

RF UNIT K100



COMPACT

FULLY EQUIPPED

UP TO 10 MW
RF PEAK POWER

FOR USE IN VARIOUS
RF APPLICATIONS

INTEGRATED WITH
KLYSTRON

TURN KEY RF UNIT 10 MW/10 KW

ScandiNova's K100 is a turn-key Radio Frequency (RF) Unit. By combining ScandiNova's solid-state pulsed power technology with high quality klystrons from well-known manufacturers, a very compact, high performance RF Unit has been created, providing up to 10 MW RF peak power. The RF Unit is optimized for a wide range of klystrons from Canon, CPI, Thales, Toshiba, Toriy, and L3.

The K100 is fully equipped with Klystron, Solenoid, klystron accessories and supporting systems, such as Solenoid Power Supply, Ion Pump Power Supply, RF Amplifier, internal cooling system and radiation shielding. All interlocks and essential diagnostics are fully integrated, and the ScandiCAT™ control system offers a safe and easy-to-use means of controlling the RF Unit.

There are several alternatives and options available for the RF Unit, e.g. extended/premium performance, different interfaces and RF components as well as different levels of service and support programmes.

THE K-SERIES

ScandiNova's K-series contains a range of klystron based RF units with high reliability and performance, a compact design and low energy consumption.

The RF units utilize ScandiNova's unique solid-state pulsed power technology, integrated with different types of klystrons, usually operating in the RF peak power range 3-100 MW.

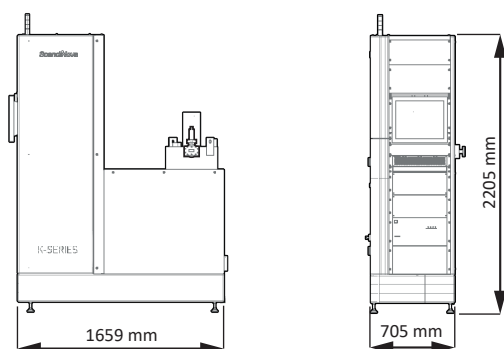
The RF units have extended diagnostics and features, and are easy to install and operate. They contain few consumables and require minimal maintenance.

| SYSTEM SPECIFICATIONS | UNIT | VALUE | NOTES |
|---------------------------|---------|--------|---|
| Klystron RF peak power | MW | 3-10 | Depends on choice of klystron |
| Klystron RF average power | kW | 10 | Maximum |
| RF frequency | GHz | 1.3-12 | L, S, C or X-band depending on klystron |
| RF pulse length, top | µs | 0.5-10 | Typical range, depends on max modulator power |
| Pulse repetition rate | Hz | 0-500 | Typical range, depends on max average power |
| RF phase shift | degrees | < 0.35 | Measured at 200 Hz |
| RF pulse flatness | % | < 1 | Flat top, depends on load |
| Radiation at 1 m distance | µSv/h | < 10 | |

| INTERFACE | CONNECTOR | DEFAULT | OPTION | NOTES |
|---------------------------|-------------------------|-----------------------------------|----------------------|--------------------------------------|
| Mains power, three-phase | Terminal block (4-wire) | 400 VAC, 50/60 Hz | 230/380/480 VAC | |
| Mains power, single-phase | Terminal block | 230 VAC, 50/60 Hz | 115 VAC | |
| Control interface | RJ45 | Modbus TCP | | 100 Hz update rate |
| Water cooling interface | Hose 1" | 66 dm ³ /min, 20-30 °C | 31-40 °C inlet water | Low conductivity water |
| Trig input | BNC | 5-15 V into 50 Ω | HFBR: Optical | Pulse width can be set by trig pulse |
| Diagnostics | BNC | Pulse voltage & current signals | | |
| RF input | SMA | Nominal input power 0 dBm | | Max +15 dBm |

| SIZE, WEIGHT AND VOLUME | UNIT | VALUE |
|------------------------------|-----------------|-----------|
| Total system weight | kg | 1200-1500 |
| - Modulator | kg | 950 |
| - Klystron, Solenoid and oil | kg | 250-550 |
| Total oil volume | dm ³ | 208 |

For more information, visit www.scandinovasystems.com/K100



The Standard RF Unit Includes

Power Distribution Unit
 Capacitive Charging Power Supply
 Solid-state Switch Unit
 Pulse transformer and tank
 Water cooling manifold and flow meters diagnostics
 Filament power supply
 Local control panel (19" touch screen)
 Graphical user interface
 ScandiCAT™ control system
 Digitizer for modulator diagnostics
 RF Digitizer (FWD/RFL power/VSWR)
 Directional coupler (SF6)
 Remote control via Modbus TCP
 Klystron
 Solenoid
 Solenoid Power Supply
 Ion Pump Power Supply
 RF Amplifier
 Factory acceptance test certificate
 Manuals

Options

Internal controllable RF source
 Internal controllable phase shifter
 Neutron resistant Switch Unit
 Additional radiation shielding
 Front turned 90 ° left
 Klystron conditioning tool
 Reduced filament heating mode
 Seismic reinforcement kit

Accessories

Circulator & RF loads (SF6)
 Waveguides
 Waveguide window
 SF6 filling system and controls
 SF6 filling flange
 Spare part kit

Services

Training in handling, operation and maintenance
 Factory acceptance test participation
 Site acceptance test
 Shipping
 Installation and start-up
 Service contract

Information contained in this document is subject to change without notice.

COMPANY WITH
 MANAGEMENT SYSTEM
 CERTIFIED BY DNV
 ISO 9001 • ISO 14001

HEADQUARTERS

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ScandiNova
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