



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 ¹	12-14 kg ¹	9-11 kg ¹
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 ²	PLd Cat.3 / SIL3 ²	PLd Cat.3 / SIL3 ²
Accuracy	≥ 0.01 mm ³	≥ 0.01 mm ³	≥ 0.01 mm ³

¹ Lower number indicates payload for full workspace, higher number indicates payload for application specific smaller workspace and reduced speed.

² PLd Cat.3 / SIL3 released in 2024.

³ In reference to ISO 9283. Robot specific values might differ depending on application environment.

Movement MAiRA S/M/L

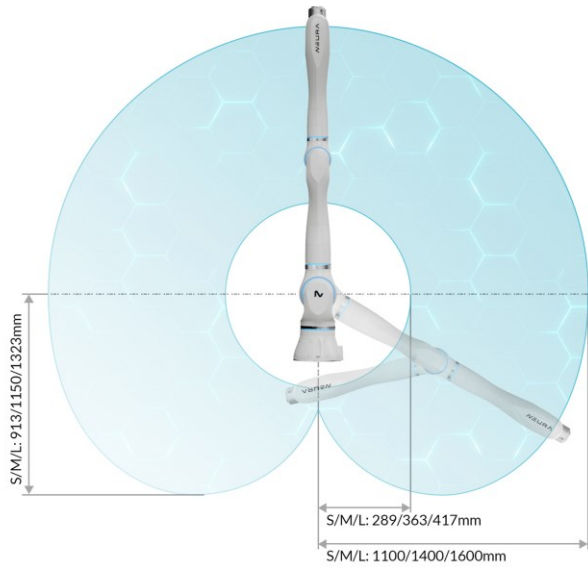
Axis	Working angle	Maximum Speed
A1	± 180°	120 °/s
A2	± 120°	120 °/s
A3	± 180°	150 °/s
A4	± 150°	150 °/s
A5	± 180°	200°/s
A6	± 145°	200°/s
A7	± 180° ⁴	360°/s ⁵

Tool Flange

Hole Pattern	MAiRA 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	24V1.5A
Interfaces	Analog Input, GPIO, Modbus RTU via M8 8-pin-A-M, IEC 61076-2-104

Software & Controller

Motion Controller	Real-Time NR-Motion Master
Machine Learning Kernel	Smart applications, performance enhancement
Open Architecture	3 rd 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



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

Teach Pendant

Dimensions	285 mm x 228 mm x 95 mm
Cable Length	5 m
User Interface	Intuitive, drag-and-drop

⁴ Effectively available working range depending on link7 configuration. Restriction due to pneumatic air and vision sensor might apply.

⁵ To be released 2025.

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

Sensors

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

Feature Compatibility Matrix MAIRA S/M/L

	Artificial Intelligence	Compressed air at connector flange	6-DoF Sensor in Flange	Custom Color	3D Vision Sensor (Head)	3D Vision Sensor (Flange)	3D Speaker Recognition & On-Board Loudspeaker
Feature Options							
Artificial Intelligence	Grey	Blue	Green	Green	Green	Green	Green
Compressed air at connector flange	Blue	Grey	Blue	Blue	Blue	Blue	Blue
6-DoF Sensor in Flange	Blue	Blue	Grey	Blue	Blue	Blue	Blue
Custom Color	Green	Blue	Green	Grey	Green	Green	Green
Vision							
3D Vision Sensor (Head)	Green	Blue	Green	Green	Grey	Red	Green
3D Vision Sensor (Flange)	Green	Blue	Green	Green	Red	Grey	Green
Interaction							
3D Speaker Recognition & On-Board Loudspeaker	Green	Blue	Green	Green	Green	Green	Grey

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