MAiRA

Multi-Sensing Intelligent Robotic Assistant

Datasheet

World's smartest, safest, fastest, and most accurate robot.

MAiRA is the world's first commercially available cognitive robot. With its integrated AI and novel touchless safe human detection sensor technology, MAiRA can perceive its surroundings and is able to easily adapt to all kinds of industrial environments. MAiRA opens a new era of robots and offers endless possibilities for interaction, for beginners and experts alike. Enabling true collaboration of human and machine.

Specification	MAiRA-S	MAiRA-M	MAiRA-L
Payload	15-18 kg*	12-14 kg*	9-11 kg*
Reach	1100 mm	1400 mm	1600 mm
Degrees of Freedom	7 rotary joints	7 rotary joints	7 rotary joints
Weight	51 kg	53 kg	56 kg
Robot mounting	Any orientation	Any orientation	Any orientation
IP classification	IP65	IP65	IP65
Ambient working temperature	0 °C – 40 °C	0 °C – 40 °C	0 °C – 40 °C
Data, power, and media	Full inner harness	Full inner harness	Full inner harness
Footprint base	Ø 252 mm	Ø 252 mm	Ø 252 mm
Tool Flange	ISO 9409-1-50-7-M6	ISO 9409-1-50-7-M6	ISO 9409-1-50-7-M6
Status illumination	RGB LED on each axis	RGB LED on each axis	RGB LED on each axis
Performance level**	PLd Cat.3 / SIL3**	PLd Cat.3 / SIL3**	PLd Cat.3 / SIL3**
Accuracy***	≥0.01 mm	≥ 0.01 mm	≥ 0.01 mm

NEURA
ROBOTICS

Axes	Movement MAiRA S/M//L	
	Working range	**Maximum speed**
A1	±180°*	120°/s
A2	±120°	120°/s
A3	±180°	150°/s
A4	±150°	150°/s
A5	±180°	200°/s
A6	±145°	200°/s
A7	±180° **	360°/s*

+-360° will be released in 2024.
** Effectively available working range depending on link7 configuration. Restriction due to pneumatic air and vision sensor might apply.

S/M/L: 913/1150/1323mm
S/M/L: 289/363/417mm
S/M/L: 1100/1400/1600mm
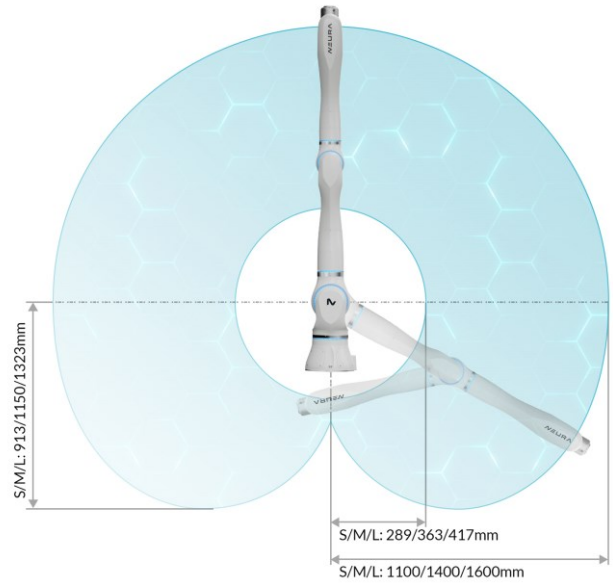
Tool Flange

Hole pattern	S/M/L: DIN ISO 9409-1-50-7-M6
Compressed air (optional)	3 x push-pull-plug S/M/L: 3 mm OD
I/O power supply	24 V 1.5A
Interfaces	Analog Input, GPIO, Modbus RTU via M8 8-pin-A-M, IEC 61076-2-104

Control Box

Dimensions	592 mm x 567 mm x 253 mm
Weight	35 kg
Power supply	90-250 VAC, 50/60 Hz, max. 16A
Interfaces	GPIO, Modbus TCP

Software & Controller

Motion controller	Real-Time NR-Motion Master
Machine Learning kernel	Smart applications, performance enhancement
Open architecture	3rd party apps, access to low level controllers and sensor data (optional)
Software interfaces	Robot and sensor data via Python NeuraPy API (SDK)
Safety architecture	Safety master & FSoE communication

Teach Pendant

Dimensions	285 mm x 228 mm x 95 mm
Cable length	5 m / 197 in
User interface	Intuitive, drag-and-drop

Sensors

Vision	3D Vision Sensor
Force/Torque Sensing	6-DoF F/T-sensor in-flange (optional)
Guidance	Zero gravity mode

Programming features

Smart GUI	NR easy programming interface
Fast Programming	Shortcut buttons, voice control, gesture control (optional), dynamic path and force recording
Human-Robot-Interaction	Vision, audio, force-feedback, face recognition (optional), motion tracking (optional)
Environment Visualization	3D CAD data, vision sensor data

Feature Compatibility Matrix MAiRA S/M/L

Legend:
- 🟩 Possible
- 🟦 In development
- 🟥 Not possible
- ⬜ n/a

		Features				Vision		Interaction
		Artificial Intelligence	Pressure at Connnection Flange	6-DoF Sensor in Flange	Custom Color	3D Vision Sensor (Head)	3D Vision Sensor (Flange)	3D Speaker Recognition & On-Board Loudspeaker
	Artificial Intelligence	n/a	Possible	Possible	Possible	Possible	Possible	Possible
	Compressed air at connector flange	Possible	n/a	In development	Possible	Possible	Possible	Possible
Feature Options	6-DoF Sensor in Flange	Possible	In development	n/a	Possible	Possible	Possible	Possible
	Customizable Color	Possible	Possible	Possible	n/a	Possible	Possible	Possible
Vision	3D Vision Sensor (Head)	Possible	Possible	Possible	Possible	n/a	Not possible	Possible
	3D Vision Sensor (Flange)	Possible	Possible	Possible	Possible	Not possible	n/a	Possible
Interaction	3D Speaker Recognition & On-Board Loudspeaker	Possible	Possible	Possible	Possible	Possible	Possible	n/a

NEURA Robotics GmbH

Gutenbergstraße 44
72555 Metzingen | Germany
Phone: +49 (0) 7123 87970 0
E-Mail: info@neura-robotics.com
www.neura-robotics.com