



# ES-R Series

## X-Ray generators



HIGH FREQUENCY  
COLOUR CONSOLE 7"  
Or COLOUR CONSOLE 10,4"  
APR ANATOMICAL PROGRAMS  
CONVENTIONAL TECHNIQUE 2,3 POINTS  
AEC TECHNIQUE 1, 2 POINTS  
CINE-DIGITAL TECHNIQUE 0 POINTS  
AIR-KERMA INDICATION AND DAP

### Single Phase Generators:

ES-R212.2x NEB

32-50kW With Capacitor Energy Storage  
Unit up to 200 kHz switching frequency  
Ideal solution for emergency hospitals and veterinary  
and everywhere single phase is convenient.

### Three Phase Generators:

ES-R306.3X - END

Power from 40kW up to 80 kW  
Connection to 1tube  
Radiography - Fluoroscopy – Pulsed Fluoroscopy  
Widespread used in DR and DRF applications

ES-R306.4x PRO

Power from 40kW up to 100 kW  
1 or 2 tubes  
Radiography – Fluoroscopy  
Pulsed Fluoroscopy – Cineradiography  
Smart and flexible solution for RAD/DR/FR/DRF applications  
CardioVascular version available up to 100kW

All the generators are equipped with CANBus and Rs232, Ethernet\*, USB custom control console\*, FREE PC service program (Odel Navigator) available.

Wide range of options: High speed starter (9000 Rpm) built in – AEC – DAP – Interface to Digital Imaging Systems, etc...

\* option



# ES-R212.1x NEB

## Generator single phase

	ES-R212.12 32kW	ES-R212.13 40kW	ES-R212.14 50kW
	INTERMITTENT MODE (RADIOGRAPHY)		
Nominal Voltage	150kV		
RX Tube Highest Current	320 mA	400 mA	680 mA
High Voltage Rise Time	1ms to 75% Peak Voltage		
Tube Current and Voltage (Maximum Performances)	320mA @ 100kV	400mA @ 100kV	630mA @ 100kV
Power Output	32 kW	40 kW	50kW
Minimum Current*Time	0,4 mAs		
	from 40kV to 150kV – in 1kV Step		
Range of Loading Factors	from 10mA to 320mA in 29 Steps	from 10mA to 400mA in 30 Steps	from 10mA to 630mA In 31 Steps
	from 1 millisecond to 6 seconds in 36 Steps		
Radiographic Techniques	APR, 0, 1, 2, 3 points		
Automatic Exposure Control	Yes on request 1 chamber AEC		
Other	4 Working Station + Direct Exposition, 1 x-Ray Tube, Dose Area Product, Air-Kerma ..		
Connecting Cables	Set Standard = 10 meters or Set Extended 20 meters		
Minimum nominal Time Irradiation	2ms		
Protections	Line, Anode Load and Rotation, Tube Thermal Load, Filament Overheating, Max kV, ..		
	<b>POWER SUPPLY</b>		
Mains Voltage	230V Singlephase - 50Hz / 60Hz		
Maximum Power Absorption	2 kW 2,2 kVA	2 kW 2,2 kVA	2 kW 2,2 kVA
Group Capacitors	Single Group	Double Group	Double Group
Optional Group Capacitors		Triple Group	Triple Group
Mains Protection	MagnetoThermal whitth differential 30mA 16Amp Curve C		
Class and Type	Classe I Type B (UNI EN 60601) - Class II b (Dir. 93/42/CEE)		

# ES-R306.3x END

## Generator three phase

	ES-R306.34R 40kW	ES-R306.35R 50kW	ES-R306.36R 65kW	ES-R306.36RF (ES-R306.37RF) 65kW (80kW)	ES-R306.36HRF (ES-R306.37RF) 65kW (80kW)
<b>INTERMITTENT MODE (RADIOGRAPHY)</b>					
Nominal Voltage	150kV				
RX Tube Highest Current	500 mA	630 mA	800 mA		
High Voltage Rise Time	1ms to 75% Peak Voltage				
Tube Current and Voltage (Maximum Performances)	500mA @ 80kV 400mA @ 100kV 320mA @ 125kV 250mA @ 150kV	630mA @ 79kV 500mA @ 100kV 400mA @ 125kV 320mA @ 150kV	800mA @ 81kV (100 kV) 630mA @ 103kV (126 kV) 500mA @ 130kV (130 kV) 400mA @ 150kV (150 kV)		
Power Output	40kW	50kW	65 kW (80kW)		
Minimum Current*Time	0,4mAs				
	from 40kV to 150kV – in 1kV Step				
Range of Loading Factors	from 10mA 500mA in 29 Steps	from 10mA 630mA in 30 Steps	from 10mA 800 mA in 31 Steps		
	from 1 millisecond to 6 seconds in 36 Steps				
Sequential Exposure Rates				30 i/s HCF	30 i/s HCF/CINE
Radiographic Techniques	APR, 1, 2, 3 points			APR, 0, 1, 2, 3 points	
Automatic Exposure Control	Up to 2 chambers – Ionization or Semiconductor type				
Other	3 Working Station + Direct Exposition, 1 x-Ray Tube, Dose Area Product, Air-Kerma ..				
Protections	Line, Anode Load and Rotation, Tube Thermal Load, Filament Overheating, Max kV, ..				
<b>CONTINUOUS MODE (FLUOROSCOPY)</b>					
Tube Voltage	from 40kV to 120kV – in 1kV step				
Tube Current and Voltage	from 0,5mA to 5mA				
Special Applications	from 1mA to 18mA				
Pulse Fluoroscopy (HCF)	Up to 30 i/s – 40, 60, 80, 100mA				
<b>POWER SUPPLY</b>					
Mains Voltage	400V Thriphase Alternate Current - 50Hz / 60Hz				
Maximum Power Absorption	92A 60kVA 54kW	130A 90kVA 67kW	Peak Current 169A (208A) Apparent power 117kVA (144) Active Power 87kW (108)		
Mains Protection	63A C Curve + 30mA type B Differential Breaker				
Class and Type	Classe I Tipe B (UNI EN 60 601) - Class II b (Dir. 93/42/CEE)				

# ES-R306.4x PRO

## Generator three phase

	ES-R306.44 40kW	ES-R306.45 50kW	ES-R306.46 65kW	ES-R306.47 80kW	ES-R306.48 100kW
<b>INTERMITTENT MODE (RADIOGRAPHY)</b>					
Nominal Voltage	150kV				
RX Tube Highest Current	500mA	630mA	800mA	1000mA	1000mA
High Voltage Rise Time	1ms to 75% Peak Voltage				
Tube Current and Voltage (Maximum Performances)	500mA @ 80kV 400mA @ 100kV 320mA @ 125kV -	630mA @ 80kV 500mA @ 100kV 400mA @ 125kV 320mA @ 150kV	800mA @ 80kV 630mA @ 100kV 500mA @ 119kV 400mA @ 150kV	1000mA @ 80kV 800mA @ 100kV 630mA @ 125kV 500mA @ 150kV	1000mA @ 100kV 800mA @ 100kV 630mA @ 150kV -
Power Output	40kW	50kW	65kW	80kW	100kW
Minimum Current*Time	0,4mAs				
from 40kV to 150kV – in 1kV Step					
Range of Loading Factors	from 10mA 500mA R10 scale over 30 values	from 10mA 630mA R10 scale over 30 values	from 10mA 800mA R10 scale over 31 values	from 10mA 1000mA R10 scale over 32 values	from 10mA 1000mA R10 scale over 32 values
from 1 millisecond to 6 seconds in 36 Steps					
Sequential Frame Rate	Up to 60 i/s in HCF, CARDIAC CINE Mode				
Radiographic Techniques	APR, 0,1, 2, 3 points				
Automatic Exposure Control	Up to 3 chambers – Semiconductor type				
Other	5 Working Station + Direct Exposition, 1 or 2 x-Ray Tube, Dose Area Product, Air-Kerma ..				
Protections	Line, Anode Load and Rotation, Tube Thermal Load, Filament Overheating, Max kV, ..				
<b>CONTINUOUS MODE (FLUOROSCOPY)</b>					
Tube Voltage	From 40kV to 150 kV	From 40kV to 150 kV	From 40kV to 150 kV	From 40kV to 150 kV	From 40kV to 150 kV
Tube Current and Voltage	From 0,5mA to 8mA	From 0,5mA to 8mA	From 0,5mA to 8mA	From 0,5mA to 8mA	From 0,5mA to 8mA
Automatic Fluoroscopy	Yes	Yes	Yes	Yes	Yes
Pulse Fluoroscopy (HCF)	Yes	Yes	Yes	Yes	Yes
<b>POWER SUPPLY</b>					
Mains Voltage	400V Thriphase Alternate Current - 50Hz / 60Hz				
Maximum Power Absorption	92Apk 60kVA 54kW	108Apk 90kVA 63kW	141Apk 117kVA 82kW	173Apk 120kVA 100kW	207Apk 150kVA 125kW
Mains Protection	63A C Curve + 30mA type B Differential Breaker				
Class and Type	Classe I Tipe B (UNI EN 60 601) - Class II b (Dir. 93/42/CEE)				

