



L3HARRIS®
FAST. FORWARD.

PULSERAD™ MODEL 43733A FLASH X-RAY (FXR) SYSTEM

The 300 kilovolt pulser is ideal for ballistic ranges and stop-motion radiography applications

The Model 43733A 300 kV FXR system belongs to a family of four flash X-ray systems that also includes 150 kV, 450 kV and 1 megavolt. These systems provide successively greater penetration and are capable of operating at increasing film-to-source distances (FTSD).

The Model 43733A Flash X-ray system provides a 25 nanosecond burst of 300 kV at the full width at half maximum (FWHM). The X-ray tube may be installed inside the pulser (the basic system configuration), or in a remote tubehead (option 032). A configuration with two X-ray tubes in remote tube-heads (option 035) is also available. In this dual configuration, both tubes are fired simultaneously by the same pulser and can be used to obtain orthogonal radiographs of rapidly moving objects. The resulting radiographs enable accurate position and orientation of the object under study. By using the optional soft X-ray tubes, very low-density objects may be imaged.

SPECIFICATIONS

Effective Source Size

Standard tube/spot sizes	1 mm, 3 mm and 5 mm
Dual tube spot size	< 4 mm
Penetration curve	2.5 m (8 ft) through 38 mm (1.5") aluminum
Exposure time (pulse width)	25 us FWHM
Dose	7 mR @ 1 m
Jitter	< 90nS

OPTIONS

001	Add-on channels
008	220 Vac, 50-60 Hz Operation
020	Added length console-to-pulser cable
032	Single remote tubehead
034	Added length tubehead cable
035	Dual remote tubehead
036	Soft X-ray capability, single
037	Soft X-ray capability, dual
042	Electron beam modification (contact factory)
130-314700-#700	Computer remote control of H.V. power supply
Special	Demountable tube with variable source size (contact factory)

ACCESSORIES

Model 43113B pulsed event timer
Gas regulators



KEY FEATURES

- > Peak output voltage: 300 kV
- > Dose at 1 m: 7 mR
- > X-ray tube spot sizes: 1 mm, 3 mm, 5 mm (standard)
- > X-ray pulse width (FWHM): 25 nsec
- > Pulser diameter: 18 in (457 mm)
- > Pulser length: 34 in (864 mm)
- > Pulser weight: 325 lbs (146 kg)

The 300 kV system comes standard with all hardware required for operation, including the X-ray tube and a Model 43210A X-ray controller (XCON) which allows both a delayed trigger for the X-ray pulser and a pulsed event timer to monitor the actual firing time of the pulser. The XCON provides a firing time delay variable up to 1 second in 10 nanosecond increments and monitors the actual pulser firing time with <10 nanosecond jitter. Delay time settings and pulsed event time monitoring can be set remotely with the user's PC via an Ethernet connection. Regulated dry air and AC power (117 Vac, 60 Hz) must be furnished by the user. Up to three additional 300 kV X-ray generators (option 001) can share the same control cabinet and power supply to minimize cost and floor space. Option 008 permits operation at 220 Vac, 50-60 Hz line voltage.

SINGLE CHANNEL SYSTEM (STAND ALONE SYSTEM)	
Control console cabinet	AC power panel with surge protector
	High-voltage power supply
	Dielectric gas pressurization controls
	XCON (X-ray controller)
Trigger transformer	
Trigger pendant	
Pulse generator	
6.1 m (20 ft) control console to pulser cable	
Pulser-mounted X-ray tube	
Resistive load and interconnecting cabling	

ADD-ON CHANNELS (NO. 2, 3, 4)	
XCON (X-ray controller)	Delay trigger generator
	Trigger amplifier
	Pulsed event timer
Trigger transformer	
Pulse generator	
6.1 m (20 ft) control console to pulser cable	
Pulser-mounted X-ray tube	
Resistive load and interconnecting cabling	

SYSTEM SELECTION			
System	FTSD	Penetration in AL	Penetration in Steel
150 kV	10 ft	0.1 in	N/R
300 kV Single	10 ft	1.2 in	0.2 in
300 kV Dual	10 ft	0.7 in	0.1 in
450 kV Single	10 ft	2.7 in	0.6 in
450 kV Dual	10 ft	1.7 in	0.4 in
450 kV Super	10 ft	3.2 in	1.0 in
1 MV	10 ft	4.0 in	1.4 in
1 MV Super	10 ft	5.2 in	1.8 in

