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MOTORSPORT INFORMATION

Audi R8 LMS GT3 (2018)

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Audi Sport in 2018 GT3 racing

Global appearance for the Audi R8 LMS

Audi Sport customer racing is entering an anniversary year full of vigor: 2018 marks the tenth season in which the four rings are successful in customer racing. Following the world premiere of the Audi R8 LMS at the end of 2008, the brand's first GT3 race car generation contested its debut season in 2009. In the tenth consecutive year, Audi intends to continue its victories in America, Asia, Australia and Europe with its customers in 2018. The sophisticated current generation of the Audi R8 LMS enjoys worldwide popularity because it sets standards in terms of aerodynamics, lightweight design, safety and customer friendliness.

Last year alone, the track record of the GT3 models grew once again by a full dozen. Around the world, twelve overall drivers' titles were won with the Audi R8 LMS, plus successes achieved in other categories and classifications. Endurance racing victories shaped the international motorsport world as well. Overall successes in the 24-hour races at the Nürburgring and at Spa, in the California 8 Hours, the 12 Hours of Imola and the 25 Hours of Thunderhill underline the reliability and versatility of the Audi R8 LMS, with both pros and amateurs proving their talent.

The 2018 season kicked off with a great triumph as well. Audi won the Bathurst 12 Hour for the third time. The race in Australia opened the Intercontinental GT Challenge in which Audi appears as the title defender. It is the only worldwide racing series exclusively dedicated to GT3 race cars with rounds in America, Asia, Australia and Europe. Audi Sport customer racing supports local teams and battles for the title with its own Audi Sport teams.

In addition, the brand's customers are active in all important GT3 series around the globe. "Hardly another manufacturer has as many GT3 race cars on the grid worldwide with its customers as Audi," says Chris Reinke, Head of Audi Sport customer racing. "We support our teams worldwide with an established and sophisticated system that guarantees a comprehensive network of service and parts supply and support a large number of series with customer racing consultants as well."

In the 24H Endurance Series with rounds in Asia, Europe and America, the GT3 sports cars are the top category. In North America, spectators watch the Audi R8 LMS in both the IMSA WeatherTech SportsCar Championship and the Pirelli World Challenge. Additional fielding opportunities exist in Peru and Panama. In Europe, the Blancpain GT Series is the biggest series held on the whole continent. The same

applies to the Blancpain GT Series Asia in Asia. In Germany, even four racing series – the ADAC GT Masters, the VLN Endurance Championship Nürburgring, the DMV GTC and the Spezial Tourenwagen Trophy – are suitable for pros and amateurs. Audi's customers have been competing for trophies and championship titles for years there. In Italy, Audi Sport Italia is contesting its tenth consecutive season with the Audi R8 LMS. Other series such as the International GT Open complement the porfolio.

In Asia, the opportunities extend from the Asian Le Mans Series to national series such as the Super GT or the Super Taikyu in Japan, the China GT and the Thailand Super Series through to local club sport events. In Australia, the Australian GT Championship is the major national series and two other event series, the Australian Endurance Championship and the Australian GT Trophy Series, address customers as well. Plus, there are local series in the states such as the Victorian State Circuit Racing Championships. In New Zealand, as well, GT3 customers can be active in racing on both the North and South Island.

Besides the well-known endurance classics like those at Daytona, Spa, Bathurst or Laguna Seca endurance events without championship status such as the 24 Hours of Nürburgring or the 25 Hours of Thunderhill in California complement the event calendar. The special emotiveness of GT3 sports cars from more than ten manufacturers guarantees that GT3 racing attracts great worldwide attention and exudes a level of fascination equaled by only few other racing series.

Audi Sport customer racing

A decade of customer racing

Audi's customer racing program was launched in 2009, so the anniversary year of 2018 marks the tenth full season of Audi Sport customer racing. Following the beginnings in the GT3 category and a race car concept for the VLN, the program, in 2015, expanded into the field of one-make cups. A race car for the TCR class followed at the end of 2016 and subsequently, in 2017, for the GT4 category. The customer program is firmly anchored on four continents and encompasses several hundred races per season.

Audi Sport customer racing's portfolio features greater variety than ever before. To teams and drivers in touring car racing, the Audi RS 3 LMS with output of up to 257 kW (350 hp) offers professional entry-level opportunities at moderate costs, both nationally and internationally. The Audi R8 LMS GT4 targets amateur drivers who wish to contest sprint or endurance races in an attractive, production-based sports car. Output of up to 364 kW (495 hp) guarantees sophisticated momentum appreciated by drivers and audiences alike. Finally, the GT3 model of the Audi R8 LMS marks the top of the line: overall victories in 12- and 24-hour races, title wins in the top national GT series, as well as in international or worldwide racing series, emphasize the qualities of the race car delivering up to 430 kW (585 hp).

"Audi Sport has evolved into one of the most attractive vehicle suppliers in international customer racing," says Michael-Julius Renz, Managing Director of Audi Sport GmbH since March 1. "Our product range thrills teams, drivers and fans around the globe. The commercial and racing successes confirm the focus of our program that is now able to celebrate its tenth anniversary."

More than 200 deliveries of the GT3 model, more than 100 TCR race cars and production of the GT4 model launched in December 2017 stand for an economically successful program that has become firmly established in the whole world. Four satellites – two in Asia, one in Australia and one in North America – cover regional support of the teams while Audi Sport customer racing based in Neuburg an der Donau takes care of the European markets.

International customer racing support

Service on all continents

More than 200 Audi R8 LMS cars have been produced as GT3 versions since 2009. Customers around the world trust the sports cars from Germany and can rely on comprehensive service as well.

The Audi R8 LMS is at home in Australia, Asia and America as well as in Europe. Audi sport customer racing has established a multi-level support concept to deliver optimum service to its customers.

In Europe, Audi Sport customer racing based in Neuburg an der Donau serves its customers whereas service partners support the program on the other continents: Audi Sport customer racing North America in America and Audi Sport customer racing Japan in Japan. In the other Asian states, Audi Sport customer racing Asia supports customers. Last but not least, on the fifth continent, Audi Sport customer racing Australia is responsible.

Beyond this structure, on a second level, customer racing consultants from Germany support the teams. They are on site at selected, strategically important events and provide advice to the teams concerning maintenance, setup and repairs. A third level completes the service package: In the case of major racing series or important single events, service trailers from Audi Sport customer racing are the hubs in the paddock. At overseas events, special freight containers serve as logistics centers.

Since the 2015 season, Audi Neuburg's Competence Center Motorsport has been home to Audi Sport customer racing's headquarters. The modern logistics center is located in Neuburg an der Donau as well. The parts stock in the warehouse contains 11,000 items for customer use and for internal purposes of preparing race cars.

Audi R8 LMS

Lightweight, safe, efficient, fast – the Audi R8 LMS

In 2015, the second generation of the Audi R8 LMS picked up from where its predecessor left off: commercially and racing-wise, the GT3 race car is a worldwide success. Since the winter of 2015/2016, customers have been relying on it and more than 200 GT3 sports cars of both generations have been built to date.

Even more race car technology, lightweight design par excellence, more efficient aerodynamics and a standard of safety that surpasses the requirements of racing law: With these qualities, the new Audi R8 LMS picks up from where its successful predecessor left off. Between 2009 and 2017, drivers in both generations of the customer race car have won 49 drivers' titles, eleven 24-hour races and seven 12-hour races worldwide.

Audi Sport GmbH has been building the chassis of the current race car generation at the Böllinger Höfe facility since September 2015. The final assembly takes place at the Biberach customer racing site. The GT racing car is closely related to the production model – the chassis of both types are built in the same plant.

In terms of safety, Audi plays a pioneering role, as the new Audi R8 LMS clearly surpasses the requirements of the regulations which took effect in 2016. Thanks to a modified structure of the front end and a carbon fiber reinforced plastic (CFRP) crash element being used for the first time at the rear, the GT3 sports car fulfills the crash test requirements for Le Mans prototypes (LMP). The sophisticated Audi Protection Seat PS 3 with its structural stiffness and adaptability to various driver physiques has been setting standards in seating technology for years. It is firmly connected to the chassis, which increases stiffness. An easily adjustable foot lever unit and a height-and length-adjustable safety steering column enable various adjustments to the respective driver. For the first time in a GT3 race car, there is also a rescue hatch in the roof of the kind used in DTM race touring cars. Following a crash, it makes it possible to pull off the driver's helmet upward in a way that is gentle on the spine and to apply a KED.

Audi has systematically displayed its lightweight design expertise in the new R8 LMS. In spite of the additional weight resulting from the aforementioned innovations, a significant reduction of the race car's dry weight has been achieved. Now, the homologation weight that has been reduced by 25 kilograms can easily be complied

with even in endurance racing trim with additional headlights and air conditioning. The intelligent material mix of aluminum in the Audi Space Frame (ASF), a CFRP structural component, and the steel roll cage make the chassis alone about 30 kilograms lighter – now tipping the scales at 252 kilograms. At the same time, the torsional stiffness of the supporting frame has increased by 39 percent.

Although the race car features a more complex material mix, Audi has interlinked the manufacturing process of the production car and the race car even more closely than before. At a manufacturing facility at the Böllinger Höfe industrial park in Heilbronn, Audi Sport GmbH jointly produces both chassis variants. In spite of the race car receiving modified cast-aluminum nodes and a steel roll cage, the racing chassis of the R8 LMS remains integrated in the basis production process up to and including the point of roof assembly and cathodic dip painting (CDP), which is a type of priming. Only after these process steps, the race cars are completed at the Heilbronn-Biberach site.

Engine rebuild after 20,000 kilometers

Audi uses production parts in the new R8 LMS wherever they make technical and economic sense in racing. The V10 engine with 5.2 liters of displacement and up to 430 kW (585 hp) of output in racing is produced on the same assembly line as the production unit. It remains nearly unchanged and, with a scheduled rebuild interval of 20,000 kilometers, sets standards in racing. The designers use modified or completely new assemblies only where they are required by motorsport regulations or by the significantly higher loads encountered in on-track competition. For instance, the production ASF chassis is only modified while the new bodywork consists of CFRP. In the suspensions, wishbones strictly designed for racing have now been installed for the first time. The six-speed transmission with paddle shifters is a completely new development as well. It is 25 kilograms lighter than its predecessor. At the same time, its efficiency has increased because the previously used drop gear arrangement has been eliminated. The new MS 6.4 electronics comprise engine electronics, traction control, and the software for the electrohydraulic gearshift. The powerful processor allows for higher computing speeds and thus faster responses. A power box is another new feature. It replaces the traditional fuse box of the onboard electrical system. As a result, engineers can easily monitor the system loads and protect the system against overload with respect to specific functions.

The new aerodynamics concept of the Audi R8 LMS for the first time includes a fully lined underfloor and a conceptually integrated rear diffusor. As a result, the size of the rear wing profile is reduced by 25 percent compared with the predecessor while the maximum downforce prescribed by the FIA is achieved in spite of the profile's

smaller size. Consequently, aerodynamic drag decreases by 20 percent while top speed, at the same engine output and fuel consumption levels, increases by 6.5 percent. The front wheel wells are open toward the rear via a larger cross-section and thus contribute their share to improved airflow. The airflow rate and cooling surface of the radiator at the front end have increased by ten percent to prepare the car for maximum outside temperatures. The circulation of fresh air in the cockpit has been intensified so that the race drivers can concentrate on their tasks even better than before. At a speed of 200 km/h, the airflow rate amounts to 250 liters per second. Audi has achieved these improvements although the aerodynamic design freedoms provided by the regulations from 2016 on are clearly smaller than before.

As a result, the Audi R8 LMS is featured as an all-round race car for customer racing. It meets the challenges posed on all race tracks in all climatic regions, is capable of delivering high performance, and can be economically operated due to its long service intervals. It offers a maximum level of safety and is equally well suited for sprints and endurance races.

Technical data

Audi R8 LMS

As of: January 2018

Model	Audi R8 LMS (2018)
Vehicle Vehicle type Chassis Safety concept	Sports car according to FIA GT3 regulations Audi Space Frame (ASF) featuring an aluminum CFRP hybrid design with stressed steel roll cage, CFRP and aluminum bolt-on parts Energy-absorbing aluminum and CFRP crash structures front and rear. Safety concept meets FIA LMP1 crash requirements. In-roof rescue hatch
Engine Engine type	V10 engine, 90-degree cylinder angle, four valves per cylinder, DOHC, gasoline direct injection, emission control by two exhaust gas catalytic converters for racing
Engine management Engine lubrication Cubic capacity Performance Torque	Bosch Motorsport Motronic MS6.4 Dry sump (adopted from production model) 5,200 cc Variable by means of restrictors up to 430 kW (585 hp) More than 550 Nm
Drivetrain/transmission Type of drive Clutch Transmission Differential Drive shafts	Rear-wheel drive, traction control (ASR) Electro-hydraulically operated three-plate racing clutch (ECA) Sequential, pneumatically operated six-speed performance transmission with paddle shifters Limited slip differential, variable preload Constant-velocity joint shafts
Suspension/steering/brakes Steering Suspension	Servo-assisted rack and pinion steering Front and rear independent suspension, double wishbones, suspension struts with coil springs and adjustable dampers, and adjustable stabilizers front and rear
Brakes Wheels Tires	Hydraulic dual-circuit braking system, steel brake discs front (380 x 34 mm) and rear (355 x 32 mm), racing ABS Aluminum forged wheels, front 12.5 x 18 inches, rear 13 x 18 inches Front 30-68/18, rear 31-71/18
Weight/dimensions Length Width Height Homologation weight Fuel tank capacity	4,583 mm 1,997 mm 1,171 mm 1,225 kg 120 l
Equipment Fire extinguishing system Controls Seating system	Audi Sport Height- and length-adjustable safety steering column, quick- adjustable rail-supported foot lever unit Audi Protection Seat PS 3

^{*} established by BoP of the series organizers

Race car and production model

Good genes and joint production

Racing and production are mutually beneficial: This frequently quoted claim is perfectly embodied by the Audi R8 Coupé (combined fuel consumption in l/100 km: 13.4–12.6; combined CO₂ emissions in g/km: 306–287 g/km) and the Audi R8 LMS because the production model and the racing version are closely akin to each other.

Born on the track. Built for the road: Audi Sport carries the genes from motorsport to the road, and no other model embodies this idea as consistently as the Audi R8. The Audi R8 V10 plus is the strongest and fastest production Audi ever. Its development was characterized by a close cooperation between race engineers, people in motorsport and engineers from the Technical Development Department. The production model and race car share a common basis.

For example, the chassis: The close connection between the production and the race car starts with the design stage and ends with manufacturing. The Audi R8 is made at a production site that has specifically been established for the sports car – the Böllinger Höfe industrial park in Heilbronn. In addition to the production model, the chassis of the race car is produced at the factory. The sports car is subsequently completed with racing-specific components. Both versions stem from the same facility. For the assembly of the individual motorsport components, the racing chassis is removed from the production line and subsequently reintroduced.

For example, the lightweight design: The Audi Space Frame (ASF) body features a completely new multi-material lightweight design. Carbon fiber reinforced plastic (CFRP) components form the B-pillars, the center tunnel and the rear wall. The front end, the roof arch and the rear end are assembled as a framework of cast aluminum nodes and profiles, some of which consist of new alloys. As in any ASF, every component has been precisely designed for its place and purpose. For example, the developers have integrated a number of components in the body shell according to their respective functions. The body shell is now 15 percent lighter than that of the predecessor. At the same time, the torsional stiffness of the production model is 40 percent higher. Particularly in terms of stiffness, the body of the new Audi R8 sets standards. The resulting quality of the lightweight design is the benchmark among competitors. The race car is precisely based on this ASF body as well. Complemented by a steel roll cage, the new chassis in the race car is 30 kilograms lighter than the predecessor's.

For example, the engine: The ten-cylinder engine is assembled by hand at the engine plant in Győr, Hungary. The engines for both the road-going and the racing version are almost completely identical. The standard dry-sump lubrication of the 5.2-litre FSI engine is a classic motorsport technology. It allows for low installation of the unit which benefits the center of gravity. In addition, it ensures oil supply even in conditions of extreme lateral acceleration. As a result, the engine offers reserves that are completely sufficient for racing purposes as well. The robust V10 in racing has been designed for a service interval of 10,000 kilometers and 20,000 kilometers for the first rebuild. Many teams use the engine for further cycles. These unusually high figures are a crucial advantage for many teams in analyzing the cost effectiveness of the race car.

Audi Sport R8 LMS Cup

Audi Sport R8 LMS Cup with many innovations

The Audi Sport R8 LMS Cup is presenting itself in its seventh season in a fundamentally new way. For the first time, amateur drivers exclusively compete in the one-make cup. In addition, rounds are held at two national highlight events in Australia and Germany for the first time. The season will close with a night race in Malaysia.

"In the 2018 season, we're offering our customers dynamic and varied events on challenging tracks," says Martin Kühl, Head of Audi Sport customer racing Asia. "The Audi Sport R8 LMS Cup continues to be the only one-make cup to which GT3 race cars are admitted." The provisional calendar will commence on March 3 and 4 with two races in Adelaide, Australia. On May 11 and 12, the Audi Sport R8 LMS Cup will visit the Nürburgring 24 Hours. The two sprint races will be held on the 5.148-kilometer Grand Prix circuit in the Eifel. On September 1 and 2, the one-make cup will be racing on the newly opened track at Ningbo, China. As another date in China, the fourth event at Shanghai from October 5 to 6 will be on the calendar. The first night race in the history of the Audi Sport R8 LMS Cup will close the season at Sepang (Malaysia) from November 24 to 25. In addition, Audi will offer its customers an invitation race, the SIC 888, on October 7 at Shanghai. By participating in in this endurance race entrants will have ten additional points credited to their championship tally.

The audience is going to experience a field that will be as varied as never before. In addition to the first and the second generation of the Audi R8 LMS, the new Audi R8 LMS GT4 will also be admitted to the Cup for the first time. New as well will be the circle of drivers. For the first time, only privateers can apply. "For them, the series will become even more attractive due to a driver mentoring program and a policy of open data," says Martin Kühl. The drivers will benefit from a mentoring program with guidance provided by motorsport pros. Furthermore, in 2018, all data generated by the GT sports cars in the practice sessions and the races will be available to all participants. This policy promises to deliver substantial learning effects in terms of driving skills.

At the end of the year, the overall winner of the one-make cup will receive a Cup Edition of the Audi R8 Coupé V10 RWS (combined fuel consumption in l/100 km: 12.4; combined CO_2 emissions in g/km: 283). Four participants who score the largest number of points in each of the four countries on the calendar, respectively, will be

able to compete in the 2019 Spa 24 Hours in a team entered under the name of the Audi Sport R8 LMS Cup. In the GT4 class, the best three drivers will receive parts packages at the end of the year. Here, the overall winner can look forward to a volume worth 50,000 euros.

"The Audi Sport R8 LMS Cup has been a valuable element of our customer racing program for many years," says Chris Reinke, Head of Audi Sport customer racing. "With the new approach for 2018 we're going to focus on the wishes of our customers even more intensively than before and continue to strengthen the position of the one-make cup in Asia and beyond."

2018 fielding opportunities

Presence around the globe

With more than 200 cars delivered the Audi R8 LMS is one of the most popular race cars in international GT3 racing. In 2018, it is on the grid of all major championships, many other series and important single events. The events at a glance.

Endurance races

12h Bathurst www.bathurst12hour.com.au

24h Daytona www.daytonainternationalspeedway.com

24h Nürburgring www.24h-rennen.de
12h Sebring www.sebringraceway.com
24h Spa www.24hoursofspa.com
25h Thunderhill www.nasa25hour.com

International

Blancpain GT Series www.blancpain-gt-series.com
FIA GT World Cup www.fia.com/events/gt-worldcup/season-2017/fia-gt-world-cup

Intercontinental GT Challenge www.intercontinentalgtchallenge.com

24H Series www.24hseries.com

Macau Grand Prix www.macau.grandprix.gov.mo

America

IMSA WeatherTech SportsCar Championship www.imsa.com

Pirelli World Challenge www.world-challenge.com

Asia

Asian Le Mans Series www.asianlemansseries.com
Audi Sport R8 LMS Cup www.audi-motorsport-asia.com
Blancpain GT Series Asia www.blancpain-gt-series-asia.com
China GT Championship www.chinagt.net.cn/en/list/62/

GT Asia www.gtasiaseries.com
Super GT www.supergt.net
Super Taikyu www.supertaikyu.com

Thailand Super Series www.thailandsuperseries.net

Pacific

Australian GT www.australiangt.com.au

North Island Endurance Series www.nierdc.com

South Island Endurance Series www.facebook.com/sierdcnz

Europe

ADAC GT Masters www.adac-gt-masters.de

British GT Championship www.britishgt.com

Campionato Italiano GT www.acisport.it/en/CIGT/home

DMV Gran Turismo Touring Car Cup www.dmv-gtc.de

Blancpain GT Sports Club www.blancpainsportsclub.com

International GT Open www.gtopen.net

Michelin GT3 Le Mans Cup www.lemanscup.com/en

Spezial Tourenwagen Trophy www.spezial-tourenwagen-trophy.de

VLN Endurance Championship www.vln.de

Partners

The partners of Audi Sport customer racing

Audi Sport customer racing cooperates with five partners in its GT racing program.

Castrol

Castrol is the world's leading manufacturer, distributor and trader of high-quality lubricating oils, greases and related services. Its customers come from the fields of automotive engineering, industry, maritime and aerospace transport, and oil extraction and production. The company is headquartered in the United Kingdom and is also directly represented in more than 40 countries. Castrol has 7,000 employees worldwide.

Eibach

Eibach enjoys a reputation worldwide as a leading manufacturer of high-quality suspension and chassis systems as well as technical specialty springs for demanding uses. The range of applications covers almost all high-quality areas of industrial and automotive engineering. For decades, Eibach has also been an important partner in the world of high-performance motor sport.

Hör Technologie GmbH

The precision parts manufacturer Hör Technologie has been involved in motorsport, aerospace and motorcycle industry, and the automotive sector for decades. The know-how covers development, design, manufacture, heat treatment and quality control. From the prototype to production, Hör Technologie offers tailor-made customer solutions in transmission technology and camshaft technology.

Krontec

With some 90 highly qualified employees Krontec Maschinenbau GmbH supplies hydraulic and pneumatic systems for motor racing to the professional top teams of Formula 1 as well as directly to the leading automotive plants for their motor sport projects. The product portfolio includes the development and production of pipe and hose systems in lightweight construction, pneumatic fast-pumping systems, hydraulic quick-disconnect couplings as well as fast-refueling systems.

Montaplast

Montaplast represents more than 50 years of experience in plastic precision parts and systems. Initially, the company was active in household appliances and later became a reliable partner in the automotive industry worldwide. In addition to production plants in Germany, USA, India and China, the company is also established in Mexico, Brazil, South Africa, Japan and Thailand through its sales offices.

Events

Selected 2018 Audi GT racing commitments

Audi Sport customer racing endurance races

11-13/01	24 Hours of Dubai (UAE)
24-28/01	24 Hours of Daytona (USA)
02-04/02	Bathurst 12 Hour (AUS)
14-17/03	12 Hours of Sebring (USA)
10-13/05	24 Hours of Nürburgring (D)
26-29/07	24 Hours of Spa (B)
24-26/08	10 Hours of Suzuka (J)
10-13/10	Petit Le Mans, Road Atlanta (USA)
26-28/10	8 Hours of California (USA)

Audi Sport customer racing sprint races

15–18/11 FIA GT World Cup (MAC)

Audi Sport R8 LMS Cup

03-04/03	Adelaide (AUS)
11-12/05	Nürburgring (D)
01-02/09	Ningbo (CN)
05-06/10	Shanghai (CN)
07/10	Invitation race Shanghai (CN)
24-25/10	Sepang (MAL)

Audi Sport Seyffarth R8 LMS Cup

04-06/05	Hockenheim (D)
18-20/05	Lausitzring (D)
01-03/06	Budapest (H)
11-12/08	Brands Hatch (GB)
24-26/08	Misano (I)
07-09/09	Nürburgring (D)

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