

# Rhoban Football Club – Robot Specification

## Humanoid Kid-Size League, Robocup 2025

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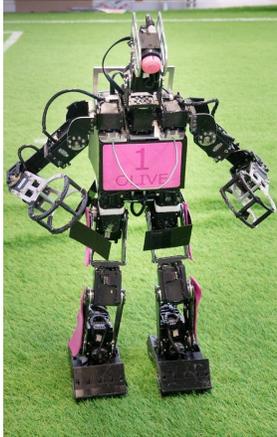
### Booster K1 <sup>1</sup>



- **Robot name:** Booster K1
- **Height:** 95 cm
- **Weight:** 19.5 kg
- **Walking speed:** approx. 50 cm/s
- **Motors:** 22 DOF
  - Neck: 2 DOFs
  - Upper Body: 4 per arms
  - Lower Body: 6 per leg
- **Sensors:**
  - Booster K1 integrated stereo camera
  - IMU SurPass A500
- **Computing units:**
  - High-level: Jetson Orin NX 8GB
    - \* 6-core Cortex-A78AE CPU@2GHz
    - \* Tensor Cores GPU@1173MHz
    - \* AI performance: 117 TOPS
- **Battery:** 5Ah, 48V
- **Operating System:** Ubuntu 22.04

<sup>1</sup> Commercial robot, see <https://www.booster.tech/booster-k1/>

## Sigmaban+ (2019-2025)



- **Robot name:** Sigmaban+
- **Height:** 70 cm
- **Weight:** 7.8 kg
- **Walking speed:** 32 cm/s
- **Motors:** 20 DOF
  - Neck: Dynamixel MX-64 (2 motors)
  - Upper Body: Dynamixel MX-64 (3 per arm)
  - Lower Body: Dynamixel MX-106 (5 per leg) and Dynamixel MX-64 (1 per leg)
- **Sensors:**
  - Camera: Point Grey Blackfly GigE
  - IMU: BNO055
  - Foot Pressure: 4 Strain Gauge Sensors per foot
- **Computing units:**
  - Low-level: ARM7 (stm32) 72MHz (Maple mini)
  - High-level: Intel NUC
    - \* Intel Core i5 AMD 1.2 GHz
    - \* 8GB RAM
    - \* SSD 256Go
- **Battery:** LiPo 4S (14.8v), 30C, 3200mAh
- **Operating System:** Ubuntu 22.04
- **Materials:**
  - Aluminium 2017, 3mm to 6mm, CNC Milled (main structure parts)
  - TPU, 3D Printed (protection bumpers)
  - HDPE 300mm, 1mm, laser cut and bent (body and feet protection)
  - PLA, 3D printed (cleats)