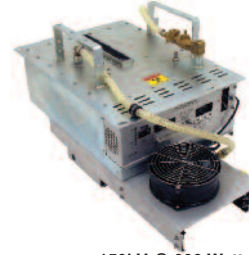
80kV @ 100 Watt

Plating Measurement, Food Inspection,  
and Security Applications



130kV @ 65 Watt

Micro-Focus Inspection



150kV @ 330 Watt

Pre-Scanner for EDS System



100kV @ 100 Watt

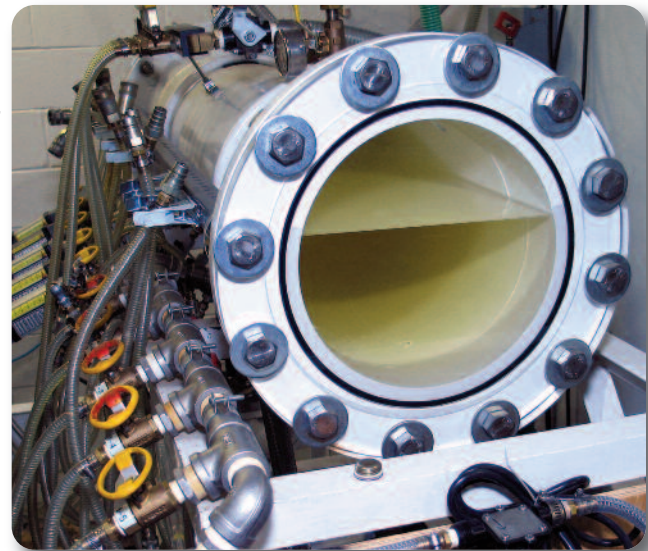
Plating Measurement, Fill Level,  
Bone Densitometry.



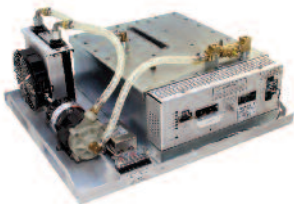
A typical Monoblock®  
assembly station



Oil is processed using filtering, heat and vacuum to obtain superior electrical insulation. A proprietary oil distribution process flushes the unit, fills it with processed oil and evacuates any trapped air from the tank. All Monoblock® units are sealed using an internal bladder to accommodate oil expansion so insulating oil is not subjected to environmental contamination.



# We Offer a MONOBLOCK® Configuration for Virtually Every Application...



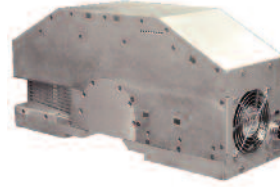
160kV @ 480 Watt  
Baggage Security Screening



150kV @ 450 Watt  
Food and Product Inspection



160kV @ 200 Watt  
Carry-On Baggage Screening



140kV @ 1kW  
CT Scanning

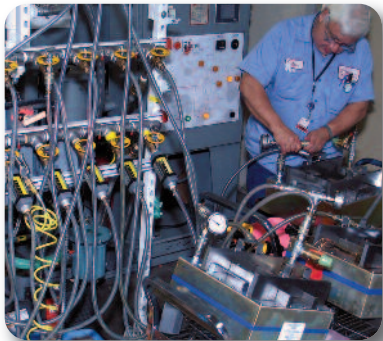


160kV @ 480 Watt  
CT Based EDS Security System

- **Spellman has manufactured and shipped over 18,000 Monoblock® X-Ray Sources**
- **LEAN Six Sigma Manufacturing results in consistent quality**
- **Spellman's custom designs and vertically integrated, low cost manufacturing capabilities minimize system cost**
- **Automated testing reduces cost and process time, while maintaining process control**



Custom designed automatic test fixtures streamline testing processes such as X-Ray tube seasoning and data gathering.



Robotic tank welding helps assure high quality leak free performance.



Robotic X-Ray leakage survey stations assure accurate radiation scans.



Our low cost manufacturing center in China ensures OEM customers can be globally competitive.

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