Waygate Technologies
a Baker Hughes business

Powering greater productivity.

Waygate Technologies ISOVOLT Titan|neo X-ray generator

ISOVOLT Titan|neo generator

Generate better outcomes.

Empower your operations with the ISOVOLT Titan|neo generator, the newest product in Waygate Technologies established line of X-ray generators.

Optimized for industry and backed by excellence, the ISOVOLT Titan|neo generator powers a range of radiographic inspection technology. Beyond being easy to use and maintain, it delivers reliable, consistent results in the highest accuracy applications—giving you precision, greater uptime, and peace of mind.

- **Robust and reliable**
- **Easy to maintain**
- **Backed by excellence**
- **User-friendly**
- **Highly compatible**

Inspect more each day.

Inspect more to achieve more. Get the reliable, powerful performance you need to optimize outputs and inspect multiple parts each day, no matter the application.

Performance that never sleeps

The Titan|neo generator offers the best, most consistent performance available to meet a range of needs, from multi-cycle exposures to hours of continuous operation. Its rugged design includes intelligent tube integration and permanent system monitoring—offering unmatched ramp-up times* and a 100% duty cycle for continuous operation in inline systems**.

Quality you can quantify

Reduce exposure times for various materials in several operation modes with excellent dose reproducibility. This system provides high, stable radiation with fluctuations <0.05%. Its extended tube range and maximum current ensure enhanced imaging contrast and high penetration power, delivering greater dependability.

*Depending on permissible tube data.

**Subject to optional generator cooling.

There’s no time for downtime.

When productivity is a priority, the ISOVOLT Titan|neo generator performs. It’s easy to use and maintain, saving you time, money, and hassle. So you can focus on optimizing operations.

Convenient control

A user-friendly interface with a modern industrial control module makes for fail-safe and simple operation.

Stress-free service

A modular design and patented maintenance-free high voltage connectors make for easy, non-disruptive installation, operation, service, and replacement—reducing the time and resources needed for any repairs, and decreasing the total cost of ownership.

Safer operations

With a number of built-in safety features and instant, automatic recognition of system status and health, you can enhance operational safety (Performance Level E), maximize equipment lifetime, and keep your processes under control.

Increased flexibility

Due to the modular structure, it is possible to change from the bipolar to the unipolar configuration by simply changing the connections. This possibility can reduce the need for additional generators and the related costs for operation with a wide variety of X-ray tubes and parameters.

Additional functions, such as the automatic adjustment of the heating current based on the specific high-voltage cable length, support the simple conversion.

Tailored to your specific needs.

The ISOVOLT Titan|neo generator is designed to keep up with increased pressures and production speeds. Its enhanced reliability and outstanding availability improve uptime.

No matter your automation and customization requirements, this generator delivers. Its modular, flexible design, makes for easy integration into several environments and external platforms—saving you time, money, and stress.

When paired with other Waygate Technologies products, it offers even greater synergy within your radiographic inspection system to reduce unplanned downtime and maintenance.

The generators are compatible with Waygate Technologies' leading acquisition software Rhythm Insight RT, so that it can be operated within a system with a computer and detector – all from a single source.

Empower greater potential.

A broad range of tubes, kits, and accessories complement integration and application capabilities—helping you not just meet your individual needs, but maximize the potential of every inspection.

The ISOVOLT Titan|neo is compatible with the accessories of its previous generations, so that it can replace existing ISOVOLT Titan generators one-to-one without the need for a range of new accessories.

Safety Devices

- Primary interlock switch
- Alarm box and switch box
- Flash and warning lamps
- Country-specific safety kits

Integration and Solution Kits

- Exposure Calculator
- Control via acquisition software Rhythm Insight RT within a system with a computer and detector
- Titan PC (external PC-based visualization)
- PROFIBUS extension kit
- Optional R24 high-voltage socket instead of the maintenance-free high-voltage socket (in order to be able to continue using R24 cables already in the field)
- Optional Water-cooled generator version for use at elevated ambient temperatures

Dosimetry and Calibration Kits

- Voltage divider (incl. calibration certification)

High Voltage Cables

- In different standard lengths, with maintenance-free plugs

Pumps and Coolers

PWL 5000 WT

OL 4503

Voltage Divider

OW 4002

OLK 50

Technical specifications

High voltage generator	HP160	HP225
Max out voltage kV	160	225
Max out current mA	45	45
Max out power kW	4.5 (limited by tube spec; 1 phase mains: 4.0 kW)	4.5 (limited by tube spec; 1 phase mains: 4.0 kW)
Insulation	Oil	Oil
Housing dim (w x d x h)	340 x 945 x 750 mm (13.38" x 37.20" x 29.52")	340 x 945 x 750 mm (13.38" x 37.20" x 29.52")
Weight	195 kg (429.9 lbs)	190 kg (418.87 lbs)
Tube voltage		
Presel and settings	From 5 to 160 kV in 1 kV	From 5 to 225 kV in 1 kV
Dig display of set and act values	3 digits (set); 4 digits (act)	3 digits (set) ; 4 digits (act)
Display resolution	1 kV (set); 0.1 kV (act)	1 kV (set) ; 0.1 kV (act)
Accuracy	<1%	<1%
Reproducibility	<0.01%	<0.01%
Temperature drift	<80 ppm/K	<100 ppm/K
Tube current		
Presel and settings	From 0.1 to 45 mA in 0.1 mA	From 0.1 to 45 mA in 0.1 mA
Dig display of set and act values	3 digits	3 digits
Display resolution	0.1 mA	0.1 mA
Accuracy	<1%	<1%
Reproducibility	<0.25%	<0.25%
Temperature drift	<100 ppm/K	<100 ppm/K
Exposure time		
Programmable timer	1	1
Presel and setting	1 ... 9999 s	1 ... 9999 s
Dig display of set and act values	4 digits	4 digits
Prewarning	Audible and visible	Audible and visible
Presel and setting	2 ... 120 s or deactivated	2 ... 120 s or deactivated
Programmed mode		
Number of storable programs	250	250
Warm-up	Auto mode based on real time clock	Auto mode based on real time clock
X-ray tube set up	8 tube selectable from a database of 40 pre-programmed tubes	8 tube selectable from a database of 40 pre-programmed tubes
Operation history	Stored on SD	Stored on SD
Warm-up history	Stored on SD	Stored on SD

Control module		
Dimension wxdxh	440 x 114 x 295 mm (17.32” x 4.48” x 11.61”)	440 x 114 x 295 mm (17.32” x 4.48” x 11.61”)
Weight	3.8 kg (8.37 lbs)	3.8 kg (8.37 lbs)
Connected loads		
Power connection	AUX: 1N PE 230 V ±10% 50/60 Hz 10 A, MAIN: 3N PE 400/230 V ±10% 50/60 Hz 20 A or 1N PE 230 V ±10% 50/60 Hz 63 A, 3-phase, grounded neutral TN-S or TN-C-S mains (star connected system), optional 3-phase isolation transformer	AUX: 1N PE 230 V ±10% 50/60 Hz 10 A, MAIN: 3N PE 400/230 V ±10% 50/60 Hz 20 A or 1N PE 230 V ±10% 50/60 Hz 63 A, 3-phase, grounded neutral TN-S or TN-C-S mains (star connected system), optional 3-phase isolation transformer
Grounding	Separate grounding for X-ray tube and high voltage generator (minimum 6 mm²)	Separate grounding for X-ray tube and high voltage generator (minimum 6 mm²)
Mains fuses	AUX: 10 A (1N PE) MAIN: 63 A (1N PE) or 20 A (3N PE) Time-delay fuses, customer-supplied	AUX: 10 A (1N PE) MAIN: 63 A (1N PE) or 20 A (3N PE) Time-delay fuses, customer-supplied
Operating temperature range	0 °C to +40 °C	0 °C to +40 °C
Storage temperature range	-30 °C to +70 °C	-30 °C to +70 °C

High voltage generator	HP320	HP450	HR240
Max out voltage kV	320	450	240
Max out current mA	45	45	3
Max out power kW	4.5 (limited by tube spec; 1 phase mains: 3.5 kW)	4.5 (limited by tube spec; 1 phase mains: 3.5 kW)	0.320 (limited by tube spec)
Insulation	Oil	Oil	Oil
Housing dim (w x d x h)	340 x 945 x 750 + 340 x 945 x 540 mm (13.38" x 37.20" x 29.52") + 13.38" x 37.20" x 21.25")	340 x 945 x 750 + 340 x 945 x 540 mm (13.38" x 37.20" x 29.52") + 13.38" x 37.20" x 21.25")	340 x 945 x 750 mm (13.38" x 37.20" x 29.52")
Weight	190+140 kg (418.87 + 308.64 lbs)	190+140 kg (418.87 + 308.64 lbs)	170 kg (374.78 lbs)
Tube voltage			
Presel and settings	From 10 to 320 kV in 1 kV	From 10 to 450 kV in 1 kV	From 5 to 240 kV in 1 kV
Dig display of set and act values	3 digits (set); 4 digits (act)	3 digits (set); 4 digits (act)	3 digits
Display resolution	1 kV (set); 0.1 kV (act)	1 kV (set); 0.1 kV (act)	1 kV
Accuracy	<1%	<1%	<1%
Reproducibility	<0.01%	<0.01%	<0.01%
Temperature drift	<80 ppm/K	<80 ppm/K	<80 ppm/K
Tube current			
Presel and settings	From 0.1 to 45 mA in 0.1 mA	From 0.1 to 45 mA in 0.1 mA	From 0.01 to 3 mA in 0.001 mA
Dig display of set and act values	3 digits	3 digits	4 digits
Display resolution	0.1 mA	0.1 mA	0.001 mA
Accuracy	<1%	<1%	<1%
Reproducibility	<0.25%	<0.25%	<0.25%
Temperature drift	<100 ppm/K	<100 ppm/K	<100 ppm/K
Exposure time			
Programmable timer	1	1	1
Presel and setting	1 ... 9999 s	1 ... 9999 s	1 ... 32767 s (xs-control)
Dig display of set and act values	4 digits	4 digits	5 digits
Prewarning	Audible and visible	Audible and visible	Audible and visible
Presel and setting	2 ... 120 s or deactivated	2 ... 120 s or deactivated	2 ... 255 s or deactivated

Programmed mode			
Number of storable programs	250	250	—
Warm-up	Auto mode based on real time clock	Auto mode based on real time clock	Automated intelligent tube conditioning
X-ray tube set up	8 tube selectable from a database of 45 pre-programmed tube	8 tube selectable from a database of 45 pre-programmed tube	—
Operation history	Stored on SD	Stored on SD	—
Warm-up history	Stored on SD	Stored on SD	—
Control module			
Dimension (w x d x h)	440 x 114 x 295 mm (17.32" x 4.48" x 11.61")	440 x 114 x 295 mm (17.32" x 4.48" x 11.61")	—
Weight	3.8 kg (8.37 lbs)	3.8 kg (8.37 lbs)	—
Connected loads			
Power connection	AUX: 1N PE 230 V ±10% 50/60 Hz 10 A, MAIN: 3N PE 400/230 V ±10% 50/60 Hz 20 A or 1N PE 230 V ±10% 50/60 Hz 63 A, 3-phase, grounded neutral TN-S or TN-C-S mains (star connected system), optional 3-phase isolation transformer	AUX: 1N PE 230 V ±10% 50/60 Hz 10 A, MAIN: 3N PE 400/230 V ±10% 50/60 Hz 20 A or 1N PE 230 V ±10% 50/60 Hz 63 A, 3-phase, grounded neutral TN-S or TN-C-S mains (star connected system), optional 3-phase isolation transformer	1N PE 230 V ± 10% 50/60 HZ 10 A AUX, 1N PE 230 V ± 10% 50/60 HZ 10 A MAIN
Grounding	Separate grounding for X-ray tube and high voltage generator (min. 6 mm^2)	Separate grounding for X-ray tube and high voltage generator (min. 6 mm^2)	Separate grounding for X-ray tube and high voltage generator (min. 6 mm^2)
Mains fuses	AUX: 10 A (1N PE) MAIN: 63 A (1N PE) or 20 A (3N PE) time-delay fuses, customer-supplied	AUX: 10 A (1N PE) MAIN: 63 A (1N PE) or 20 A (3N PE) time-delay fuses, customer-supplied	10 A (1N PE) integrated into aux switch, 10 A (1N PE) integrated into main switch
Operating temperature range	0 °C to +40 °C	0 °C to +40 °C	0 °C to +40 °C
Storage temperature range	-30 °C to +70 °C	-30 °C to +70 °C	-30 °C to +70 °C

A legacy of excellence. A future of possibility.

With more than 125 years of X-ray experience and thousands of installations worldwide, the ISOVOLT platform is known for its reliability and performance in the radiography and NDT space. It provides a standard for X-ray generators everywhere. The ISOVOLT Titan|neo generator is just one part of Waygate Technologies revolutionary X-ray, CT technology, and digital radiography suite, and just one way Baker Hughes is setting the stage for future innovations designed to improve your operations.

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