

PXB:2.5

PORTABLE X-RAY BETATRON

WIRELESS AND BATTERY
OPTIONS AVAILABLE



SEE DEDICATED DATASHEETS



2.5MeV Model For illustration purposes only

PXB:2.5 PORTABLE X-RAY BETATRON

PIPELINE CRAWLERS • BETATRON PORTABLE X-RAY • DIGITAL RADIOGRAPHY

The **PXB:2.5** Portable X-Ray Betatron is designed to produce high energy ionising radiation for industrial radiographic non-destructive testing. Half Value Layer (HVL) for Steel is 20mm

The **PXB:2.5** portable X-Ray Betatron contains no moving parts (excluding cooling fan) and no circulating liquids, radiation outside the main beam is 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:2.5** produces radiographs of very high contrast, sensitivity and resolution. The **PXB:2.5** is recommended for radiographic testing of weld joints and castings with a steel thickness of 30 to 120mm, concrete and other materials from 100 to 300mm. The irradiation field equals 350mm x 350mm @ 1M focal distance. In operation the **PXB:2.5** has no need for compensating filters that improves the uniformity of the radiation field. The **PXB:2.5** is far less costly than other NDT accelerators such as 'Linacs'.

The **PXB:2.5** can replace a Cobalt Isotope which may give unacceptable quality, they also require costly periodic replenishment. The **PXB**'s shot time is much quicker and with a small focal spot size, it provides a sharper, high quality radiograph, increasing project 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

RF SPECIFIC APPLICATIONS

- EOD/IOD ERW/UXO ▪ Offshore Use ▪ Confined Space (enables external operation)
- Threat Response ▪ Working at Height (Reduced Cabling and Logistics) ▪ Bridge Inspection

BATTERY SPECIFIC APPLICATIONS

- Remote Locations ▪ Rapid Deployment ▪ Un-Reliable Mains Supply ▪ Maintenance Work
- Sensitive Environments (No Generators/Hazardous Chemicals) ▪ High Throughput ▪ Gamma Replacement

ALSO 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	2.5 MeV
Dose Rate at 1m (3.3ft)	>0.7R/minute
Typical Dose Rate @ 1m (3.3ft)	1R
Focal Spot Size	0.2 x 2.0 mm
Duty Cycle Radiation Beam	75% per hour
Beam Coverage	350 x 350mm @ 1m
Radiographic Sensitivity	Down to 1%
Supply Voltage	Single-phase, 110V or 220V, 50/60Hz
Adjustment Range of Energy	1.0 to 2.5MeV in 0.1MeV increments
Power Consumption	1.0kW (4.5A @220V, 9A @ 110V)
Standard Cable Length	PSU to Radiator 5m - PSU to Control Panel 15m Mains Supply to Power Unit 5m
Generator	Recommended 6kVA Please contact JME for more information.

DIMENSIONS AND WEIGHT

Accelerator (Radiator)	440 x 300 x 150mm	31kg
Power Unit	445 x 245 x 390mm	20kg
Control Panel	305 x 275 x 150mm	4.2kg
Pulse Converter	415 x 205 x 240mm	10.5kg



PROUDLY SUPPLYING THE NDT INDUSTRY FOR OVER 35 YEARS



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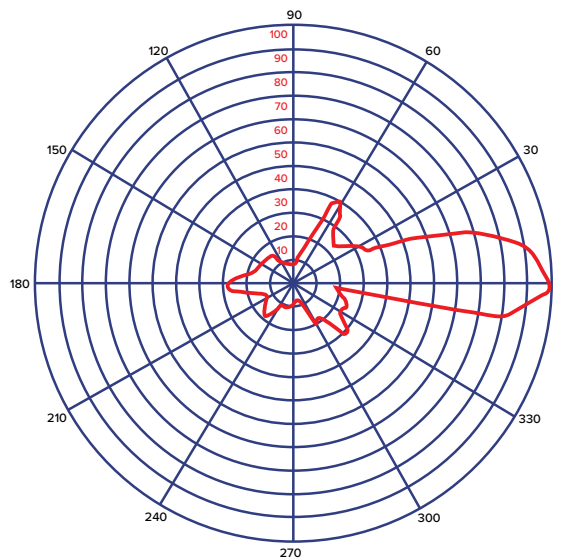
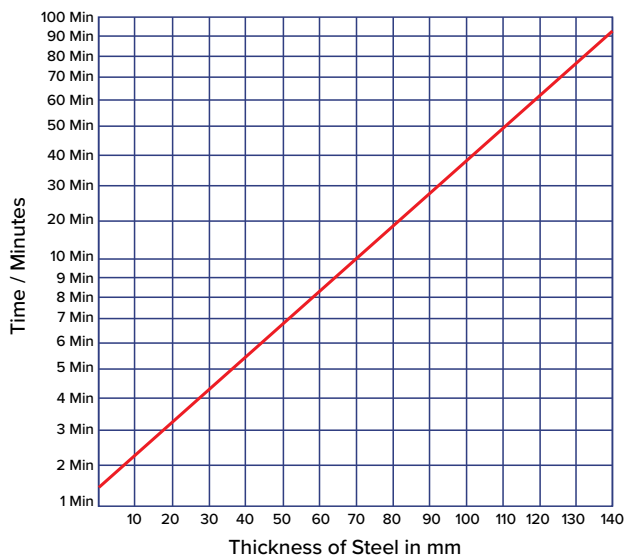
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VIEW MORE INFORMATION ABOUT THE PORTABLE X-RAY BETATRON SYSTEMS at www.jme.co.uk

PXB:2.5 DOSE RATE DISTRIBUTION IN THE HORIZONTAL PLANE

Degrees	0	10	20	30	40	50	60	70	80	90	100	110
% dose rate	100	81.3	37.4	27.4	24.9	20.6	23.6	25.6	11.7	4.2	5.8	7.9
Degrees	120	130	140	150	160	170	180	190	200	210	220	230
% dose rate	8.1	8.0	8.0	7.9	8.8	12.1	15.1	13.6	9.6	7.7	10.7	14.7
Degrees	240	250	260	270	280	290	300	310	320	330	340	350
% dose rate	12.2	6.1	4.0	6.0	7.6	7.9	17.6	23.7	34.1	27.1	34.5	82.4



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 2.5 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



PXB:6
PORTABLE X-RAY BETATRON

ALSO AVAILABLE AS A WIRELESS SYSTEM



PXB:7.5
PORTABLE X-RAY BETATRON

ALSO AVAILABLE AS A WIRELESS SYSTEM



PXB:9
PORTABLE X-RAY BETATRON

WIRELESS SYSTEM COMING SOON



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