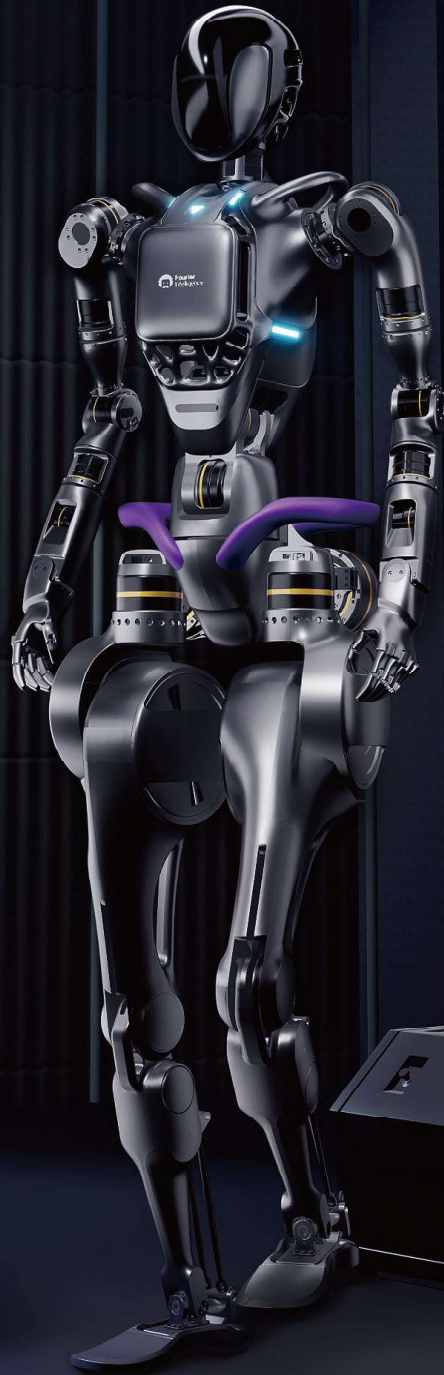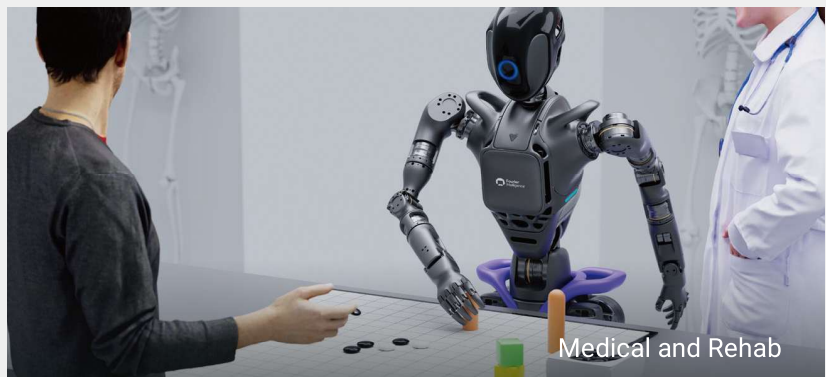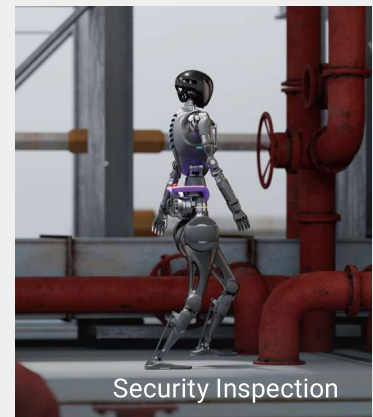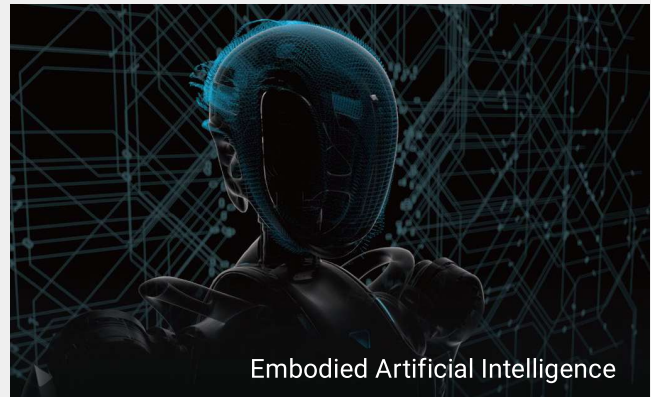# FOURIER

Fourier GR-1

General-Purpose Humanoid Robot

FOURIER GR-1

The Fourier GR-1 breaks new ground in humanoid robotics for practical applications. With a versatile body structure and advanced motion control, it replicates human-like degrees of freedom. Boasting a peak torque of 230 N.m, GR-1 navigates obstacles and diverse terrains with unmatched agility and precision.

Application Scenarios

Research and Education

Embodied Artificial Intelligence

Performances and Exhibitions

Robot Receptionist

Security Inspection

Medical and Rehab

Physical Dexterity

Fourier's Smart Actuator (FSA) integrates the motor, driver, reducer, and encoder into a single module, providing GR-1 with powerful and flexible mobility for dynamic and precise movements.

3
Head DOFs
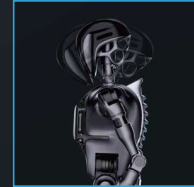Head movement includes pitch, roll, and rotation for flexible perception and interaction.

7*2
Arm DOFs
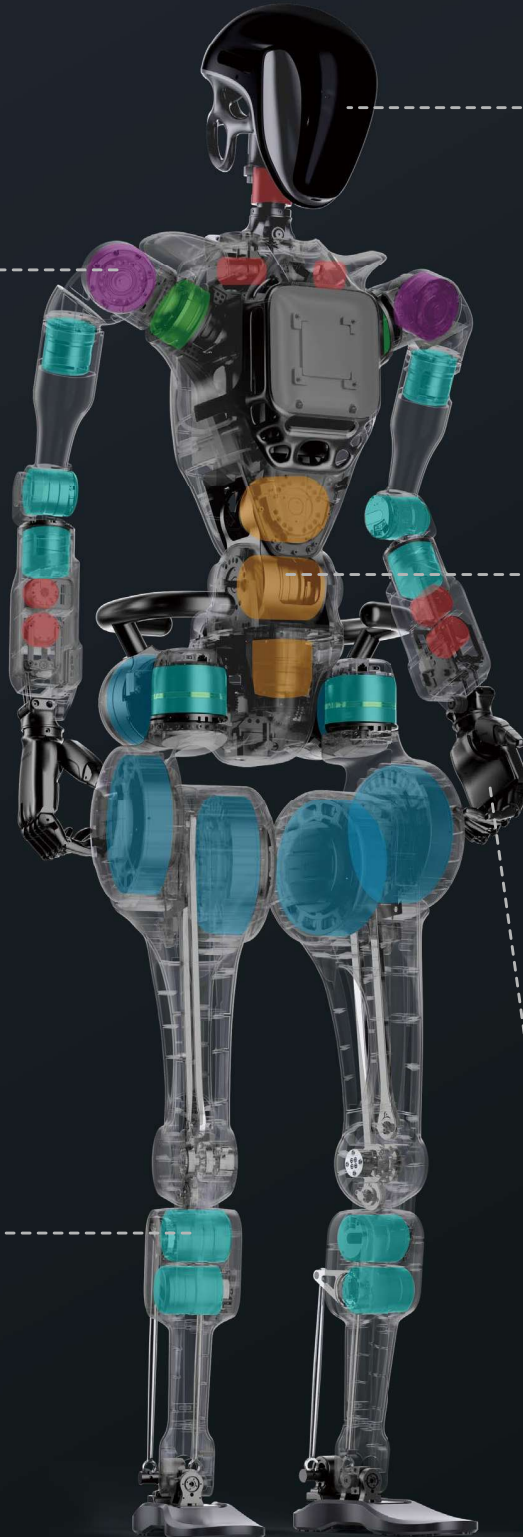7 degrees of freedom design, end-effector capable of reaching any position and angle in three-dimensional space.

3
Waist DOFs
Designed for performing tasks and enables 360-degree observation without movement.

6*2
Hand DOFs
Human-like hand design for versatile grasping.

6*2
Leg DOFs
An intricate ankle design to adapt and traverse on various terrains.

Technical Specifications

—

Product Model	GR–1L	GR–1	GR–1L Pro	GR–1 Pro

Mechanical Specifications

	GR–1L	GR–1	GR–1L Pro	GR–1 Pro
Standing Size	1650X515X320mm	1650X515X320mm	1650X515X320mm	1650X515X320mm
Arm Span	1665mm	1680mm	1665mm	1680mm
Weight	≈55kg	≈55kg	≈60kg	≈60kg
Material	Aluminium alloy + Engineering plastic	Aluminium alloy + Engineering plastic	Aluminium alloy + Engineering plastic	Aluminium alloy + Engineering plastic

Electronic Parameters

	GR–1L	GR–1	GR–1L Pro	GR–1 Pro
Supply Voltage	46.2V	46.2V	46.2V	46.2V
Maximum Power	≈550W	≈550W	≈550W	≈550W

Performance Parameters

	GR–1L	GR–1	GR–1L Pro	GR–1 Pro
Speed	5km/h	5km/h	5km/h	5km/h
Single–handed Payload	3kg	3kg	3kg	3kg
Processing Power	i7–13700h 6P+8E 20thread 1.6/5.0GHz	i7–13700h 6P+8E 20thread 1.6/5.0GHz	i7–13700h 6P+8E 20thread 1.6/5.0GHz	i7–13700h 6P+8E 20thread 1.6/5.0GHz

Joint Parameters

	GR–1L	GR–1	GR–1L Pro	GR–1 Pro
Max Torque	230N.m	230N.m	230N.m	230N.m
Total Actuators	34	44	34	44
End–point Execution	Gripper	Dexterous Hand	Gripper	Dexterous Hand
Waist Flexibility	3	3	3	3
Head Flexibility	3	3	3	3
Ankle Flexibility	2	2	2	2

Product Model	GR–1L	GR–1	GR–1L Pro	GR–1 Pro

Sensor Parameters

	GR–1L	GR–1	GR–1L Pro	GR–1 Pro
Depth Camera	Realsense	Realsense	Realsense	Realsense
IMU	●	●	●	●
Ring Microphone	—	—	●	●

Features

	GR–1L	GR–1	GR–1L Pro	GR–1 Pro
Motion Mode	Static Standing Gait Motion Stationary Movement End Effector Gripping	Static Standing Gait Motion Stationary Movement End Effector Gripping	Static Standing Gait Motion Stationary Movement End Effector Gripping	Static Standing Gait Motion Stationary Movement End Effector Gripping
Protective Casing	Skeleton Casing	Skeleton Casing	Enclosed Casing	Enclosed Casing
Waist Safety Handle	—	—	●	●
One–Click Start	—	—	●	●
Control Terminal	Touchscreen Remote Controller	Touchscreen Remote Controller	Touchscreen Remote Controller	Touchscreen Remote Controller
Voice Control	—	—	●	●
Cluster Control	—	—	●	●
Curved Screen	—	—	●	●
WiFi	●	●	●	●
Bluetooth	●	●	●	●
Secondary Development	●	●	●	●

Battery Life

	GR–1L	GR–1	GR–1L Pro	GR–1 Pro
Battery Capacity	460Wh	460Wh	460Wh	460Wh
Charging	46V 2A	46V 2A	46V 2A	46V 2A