

RAPTOR FORKLIFT.

Product Specification Sheet

Autonomous industrial forklift for narrow-aisle warehouse and yard logistics

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Product Model	RAPTOR Forklift (production)
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PAYLOAD	LIFT HEIGHT	DRIVETRAIN	OPERATION
1 t	2,000 mm	4WIS	Autonomous

01 Product Overview

The RAPTOR Forklift is a fully unmanned autonomous industrial forklift for narrow-aisle warehouse and yard logistics. A four-wheel independent rear-steer electric platform carries a complete in-house autonomy stack — perception, driving intelligence, lift control, and fleet connectivity — developed and manufactured by Seoul Dynamics as one end-to-end autonomous solution. Every driving and handling behavior is trained in physics-accurate simulation and validated in the field before delivery.

02 Functional Modules

MOBILITY

Drive Module

Four-wheel independent rear-steer (4WIS) electric drivetrain with independent traction and steering control per wheel. Tight-radius maneuvering in aisles where conventional counterbalance trucks cannot operate.

MATERIAL HANDLING

Lift & Mast Module

1-ton rated payload with 2,000 mm lift height and $\pm 30^\circ$ mast tilt. Smooth, load-safe lift and tilt motion control for pallet engagement, transport, and stacking.

SENSING

Perception Module

Multi-LiDAR array with full 360° coverage plus stereo camera vision. On-board AI recognizes pallets, loads, and obstacles in real time and estimates pallet pose for precise fork alignment.

INTELLIGENCE

Autonomy Module

Self-mapping of the worksite, autonomous path planning tuned to the vehicle's steering geometry, and mission execution — pallet pickup, transport, trailer transfer — without an operator.

OPERATION

Teleoperation Module

Wireless controller operation with 20-step speed scaling for precise manual work, plus the OmniPilot™ option for low-latency long-range remote operation (< 120 ms glass-to-glass).

PROTECTION

Safety Module

Multiple independent emergency-stop paths — soft stop, physical button, and an automatic 0.5-second link-loss failsafe — with audible motion feedback and supervised state control.

ENERGY

Power Module

All-electric drivetrain powered by an industrial lithium-iron-phosphate battery system with real-time battery monitoring for predictable shift planning.

CONNECTIVITY

Fleet & Integration Module

Connects to factory and warehouse management systems for task assignment and reporting. Scales from a single robot to coordinated fleets with the RoboOrchestrator™ option.

03 Specification Summary

VEHICLE

Drive type	4-wheel independent rear-steer (4WIS)
Power	All-electric drivetrain
Rated payload	1,000 kg (1 t)
Lift height	2,000 mm
Mast tilt	±30°
Speed control	20-step envelope, precision to full speed
Operating area	Narrow-aisle indoor and prepared yard surfaces

OPERATING MODES

Autonomous	Self-mapping, path planning, and mission execution
Remote	OmniPilot™ low-latency remote operation (option)
Manual	Wireless controller teleoperation

PERCEPTION & INTELLIGENCE

Coverage	360° LiDAR sensing + stereo camera vision
Recognition	AI detection of pallets, loads, and obstacles
Fork alignment	Vision-based pallet pose estimation
Training	Physics-accurate simulation, field-validated

SAFETY

Emergency stop	Multiple independent E-stop paths
Link-loss failsafe	Automatic stop within 0.5 s
Motion feedback	Direction-dependent audible alerts

OPTIONS

Remote operation	OmniPilot™
Fleet management	RoboOrchestrator™
Integration	MES / WMS connectivity

SAFE OPERATION

Keep a 2 m clearance around the vehicle during operation. Use the lowest speed step on slopes and avoid sharp turns while carrying a load. Detailed operating procedures are provided with delivery and during on-site commissioning and operator training.

DOCUMENT CONTROL

REV	DATE	CHANGES	AUTHOR
v1.1	2026-06-06	Customer edition — functional module overview and specification summary	Seoul Dynamics Technical Publications

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