

Evo-20 Series

High performance customizable product range for all two-axis

Motion simulators are a strategic element in the design of a successful sensor, whether to ensure that a development roadmap is going according to plan or that a fielded sensor is still up to specifications.

Today, iXblue is a recognized provider of inertial navigation systems and one can find its sensors in the deepest ocean as well as far away in space. Evo Series is the payoff of this need for practical and more than performant motion simulators leading to the design of several cutting-edge technologies and smart functionalities.

Sharing the same electro-mechanical base, Evo-20s are co-designed by iXblue's team and the final user to ensure that his needs are met in the most effective fashion.

Every Evo-20 includes the patented iXblue's Nginer controller and iXblue's ProAxe graphical user interface (GUI). These smart innovations help reducing integration time and non-recurring costs.



FEATURES

- Direct drive brushless electric motors
- High accuracy optical encoders
- iXblue Nginer controller including:
 - Patented auto-tuning
 - Patented adaptive sine
 - Advanced anti-cogging techniques
 - Auto-tuned look-up-table-based anti-cogging
 - Real-time built-in-test
 - Advanced unbalance and fault detection
- iXblue ProAxe graphical user interface
- Climatic chamber on demand
- Modular design with vertical and/or horizontal operation
- Wide variety of quality slip rings and rotary joints

BENEFITS

- Adaptive features and performances for different payloads
- Highest accuracy
- Unrivalled dynamic performances
- Lowest cost of ownership
- Frequency response testing capabilities

APPLICATIONS

Two-axis motion simulators are suited for fully automated calibration and verification of inertial systems:

- AHRS/Gyrocompass
- IMU/INS
- Optical seekers and sensors
- Radar systems

MAIN SPECIFICATIONS

Nominal Payload

Maximal weight (kg)	From <1 to 50 kg
Inertia Range	Not limited thanks to Auto-tuning feature

Dynamics performances¹

	Inner Axis	Outer Axis
Maximum Rate	± 3,000 deg/s	± 1,000 deg/s
Rate accuracy over 360 deg	< 1 ppm < 0,0001%	< 1 ppm < 0,0001%
Rate stability over 360°	< 1 ppm < 0.0001%	< 1 ppm < 0,0001%
Rate command resolution	Up to 0.00001 deg/s	Up to 0.00001 deg/s
Maximum acceleration	From ± 1,000 deg/s ² to ± 40,000 deg/s ²	> 6,000 deg/s ²

Geometrics

Angular Freedom	Unlimited
Position Accuracy	< ± 2 arc sec (better than 0.7 arc sec RSS)
Positioning repeatability, bidirectional	< ± 1 arc sec or custom
Mechanical Wobble	< 1 arc sec / 2 arc sec
Orthogonality between axes	< 2 arc sec or custom
Axis intersection	< 5 mm-sphere or custom

Interface

Table-top	Standard diameter Custom diameter Table-top flatness	From 300mm to 700 mm On demand 50 µm
Remote communication interfaces	RS-232 or RS-422, Ethernet IEEE-488 (GPIB) on demand	
Inputs	1 input per axis, BNC receptacle on front panel ±10 V with configurable sensitivity	
Outputs	2 outputs per axis, BNC receptacle on front panel ± 10 V with configurable sensitivity	
Slip-rings (Customizable)	Depends on customer requirements: No slip-rings SR30 (30 ways 2 A / 210 V) SR50 (50 ways 2 A / 210 V) SR80 (80 ways 2 A / 210V) SRSPE (Custom slip-rings based on customer requirements) ²	
Power supply	Single-phase and/or three-phase suited with local requirements	

¹These performances are measured with no payload and may not be compatible with some of the other configurations. Higher values are also possible on custom design. Please contact iXblue for more details.

² Please contact iXblue for more details.