AGIBOT A2 Humanoid Robot – Technical Specification Sheet

			A2 Flagship Model	A2 Lite Model
Product Positioning			AgiBot A2 Flagship Edition is the industry's first full-size humanoid robot for large-scale commercial deployment, which has been commercially deployed in over 20 leading enterprises and has obtained recognition in China, the United States, and Europe 4 major authoritative certifications (CR&CE-MD&CE-RED&FCC)	AgiBot A2 Lite is a full-size humanoid robot with extreme cost-effectiveness, specifically designed for entertainment and commercial performance scenarios. It features multi-robot botnet control and free choreography, leading a new paradigm in entertainment and commercial performances.
Product Positioning		**Height**	169cm	169cm
		Size	169(H)*75(W)*30(L)cm	169(H)*75(W)*30(L)cm
		Net Weight	≈69kg	≈63kg
		Active degrees of freedom	7*2dof for both arms, 6*2dof for both legs, 2dof for the head, and 6*2dof for dexterous hands = 14 +12 + 2 + 12 = 40	Both arms 5*2dof, both legs 6*2dof, head 1dof = 10 + 12 + 1 = 23
Product Basic Information	**Electrical Performance**	**Endurance**	Endurance time of whole-machine force control standing + voice broadcast: approximately 3h Endurance time of the whole machine walking on flat ground with straight legs: approximately 1.5h	The endurance time of the whole machine's force-controlled standing is: 4h35min Walking endurance time of the whole machine: 1.5h
		Battery Capacity	14.4Ah	14.4Ah
		Charging Time	2h	2h
		Charging Power	≤500W	≤500W
		Charging Voltage	48V DC	48V DC
	Environmental Adaptability	**Working Temperature and Humidity**	0 ~ 40°C, relative humidity 10% ~ 90%, no condensation	0 ~ 40°C, relative humidity 10% ~ 90%, no condensation
		Storage Temperature and Humidity	-20°C to 70°C, relative humidity 10% to 90%, no condensation	-20°C to 70°C, relative humidity 10% to 90%, no condensation
		IP Rating	Joint Module: IP5X	Joint Module: IP5X
	Site Adaptability	**Minimum Passing Width**	Currently, the minimum width for ontology remote control is >1m, Navigation through minimum width >2m	Currently, the minimum width for ontology remote control is >1m, Navigation through minimum width >2m
		Maximum Obstacle Crossing Height	20mm	20mm
		Maximum Operating Gradient	8% (angle 4.57 degrees)	8% (angle 4.57 degrees)
Product Capability	**Operation and Interaction**	**Perceptual Ability**	LiDAR*1 + Fisheye Camera*2 + RGBD Camera*2 + RGB Camera*1	Not supported
		Speech Ability	Supports intelligent interactive voice based on large models	Not supported
		Light-duty Operation Ability	Supports self-distribution of items	Not supported
		Remote Control Operation	Wireless Remote Control	Wireless Remote Control
		Speaker	Double 5W	5W
		Dance Development	Support	Support
		Botnet Software	Support	Support
	Mobility	**Maximum Movement Speed**	Maximum speed 0.8m/s, daily use ≤0.6m/s	Maximum speed 0.8m/s, daily use ≤0.6m/s
		Mobile Mode	Supports translation, skew, and in-place rotation	Supports translation, skew, and in-place rotation
	IoT capabilities	**Communication Protocol**	TCP/IP	TCP/IP
		Communication Module	WiFi, 4G/5G Mobile Network	WiFi
	Intelligent Control Parameters	**Basic Computing Power Board**	16-core high-performance CPU	16-core high-performance CPU
		High Computing Power Board	Jetson AGX Orin 64G	/
	Typical parameters of the arm	**Dexterous Hand**	Grip weight (palm down): <3kg Hook grip weight (palm up): <8kg	Soft Prosthetic Hand
		Single-arm Rated Load	2kg	1.5kg (excluding end effector)
		End Linear Velocity	1m/s	1m/s
		Arm movement space	J1(Shoulder pitch）: ±170°	J1(Shoulder pitch）: ±170°
			J2(Shoulder roll): -30°~95°	J2(Shoulder roll): -30°~95°
			J3(Shoulder yaw): ±170°	J3(Shoulder yaw): ±170°
			J4(Elbow pitch): -1°~118°	J4(Elbow pitch): -1°~118°
			J5(Wrist roll): ±170°	J5(Wrist roll): ±170°
			J6(Wrist pitch): ±45°	/
			J7(Wrist yaw): ±30°	
	Typical parameters of the head	**Legroom (with some deviation)**	J1(Hip roll):-37~40°	J1(Hip roll):-37~40°
			J2(Hip yaw): ±75°	J2(Hip yaw): ±75°
			J3(Hip pitch): -50°~110°	J3(Hip pitch): -50°~110°
			J4(Knee pitch): -5°~140°	J4(Knee pitch): -5°~140°
			J5(Ankle pitch): -30°~52°	J5(Ankle pitch): -30°~52°
			J6(Ankle roll): ±28°	J6(Ankle roll): ±28°
	Typical parameters of the head	**Headroom**	Pitch Joint: ±23°	Rotating Joint: ±45°
			Rotating Joint: ±45°	/

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