



FALCONBOTS

Robot Specification Humanoid Robot for Robocup 2013

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1 ROBOT MODEL:



Name TEC-04

SPECIFICATION:

Physical specs:	Height	40 cm
	Weight	1.6 g
	Walking speed	13 cm/s

Degrees of freedom: 20 DOF	6 DOF on each leg
	3 DOF on each arm
	2 DOF on the head

Servo Motors:	16 Dynamixel AX-12+ Digital servomotors	by Robotis (plastic gears) 9V - 12V operating range 15 kg cm @ 12 V (stall torque) 360°/s @ 10V (max speed) Dimensions: 40x34x47 mm
	4 Dynamixel AX-18+ Digital servomotors	by Robotis (plastic gears) 9V - 12V operating range 18 kg cm @ 12 V (stall torque) 360°/s @ 10V (max speed) Dimensions: 40x34x47 mm
Sensors:	1 C210 HD webcam:	by Logitech, HD 640x480 @ 30fps (max rate) YUV (color space)
	1 IMU:	2 accelerometer axes (analog outputs) 2 gyroscope axes (analog outputs)
Processing unit:	Roboard RB-110	based on the 32-bit x86 Vortex86DX CPU 1 GHz, 256 MB DDR2 RAM RS-485, 16 PWM channels, 1 USB 2.0 ports, RS-232, SPI/I2C bus, 8 10-bit ADC ports, Mini PCI socket, microSD slot, 2 hi-speed serial 400 mA @ 5V (power consumption) 96mm x 56 mm, 40 g

1 ROBOT MODEL:



Name TEC-05

SPECIFICATION:

Physical specs:	Height	45.5 cm
	Weight	2.8 Kg
	Walking speed	24 cm/s
Degrees of freedom: 20 DOF		6 DOF on each leg
		3 DOF on each arm
		2 DOF on the head
Servo Motors:	20 Dynamixel MX-28+	by Robotis (plastic gears)
	Digital servomotors	9V - 12V operating range
		24 kg cm @ 12 V (stall torque)
		360°/s @ 10V (max speed)
		Dimensions: 40x34x47 mm
Sensors:	1 C905 HD webcam:	by Logitech, HD 1280x720 @ 30fps (max rate) YUV (color space)
	1 6 DOF IMU:	3 accelerometer axes 3 gyroscope axes
Processing unit:	FitPC 2i	by CompuLab, based on the Intel Atom Z530 microprocessor 1.6 GHz @533MHz FSB L2-512KB, 1GB DDR2 RAM, 2 USB, 4GB NAND flash disk, 802.11 b/g/n, 1 Gigabit Ethernet 5-7 W (power consumption) 104 mm x 96 mm x 23 mm, 92 g
	CM-730	by Robotis, based on STMicroelectronics 32F103RE ARM Cortex 32-bit CPU 72MHZ, 512KB Flash, 64KB SRAM 5 LED, 2 RGB LED 3 push buttons, 1 buzzer 13 ADC, 5 TTL serial ports 80 mm x 75 mm x 20 mm

1 ROBOT MODEL:



Name TEC-06

SPECIFICATION:

Physical specs:	Height	45.5 cm
	Weight	2.8 Kg
	Walking speed	24 cm/s
Degrees of freedom:	20 DOF	6 DOF on each leg 3 DOF on each arm 2 DOF on the head
Servo Motors:	20 Dynamixel MX-28+ Digital servomotors	by Robotis (plastic gears) 9V - 12V operating range 24 kg cm @ 12 V (stall torque) 360°/s @ 10V (max speed) Dimensions: 40x34x47 mm
Sensors:	1 C905 HD webcam:	by Logitech, HD 1280x720 @ 30fps (max rate) YUV (color space)
	1 6 DOF IMU:	3 accelerometer axes 3 gyroscope axes
Processing unit:	FitPC 2i	by CompuLab, based on the Intel Atom Z530 microprocessor 1.6 GHz @533MHz FSB L2-512KB, 1GB DDR2 RAM, 2 USB, 4GB NAND flash disk, 802.11 b/g/n, 1 Gigabit Ethernet 5-7 W (power)

consumption)104 mm x 96 mm
x 23 mm, 92 g

CM-730

by Robotis, based on
STMicroelectronics 32F103RE
ARM Cortex 32-bit CPU 72MHZ,
512KB Flash, 64KB SRAM
5 LED, 2 RGB LED 3 push
buttons, 1 buzzer 13 ADC,
5 TTL serial ports 80 mm x
75 mm x 20 mm

1 ROBOT MODEL:



Name TEC-06

SPECIFICATION:

Physical specs:	Height	45.5 cm
	Weight	2.8 Kg
	Walking speed	24 cm/s

Degrees of freedom:	20 DOF	6 DOF on each leg 3 DOF on each arm 2 DOF on the head
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Servo Motors:	20 Dynamixel MX-28+ Digital servomotors	by Robotis (plastic gears) 9V - 12V operating range 24 kg cm @ 12 V (stall torque) 360°/s @ 10V (max speed) Dimensions: 40x34x47 mm
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Sensors:	1 C905 HD webcam:	by Logitech,HD 1280x720 @ 30fps (max rate) YUV (color space)
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	1 6 DOF IMU:	3 accelerometer axes 3 gyroscope axes
Processing unit:	FitPC 2i	by CompuLab, based on the Intel Atom Z530 microprocessor 1.6 GHz @533MHz FSB L2-512KB, 1GB DDR2 RAM, 2 USB,4GB NAND flash disk, 802.11 b/g/n, 1 Gigabit Ethernet 5-7 W (power consumption)104 mm x 96 mm x 23 mm, 92 g
	CM-730	by Robotis, based on STMicroelectronics 32F103RE ARM Cortex 32-bit CPU 72MHZ, 512KB Flash, 64KB SRAM 5 LED, 2 RGB LED 3 push buttons, 1 buzzer 13 ADC, 5 TTL serial ports 80 mm x 75 mm x 20 mm

1 ROBOT MODEL:



Name Mylito

SPECIFICATION:

Physical specs:	Height	40 cm
	Weight	1.6 g
	Walking speed	10 cm/s

Degrees of freedom: 20 DOF	6 DOF on each leg
	3 DOF on each arm
	2 DOF on the head

Servo Motors:	10 HSR-8498HB	by HITEC (Karbonite gears)
	Digital servomotors	Dimensions: 40x20x47 mm Max. Angle of rotation 180 Degrees 6V-7.4V operating range 7.4 kg cm @ 6V (stall torque) 300°/s @ 6V (max speed)
	10 HSR-8498HB	by HITEC (Steel gears)
	Digital servomotors	Dimensions: 40x20x47 mm Max. Angle of rotation 180 Degrees 6V-7.4V operating range 11 kg cm @ 6V (stall torque) 272°/s @ 6V (max speed)

Sensors: 1 C210 HD webcam: by Logitech, HD 640x480 @ 30fps (max rate) YUV (color space)

1 IMU: 2 accelerometer axes (analog outputs)
2 gyroscope axes (analog outputs)

Processing unit: Roboard RB-100 based on the 32 bit x86 Vortex86DX CPU 1 GHz, 256 MB DDR2 RAM RS-485, 32 PWM channels, 3 USB 2.0 ports, RS-232, SPI/I2C bus, 8 10-bit ADC ports, Mini PCI socket, microSD slot 400 mA @ 5V 5V (power consumption) 96mmx56mm, 40g