

QLABS VIRTUAL QCAR 2

Safely develop and validate your self-driving algorithms in virtual worlds

The Quanser Virtual QCar 2 is a fully instrumented, dynamically accurate digital twin of the physical QCar 2 1/10 scale self-driving car. It behaves the same way as the physical hardware and can be measured and controlled using MATLAB Simulink® or Python development environments. It can enrich your lectures and activities in traditional labs, or bring credible, authentic model-based lab experiences into your distance and online self-driving courses.

Same as the physical Qcar, the virtual system is a self-driving teaching and research platform complete with industrially relevant sensors such as LiDAR, 360° CSI cameras, an RGB-D camera, and inertial and odometric sensors.

Features



Academically Appropriate

High-fidelity, credible lab experiences equivalent to using the physical lab equipment



Comprehensive Resources

Innovative curriculum and research resources



Open Access

Full access to the system through MATLAB Simulink® or Python™



Scalable

12-month multi-seat subscription

Courseware

- Sensor interfacing and kinematic modeling
- Occupancy grid mapping
- Sensor fusion
- Vehicle lateral and longitudinal control
- Image acquisition and camera interfacing
- Line detection
- Lane detection and keeping
- Object detection and classification

Product Details

CSI cameras	4x160° FOV @820x410 resolution @30Hz
2D Lidar	360° 384 points per scan @15Hz
RealSense RGB-D camera	RGB and Depth @640x480 resolution @30Hz
IMU	3-axis gyroscope and accelerometer

QLabs Virtual QCar 2 runs on Windows 10 (64-bit) or Ubuntu 20+ and requires MATLAB/Simulink R2023a+ (not included) or Python 3.8+.

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