



High Energy X-ray Source - 7.5 MeV Betatron

Part Code: CIT/7.5Betatron

Metallic products such as those with up to 150 mm material thickness can now be digitally radiographed and inspected with the high energy x-ray betatron source. Significant reduction [up to 70%] in exposure times is realised when compared against conventional radiographic methods. This is a unique benefit which can replace gamma radiography inspection method.

Due to the small focal spot, the total unsharpness of radiographic image is reduced, resulting in a lower internal scatter, which in turn improves the radiographic image to a class B radiographic quality. 7.5 MeV Betatron is a compact, circular electron accelerator generating directional x-ray beam. It contains no moving parts except small air flow fans, and no circulating liquids. It is easy to assemble, operate and maintain.

Features

- Compact, powerful and versatile
- Output energy selectable up to 7.5 MeV
- Excellent sensitivity and resolution
- Automatic exposure control facility
- Penetrates 300 mm steel and 1 m concrete



Applications

Pressure vessels, thick welds such as in ship-building, etc.

Key Benefit

Computed radiography provides considerable reduction in exposure times, as compared to conventional film radiography.

Component inspected	Material thickness	Inspection Times	
		Conventional method	Computed radiography
Pressure vessel	150 mm	6-7 hours	18 minutes

Technical Specifications

X-ray output energy selector	2 to 7.5 MeV
Dose rate @ 1m in air	5R/minute
Focal spot size	0.3x1.6 mm
Duty cycle at 20°C/hr	75%
Radiation beam spread angle	22
Radiographic sensitivity	Typically 1%
AC power input	110/240V 50/60Hz
Dimensions / Weight (mm/kgs)	
Accelerator	700x430x350 / 100
PSU	560x480x380 / 70
Control Panel	130x200x30 / 0.5

*CIT is authorised system OEM distributors