

# PXB:6 RF B

PORTABLE X-RAY BETATRON

WIRELESS  
OPTION AVAILABLE



SEE DEDICATED DATASHEET



6MeV Model For illustration purposes only

## PXB:6 PORTABLE X-RAY BETATRON

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The **PXB:6** portable X-Ray Betatron is designed to produce high energy ionising radiation for industrial radiographic non-destructive testing. The **PXB:6** contains no moving parts (excluding cooling fan) and no circulating liquids, radiation outside the main beam are low, so safe working distances are moderate. After demarcation of dose rate boundaries, the betatron may be used at external sites or in fabrication workshops with little or no additional screening. The **PXB:6** produces radiographs of very high contrast, sensitivity and resolution.

The **PXB:6** is recommended for radiographic testing of weld joints and castings with a steel thickness of 50 to 200mm, concrete and other materials from 200 to 900mm. Half Value Layer (HVL) Steel 28mm.

The irradiation field equals 250mm x 250mm @ 1M focal distance. In operation the **PXB:6** has no need for compensating filters that improves the uniformity of the radiation field.

The **PXB:6** is far less costly than other NDT accelerators such as 'Linacs'.

The **PXB:6** can replace cobalt isotope gamma sources which may not give acceptable quality and require costly periodic replenishment. Compared to cobalt, the Betatron's shot time is drastically reduced and the extremely small focal spot size provides a sharper, higher quality radiograph, thus increasing production rate and profit.

### APPLICATIONS:

JME's range of Betatron systems have been supplied for a wide variety of applications within many sectors of the NDT industry. Examples of the work we have previously supplied systems for include but are not limited to the inspection of:

- Large Forgings ▪ Castings ▪ Valves ▪ Beams ▪ Ships Hulls ▪ Pressure Vessels
- Engine Blocks ▪ Thick Welds ▪ Composites ▪ Reinforced Concrete Buildings
- Bridges ▪ Cargo ▪ Security Scanning Solutions

AVAILABLE AS A MOBILE 'BATTERY OPERATED', 'WIRELESS', OR COMBINED SYSTEM.



CONTACT JME FOR INFORMATION REGARDING SERVICE PACKAGES AND EXTENDED WARRANTIES

## TECHNICAL SPECIFICATIONS

### Maximum X-Ray Output

6 MeV

### Dose Rate at 1m (3.3ft)

>3R/minute

### Focal Spot Size

0.3 x 3 mm

### Duty Cycle Radiation Beam

75% per hour

### Beam Coverage

250 x 250mm @ 1m

### Radiographic Sensitivity

Down to 1%

### Supply Voltage

Single-phase, 110V or 220V, 50/60Hz

### Adjustment Range of Energy

2.0 to 6MeV in 0.1MeV increments

### Power Consumption

2.0kW 13.6A @220V, 27A @ 110V)

### Standard Cable Length

PSU to Radiator 5m - PSU to Control Panel 15m

Mains Supply to Power Unit 5m

### Generator

Recommended 10kVA

Please contact JME for more information.

### Min Dose: (in air @ 1m per minute)

3R

### Number of Pulses per second:

200

### Time Between Pulses:

5mS

### Pulse Duration:

1µS

### Dose Per Pulse: (in air @ 1m)

0.250mR

### DIMENSIONS AND WEIGHT

#### Accelerator (Radiator)

700 x 430 x 355mm 109kg

#### Power Unit

607 x 450 x 570mm 94kg

#### Control Panel

305 x 275 x 150mm 4.2kg



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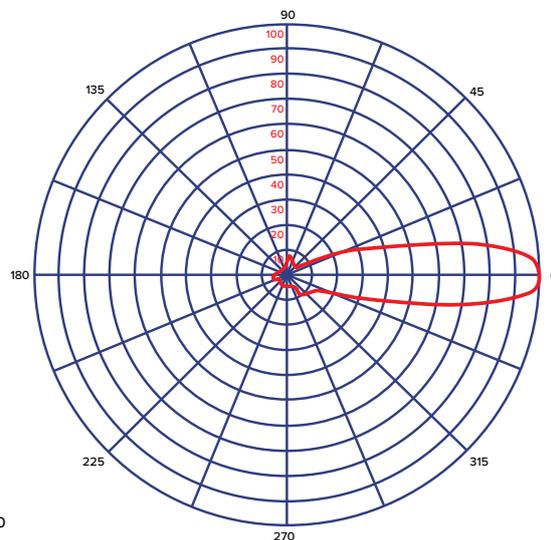
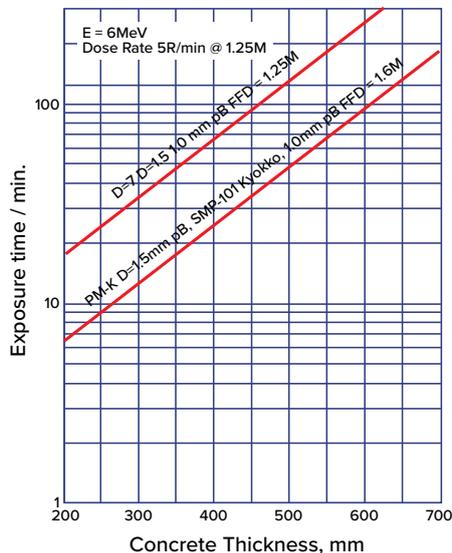
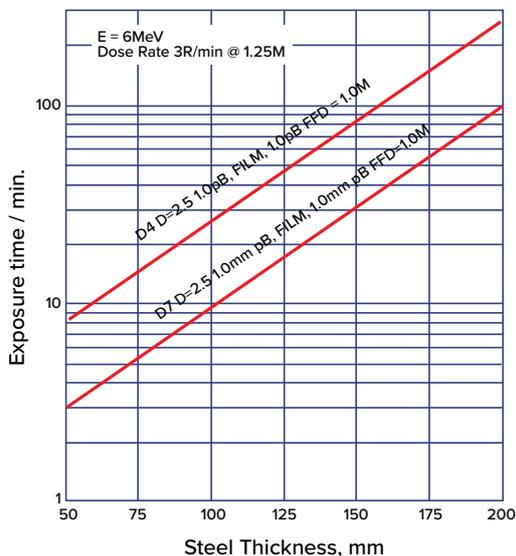
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# VIEW MORE INFORMATION ABOUT THE PORTABLE X-RAY BETATRON SYSTEMS at [www.jme.co.uk](http://www.jme.co.uk)

## PXB6D DOSE RATE DISTRIBUTION IN THE HORIZONTAL PLANE

Degrees	0	22.5	45	67.5	90	112.5	135	157.5
Dose rate %	100	23	6.7	6.3	2.9	2.5	3.5	4.5
Degrees	180	202.5	225	247.5	270	292.5	315	337.5
Dose rate %	4.3	3.3	3.5	5.5	4	5	10.5	17



## FEATURES

- Inert when not powered
- Instant Stop of X-Ray / Cut off
- RF Wireless E-stop (optional extra)
- Completely Portable
- Output energy selectable up to 6 MeV
- Excellent sensitivity and resolution
- Penetrates upto 11.81 inch's (300mm) of steel, 39.37 inch's (1m) concrete\*

\*Dependent on Model

## REQUIRED RELATIVE DOSES IN COMPARISON WITH D7 FILM UNDER SIMILAR CONDITIONS

Film type	D4	MX5	AX	CX	PT-1	PT-4M
Dose coefficient relative to D7	2.65	2.8	1.25	0.57	0.53	1.6

## AVAILABLE MODELS



**SALES AND MANUFACTURING**  
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