

# M-SERIES M200D



## MAGNETRON MODULATOR UP TO 5 MW

**ScandiNova's M200D** is a dual-energy pulse Modulator in a very compact enclosure. Our dual-energy models are for applications where there is a need to switch between two different energy levels. The Modulator is optimized for a wide range of different magnetrons with an RF peak power ranging from 2.5 MW to 5 MW, and can also power klystrons. The M200D is also available as a single-energy, stand-alone version (see M200).

All interlocks and essential diagnostics are fully integrated, and ScandiNova's modern control system offers a user-friendly interface. The pulse length, amplitude and repetition rate can all be changed.

The M200D can be delivered as a pure high-power pulse modulator or as part of an RF Unit including magnetron and related components. Different levels of service and support programmes are available.

DUAL-ENERGY

COMPACT

UP TO 5 MW RF PEAK POWER

FULLY COMPUTERIZED

MINIMIZED CONSUMABLES

## THE M-SERIES

**ScandiNova's M-series** contains a range of magnetron pulse modulators with high reliability and performance, a compact design and low energy consumption.

Our magnetron pulse modulators require about one third of the space of alternative solutions yet still offer around 30% higher efficiency, two operating advantages that especially appeal to cancer treatment providers.

Their high reliability and performance also attract many industry applications.

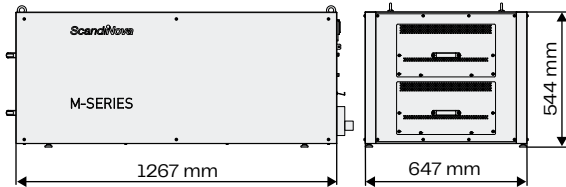


SPECIFICATIONS	UNIT	VALUE	NOTES
Magnetron RF peak power, high	MW	2.5–5	Depends on choice of magnetron
Magnetron RF peak power, low	MW	1–3	Depends on choice of magnetron
Magnetron RF average power	kW	7	Maximum, depends on choice of magnetron
Modulator peak power, high	MW	14	Maximum
Modulator peak power, low	MW	6.2	Maximum
Modulator average power	kW	16	Maximum
Pulse voltage	kV	40–75	
Pulse current	A	30–250	
RF pulse length, top	µs	0.5–5	Depends on max average power
Pulse repetition rate	Hz	0–500	2x250 Hz, depends on max average power
Modulator Voltage Stability, RMS	%	0.4	Verified on resistive load (see options)
Water cooling	l/min	8	18–40 °C, non-condensing

INTERFACE	CONNECTOR	DEFAULT	OPTION
Mains power, three-phase	Terminal block (4-wire)	400±10 % VAC, 50/60 Hz	208/380/480 VAC
Mains power, single-phase	C20	230±10 % VAC, 50/60 Hz	115 VAC
Control interface	RJ45	Modbus TCP	
Water cooling interface	12 mm	Legris Push-in	Swagelock
Trig input	BNC	Electrical	Optical
Diagnostics	BNC	Pulse voltage & current signals	

SIZE AND WEIGHT	UNIT	VALUE
Weight (incl. oil)	kg	200

For more information, visit [www.scandinovasystems.com/M200](http://www.scandinovasystems.com/M200)



Contact ScandiNova for any requirements not covered by this specification.

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

#### The Standard Modulator Includes

- Filament power supply
- Control system
- Control via Modbus TCP
- Pulse sensors
- HV pulse cable
- Internal trig generator
- Factory acceptance test certificate
- Manuals

#### Options

- Pulse/RF diagnostics
- Enhanced PRF Range (1000–2000 Hz)
- Enhanced Stability (down to 0.1 %)
- Digitizer

#### Additional System Components

- Circulator & RF loads
- Directional coupler
- Magnet power supply
- Waveguide windows
- Magnetron

#### Services

- Training in handling, operation and maintenance
- Shipping
- Installation and start-up
- Service contract

#### Typical Magnetron Loads

(M200D can also power klystrons)

#### BVERI

VE2116

#### E2V

M5028

MG8076

#### GLVAC

GLM8028

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

#### HEADQUARTERS

ScandiNova Systems AB  
Typsnittsgatan 15  
SE-754 54 Uppsala, Sweden

#### CONTACT

Tel: +46 (0)18 480 59 00  
E-mail: [info@scandinovasystems.com](mailto:info@scandinovasystems.com)  
[www.scandinovasystems.com](http://www.scandinovasystems.com)

**ScandiNova**  
Excellence in pulsed power