



ultra light weight  
 extremely durable design  
 high output

# TR90 Tough Ray

MinXray's innovative Tough Ray series technology brings portable X-ray field imaging to a new level. High output, low weight and outstanding features are now packaged in our most durable design yet. And MinXray's Tough Ray units are backed by our industry-leading 5 year limited warranty.

- more mA power – up to 30 mA – generated by MinXray's unique *HighBurst™* design
- automatic voltage input sensing and compensation for clean output in low-voltage settings
- ideal output and features for use with digital imaging systems



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 WWW.MINXRAY.COM

## High Frequency / HighBurst™ Design

MinXray's high frequency, HighBurst™ units are the most efficient and powerful portable X-ray generators in the world. A unique design makes for full utilization of the X-ray tube providing for clean, full and accurate X-ray power. Therefore, considerably more radiation output per pound of system weight is available from MinXray designs. As an added benefit, units in low input voltage settings in the field can still be operated by using another unique design feature allowing the user to switch to a low input voltage mode.

### TR90

Electronic Design	Computer-controlled, high frequency, full-wave rectified
X-ray Output with Normal Input Voltage	30/18 mA @ 40 – 60 kVDC, 25/15 mA @ 62 – 70 kVDC, 20/12 mA @ 72 – 80 kVDC, 15/9 mA @ 82 – 90 kVDC
X-ray Output with Low Input Voltage	15/9 mA @ 40 – 60 kVDC, 12.5/7.5 mA @ 62 – 70 kVDC, 10/6 mA @ 72 – 80 kVDC, 7.5/4.5 mA @ 82 – 90 kVDC
AC Input	60 VAC – 130 VAC 50/60 Hz
Line Voltage Adjustment	Low voltage operation system
Timer	.02-2 sec as follows: .02-.4 sec (.01 sec steps); .4-1.0 sec (.02 sec steps); 1.0-1.5 sec (.05 sec steps); 1.5-2.0 sec (.10 sec steps)
Internal Power Supply	50 kHz High Frequency inverter system
X-ray Tube	XDT-F90 SNM Instruments Factory
Focal Spot Size	1.0 mm
Anode Heat Storage	7 kHU
Total Filtration	2.7 mm Al equivalent
Collimator	Mikasa Model R-300V, continuously adjustable light beam type with adjustable dual integrated laser pointers to indicate central ray and distance in bright ambient light conditions
LP4 Laser Pointers	Class IIIa Laser diode; max. output less than 2.2 mW, wavelength 635mm
Exposure Switch	Two stage deadman type
Exposure Cord	8 feet (2.4 meters)
Power Cord	20 feet (6.1 meters)
Size	7.4 x 6.2 x 12.3 inches (18.8 x 15.7 x 31.2 cm)
Weight	14.1 lb (6.4 kg)



A full range of equipment options to provide the right unit for your practice.



TR units are field tested and field ready.



TR units are supplied in a highly protective carrying case.

## Ordering Information

### TR90 Tough Ray High Frequency Portable X-ray Unit:

30 – 9 mA @ 40 – 90 kVDC with carrying case and light beam collimator with integrated adjustable dual laser pointers, exposure switch/cord and power cord.

**X100S** Tripod stand

**X100SCC** Carrying bag for X100S tripod

**EFBTR** Redden equine footblock for Tough Ray units TR80/TR90

**XRT300** Compact X-ray table

**300GS** Mobile gas spring X-ray stand

For more information about MinXray products, consult your local dealer.

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Specifications subject to change without notice.

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