



# MAiRA

Multi-Sensing Intelligent  
Robotic Assistant

## Data sheet

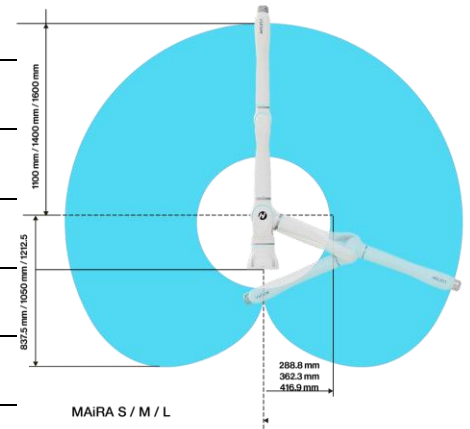
**World's smartest, safest, fastest,  
and most accurate robot.**

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.

General specs	MAiRA Basic/Pro S	MAiRA Basic/Pro M	MAiRA Basic/Pro L	MAiRA Basic/Pro XL	MAiRA Jr.
<b>Payload</b>	15-18 kg	12-15kg	9-12kg	35kg	6-8 kg
<b>Reach</b>	1100 mm	1400 mm	1600 mm	1800 mm	900 mm
<b>Degrees of Freedom</b>	6 or 7 rotary joints	6 or 7 rotary joints	6 or 7 rotary joints	6 or 7 rotary joints	6 or 7 rotary joints
<b>Weight</b>	51kg	53kg	56 kg	187 kg	33kg
<b>Robot mounting</b>	Any orientation	Any orientation	Any orientation	Any orientation	Any orientation
<b>IP classification</b>	IP65	IP65	IP65	IP65	IP65
<b>Ambient working temperature</b>	0 °C–50 °C	0 °C–50 °C	0 °C–50 °C	0 °C–50 °C	0 °C–50 °C
<b>Data &amp; power cables</b>	Complete inner harness and ducts	Complete inner harness and ducts	Complete inner harness and ducts	Complete inner harness and ducts	Complete inner harness
<b>Footprint base</b>	Ø 252 mm	Ø 252 mm	Ø 252 mm	Ø 370 mm	Ø 200 mm
<b>Tool connector type</b>	ISO 9409-1-50-7-M6	ISO 9409-1-50-7-M6	ISO 9409-1-50-7-M6	EN ISO-9409-1-80-6-M8	ISO 9409-1-50-7-M6
<b>Status illumination</b>	RGB LED on each axis	RGB LED on each axis	RGB LED on each axis	RGB LED on each axis	RGB LED on each axis
<b>Performance level</b>	PLe Cat.3 / SIL3	PLe Cat.3 / SIL3	PLe Cat.3 / SIL3	PLe Cat.3 / SIL3	PLe Cat.3 / SIL3
<b>Repeatability</b>	≥ ± 0.01 mm	≥ ± 0.01 mm	≥ ± 0.01 mm	≥ ± 0.02 mm	± 0.02 mm

**Movement MAiRA Basic/Pro S/M/L**
**Movement MAiRA Basic/Pro XL**
**Movement MAiRA Jr.**

	Working range	Maximum speed	Working range	Maximum speed	Working range	Maximum speed
<b>A1</b>	±360°	120°/s	±360°	55°/s	±360°	180°/s
<b>A2</b>	±120°	120°/s	±120°	55°/s	±110°	180°/s
<b>A3</b>	±180°	150°/s	±180°	90°/s	±180°	180°/s
<b>A4</b>	±150°	150°/s	±150°	90°/s	±140°	200°/s
<b>A5</b>	±180°	200°/s	±180°	120°/s	±180°	200°/s
<b>A6</b>	±145°	200°/s	±145°	120°/s	±150°	360°/s
<b>A7</b>	±360°	360°/s	±360°	220°/s	±360°	360°/s


**TCP connector flange**

<b>Hole pattern</b>	S/M/L: DIN ISO 9409-1-50-7-M6 XL: EN ISO-9409-1-80-6-M8
<b>Compressed air (optional)</b>	3 x push-pull-plug S/M/L: 3 mm OD XL: 6 mm OD
<b>I/O power supply</b>	24V 600mA
<b>Interfaces</b>	EtherCAT, GPIO, Modbus RTU via M8 8-pin-A-M   IEC 61076-2-104

**Sensors**

<b>Vision</b>	3D Vision Sensor
<b>Visual Feedback</b>	Laser RGB Projection (optional)
<b>Force/torque</b>	6-DoF F/T-sensor in flange (optional)
<b>Guidance</b>	Zero gravity mode
<b>Safety</b>	Touchless Safe Human Detection technology (optional)
<b>Interaction</b>	3D voice recognition sensor and on-board speaker, visual feedback

**Software & Controller**

<b>Motion controller</b>	Real-Time NR-Motion Master
<b>Machine Learning (ML) kernel</b>	Smart applications, performance enhancement
<b>Open architecture</b>	3 <sup>rd</sup> party apps, access to low level controllers and sensor data
<b>Software interfaces</b>	Robot, sensor, and NEURA AI SDKs
<b>Safety architecture</b>	Safe master & FSoE communication

**Programming features**

<b>Smart GUI</b>	NR easy programming interface
<b>Fast programming</b>	Shortcut buttons, voice control, gesture control (optional), dynamic path and force recording
<b>Human-robot-interaction</b>	Visual, audio, force-feedback, face recognition, motion tracking
<b>Environment visualization</b>	3D CAD data, sensor data



### Control box

<b>Dimensions</b>	592 mm x 567 mm x 253 mm
<b>Weight</b>	35 kg
<b>Power supply</b>	90-250 VAC, 50/60 Hz, max. 1,5 kW
<b>Interfaces</b>	GPIO, Modbus TCP, OPC UA



### Tech pendant

<b>Dimensions</b>	285 mm x 228 mm x 95 mm
<b>Resolution</b>	2560 x 1600
<b>Cable length</b>	5 m / 197 in
<b>User interface</b>	Intuitive, drag-and-drop

Standard and optional feature set		MAiRA Basic S/M/L	MAiRA Pro S/M/L	MAiRA Pro XL	MAiRA Jr.
<b>Artificial Intelligence</b>		–	●	●	●
<b>Connector flange</b>	<b>Compressed air</b>	○	○	○	–
<b>Feature options</b>	<b>6-DoF F/T-sensor in flange</b>	○	○	○	○
	<b>Touchless Safe Human Detection technology</b>	○	○	○	○
	<b>Custom color</b>	○	○	○	○
<b>Vision</b>	<b>3D Vision Sensor (Head)</b>	–	●	●	–
	<b>3D Vision Sensor (Flange)</b>	–	○ <small>Replaces serial 3D Vision Sensor (head)</small>	●	●
	<b>3D Vision Sensor Gesture Control</b>	–	○	○	–
<b>Interaction</b>	<b>3D voice recognition sensor &amp; on-board speaker</b>	–	●	●	●
	<b>Visual feedback Laser RGB</b>	–	–	●	–

● = Standard feature    ○ = Optional feature    – = Not available

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