

# X-ray Generator

**XRG 160/320**  
**XRG 320/640**





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### X-ray generators

The compact X-ray generators of the XRG series are the ideal solution for use in applications requiring high voltages but low power outputs. Flexible control options ensure optimal adaptation to the specific application. Various designs allow the connection of both tubes with earthed anodes and tubes with earthed cathodes. Depending on the application, the various designs each have their advantages.

### Components

The generators are compact, but are nevertheless structured modularly within a single unit. Each consists of two modules: the control module XCM and the high-voltage module HVM. The control module features all the peripheral connections. The power supply, activation system and the external signals are connected to the XCM. The input voltage range is 90-250 VAC and is hence universal. The high-voltage output and the internal electronics can be powered separately. This provides added safety in that communications can still continue to function if the high voltage cuts out. The power electronics of the XCM are cooled by an integrated fan.

The oil-insulated high-voltage module is connected to the control module via two connectors. A high voltage cable is requested to connect the X-ray tube to the XRG.

### Activation system

The systems are using serial activation via an ethernet connection. Displays and inputs which are relevant for the safety of the entire system are fitted directly on the X-ray generator. Adjustments to customer specifications are possible due to the modular design.

### Installation

The generators are designed in such a way as to permit installation in any position. The high-voltage module is provided with a pressure compensation system and is hermetically sealed against the environment. All connections are designed as plug-and-socket. Assembly and disassembly therefore is quick and easy.

### Stability

The outstanding feature of the system is its extreme high-voltage stability both in the short and the long term. In combination with metal-ceramic X-ray tubes, this is an ideal solution when it comes to high-stability X-radiation.

### X-ray tubes

A wide range of tubes can be connected to the X-ray generators. In addition to the standard tubes from familiar manufacturers, special tubes for niche applications can also be used.

### Bipolar system

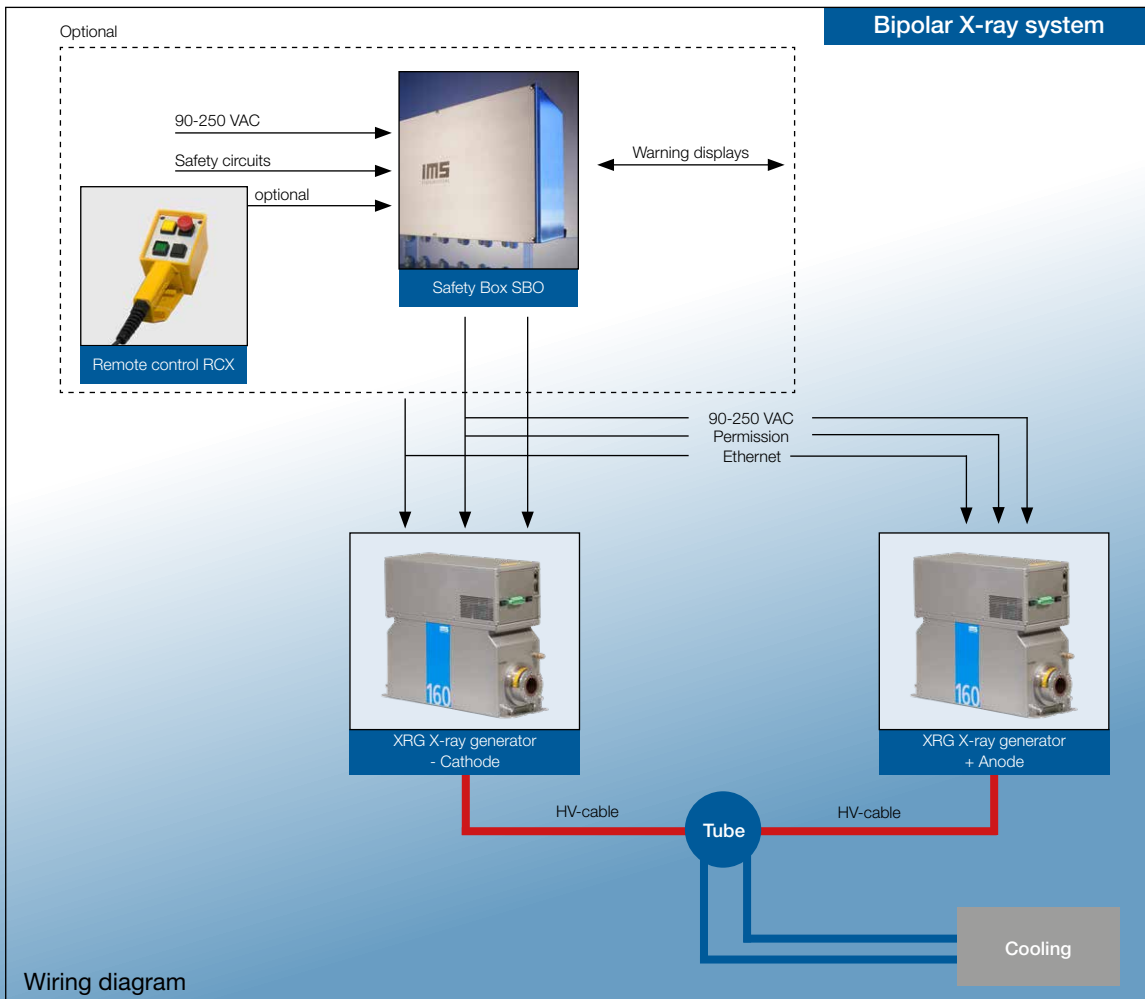
In order to achieve voltage ranges above 160 kV, bipolar X-ray systems are used. The X-ray tube is powered by two generators either with a positive or a negative voltage of up to 160 kV. Due to that voltages up to 320 kV can be achieved. IMS Röntgensysteme GmbH has developed this technology and is able to cover larger measuring ranges with the new X-ray generators.



	Designation	Tube type	Emission current	Power	Interface
160 kv	<b>XRG 160/320/02</b>	Cathode	3 mA	320 W	Ethernet
	<b>XRG 160/320/04</b>	Anode	3 mA	320 W	Ethernet
320 kv	<b>XRG 320/640</b>	Bipolar	3 mA	640 W	Ethernet

The connection of the safety circuits is an optional upgrade. In the standard version, the user is responsible for the safety of the overall system and for the connection of warning elements. In combination with the ethernet interface, the X-ray generator is

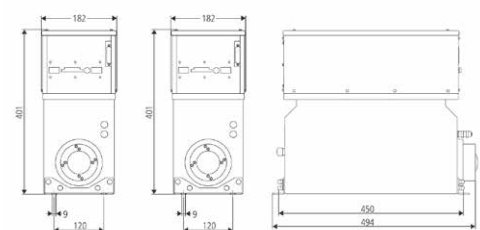
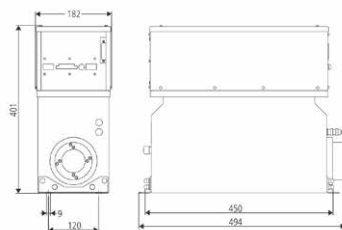
also available with integrated safety monitoring systems. In this case, it is also possible to connect a remote control system and a warning lamp monitored by the generator.

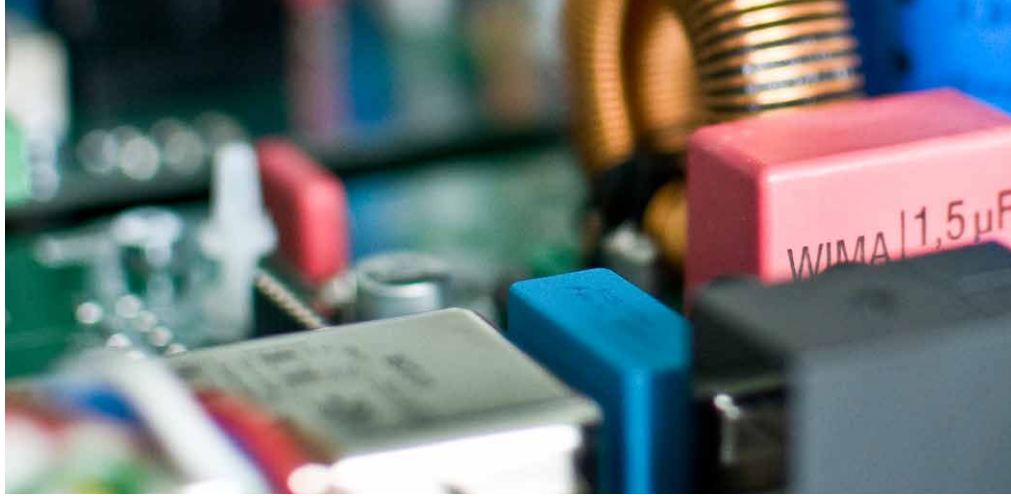


## Technical data



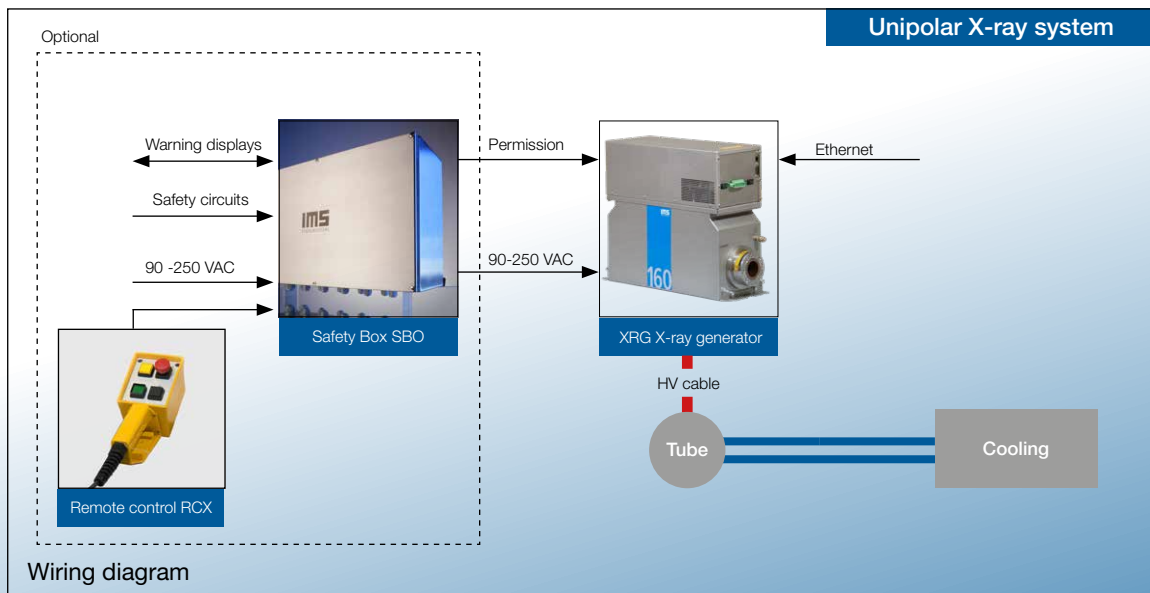
	XRG 160/320/02 Cathode (-) XRG 160/320/04 Anode (+)	XRG 320/640
<b>High voltage</b>		
Setting range	5-160 kV	10-320 kV
Adjustment	0.1 kV increments	0.1 kV increments
Absolute accuracy	± 1%	± 1%
Reproducibility	± 0,2%	± 0,2%
High-voltage stability	5 V/mA, min. 20 V	5 V/mA, min. 20 V
Temperature drift	< 50 ppm/°C	< 50 ppm/°C
High-voltage receptacle	R24	2 x R24
<b>Emission current</b>		
Setting range	0-3 mA	0-3 mA
Adjustment	0,1 mA increments	0,1 mA increments
Absolute accuracy	± 1%	± 1%
Reproducibility	± 0,2%	± 0,2%
Emission current stability	± 0,2%	± 0,2%
Temperature drift	< 50 ppm/°C	< 50 ppm/°C
Focus	Large	Large
<b>Power</b>		
Maximum output	320 W	640 W
Duty cycle	∞	∞
<b>Mains connection</b>		
Supply mains, high-voltage output	90-250 V AC, 4 A, single phase, 50 / 60 Hz	90-250 V AC, 4 A, single phase, 50 / 60 Hz
Supply mains auxiliary voltage supplies	90-250 V AC, 0,5 A, single phase, 50 / 60 Hz	90-250 V AC, 4 A, single-phase, 50/60 Hz
<b>Cable lengths</b>		
High-voltage cable	max. 12 m	each max. 12 m
<b>Interfaces</b>		
Interface	ethernet	ethernet
<b>Cooling</b>		
Fan	internal fan	internal fan
<b>Ambient conditions</b>		
Operation	0 °C to +40 °C, 80 % relative humidity	0 °C to +40 °C, 80 % relative humidity
Storage	-10 °C to +60 °C, 90 % relative humidity	-10 °C to +60 °C, 90 % relative humidity
<b>Dimensions and weight</b>		
X-ray generator (L x W x H)	494 x 182 x 401 mm	2 x 494 x 182 x 401 mm
Weight	34 kg	2 x 34 kg = 68 kg
<b>Protection class</b>		
	IP20	IP20
<b>Dimensioned drawings</b>		

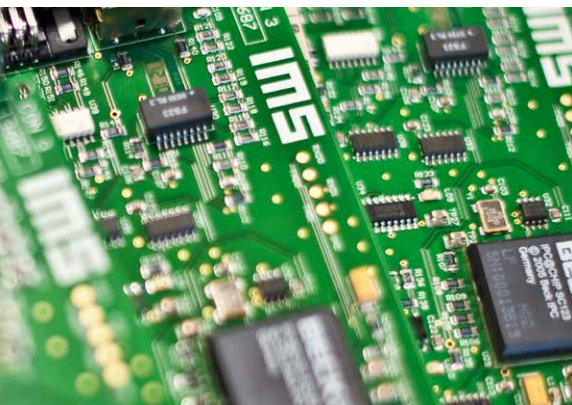




### System specifications - XRG X-ray generators

- |                                     |   |
|-------------------------------------|---|
| ■ High-voltage ranges from 5-320 kV | ■ Modular system                                    |
| ■ Input voltage range 90-250 VAC    | ■ State-of-the-art high-voltage technology          |
| ■ Optional network connection       | ■ Air-cooling system                                |
| ■ High stability                    | ■ Robust design due to stainless steel housing      |
| ■ High precision                    | ■ CE conformity                                     |
| ■ Compact construction              | ■ Produced in compliance with DIN EN ISO 9001: 2015 |





IMS Röntgensysteme GmbH offers all components required for setting up your X-ray system.

#### X-ray generator XRG

IMS Röntgensysteme stands for long-term proven X-ray solutions in non-destructive testing and gauging.

The maximum voltage that can be generated is specified by the high-voltage generator XR G. All IMS systems can be controlled directly via an interface.

You have not found a suitable solution yet? Talk to us, we are happy to advise you! Special solutions tailored to your needs are possible at any time due to our strong in-house development and production.



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