



XCIENT Fuel Cell



Change Your Power. Change the Future.

The XCIENT Fuel Cell, the world's first commercialized hydrogen-powered fuel cell heavy-duty truck, has proven its performance in the demanding conditions of the Alps in Switzerland. Now, Hyundai is expanding its hydrogen trucking solutions to the U.S. through clean logistics initiatives, accelerating the shift to zero-emission freight transportation and leading the global energy transition.



* The images shown are for illustration purposes only and may not be an exact representation of the actual product.

Hydrogen – Proven Since Time Began.

The XCIENT Fuel Cell is powered by a twin fuel cell system that runs on hydrogen. When hydrogen passes through a fuel cell system, it reacts with oxygen to generate electricity, producing only water as a byproduct.



Zero Emissions

Hydrogen (H₂) reacts with oxygen (O₂) to generate electricity, producing only pure water (H₂O) as a byproduct.



Confident Range

The XCIENT Fuel Cell provides a driving range of approximately 450 miles per charge, with the potential for even longer distances depending on load and driving conditions.

* Driving range and charging times can vary depending on external factors.



Efficient Charging

Both 700 bar and high-flow 350 bar refueling offer greater flexibility. This allows you to spend less time refueling and more time on the road.



Extreme Weather Resilient

With fuel cell system engineered and tested for severe weather conditions, the XCIENT Fuel Cell maintains reliability and efficiency ensuring uninterrupted performance.

Be the Talk of the Highway.

You'll be driving with confidence and turning heads with the industry's most advanced hydrogen-powered fleet. With zero emissions, exceptional performance, and cutting-edge technology, the XCIENT Fuel Cell is setting new standards for sustainable transportation.



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Don't Just Change. Make it Better.

The XCIENT Fuel Cell's striking design is a true head-turner. Its mesh-pattern grille and elongated bumper seamlessly integrate with the graphic elements and lighting module, creating a bold and modern aesthetic. The newly integrated ADAS*, combined with advanced built-in sensors, including radar and machine vision technology, enhances your convenience and safety, ensuring a smarter and more secure driving experience on every journey.

* Advanced Driver Assistance System



LED Headlamps
Durable LEDs deliver maximum lighting power while consuming less electricity.



Side Radar Sensors
Side-front radar and side-rear radar are encased in a sturdy protective cover, giving the driver an extra set of eyes in blind spots.



Elongated Bumper
The streamlined, rounded shape cuts through the air, reducing turbulence and wind noise—boosting fuel efficiency and driving stability.



LED Rear Combination Tail Lamps
The tail lamps feature LEDs for enhanced visibility.



Forward-Thinking Design.

We believe technology should enhance the driving experience. That's why the XCIENT Fuel Cell cabin is designed with the driver in mind—offering an exceptional user experience while minimizing distractions, so you can keep your eyes on the road and your hands on the wheel.



12.3-inch Digital Cluster
Providing all the essential information with minimal distraction, the 12.3-inch cluster features sharp, easy-to-read graphics.



Intuitive 12.3-inch Touchscreen
Directly below the head unit, a row of physical buttons flanked by rotary control dials serves as one-touch shortcuts to access the most commonly utilized functions.



Deck View Monitor
Equipped with an extra-wide-angle lens, the screen provides a real-time rear view video feed.



Switchable USB Port
Two USB C-type outlets provide up to 27 W for fast charging and can switch between charge-only and data-plus-charge modes.



HVAC Controller
The Heating, Ventilation, and Air Conditioning functions are now easier to operate with the LCD.



BCW* & BCW-Near Indicators
The BCW & BCW-Near indicators are positioned on both front pillars for optimal visibility.
* Blind-spot Collision Warning



Familiar but So Much Better.

With a refined layout and driver-focused controls, the XCIENT Fuel Cell cabin enhances every journey with intuitive operation and seamless comfort, building on Hyundai's extensive expertise in commercial vehicle design.



Multi-stage Ventilated and Heated Seat

The driver seat features heating and ventilation for optimal comfort in any weather. Individually adjustable seat cushions and backrests help maintain proper posture and reduce muscle fatigue on long drives. Additionally, the driver seat floats on a customizable air cushion that enhances ride comfort.



Smart Key

The keyfob incorporates a smart remote control and comes with commercial vehicle-specific features.



Energy-Saving Utility Mode

When in idle, Utility Mode dramatically reduces total power consumption. It shuts off the motor and depowers the steering system while delivering full power to the HVAC, lighting, and infotainment.



Hidden Cup Holder

The retractable cup holder can accommodate extra-large-size beverage containers, making it handy for long hauls.



Tow Hook Storage Box

The rear storage box features a built-in bracket to hold the tow hook and other items.



Mesh Storage Pocket

A mesh-type storage pouch is mounted on the back wall for added convenience.



Clothes Hanger

The hanger clips add extra convenience as they are removable and can be repositioned to suit personal preferences.

Proven Performance. Trusted Reliability.

As the world's first fuel cell heavy-duty truck in commercial operation, the XCIENT Fuel Cell has consistently demonstrated its reliability across diverse fleet applications, including port logistics at the Port of Oakland and HMGMA (Hyundai Motor Group Metaplant America) clean logistics initiative in the U.S.

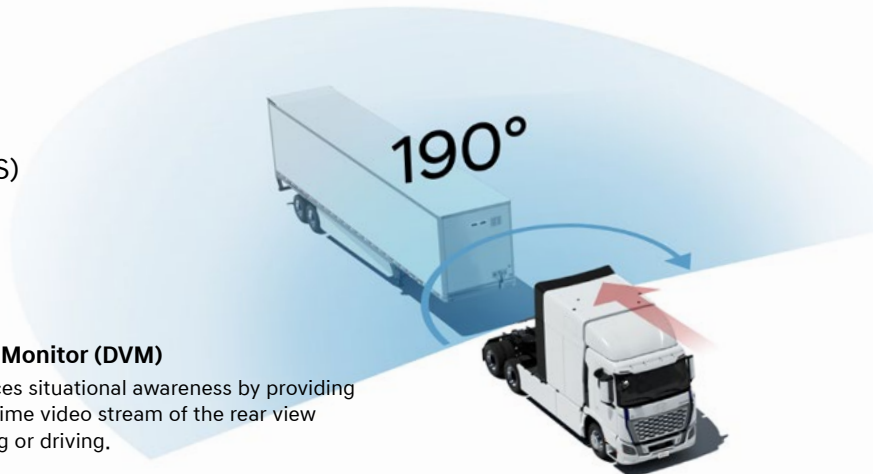


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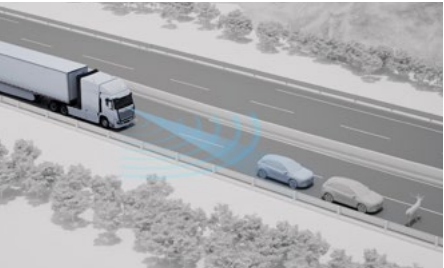


Smart Assistance for Safer, Smoother Driving.

The XCIENT Fuel Cell is equipped with an Advanced Driver Assistance System (ADAS) that enhances both safety and driving comfort. Newly integrated features help reduce driver fatigue, ensuring a more relaxed and controlled driving experience.



Deck View Monitor (DVM)
DVM enhances situational awareness by providing a clear real-time video stream of the rear view when parking or driving.



Forward Collision-Avoidance Assist (FCA)
FCA helps detect potential collisions with vehicles ahead and automatically applies brakes to prevent or mitigate the impact.



Lane Departure Warning (LDW)
LDW alerts driver when the vehicle drifts out of its lane without signaling.



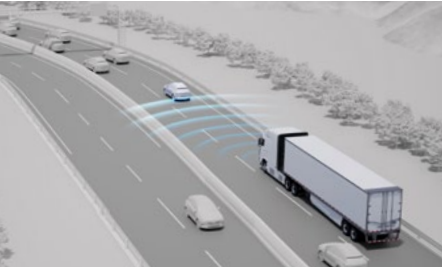
Blind-Spot Collision Warning (BCW)
BCW is a driving safety function that warns drivers not to collide with rear-side vehicles.



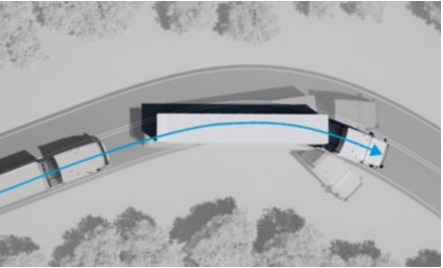
Blind-Spot Collision Warning-Near (BCW-Near)
BCW-Near is a driving safety function that provides a warning if there is a risk of a collision with an obstacle approaching from the right blind spot (LHD reference).



Forward Collision Warning-Near (FCW-Near)
FCW-Near provides a warning on detecting the risk of forward collision with nearby objects in the blind-spot while driving at low speeds.



Smart Cruise Control (SCC)
SCC helps maintain distance from the vehicle ahead and drive at a speed set by the driver.
* Operation range: 5 mph ~ 61 mph (Power mode 65 mph)



Vehicle Dynamic Control (VDC)
In slippery conditions, VDC ensures optimal stability by detecting traction issues and managing torque output to each individual wheel to help maintain directional control.



Easy Hill Start System (EHS)
When stopped on an incline, EHS prevents inadvertent rollback by releasing the brakes only after applying pressure to the throttle pedal.



Wider Visibility, Enhanced Efficiency.

Precision is key when operating a heavy-duty truck. The XCIENT Fuel Cell's cab-forward design provides superior visibility and maneuverability, giving you an advantage in tight spaces where every inch matters.

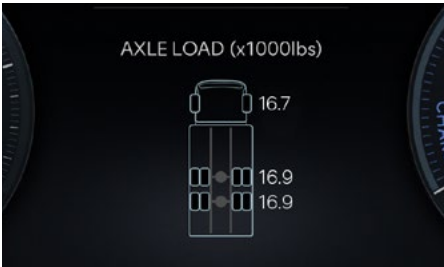
Improved Visibility

The cab-over design provides significant advantages, including enhanced forward visibility and reduced blind spots, making it easier to maneuver in tight spaces.



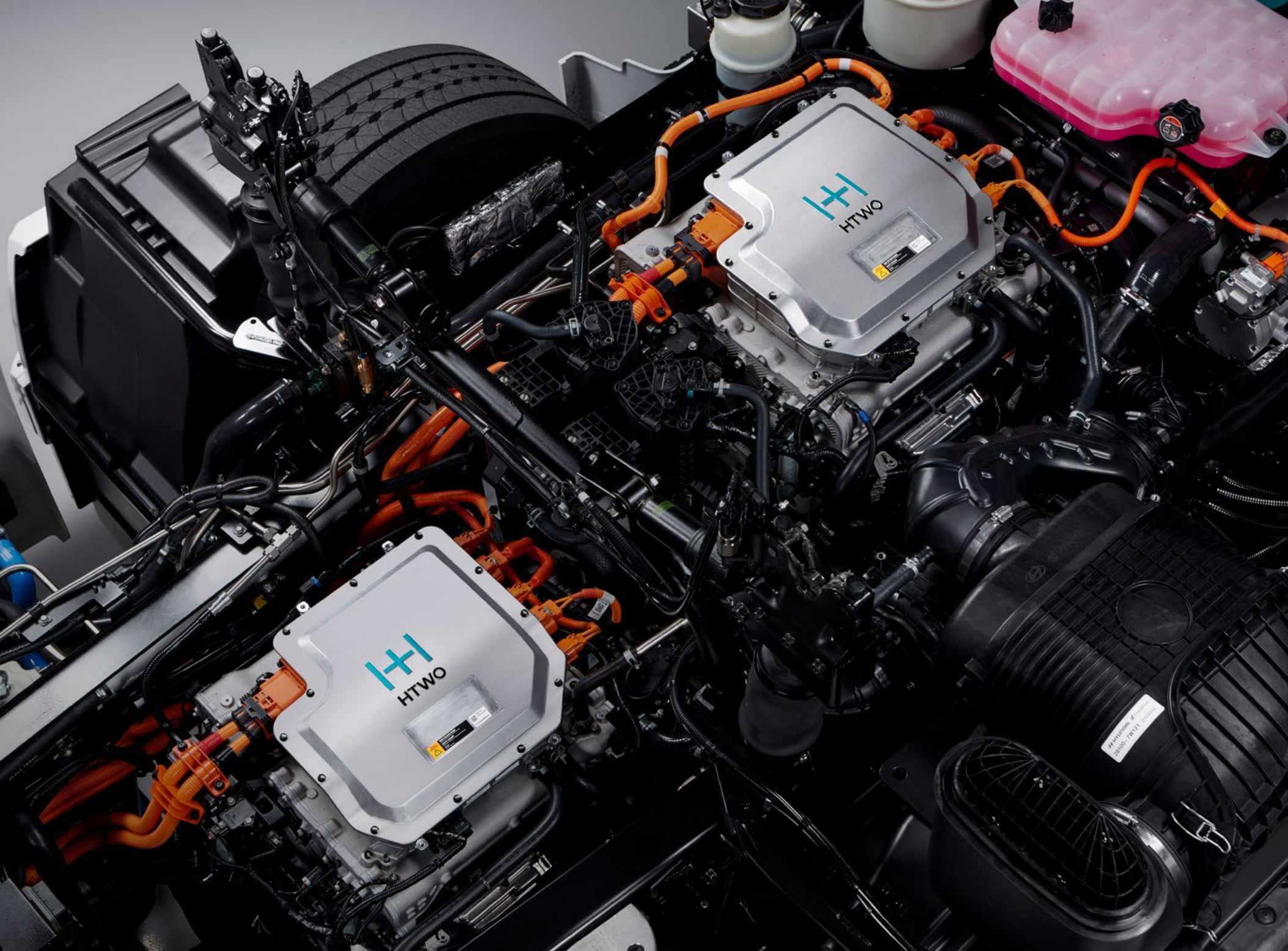
Air Suspension

The front and rear axles feature an air-cushioned suspension, enhancing stability and ride comfort. It also allows for adjustable cargo bed height, making loading and unloading easier.



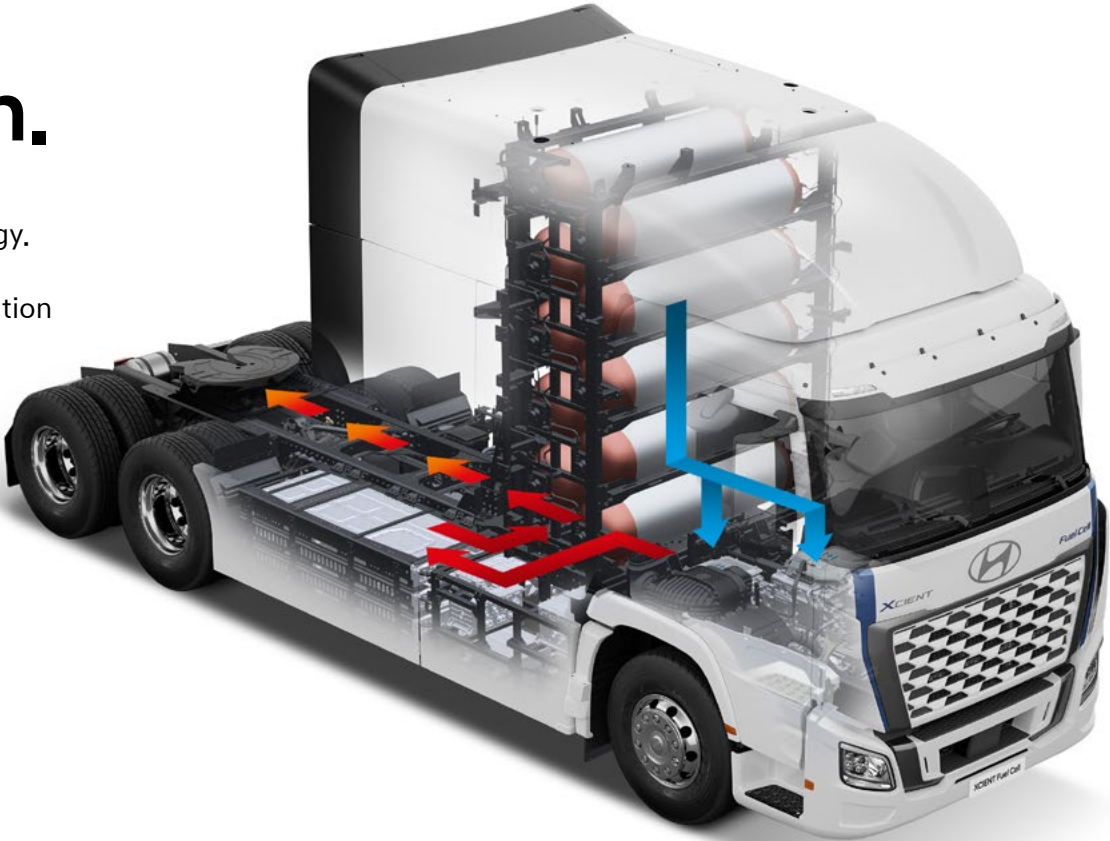
Weight-Distribution Display

This feature monitors cargo weight distribution across the front and rear axles, ensuring safer hauling.



Advanced Hydrogen System.

The XCIENT Fuel Cell's hydrogen system is driving the future of mobility with state-of-the-art technology. Designed for optimized energy efficiency, it delivers a groundbreaking hydrogen-powered solution for commercial transportation.



68.6 kg H₂ (700 bar)

Hydrogen Storage Tanks

The improved Type IV fuel tanks with safety certification supports fast charging at 700 bar and can also be charged at high-flow 350 bar, providing a convenient charging environment.

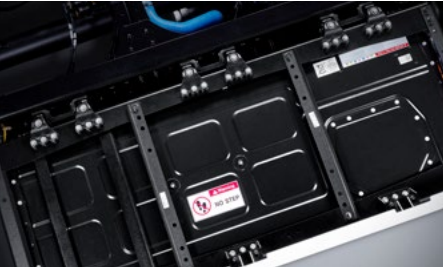


180 kW* (2 x 90 kW each)

Fuel Cell System

The heart of the XCIENT Fuel Cell continues to evolve, offering improved system output and enhanced safety.

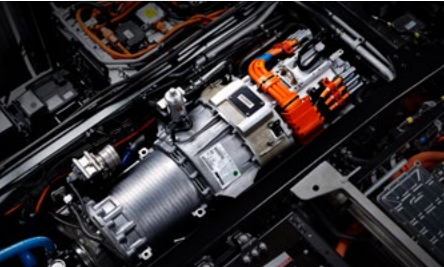
* Gross



72 kWh (3 x 24 kWh each)

Battery

The battery system is safer with an enhanced mounting structure, prevents power loss, and delays fire hazard situations in the event of battery cell thermal runaway.



350 kW / 1,650 lbf-ft

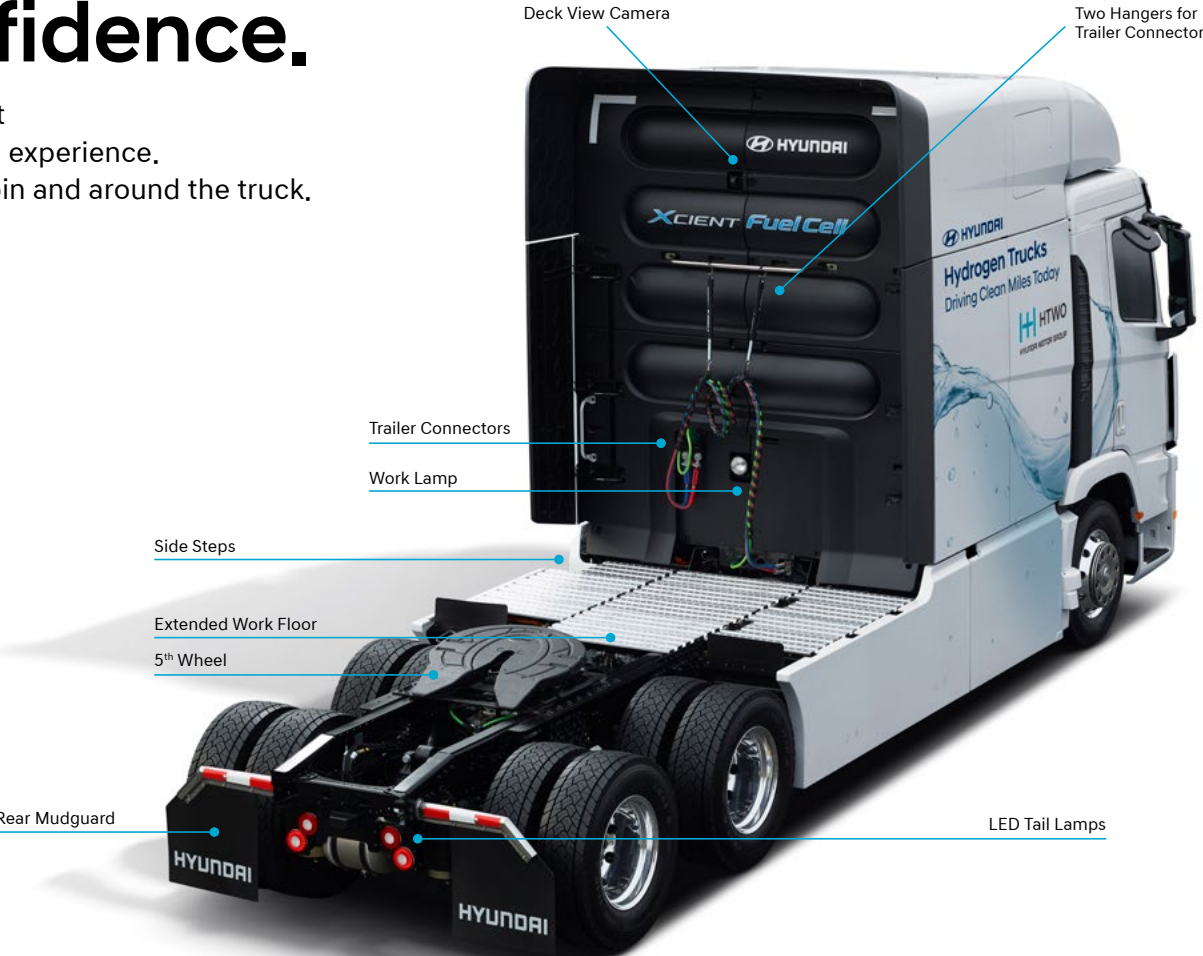
Motor

The drive motor, with a maximum output of 350 kW and 1,650 lbf-ft of torque ensures stable and responsive performance. The 5-speed automatic transmission optimally adjusts power delivery based on load and driving speed.



Work with Confidence.

The XCIENT Fuel Cell is designed to deliver not just a better environment but a better trucking experience. Not only while driving but also outside the cabin and around the truck.



Aluminum Grip Cable Connector
Durable all-aluminum grips enhance usability and convenience.



Trailer Connectors and Two Hangers
Double-fixing bands make trailer hoses adjustments easier and ensure a more stable connection with various trailers.



Enlarged Working Environment
A wider deck makes it safer and easier to move around when performing hookups.



5th Wheel
The air-actuated 5th wheel lock allows for easy locking and unlocking directly from the cabin. Its adjustable position helps optimize weight distribution across the front and rear axles.

Innovation in Motion.

Hyundai elevates every journey with enhanced efficiency, safety, and performance. Through optimized fuel consumption, real-time battery monitoring, and continuous innovation, we create a smarter, safer, and more sustainable driving experience.



Variable Top Speed*

Top speed increased to 61 mph, and can be maximized to 65 mph* during Power Mode.

* When SOC (State of Charge) falls below 50 %, top speed is adjusted to 61 mph to optimize driving range.

* Speeds are based on the speedometer, GPS speed might vary.



Idle Stop and Go System

The ISG system enhances fuel efficiency by automatically shutting down the motor when the vehicle is stationary, helping to reduce hydrogen consumption.



Battery Monitoring System

Utilizes key indicators, including cell voltage, maximum cell temperature, and temperature rise rate, for thermal runaway diagnosis.



Cybersecurity

The XCIENT Fuel Cell is equipped with robust cybersecurity software to keep intruders at bay.



Features



LED Clearance Lamps



LED Identification Lamps



Fixed Step Bumper



Matte Chrome V-shaped Grille



Driver-side Roll-down Curtain



Door Pockets



Driver Seat Rear Console



Passenger Seat Rear Console



Front Corner Radar Sensors
(Bumper Mounted)



Rear Corner Radar Sensors
(Passenger / Driver Side)



Easy-access Side Maintenance Panel



Easy-access Front Maintenance Panel



Driver Armrest Control Console



Gear Change Knob and Mode Switch



Auxiliary Brake and Manual Gear Shifter



Trailer Hand Brake



Heated Side Mirrors with LED Welcome Lamp



Water-repellant Door Glass



Easy-access Door Steps



Door Courtesy Lamps



12 V Dual Power Outlets



Trailer Air Supply and Parking Brake Switches



Passenger-side Folding Table



Passenger Backrest Table



Integrated Anti-slip Side Steps



Work Floor Assist Grip



Deck View Camera



315 / 70 R22,5 Front / Rear Radial Tires



Anti-slip Dashboard Upper Console



Overhead Storage Consoles



Center Fascia Storage Drawer



Passenger Cup Holders

Specifications

XCIENT Fuel Cell Tractor	
Cab Type	Day Cab
Configuration	6x4
Dimension	
Wheelbase	223 inch
Overall Length	345 inch
Overall Width	102 inch
Overall Height	161 inch
Powertrain	
Fuel Cell Stack	180 kW (Gross / 2 x 90 kW each)
Battery	72 kWh (3 x 24 kWh each)
Motor / Inverter	350 kW / 1,650 lbf-ft
Transmission	5-Speed Automatic Transmission
Hydrogen Tanks	
Filling Pressure *	700 bar (compatible with high-flow 350 bar)
Capacity	68.6 kg @ 700 bar (39.3 kg @ 350 bar)
Performance	
All-Electric Range (AER)	450** miles with a full load

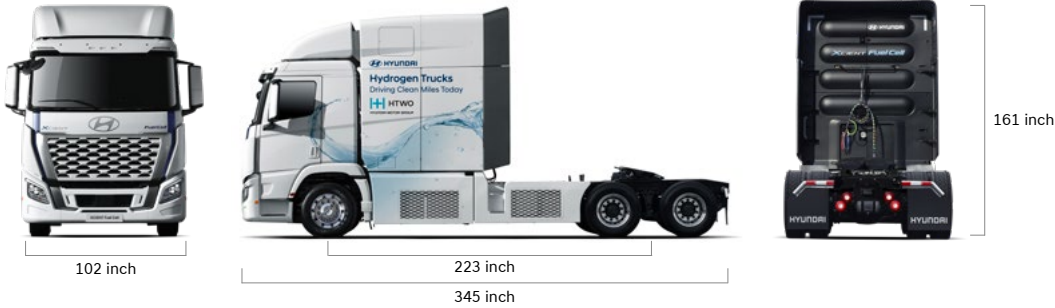
* Capable of refueling from 350 bar pressure hydrogen stations. **Driving range and charging times can vary depending on external factors.

Exterior Color



Creamy White (Solid) Nordic Green (Metallic)

- The values above are based on internal testing results and are subject to change after final validation.
- Some of the equipment illustrated or described in this catalog may not be standard.
- Hyundai Motor Company reserves the right to change specifications and equipment without prior notice.
- The color may vary slightly from the actual colors due to differences in print quality.
- Please consult sales consultants for full and accurate information.



Return Home Feeling Better
than When You Left It.



Your Partner in Every Way.



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