# DATASHEET

## KIME V5 2025

Kime V5 is a humanoid bartender robot designed for the automated preparation and dispensing of alcoholic and non-alcoholic beverages. Its design combines high-precision industrial technology with advanced AI for customer interaction. It is optimized for deployment in events, shopping malls, trade shows, entertainment venues, and the hospitality sector. Its operation prioritizes robustness and safety, separating robotic handling from direct food management.

## FEATURES (KEY CAPABILITIES)

- Dual industrial arm: Two robotic arms with 6 Degrees of Freedom (DoF) per arm.

- Anthropomorphic end effectors: High-grade 5-finger robotic hands that allow for multi-modal, adaptive grasping (power for bottles, precision for fragile glassware).

- HD/CV Vision System: RGB (1280x720) and Depth (640x480) vision. Uses AI for object detection and state classification (e.g., empty vs. full glass).

- Advanced AI Control: Integrates Large Language Models (LLM) for dynamic task planning and complex error recovery, surpassing rigid scripting.

- Open Software Platform: SDK PLATFORM

- Certification: Complies with CE regulatory compliance for public environments and holds USA/FCC/NSF certifications.

# TECHNICAL SPECIFICATIONS

## Absolute Maximum Ratings

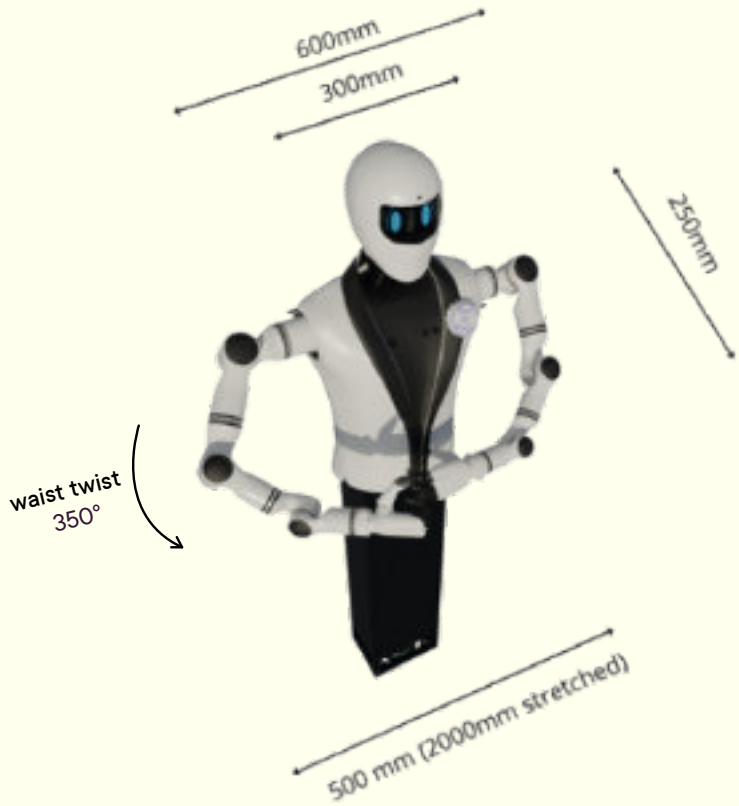
| Parameter | Limit Value | Unit |
|---|---|---|
| - Payload Capacity | 5 | kg (per arm) |
| - Storage Temperature | 0 to 40 | °C |
| - Relative Humidity | 10 to 80 | % (non-condensing) |
| - IP Protection Rating | IP44 | "(Indoor use only, splash and dust resistant) " |

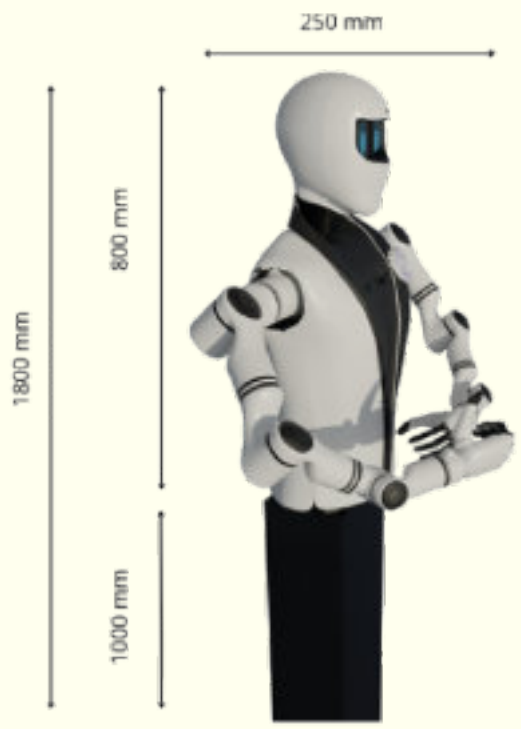
## Electrical Characteristics

| Parameter | Minimum | Typical | Maximum (Peak) |
|---|---|---|---|
| - Supply Voltage (AC) | 220 AC 60Hz | - | - |
| - Consumption (Idle Mode) | - | 100 W | - |
| - Consumption (Operating Mode) | 300 W | 600 W | 1300 W (with ice compressor) |
| - Internal Voltage (DC) | - | 12V and 24V | - |
| - Electrical Protections | Circuit breaker<br>RCD, safety relays | - | - |

## Physical and Thermal Specifications

| Parameter | Value |
|---|---|
| - Total Height (Robot + Kiosk) | Approx. 2 meters |
| - Robot Unit Height | 1498 mm |
| - Robot Weight (with base) | 60 Kg |
| - Primary Materials | "Stainless steel, aluminum (arms), mild-steel (base), DMF " |
| - Arm DoF | 6 DoF per arm |
| - Head/Neck DoF | 3 DoF (XYZ vector-IK pointer) |
| - Waist, range of motion | 350° |
| - Arm Movement Speed | 359 °/s to 720 °/s |
| - Operational Noise Level | < 60 dB |
| - Operating Temperature | 5°C – 35°C |
| - Perception System | "RGB-D Cameras, Ultrasonic Sensors (range 2–40 cm), Limit Switches |



# CONNECTIVITY AND DIAGRAMS

| - Connectivity Type | Specification |
|---|---|
| - Standard Connectivity | Ethernet (LAN) |
| - Maintenance Connectivity | Wi-Fi 2.4/5 GHz (for maintenance only) |
| - Peripheral Connectivity | USB ports |
| - Communication Protocols | JSON API (for commands) and MQTT protocol |
| - Bluetooth Connectivity | |

# APPLICATION INFORMATION

| Subject | Detail and Warning |
|---|---|
| - SDK and Software Access | The platform utilizes ROS 2 Humble, Python, and C++. However, all software and configuration must be managed and settled up by the Macco technical team. Unauthorized personnel are NOT permitted to modify, change, or recompile the software or firmware. |
| - Force Detection Integration | Force and contact detection is achieved by monitoring torque anomalies in the servo motors via software ; this eliminates the need for fragile tactile sensors. |
| - Operator Interaction | The vision system can differentiate between authorized personnel and customers. Kime must remain in a silent operational mode when detecting service personnel, prioritizing the operator's workflow. |
| - Operational Safety | Kime never works directly in contact with food or liquids. Internal components are protected, and the robot is segregated from direct ingredient handling to ensure hygiene." |