



RFG 20K-WC

WATER COOLED:

Model RFG 20K-13-WC

Model RFG 20K-27-WC

The **RFG 20K-WC (20kW / 20000 WATT)** RF generator is a precision unit intended for both scientific and industrial applications. The robust construction using the latest in switch mode and solid-state design techniques ensure a long and trouble free life even in harsh environments.

The small size of the unit makes it ideal for use where there is restricted rack space.

It is recommended that the generator be used in conjunction with either a manual or automatic impedance matching network. Both types are available from Coaxial Power Systems Ltd – please see the separate brochure for details.

This unit is water-cooled (WC) for continuous operation.



The main features of this RFG are:

- Efficient Class-E design
- 380-415 VAC (3 phase) – As standard
- 208 VAC (3 phase) – Optional
- 480 VAC (3 phase) – Optional
- Floor-standing cabinet
- Analog and RS-232 interfaces available.
- External control of output voltage. (Useful in sputter coating applications).
- Feedback control system ensures that the set output power remains constant and repeatable.
- Internally calibrated power measurements for high accuracy throughout the power range.
- Microprocessor display of incident (forward) power, reflected power and unit status
- Precision power control fully adjustable between 0-100%.
- 13.56MHz, 27.12MHz frequencies available as standard.

(Non-standard frequencies are available - please contact factory for details).

The output power of each generator is fully adjustable between zero and maximum power. The feedback control system ensures that the set output power remains constant and repeatable. Incident (forward) and reflected power measurements are internally calibrated to give high accuracy throughout the power range.

Option (please enquire)

An external voltage of 0 to 5Volts can be used to control the output. This is particularly useful in sputter coating applications where the DC voltage developed across the plasma dark space can be controlled rather than the RF power.

Physical	
Model Variants	RFG 20K-13-WC (13.56MHz) RFG 20K-27-WC (27.12MHz)
Dimensions	Floor-standing cabinet 600mm (W) x 800mm (L) x 1150mm (H) External connectors protrude from rear panel.
Weight	Estimated 330kg.
Front panel Material / Colour	Aluminium, powder coat finish.
Chassis and Cover Material	Steel, powder coat finish.
Connector and Cable Specifications	
RF Output Connector	1-5/8 EIA flange
User Port Connector (Analogue & RS-232)	25-pin, Sub-Miniature 'D' Female, with 8mm 4-40 jack post
AC Power Input Connector / Cable	380-415 VAC Model: 63A type 3P+E (4 pin) connector
Input + Output CEX / Drive Connector	Input: SMA, Coaxial Sub-Miniature / Output: SMA, Coaxial Sub-Miniature
Pulse Input Connector	NOT APPLICABLE
AMNC Readout connector (Optional)	Lemo – Circular Connector, 3 contacts.
Coolant Connectors	Water IN – 8mm Bore push-fit connector Water OUT – 8mm Bore push-fit connector
Earth Connection	Single, 45° Stud-Mount terminal, 6.35 x 0.81mm
Electrical	
Input Power	380-415 VAC (3 phase) - Standard 208 VAC (3 phase) – Optional 480 VAC (3 phase) – Optional
Output Power / Impedance	20000-Watts (20kW) Continuous / 50 Ω
Output Frequency Options / Stability	13.56MHz / +/-1.4kHz. 27.12MHz / +/-2.7kHz.
Interface Options	Analogue (Standard), RS-232 (Optional),
Efficiency	80%
Output Envelope Ripple	Less than 1% of full amplitude.
VSWR Capability	Can withstand VSWR at any phase angle.
Harmonic Output	Better than 40 dB below fundamental.
Pulse Operation via SMA input on rear panel	Consult factory
Local Control and Remote Interface	
Local Control	Accessed via Front-Panel Controls: Line ON/OFF. RF ON/OFF. Digital output power set / Menu Control dial. Menu Switches. Remote switches: RF on/off control enable, O/P set on/off. Local switches: x0.1 / x1 (output range), CEX-OSC, PULSE-CW. Timer. VFD display showing: Forward (Incident) power / Reflected power / Reflected power exceed limit. Remote operation. Timer. Interlock status (cooling and external) AMN Readout on main display (optional)
Remote Interface	Accessed via User-Port. RF ON/OFF Incident Power indication Reflected Power indication Output set 0-5volts = 0-100% Remote output set request.
Specification is continued on the following page 	

Environmental	
Operating Temperature	0-40°C (32°F-104°F)
Storage Temperature	0-65°C (-4 to 149°F)
Cooling Requirements	
Cooling	Water-Cooled Amplifier via external recirculation system / Air-cooled Driver.
Water Temperature	1-50°C (33-104°F) to inlet temperature.
Flow	10 LPM minimum
Other	
Standards	EN61000-3-2:2006 EN6100-3-3/A2:2005 EN61326-1:2006 EN55011:2009+A1:2010 EN60204-1:2006+A1:2009 UL61010-1:2004 R7.05 Machinery Directive 2006/42/EC Low Voltage 2006/95/EC EMC 2004/108/EC BS EN ISO 9001:2008

Notes & Revision History

Warranty

Coaxial Power Systems Ltd offer a warranty for parts and labour (if returned to factory) for 1 year from date of despatch. The warranty is invalidated if the generator has suffered inappropriate treatment i.e. excessive vibration, mechanical denting or dropping, accidental liquid spill, excessive applied voltage to remote connectors etc. Coaxial Power Systems Ltd should be notified of all warranty claims before return of equipment.

Contact

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