

PAL

TALOS

HIGH PAYLOAD HUMANOID ROBOT

GENERAL FEATURES

Height 175 cm
Weight 95 kg

32 DEGREES OF
FREEDOM (DoF)

Legs 6 (x2) Waist 2
Arms 7 (x2) Neck 2
Gripper 1 (x2)

Robust Design

Designed for tasks requiring strength and dexterity

Height

175cm

Payload per arm

6kg

Precise Manipulation

With a high payload capacity for real-world tasks

Control

Joint-level
Torque
Control



TALOS

TECHNICAL SPECIFICATIONS

Simulation model available at:
wiki.ros.org/Robots/TALOS

MANIPULATION

Arm/Gripper payload	6 kg (arm stretched)
Workspace	Large workspace for dexterous bi-manipulation

CONNECTIVITY

Wi-Fi	802.11 a/b/g/n 5 and 2.4 GHz (Access Point or Client mode)
Ethernet	Direct connection to PCs from user panel RJ45 port
EtherCAT	Possibility to connect external master to control the robot
Service Port	For tethered emergency button

ELECTRICAL FEATURES

Power system	Lithium-Ion battery
Nominal energy	1080 Wh
Maximum discharge	+100 A
Battery autonomy	1.5h walking / 3h stand-by

HRI INTERFACES

Speakers	5 W, Text to Speech in English included
LEDs	24 RGB, API for visual effects control

SENSORS

Force/Torque sensors	(x4) 6 axis F/T sensor (in both ankles and wrists)
Torque sensors	FULL TORQUE SENSOR FEEDBACK IN ALL JOINTS*
AHRS - IMU	1 kHz filtered orientation, gyro, acceleration

COMPUTERS

Intel Core i7	(x2) control and multimedia PC (COM Express Type-6)
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SOFTWARE

OS	Ubuntu LTS, Linux RT Preempt
Middleware	ROS, OROCOS
Simulation	Gazebo simulation and URDF model
Control	Real-time ros_control loop at +1 kHz
Planning	Movelt!

VISION

Field of view	60° horizontal x 49.5° vertical x 73° diagonal
RGB	1280x720 at 30 fps
Depth	640x480 at 30 fps, 0.4–8m range

HEAD

Specs	150° pan range in every head tilt position
Modular	Fully customizable

GRIPPER

Specs	3 fingers, 1 actuator with current limit control
Modular	Fully customizable

*Except head, wrists and grippers