



**L3HARRIS®**  
FAST. FORWARD.

## **PULSERAD™ MODEL 43731A FLASH X-RAY SYSTEM**

**150 kilovolt (kV) system well-suited to study high-speed projectiles, fragments, shaped charge jets and more**

The 150 kV belongs to a family of four Flash X-ray systems rated at 150 kV, 300 kV, 450 kV, and 1 megavolt (MV). These systems provide successively greater penetration and are capable of operating at larger film-to-source distances (FTSD).

The Model 43731A Flash X-ray System provides a 70 nanosecond “burst” of 150 kV X-rays. Radiographs through several millimeters of aluminum at a film-to-source distance of up to 9 feet (2.75 meters) may be obtained in a single exposure. The X-ray tube may be installed inside the high voltage (HV) pulse generator (basic system configuration) or in a smaller, remote tubehead (option 032 or 033) separated by up to 100 feet (30 meters) of coaxial cable. The remote tubehead enables positioning of the X-ray tube in areas too confined or too hazardous for the HV pulser. By using the optional soft X-ray tubes, very low-density objects may also be imaged.

### SYSTEM SPECIFICATIONS

<b>Effective source size</b>	3 mm (tubes down to 1 mm are available)
<b>Penetration curve</b>	2 ft (610 mm) through 1.75 in (44.5 mm) of aluminum
<b>Exposure time (pulse width)</b>	~70 x 10 <sup>-9</sup> sec
<b>Dose at 8 in (20 cm) tube in pulser</b>	40 mR
<b>Jitter</b>	< 90 nS

### OPTIONS

<b>001</b>	Add-on channels
<b>008</b>	220 Vac, 50-60 Hz Operation
<b>020</b>	Added length console-to-pulser cable
<b>032</b>	Single remote tubehead (straight line)
<b>033</b>	Remote tubehead (right angle)
<b>034</b>	Added length tubehead cable
<b>036</b>	Soft X-ray capability, single
<b>037</b>	Soft X-ray capability, dual
<b>042</b>	Electron beam modification (contact factory)
<b>130-314700-#700</b>	Computer remote control of H.V. power supply

### ACCESSORIES

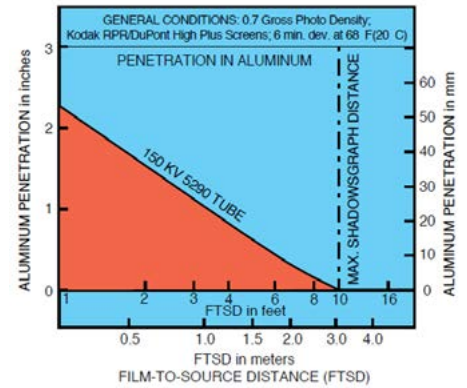
Gas regulators



### SYSTEM CHARACTERISTICS

- > Peak output voltage: 150 kV
- > Pulser current: 2 kA
- > Dose at 8 in (20 cm): 40 mR
- > Pulser diameter: 18 ¾ in (457 mm)
- > Pulser length: 9 ¼ in (255 mm)
- > Pulser weight: 80 lbs (36 kg)

The Model 43731A system comes standard with all hardware required for operation, including an X-ray tube and a Model 43210A X-ray Controller (XCON) which provides both a delayed trigger for the X-ray pulser and a pulsed event timer to monitor the firing time of the pulser. The XCON provides a firing time delay variable from 100 nanosecond (ns) to 1000 milliseconds in 100 ns increments and monitors the actual pulser firing time with 10 ns accuracy. Delay time setting and pulsed event time monitoring can be accomplished with the user's PC via an Ethernet connection. Customer furnished items are limited to regulated dry air and ac power (110 Vac, 60 Hz).



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
20 ft (6.1 m) 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
20 ft (6.1 m) 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

### 150 kV Flash X-Ray (FXR) System

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Nonexport-controlled Information

L3Harris Technologies is a Trusted Disruptor for the global aerospace and defense industry. With customers' mission-critical needs always in mind, our 46,000 employees deliver end-to-end technology solutions connecting the space, air, land, sea and cyber domains.



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