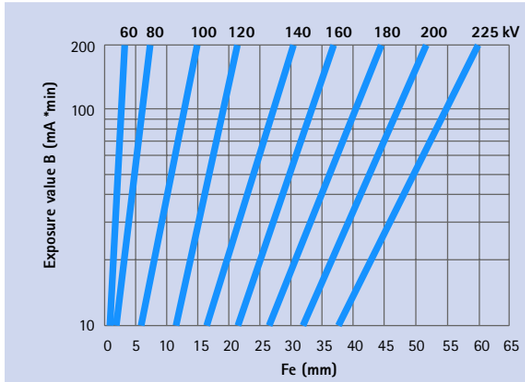
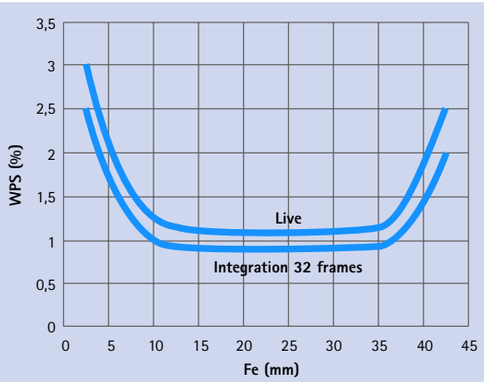
Safety provisions

General
- Two independent, independently monitored safety-circuits (fail-safe, 24 V)
- Continuous system functional monitoring with fully automated system shut-down and failure indication
- Automated filament post-heating H.V. capacitor discharge upon termination
- X-ray ON warning lamp monitoring provided (fail-safe)

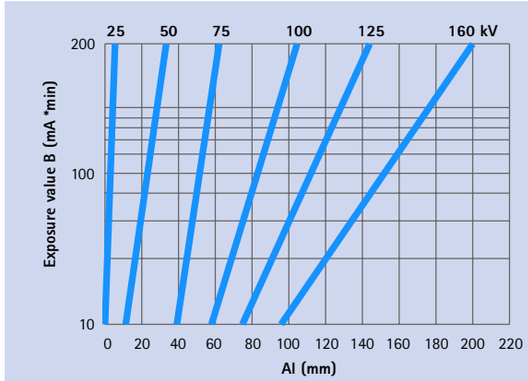
Provided connections for:
- External safety circuit for automated systems (24 V)
- H.V. primary circuit interruption for CDRH switch [US-Standard]
- Monitored door lock feature
- External coolant monitoring



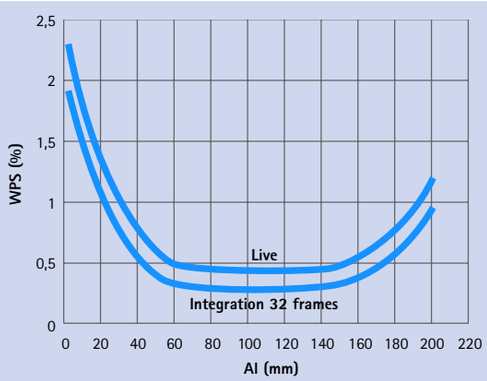
Film exposure chart for Fe up to 225 kV
FFD = 700 mm; Film System Class C5 acc. EN 584-1;
Pb-screen 0.02 mm; Density 2.0



Radioscopic wire penetrameter sensitivity (WPS) for Fe [%]
MG226/2.25 with Y.TU/ 225-D01, focal spot: 0.5 mm acc.
EN 12543 (0.2 acc. IEC336);
Distance focal spot - image intensifier: FDD = 800 mm;
Distance focal spot - object: FOD = 200 mm;
XRS 232: 7" size



Film exposure chart for AL up to 160 kV
FFD = 700 mm; Film System Class C3 acc. EN 584-1;
Pb-screen 0.02 mm above 75 kV; Density 2.0



Radioscopic wire penetrameter sensitivity (WPS) for AL [%]
MG226/2.25 with Y.TU/ 225-D01, focal spot: 0.5 mm acc.
EN 12543 (0.2 acc. IEC336);
Distance focal spot - image intensifier: FDD = 800 mm;
Distance focal spot - object: FOD = 200 mm;
XRS 232: 7" size

Our experience is available
for your specific inspection needs today!

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Technical Data
Y.MG103/165/226

YXLON.MG103/165/226
Universal Unipolar Constant Potential X-Ray Systems

YXLON's unipolar constant potential X-ray systems include 2.25 kW and 4.5 kW versions. The 2.25 kW systems have been designed and configured primarily for use in manual, semi-automated and fully automated radioscopic applications. The high energy and high dose rates of the unipolar 4.5 kW systems make them excellent candidates not only for radiographic and radioscopic applications but also for dosimetry and scanning methods like tomography.

The typical application of each system is tailored towards specific target areas like low density applications, biological specimens (pathology), plastics and rubber compounds (MG103) and aluminum and steel applications like casting inspection (MG165 and MG226).
The unipolar 40kHz X-ray systems feature a very high output stability, a precise energy setting and an extremely fast change over to any selected new value. Any fluctuation or deviation of set values is controlled and corrected within microseconds. In addition these features reduce inspection times considerably and highly qualify the system for inline inspection in fast, completely automated production lines.
The wide range of use calls for a universal, easy to use control system realized in the MGC41.
The set-up modes are menu driven. All signals, operating mode and fault diagnosis of internal or external errors are displayed in clear text which can be easily displayed in a number of optional languages. Additional error indications are given by numerical codes. Furthermore, 100 technique programs can be stored for future use, and when connected through the serial port interface, an infinite number of programs may be stored on the host computer.
All system components are protected from water damage. H.V Generators and Power supplies meet the requirements of IP54.
YXLON. The reason why.

■ High output stability ■ Short inspection times ■ High Reliability ■ Easy to use

YXLON. The reason why

YXLON SYSTEM	MG103/4.5	MG165/2.25	MG165/4.5	MG226/2.25	MG226/4.5
Max. Power:	4,500 W	2,250 W	4,500 W	2,250 W	4,500 W
High voltage:					
Adjustment range (four-digit LED display)	5-100 kV	7.5-160 kV	7.5-160 kV	10-225 kV	10-225 kV
Adjustment increments (minimum step)	0.1 kV / step				
Accuracy	± 1 % of demand value ± 0.1 kV				
Reproducibility	± 0.01 % of maximum kV-value at a constant temperature				
H.V. ripple (with 10 m H.V. cable)	5 V/mA, min. 15 V	5 V/mA, min. 20 V	5 V/mA, min. 20 V	5 V/mA, min. 20 V	5 V/mA, min. 20 V
Temperature induced drift with compensation*	80 ppm/°C based on demand value 40 ppm/°C based on demand value (on request 30 ppm/°C possible)				
Tube current:					
Adjustment range (four-digit LED display)	0.5-60 mA	0-22.5 mA	0-45 mA	0-15 mA	0-30 mA
Adjustment: Standard range	in 0.1 mA steps from 0.5 mA to maximum value	in 0.05 mA steps from 0.5 mA to maximum value	in 0.05 mA steps from 0.5 mA to maximum value	in 0.05 mA steps from 0.5 mA to maximum value	in 0.05 mA steps from 0.5 mA to maximum value
High resolution range (recommended)	not available	in 0.01 mA steps from 0.0 mA to maximum value	in 0.01 mA steps from 0.0 mA to maximum value	in 0.01 mA steps from 0.0 mA to maximum value	in 0.01 mA steps from 0.0 mA to maximum value
Accuracy (at constant temperature)	± 0.2 % of demand value ± 0.01 mA				
Reproducibility (at constant temperature)	± 2 µA				
Temperature drift	50 ppm/°C of demand value (on request: 30 ppm/°C possible)				
Focal spot selection:	Keypad selected: selection indicated by large and small symbols on display panel				
Individual components:					
Control unit: Dimensions (WxHxD); Weight	MGC41: 483 mm x 133 mm x 300 mm; 12.5 kg				
Power supply: Dimensions (WxHxD); Weight	MGP41: 340 mm x 350 mm x 628 mm; 45 kg	MGP40: 340 mm x 200 mm x 628 mm; 26 kg	MGP41: 340 mm x 350 mm x 628 mm; 45 kg	MGP40: 340 mm x 200 mm x 628 mm; 26 kg	MGP41: 340 mm x 350 mm x 628 mm; 45 kg
H.V. generator (oil insulated) Dimensions (WxHxD) Weight	MGG40: 375 mm x 335 mm x 625 mm 80 kg	MGG42: 375 mm x 335 mm x 625 mm 80 kg	MGG42: 375 mm x 335 mm x 625 mm 80 kg	MGG46: 514 mm x 364 mm x 624 mm 125 kg	MGG46: 514 mm x 364 mm x 624 mm 125 kg
Metal-ceramic tube head (recommended)	Y.TU/160-D02	Y.TU/160-D04	Y.TU/160-D02	Y.TU/225-D01	Y.TU/225-D02
Additional components	H.V. cable: standard: 5 m, optional 10 m / 15 m / 20 m · water flow valve/monitor (with 10 m cable) · coolant lines (specify length)				
Options	Water to air cooler, water to water cooler, cooling block 50/60 Hz, all single-ended X-ray tubes				

*optional

Operation
Constant potential with Isowatt-feature – fully automated monitoring of power limits and tube head specifications

Menu-driven system information input
- Language selection: English, German, French, Spanish
- Serial interface
- Prewarning time
- Hour counter
- History register (last 99 cycles)
- Tube head selection
- Display contrast
- Service menu

Mains supply (single-phase)
- 230 V +10%-15%, 50/60 Hz
- Protection MGP 40: 25 A
- Protection MGP 41: 50 A

Exposure timer (four-digit LED display)
Input range
- Special ∞ setting for radioscopic application
- In 1 second steps up to 10 minutes
- In 10 second steps up to 99 minutes and 50 seconds

Pre-warning
- Adjustable from 1 to 30 seconds
- Menu-driven selection
- Input through touch keypad

Tube head selection
- Menu-driven through keypad entry (see above for recommended tube head)

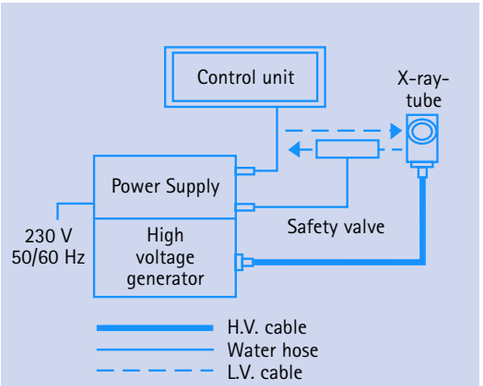
Programmed operation
- 100 technique capacity (kV, mA, time, focal spot, programmable through numeric keypad)
- 3-level program for automated tube conditioning

Environment
- Duty cycle: 100 % at +40 °C max. ambient temperature in non-convective air
- Operation temperature: 0 °C to +40 °C, relative humidity 90 % at +40 °C, non-condensing
- Storage temperature: -25 °C to +70 °C, relative humidity 95 % at +40 °C, non-condensing

Compliance
YXLON International products are manufactured according to strict safety and quality standards and in compliance with the following standards:
- DIN 54113 (radiation shielding and safety circuits)
- EN 12543 (focal spot measurement standards)
- German radiation regulations of 2002
- DIN EN 60204/DIN EN 50178
- EN 50082-2/EN 55011
- USA: 21 CFR § 1020.40
  47 CFR § 15 (FCC)

The quality management system of YXLON International X-Ray GmbH is certified to DIN EN ISO 9001.

Additional components
- RS232C serial port for MGC41
- MGC41 PC-Software
- Mobile tripod
- Beam centering device
- Tube mount
- Additional options available on request



Block diagramm of unipolar stationary systems