RFG 2K

AIR COOLED:
Model RFG 2K-2-AC (2kW / 2,000 Watts)
Model RFG 2K-13-AC (2kW / 2,000 Watts)
Model RFG 2K-27-AC (2kW / 2,000 Watts)

The RFG 2K (2.0kW / 2.000 WATT) RF generator is a precision unit intended for both scientific and industrial applications. The robust construction, using tried and tested components together with the latest 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.

This unit is available air cooled (AC) as standard for continuous operation. A water-cooled variant can be supplied if your operating environment demands it due to extreme temperatures or poor ventilation.

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.

The main features of all models are

- Efficient Class-E design.
- Rack-mount design as standard.
- Compact (ideal for restricted rack space).
- 230 VAC - Standard
- 380-415 VAC (3 phase) – Optional
- 208 VAC (3 phase) – Optional
- 480 VAC (3 phase) – Optional
- Full-rack / 3U high.
- Microprocessor display of incident (forward) power, reflected power and unit status
- Precision power control (fully adjustable between 0 and max power).
- Fast pulse operation from TTL/CMOS input.
- 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.
- 2MHz, 13.56MHz, 27.12MHz frequencies 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 p
### Physical

<table>
<thead>
<tr>
<th>Model Variants</th>
<th>Dimensions</th>
<th>Weight</th>
<th>Front panel Material / Colour</th>
<th>Chassis and Cover Material</th>
</tr>
</thead>
<tbody>
<tr>
<td>RFG 2K-2-AC (2MHz)</td>
<td>Full rack mounting - 3U high</td>
<td>24 Kg</td>
<td>Aluminium, RAL7135 Light Grey</td>
<td>Stainless Steel</td>
</tr>
<tr>
<td>RFG 2K-13-AC (13.56MHz)</td>
<td>445mm (W) x 553mm (L) x 133mm (H) / (Front panel width is 482mm). External connectors protrude extra 16mm MAX (Front panel), 25mm MAX (Rear panel).</td>
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<tr>
<td>RFG 2K-27-AC (27.12MHz)</td>
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</tbody>
</table>

### Connector and Cable Specifications

| RF Output Connector                     | 7/16 type / 50 Ω                                   |
| User Port Connector (Analogue & RS-232) | 25-pin, Sub-Miniature 'D' Female, with 8mm 4-40 jack post |
| AC Power Input Connector / Cable        | 230 VAC Model: Site-wired, Captive-Cable at 2 Metres. 380-415 VAC Model: AMP Connector, 7 contacts 208 VAC Model: Site-wired, Captive-Cable at 2 Metres 480 VAC Model: AMP Connector, 7 contacts |
| Input + Outup CEX / Drive Connector    | Input: SMA, Coaxial Sub-Miniature / Output: SMA, Coaxial Sub-Miniature |
| Pulse Input Connector                  | SMA, Coaxial Sub-Miniature                        |
| AMNC Readout connector (Optional)      | Lemo – Circular Connector, 3 contacts.             |
| Earth Connection                       | M4 Screwbrush or M5 stud located on rear panel.    |

### Electrical

| Input Power                             | 230 VAC (Single-phase) - Standard 380-415 VAC (3 phase) - Optional 208 VAC (3 phase) – Optional 480 VAC (3 phase) – Optional |
| Output Power / Impedance                | 2000-Watts (2.0kW) Continuous / 50 Ω               |
| Output Frequency Options / Stability    | 2MHz / +/-4.1kHz 13.56MHz / +/-1.4kHz 27.12MHz / +/-2.7kHz. |
| Interface Options                       | Analogue (Standard), RS-232 (Optional), Device-Net (Optional). |
| Efficiency                              | 91%                                               |
| 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 | Minimum pulse width 40μs (micro-seconds). The external power control signal should vary the peak output from 0 to MAX-power with a pulse-on duty cycle from 0 to continuous (100% duty cycle). |

### Local Control and Remote Interface

- **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)

- **Accessed via User-Port.**
  - RF ON/OFF
  - Incident Power indication
  - Reflected Power indication
  - Output set 0-5volts = 0-100%
  - Remote output set request.

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**Specification is continued on the following page**
### Environmental

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Temperature</td>
<td>0-40°C (32°F-104°F)</td>
</tr>
<tr>
<td>Storage Temperature</td>
<td>0-20°C to +65°C (-4 to 149°F)</td>
</tr>
</tbody>
</table>

### Cooling Requirements

- **Cooling**: Totally air-cooled

### Other

- **Standards**
  - CE Certification
  - BS EN ISO 9001:2008
  - EN61000-3-2: 2006
  - EN6100-3-3/A2: 2005
  - EN61326-1: 2006
  - EN61010-1: 2001

### Notes & Revision History

RS-232 SECTION UPDATED – 08.03.18 – DR

### 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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