



APEXHAULER

3 DoF Master Driving Simulator

ApexHauler: 3 DoF Master Driving Simulator

▲ Realistic Motion Feedback

ApexHauler simulates the movements of a truck, providing realistic sensations of acceleration, braking, and cornering. This immersive feedback enhances training by replicating real-world driving conditions with precision.


▲ Hazard Perception Training

ApexHauler simulates hazardous road conditions like adverse weather, road obstacles, and challenging terrains. Trainees can develop crucial hazard perception skills in a safe and controlled environment, improving safety on the road.

▲ Cargo Handling and Maneuvring

ApexHauler allows trainees to practice loading, unloading, and maneuvering cargo in various scenarios. These exercises enhance proficiency in handling heavy loads and navigating tight spaces, crucial skills for truck drivers.





Fuel Efficiency Optimization

ApexHauler enables trainees to experiment with driving techniques to optimize fuel efficiency. By simulating different driving conditions and load weights, drivers can learn to minimize fuel consumption, reducing operational costs and environmental impact.

Customizable Training Scenarios

ApexHauler offers customizable scenarios tailored to specific training objectives. Instructors can simulate diverse road conditions, traffic patterns, and emergency situations to prepare drivers for real-world challenges effectively.

Instructor station

The instructor station of ApexHauler serves as the nerve center for monitoring, controlling, and managing the simulation experience. From this control hub, instructors can observe trainee drivers' actions in real-time, adjust simulation parameters to customize scenarios, and provide immediate feedback and guidance. It enables the creation and management of various driving scenarios, facilitates data logging and analysis for performance evaluation, and features communication interfaces for seamless interaction between the instructor and trainee. With safety features and the ability to intervene if necessary, the instructor station ensures a comprehensive and effective driver training experience within a simulated environment. Instructor station can be used in conjunction with other Realiscape's driving simulators like ApexMotion for a unified training environment.



ApexTrainer Sphere: The professionals' choice

Realistic Simulation

ApexTrainer Sphere replicates realistic driving scenarios, including varying road conditions, weather effects, and traffic situations. Trainees experience lifelike driving dynamics, enhancing readiness for real-world trucking challenges.

Route Familiarization

Trainees can simulate routes similar to ones they'll encounter on the job, allowing for virtual exploration and familiarity with diverse road networks. This prepares drivers for specific routes and improves efficiency during actual operations.

Customizable Training Modules

ApexTrainer Sphere offers customizable training modules tailored to individual skill levels and training objectives. Instructors can create scenarios targeting specific skills, ensuring comprehensive and personalized training experiences.

Hazard Perception Training

ApexTrainer Sphere immerses trainees in hazardous scenarios such as inclement weather, road obstacles, and accident avoidance. This fosters critical hazard perception skills, crucial for safe and effective truck operation.

Eco-Driving Techniques

ApexTrainer Sphere enables the practice of eco-driving techniques to optimize fuel efficiency and reduce emissions. Trainees learn to minimize fuel consumption through efficient driving behaviors, contributing to cost savings and environmental sustainability.

Performance Evaluation and Feedback

Detailed performance metrics provide objective feedback on trainee performance, facilitating targeted improvement strategies. Instructors can analyze driving behavior, identify areas for development, and track progress over time.

TECHNICAL SPECIFICATIONS

Cabin

CABIN:	Left Hand Drive
MATERIALS AND COMPONENTS:	Aluminum, Steel (Chassis), high quality plastic, OEM components (adjustable steering column with handles (indicator lights, speed control, cruise control, wipers), adjustable seat (front-back / up-down) with high quality fabric, 3-point safety belt, handbrake, gear shift, dashboard buttons (lights, mirrors adjustment etc). Raised design with ladder and handles for realistic access.
DIMENSIONS (APPRX.) (D X W X H MM):	1600 x 1200 x 2000
WEIGHT (apprx.):	320 kg
TRAINEE MAX WEIGHT:	140 kg
DISPLAY SCREENS:	3 x 55" orizontal, 1920 x 1080 each (full HD). 180° FOV (combined)
DASHBOARD:	19" screen or better, full HD. Displays speed, engine revs, selected gear, distance travelled, fuel level, oil level, engine temperature, indicator lights (overheat, battery, low fuel, headlights, ESP engaged, handbrake etc), fuel consumption, faults etc. Various layouts depending on car model. Emergency kill switch.
DRIVING LESSONS SCREEN:	19" screen or better, full HD with touch.
DRIVER FEEDBACK:	Vibrating steering wheel, force feedback pedals.
GEARBOX:	Manual and automatic.
SOUND SYSTEM:	5.1 Dolby Digital Surround, communications headset.

Computer

PROCESSOR:	Intel Core i7 (14th gen) or equivalent
MEMORY:	32 GB DDR4
DISK:	1TB NVMe
GPU:	Nvidia GeForce RTX 4080 or equivalent

Motion Platform

AXIS	SPEED	ACCELERATION	ANGLE	
Up/down	400 mm/sec	6.86 m/sec ²	-50 mm	+50 mm
Roll	± 26.5° / sec	491°/sec ²	-3.6°	+ 3.6°
Pitch	± 26.5° / sec	491°/sec ²	-3.6°	+ 3.6°

Software (ApexTrainer Sphere)

SIMULATION FIDELITY:	Professional. Comprehensive computational multiphysics algorithms for large vehicles driving.
ENVIRONMENT:	Urban: (120 km city highway, 120 km city driving). Suburban/forest mixed: (50 km standard plain, 30 km tarmac mountain road, 20 km plain dirt road, 20 km mountain road). Manoeuvre area with loading docks. Variable weather, time of day (affecting streets, cars, buildings etc lights at dusk) and traffic conditions user-selectable. Weather affects vehicle dynamics.
LOCALIZATION:	Full International English and Greek localization (LHD) (environment, driving laws, road signs, vehicle types, license plates), instructions and user interface both for trainer and trainee.
SCENARIOS:	Standard scenarios, emergency driving (car selectable), new driver, defensive driving, dangerous conditions (slippery road, animal/pedestrian on the road, unpredictable vehicle behavior, limited space driving/maneuvering, load tilt, mechanical faults, flat tire etc). Applies on car, truck, small truck, firefighting, water tank carrier, coach, city bus, lorry with trailer/semi-trailer etc.
SPECIAL VEHICLES:	Firefighting incl. siren sound with varying road conditions (heavy/light traffic) and unforeseen incidents (traffic lights, pedestrians, obstacles etc). Urban, suburban, forest roads.
DRIVING AIDS:	Safety electronics (ABS, ESC, TCS, Lane Assist, etc). Mirror display on screens.
SOUNDS:	Fully simulated environmental conditions (ambient sounds, rain, other vehicles etc.) and vehicle sounds like engine, tyres, direction lights, horn, wipers, crash etc.
DRIVING LESSONS:	Trainee activated via touchscreen driving lessons like parking, reverse driving, towing etc. Every lesson is accompanied by instructions written and oral.

Instructor Workstation

SETUP:	Rack-mounted computer, rack, three 27-inch screens (full HD), communication headset, gigabit switch, desk and chair.
COMPUTER:	Intel Core i7 (14th gen) or equivalent, 16 GB DDR4, Nvidia GeForce RTX 4070 or equivalent, dual disks (500 GB NVMe SSD + 1TB NVMe SSD).
SOFTWARE (ApexControl):	Control up to four systems simultaneously like simulator setup (number of screens, connection subsystems) vehicle (type, cabin), scenario, road and weather conditions, obstacles etc. through easy-to-follow menus.
SOFTWARE (ApexConfig)	Vehicle type (car, truck, small truck, firefighting, water tank carrier, coach, city bus, lorry with trailer/semi-trailer etc), cabin type, dimensions, weight, center of gravity, gearbox type and layout, tyre condition, water tank configuration (tank size, percentage full, compartmentalisation, kind of liquids [max 2]), vehicle save ability.
SOFTWARE (ApexMaker):	Scenario builder for ApexTrainer software.
SOFTWARE (ApexLearn):	Trainee file, tracking, exercise parameters, progress and statistics. After action review with multi-view, exercise route, exercise time, exercise outcome and statistics (fuel consumption, controllers usage, driving mistakes etc.) printout in PDF, trainee evaluation and scoring via ISO 39001:2012 compatible procedures.
LOCALIZATION:	Full International English and Greek localization (user interface on all applications, printouts, scoring etc.).

Options

CAMERA:	Instructor's camera for student observation.
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