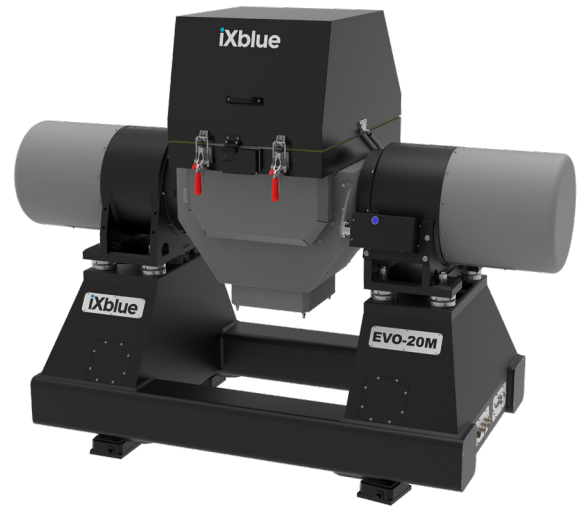


# EVO-20M-HD

High precision and high dynamic two-axis positioning and rate table



EVO-20M-HD is an ultra-high performance 2-axis positioning and rate table. The table is designed from the ground-up to for high bandwidth and high dynamic applications while delivering best in class precision and stability. The EVO-20M-HD is able to test and calibrate inertial grade IMUs and INUs and is ideal for development and research, as well as production.

## BENEFITS

- High bandwidth (up to 150 Hz)
- High dynamic (acceleration:  $> 10,000 \text{ deg/s}^2$  ; rate:  $> 3,000 \text{ deg/sec}$ )
- High position precision ( $< \pm 0.5 \text{ arc sec}$ )
- High position stability ( $< \pm 0.05 \text{ arc sec}$ )
- Best price/performance ratio on the market
- Maintenance free
- Automated testing

## TABLE FEATURES

- Direct drive brushless electric motors
- High accuracy optical encoders
- Climatic chamber option with  $\text{LN}_2$ ,  $\text{LCO}_2$  or mechanical refrigeration
- Custom slip-ring options

## CONTROLLER FEATURES

- iXblue nGine controller including:
  - Patented auto-tuning of controller parameters
  - Patented adaptive sine bandwidth enhancement
  - Auto tuned anti-cogging
  - Real-time built-in-test
  - Advanced unbalance and fault detection
  - Axis cross-coupling compensation
  - Accurate assisted balancing procedure
- iXblue ProaXe Graphical User Interface (GUI)

## TRACK RECORD

iXblue leverages 60 years of unique experience in the design and manufacturing of advanced position/rate tables and motion simulators. This includes over 15 years of expertise combining direct drive brushless electric motors and optical encoders. This unique experience allows iXblue to build the most accurate, stable and dynamic systems, meeting all the requirements for testing of inertial payloads.

## ADVANCED PERFORMANCE

EVO-20M-HD is designed with key components chosen for having the best quality. Brushless motors, optical encoders and slip-ring capsules are critical to the performance of the complete system. Every EVO-20M-HD comes with iXblue nGine controller and ProaXe Graphical User Interface, which are the most advanced control electronics in terms of performance, efficiency and safety.

## SCALABILITY

The EVO-20M-HD can evolve with your process. The high-dynamic, two-axis test-table may be used with or without the thermal chamber. Customer specified tabletops or Unit Under Test adapters, slip-rings and performance features can be tailored to the customers' requirements.

## TECHNICAL SPECIFICATIONS

### Payload definition

Nominal payload mass	20 kg
Maximum payload mass	50 kg
Maximum payload dimensions	400 mm diameter x 300 mm height

### Mechanical specifications

	Inner	Outer
Axis inertia	0.4 kg.m <sup>2</sup>	N/A
Position accuracy	< ±0.5 arc sec	
Position repeatability	< ±0.2 arc sec	
Wobble	< 1 arc sec	< 2 arc sec
Orthogonality	< 2 arc sec	

For customized performance requirements, please contact us.

### Table interfaces

Mechanical interface (Tabletop)	450 mm (with TC) Other dimensions available on request		
Slip-rings and rotary joints	Signal rings: 2 A, 150 VDC	RF ways:	GNSS
	Power rings: 5 A 400 VAC, 20 A 400 VAC	Gas:	Nitrogen, inert gases, air, ...
	Data ways: Ethernet, RS232, RS422, 1553		

### Thermal chamber

Cooling options	LN <sub>2</sub> , LCO <sub>2</sub> , Mech	Mechanical refrigeration is implemented in a closed loop with an evaporator in the chamber and static compressor.	
Temperature range	-60 to +100 °C	Temperature gradient (peak)	+5 °C/min heating, -3 °C/min cooling
Temperature stability	<± 1 °C	Temperature homogeneity	< 2 °C (over usable area above TT)

### nGine controller interfaces

Main features	ProaXe GUI PC, auto-tuning of controller parameters, adaptive sine bandwidth, auto tuned anti-cogging, real-time built-in-test, trajectory-file, advanced unbalance and fault detection, real-time data acquisition with external trigger
Remote communication interfaces	Standard: USB, RS-232 and Ethernet. Optional: IEEE-488.2 (GPIB), USB, SCRAMNet or VMIC
Inputs and outputs	Scalable analog inputs and outputs for position and rate Digital inputs for control and trigger Digital outputs Event pulse generation

### Dynamic specifications

	Inner	Outer*
Angular freedom	Continuous	Continuous
Rate range	±3,000 deg/s	±1,200 deg/s
Rate accuracy	< 0.0001 % (1 ppm)	
Rate stability over 360 deg	< 0.0001 % (1 ppm)	
Maximum acceleration (no load)	±10,000 deg/s <sup>2</sup>	±450 deg/s <sup>2</sup>
Bandwidth at ±1 dB and ±5 deg-phase (adaptative sine)	> 150 Hz	> 40 Hz

\*with TC on Outer Axis

### Environmental specifications

Power voltage	230 & 400 VAC 50/60 Hz
Operating temperature	+17°C to +27°C