



T12E

ELEGANT AND LUXURY
YUTONG NEW HIGH-END BATTERY ELECTRIC BUS

Yutong Bus Co., Ltd.

Yutong Marketing Center, Economic and Technological Development Zone, Zhengzhou, China, Tel: +86 371 6671 8999 Website: www.yutong.com E-mail: sales@yutong.com Follow us on Facebook & Twitter & YouTube at Yutong Bus & Coach

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WHO WE ARE

World's major bus and coach supplier
No.1 bus brand in sales globally

- 2 manufacturing bases
- Total plant area > 3.59 millionm²
- Max.daily production capacity> 445 units
- Max.daily production capacity of new energy buses > 375 units
- 5m-18m full product lineup,
incl. city buses, coaches, commuters, school buses, special vehicles, etc.
- As of the end of 2021, Yutong has exported more than 80,000 buses and sold more than 160,000 new energy buses. Yutong large and medium-sized buses have been selling well in global markets for many consecutive years.

OUR MISSION

Fantastic Travel to the Public
Greater Value for Customers

Annual oil-saving	2,800,000,000 liters
Annual NO _x emission reduced by	43,680 tons
Annual CO ₂ emission reduced by	over 7,500,000 tons
Annual PM2.5 emission reduced by	910 tons



T12E

ELEGANT AND LUXURY

T12E, a high-end battery electric bus newly developed by Yutong, has fashionable and cutting-edge design, comfortable driving and riding experience, prolonged driving range and comprehensive active and passive safety protections, making the journey more enjoyable, intimate and safer.

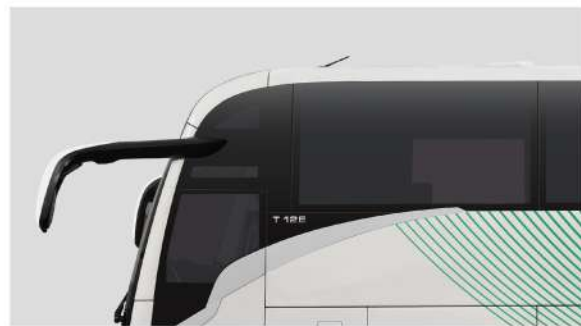


NATURAL ELEGANCE

Designed by noted European styling company and endowed with grace, leading the trend



Won "DESIGN LABEL" award at Busworld in 2019



Sleek lines
Aerodynamic design, smooth body styling, easy to control airflow, effectively reduce wind resistance.



Smile-face front design
Friendly and enthusiastic appearance appeals to whomever at the first sight.



Side wall aluminum skin structure
High corrosion resistance, light weight and fine skin smoothness.



Combined rear taillights
Streamlined design, glamorizes the night.



Electric exterior rear-view mirror
The styling of rabbit's ear resemblance with heating and defrosting functions, integrates aesthetic design and practical value perfectly.



OPERATION SIMPLE AND FREEWHEELING

T12E strives for easy operation through humanized design.

Ergonomic driving area

The scientific and spacious layout of the driver's area with broad vision makes every driving easy and pleasant.

- ① The driver's area adopts the upgraded instrument panel design, making the key layout more intuitive;
- ② 12.3 inch digital instrument makes it easy to access driving information;
- ③ Spacious driver's area and pneumatic controlled steering column angle and telescopic adjustment, ensure handy wheel steering;
- ④ Several storage boxes are integrated near the cab to meet the storage needs of personal belongings and travel documents;



Visualized central control

The world-class Bosch central control panel and electric flip HD display are used to visualize the operation, bringing superior audio-visual experience.



Air suspension driver's seat

Seat height, front and rear, backrest angle and cushion inclination angle, etc., are all designed adjustable, making driving more comfortable.

Optional functions like eight-point air bag massage, seat ventilation, seat heating etc. are attainable, upgrading the comfort again.



Imported full LCD instrument

Automatic brightness adjustment, rich functions, full sense of science and technology.



Intelligent one-button control

Near-field sensing one-button start, intelligent wipers and lighting, comparable to the design of passenger cars, make driving more relaxing.



Multifunction steering wheel

Smaller steering wheel, with a diameter of merely 450mm, integrates multiple common functions, bringing about handy manipulation with light steering.



UNPARALLELED COMFORT

T12E takes care of each traveler with tenderness, dissipates their mental and physical fatigue, feeling as in the clouds.

● Optional configuration

220V power socket, 360°-view system, on-board WiFi, wheelchair lift, destination board, tire pressure alarm, etc.



Comfortable and smooth

Imported airbag suspension system, low-noise gears, maintenance-free, and specialized motor for battery electric vehicles, bring a smooth experience with greater sense of quality.



Relaxing and pleasant

The exclusive luxury seats tailored for European passengers are available in various colors, with adjustable backrest, USB charging interface and small table board, ensuring an entertaining and carefree travel.



Quiet travel

Passenger area noise $\leq 61\text{dB}$ (speed: 60km/h), enjoy a quiet travel inside the coach.



Elegant and graceful

Rhine White interior, LED number plate lights, European-style integrated luggage rack, colorful seats and five-color LED atmosphere lights create a spectacular visual effect.



Audio-visual luxury

Equipped with Bosch's latest generation 7-inch central control panel + 22-inch LCD color display, HD display and electric flip, audio-visual enjoyment is realized.

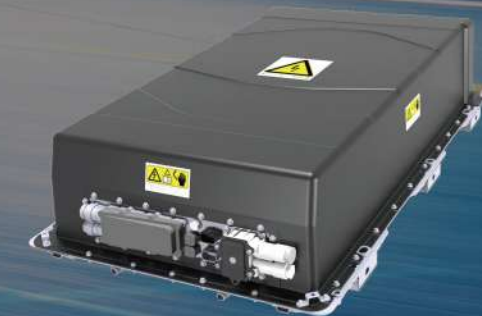
START THE VEHICLE DRIVE AS MUCH AS YOU LIKE

The super driving range capacity of the T12E allows you to drive faraway and return with ease.



Efficient drive motor

The maximum efficiency 97%, the peak power 350 kW, the peak torque 3200 N.m, and wider constant power area of the motor, effectively guarantee the dynamic performance and low power consumption of the whole vehicle, greatly showing the operational advantages.



High energy density power battery

1. Energy density > 160 Wh/kg, lighter weight, longer driving range and more economical.
2. The material of lithium iron phosphate battery is stable in structure, with a service life of 8 years (ternary battery only serves for 3~5 years).
3. The battery system can be maintained intelligently during operation and only needs to be maintained manually once a year, lowering the operating cost.
4. Power consumption ≤ 1.05 kWh/km, and driving range about 350 km.

Note: CWTVC working condition, urban: highway: expressway cycles = 1:2:7, full load, A/C off.

SAFETY FROM ALL ASPECTS

In August 2021, Yutong Electric Safety Standard (YESS) has been launched globally, taking safety to a higher level.

Five protection



Vehicle protection

Closed-loop rollover protection structure

700 MPa high-strength steel and closed-loop rollover protection structure are adopted, improving the safety of bus lateral structure as rollover accident occurs, which has passed the EU rollover test certification.

Energy-absorbing frontal collision protection system

The performance index of vehicle frontal collision protection has reached the internationally advanced level.



System protection

Full-time and full-domain nitrogen protection, real-time oxygen exclusion in the battery pack, truly "takes away the firewood from under the cauldron".



Pack protection

Multi-level thermal-electrical coupling protection, achieves effective isolation of internal and external safety hazards, building a "moat" for batteries.



Component protection

Multi-package high-efficiency hydro-thermal technology, eliminates high-voltage heating components in the pack, making battery completely isolated from the "igniter".



Monitoring and protection

24/7 uninterrupted monitoring system, safeguards battery safety anytime and anywhere.

Yutong's exclusive integrated controller

The system HV connection points and volume are reduced by over 50%, with exquisite layout of harness, improving their connection safety.

Industry-leading new energy protection

- The protection level of battery, motor controller and vehicle controller reaches IP68+IP6K9K;
- The protection level of electric air compressor and electric steering oil pump reaches IP68;
- The motor protection level reaches IP68+IP6K9K.



Comprehensive upgrade of charging supporting system

Adaptive heating mode is adopted, ranging from -30 °C ~ 50 °C; covering all charger models, with diverse choices attainable.



National standard 150 KW/160 KW

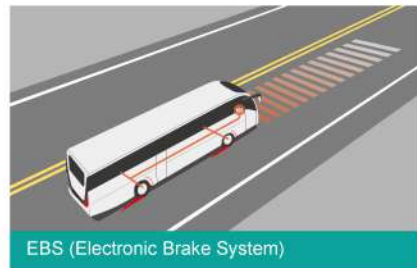


European Standard 120 KW

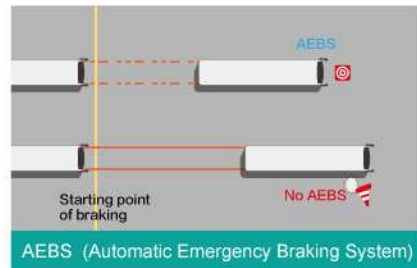


INTELLIGENT DRIVING WITH TECHNOLOGY

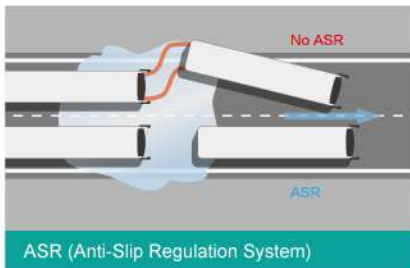
T12E CAN communication through the vehicle makes it easier to monitor the vehicle state, with diverse optional active/passive safety configurations, more complete and legible display of state information, facilitating vehicle safe operation with high-end technology.



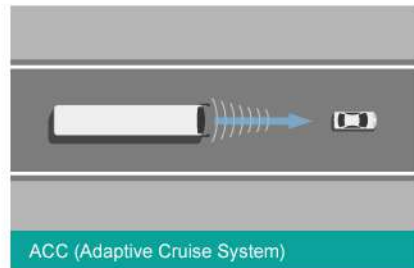
EBS (Electronic Brake System)



AEBS (Automatic Emergency Braking System)



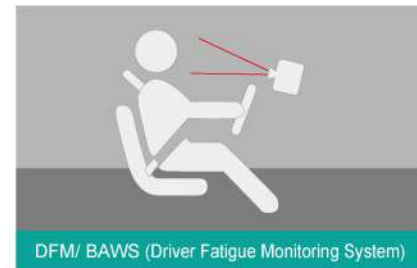
ASR (Anti-Slip Regulation System)



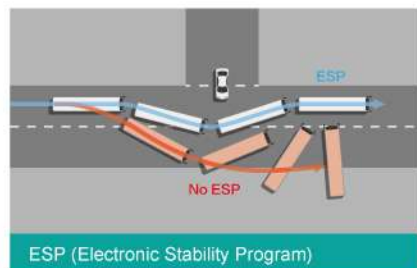
ACC (Adaptive Cruise System)



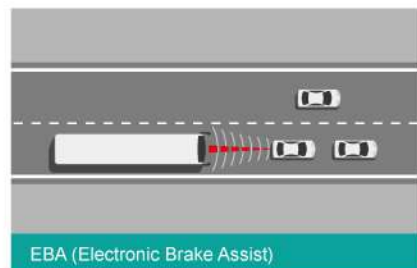
HSA (Hill Start Assist system)



DFM/ BAWs (Driver Fatigue Monitoring System)



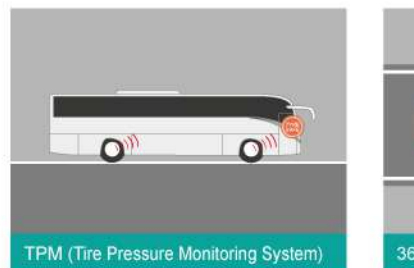
ESP (Electronic Stability Program)



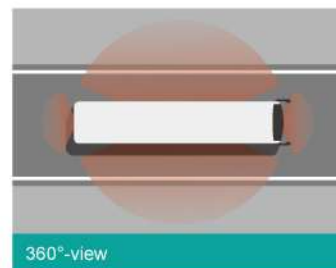
EBA (Electronic Brake Assist)



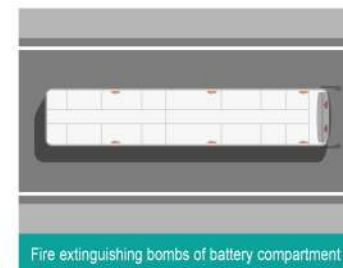
LDWS (Lane Departure Warning System)



TPM (Tire Pressure Monitoring System)



360°-view



Fire extinguishing bombs of battery compartment



Alcco lock

Note: The above configurations or functions are optional.

PROFITABLE OPERATION

100 vehicles could save 24.78 million euros in eight years, based on daily running 250km and 350 days a year.



Vehicle Type	12m diesel coach	T12E	Total saving
Fuel consumption per 100 kilometers	32L	105kWh	-
Average annual mileage (km)	250 km * 350 days = 87500 km		-
Fuel price	1.5 euro/L	0.126 euro/kWh	-
Converted fuel cost (euro /km)	0.48	0.096	0.354
Fuel cost for 1 year (thousand euros)	42	11	30.9
Fuel cost for 8 years (thousand euros)	336	88.2	247.8
Fuel cost for 100 vehicles (thousand euros)	33600	8820	24780

Note: the diesel coach uses the typical operation data in the market; T12E uses the average power consumption under comprehensive working conditions; the operating mileage uses the market average operation data.

GREEN, GOES FORWARD FOR LOVE

T12E empowers cities with battery electric power and boosts the future with green technology.



Environmental protection effect

	Oil/gas/electricity consumption per hundred kilometers	CO ₂ emission per hundred kilometers	PM emission per hundred kilometers	NO _x emission per hundred kilometers	CO ₂ emission in 8 years	PM emission in 8 years	NO _x emission in 8 years
12m conventional diesel coach	32L	85.76kg	13.12kg	4.8kg	600t	91.8t	33.6t
Battery electric bus	105kWh	0	0	0	0	0	0
Social benefits of single battery electric vehicle	Emission reduction (CO ₂): 75t/year		Equivalent to tree planting efforts: 543 trees/year				
Social benefits of 100 battery electric vehicles	Emission reduction (CO ₂): 7500t/year		Equivalent to tree planting efforts: 54300 trees/year				

Note: 1L diesel emits 2.68kg CO₂, 0.15kg NO_x and 0.41g pm; 1 tree absorbs 138kg CO₂/year.

GLOBAL APPLICATION CASES

France

From 2016 to 2021, Yutong has sold ICE12 continuously to French market. A large number of vehicles are running in various cities such as Paris, Lyon, Bordeaux, Provence, Vannes, and Rouen etc. The vehicles are stable in operation, low in noise, environmentally friendly, energy-saving, and comfortable, which are deeply loved by users, drivers and passengers.



UK

Since October 2020, British customers have purchased 2 Yutong ICE12 to operate between Dundee and Edinburgh. The vehicles show stable and satisfying performance under highly intensive operating conditions. The customer was very satisfied and purchased another 6 E-coaches of the same model in September 2021.



Luxembourg

From 2018 to 2021, customers from Luxembourg continued to purchase Yutong ICE12, and currently there are 6 units of ICE12. The vehicles are stable in operation, environmentally friendly, energy-saving, and comfortable, which are well recognized by users.



Qatar

In 2021, 741 Yutong electric products were purchased at one time for Qatar World Cup, including 70 E-coaches, are undergoing trial operation. According to customer feedback, the vehicles are stable in performance, beautiful in styling, green, environmentally friendly, and comfortable, which are well recognized by users.



Chile

In May 2021, one Yutong T13E E-coach was sold to Chile, which runs between Casino coposa and Collahuasib mining areas. Under high altitude and cold conditions, the vehicle operates and performs well. Therefore the customer is very satisfied and purchased another 4 vehicles of the same model in September 2021. In June of the same year, another customer bought one T13E, which is mainly used for miner commuting and are operating well at present.



Macao, China

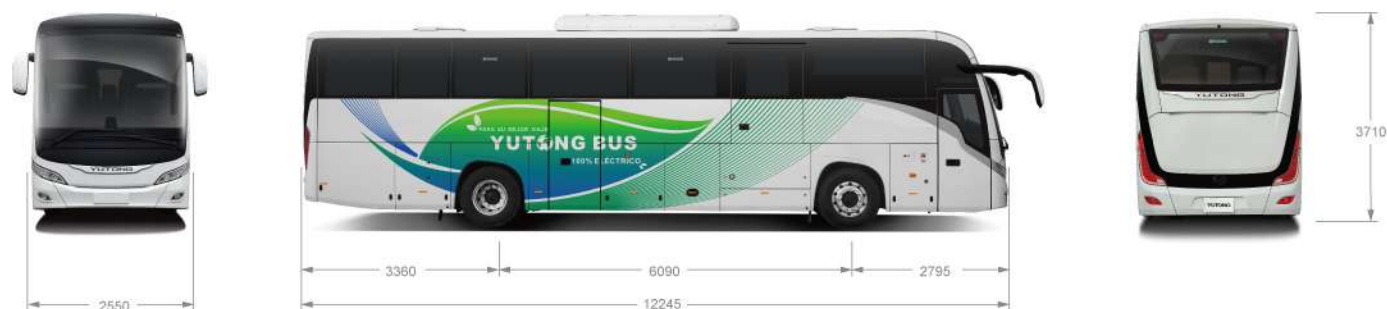
Since 2017, Macao customers have purchased 117 Yutong E11 E-coaches in total. The vehicles run between the Macau Peninsula and Taipa Island. The vehicles are stable in operation, environmentally friendly, energy-saving, and comfortable, which are well recognized by users.





T12E

VEHICLE SPECIFICATIONS



SPECIFICATIONS

Overall L*W*H (mm)	12245*2550*3710
Interior height (mm)	2012
Min. turning diameter (m)	≤18.5
Approach/departure angle(°)	7.5/7.5
Max. gradeability (%) (15km/h)	12 (20s)
Battery type	LFP
Energy storage system (kWh)	422, liquid cooling

Seating Plan

