



LIGIER JS P3

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LIGIER

JS P3

LIGIER & ONROAK AUTOMOTIVE

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After an exceptional career as a motorbike and racing car driver, Guy Ligier chose to become a builder of race cars. Five years in endurance, particularly marked by a second place for the Ligier JS2 at the 24 Hours of Le Mans in 1975, preceded an adventure of twenty years in Formula 1. Between 1976 and 1996, Ligier won the title of World Vice Champion in 1980, fifty podiums and nine victories, including one for Olivier Panis in the streets of Monaco. In 2004, Ligier made his return to endurance and the era of the "CN" began with the JS 49, JS 51 and JS 53 models.

More than 40 years after its creation, the legendary brand is experiencing a revival through Onroak Automotive. This partnership has already given birth to the Ligier JS P2 and JS P3, names chosen in respect for the history of the brand: a way to nurture the future of Onroak Automotive with the glorious sporting past of Ligier.

Onroak Automotive, French manufacturer of race cars, was born from the combination of the two passions of its president, Jacques Nicolet: a passion for motorsport, especially for the 24 Hours of Le Mans, and a passion for enterprise. Having had a success with the OAK Racing team, Jacques Nicolet took advantage of the experience and the knowledge of the technology and competition to develop a genuine entity dedicated to the design and production of sport-prototypes.

Onroak Automotive offers a range of Ligier sport-prototypes – CN, LMP3 and LMP2 – that allow everyone to find the model that suits a specific category or to evolve to the next rung of the endurance pyramid. The manufacturer has been able to gather a solid list of prizes over the seasons, earning it the recognition of the professionals of international motorsport.

Selected by the Automobile Club de l'Ouest (ACO), the International Motor Sports Association (IMSA) and the Fédération Internationale de l'Automobile (FIA), Onroak Automotive is one of the four LMP2 chassis manufacturers chosen for the new regulations of the category which will come into force in 2017. Onroak Automotive is also one of the six manufacturers of LMP3 cars.



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ONROAK AUTOMOTIVE AND THE LMP CATEGORIES

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Onroak Automotive has proved, since its creation in 2012, its mastery in the design of LMP chassis.

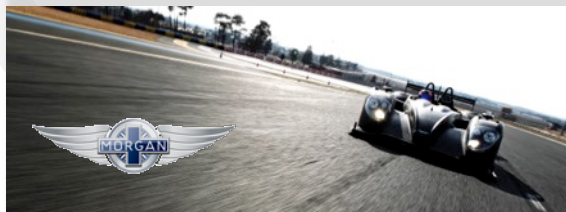
Onroak Automotive benefits today from a recognised experience in the design and the development of LMP chassis, which has been confirmed through the successes of many teams with the Morgan LM P2, the Ligier JS P2 and the Ligier JS P3.

The Onroak Automotive Design Office has designed a brand new LMP2 chassis, the Ligier JS P217, taking advantage of its experience in the category, all the while optimising the new regulations.

MORGAN LM P2

2013 1 st & 2 nd FIA WEC-LMP2 1 st & 2 nd LM 24H-LMP2 1 st AsLMS	2014 1 st AsLMS
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Since 2012
20 pole positions, 18 best laps,
50 podiums, 18 victories



LIGIER JS P2

2015 1 st & 3 rd FIA WEC-LMP2 3 rd & 4 th LM 24H-LMP2 3 rd AsLMS	2016* 1 st 24H of Daytona 1 st 12H of Sebring 1 st & 2 nd 6H of Silverstone
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Since 2014
17 pole positions, 16 best laps,
25 podiums, 8 victories

**1er trimestre*



LIGIER JS P3

2015 1 st AsLMS-LMP3 (4 wins out of 4 races)	2016* 4 wins out of 5 races (ELMS, GT Tour & VdeV)
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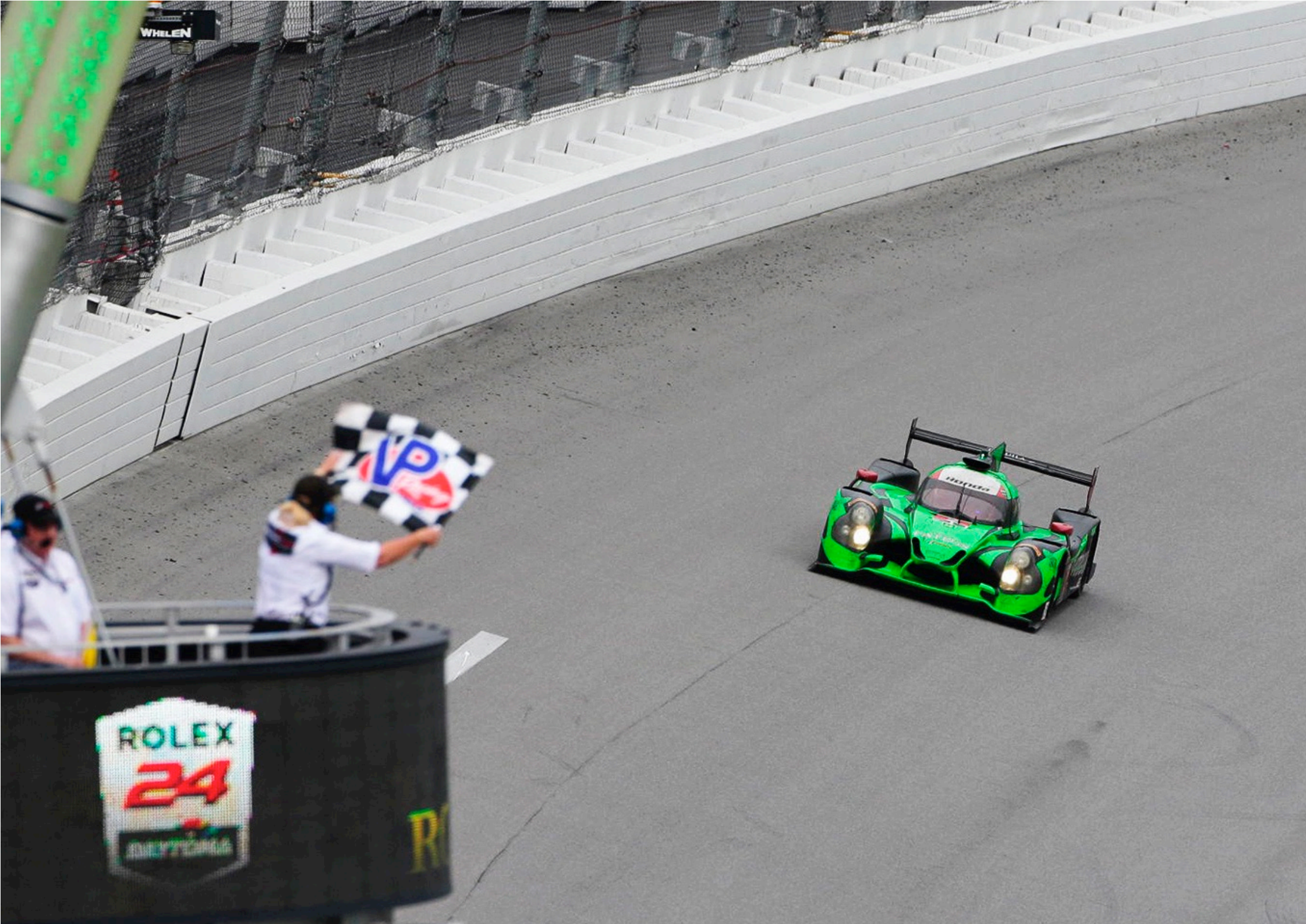
Since September 2015
7 pole positions, 8 best laps,
15 podiums, 8 victories

**1er trimestre*



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THE LIGIER RANGE

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Onroak Automotive offers a range of Ligier sport-prototypes, to allow teams and drivers to climb the ranks of the endurance pyramid.

LIGIER JS 53 EVO 2 – CN Category

The Ligier JS 53 EVO 2, thanks to its performance, high level of security, perfect balance and a real ease of driving, is ideal for young drivers and for gentlemen drivers who want to discover driving an endurance sport-prototype.

It is present in the V de V Endurance Series, equipped with a 2 litres 255 hp Honda engine and a six-speed sequential Sadev gearbox, but also in hill climbs and various national series.



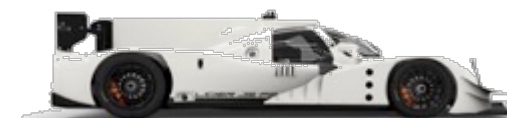
LIGIER JS P3 - LMP3 Category

The Ligier JS P3 is equipped with a 420 hp Nissan VK50 V8 engine, and a 6-speed sequential X-Trac gear box with a semi-automatic steering wheel paddle system. Thanks to the controlled cost and the ease of operation and driving, the Ligier JS P3 makes high level sport-prototype competition accessible for gentlemen drivers and young drivers. It's eligible in several series, namely the ELMS, Asian LMS, Asian Le Mans Sprint Cup, V de V Endurance Series and the GT Tour.



LIGIER JS P2 - LMP2 Category

The Ligier JS P2 can accommodate the three homologated engines on offer: Honda HPD, Judd HK and Nissan VK45. Competing in the LMP2 category, the top of the pyramid for private teams, the Ligier JS P2 is ideal for competing in the most prestigious endurance races. It includes in its track record the LMP2 title in the 2015 FIA WEC and victories at the 24 Hours of Daytona and 12 Hours of Sebring, both in 2016.



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THE ONROAK AUTOMOTIVE FACILITIES

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The Onroak Automotive production workshops are based at two distinct sites in France, each with important geographic and strategic assets.



■ LE MANS FOR THE LMP2 ACTIVITIES

At the heart of the Technoparc of the 24 Hours, benefiting from an ideal position at the door of the Le Mans circuit, the Onroak Automotive site houses the LMP2 activities. The proximity of the circuit, and the Bugatti and Maison Blanche tracks, facilitates the organization of test sessions, development sessions, and shakedown. During the two weeks of the event of the 24 Hours of Le Mans, the proximity of the workshops and the warehouse is a major asset that Onroak Automotive can exclusively offer their clients, being the only manufacturer based there.



■ MAGNY-COURS FOR THE LMP3 AND CN ACTIVITIES

The LMP3 and CN programs are based in Magny-Cours, at the heart of the motorsport activity of la Nièvre. The proximity of several motorsport professionals is the strength behind the Technopole of Magny-Cours and the agreements between the manufacturer and the circuit allows them to easily organise test sessions all year round, on the Grand Prix layout as well as the training circuit.

THE ONROAK AUTOMOTIVE FACILITIES

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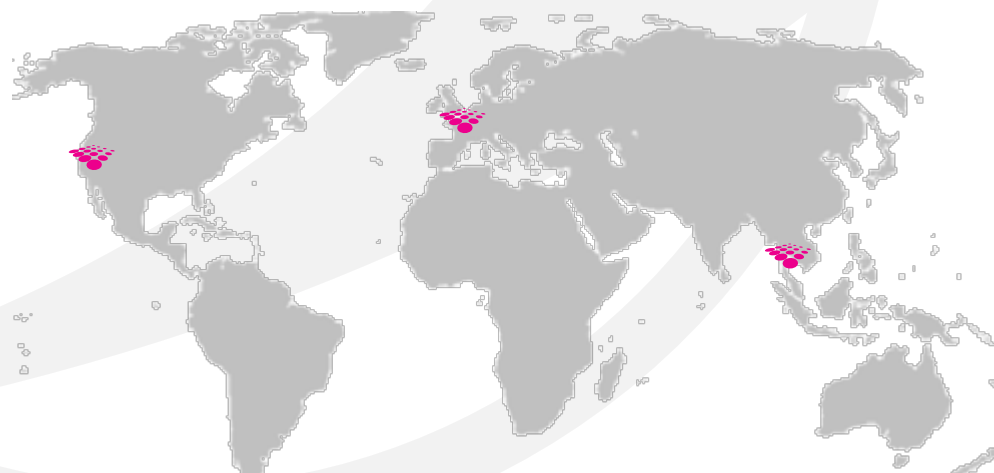
To answer the needs of their clients, Onroak Automotive is also present in the United States and in Asia:

- UNITED STATES

The American branch of Onroak Automotive North America exists since 2015 in California in Costa Mesa. Onroak Automotive North America's objective is to develop the activity and support of the teams on the other side of the Atlantic. The local structure allows for the best possible commitment from Onroak Automotive to accompany their LM P2 and DPi clients in the IMSA WeatherTech SportsCar Championship in 2017 and other series across North America.

- ASIA

Alongside the development of the activities across the Atlantic, Onroak Automotive opened a workshop in Sepang in Malaysia in 2016 to support the needs of their clients for their races in Asia, especially the Asian Le Mans Series and the new Asian Le Mans Sprint Cup. Onroak Automotive's clients who wish to take on Asia will also find adequate support through a support service and a stock of spare parts on site for the CN, LMP3 and LMP2 models.



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THE JS P3 JOINS THE LIGIER RANGE

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Already in the LMP2 category, with the JS P2, and in CN with the JS 53 EVO 2, Ligier added to its range with the JS P3, a sport-prototype for the LMP3 category.

The Ligier JS P3 fully benefits from its kinship with the Ligier JS P2, notably concerning the design and the aerodynamic characteristics which are inspired by the latter: a choice of efficiency.

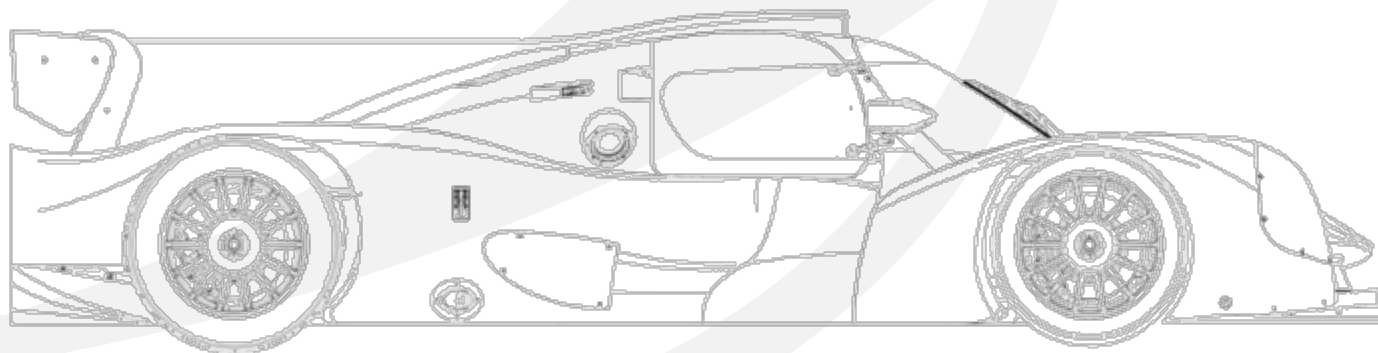
The Ligier JS P3 has been homologated in August 2015 for 4 years according to the current ACO regulations.

Its sale price, with engine, agrees with the ACO cost-capped policy: €206 000 + VAT.

Its conception follows the same philosophy as the other Onroak Automotive sport-prototypes, creating a product that is reliable, easy to use and competitive.

The Ligier JS P3's main assets are:

- Significant weight optimisation
- Ease of maintenance
- Ventilation & driving comfort
- Aerodynamics
- Habitability & safety of the cockpit



LIGIER

JS P3



BODYWORK & AERODYNAMICS

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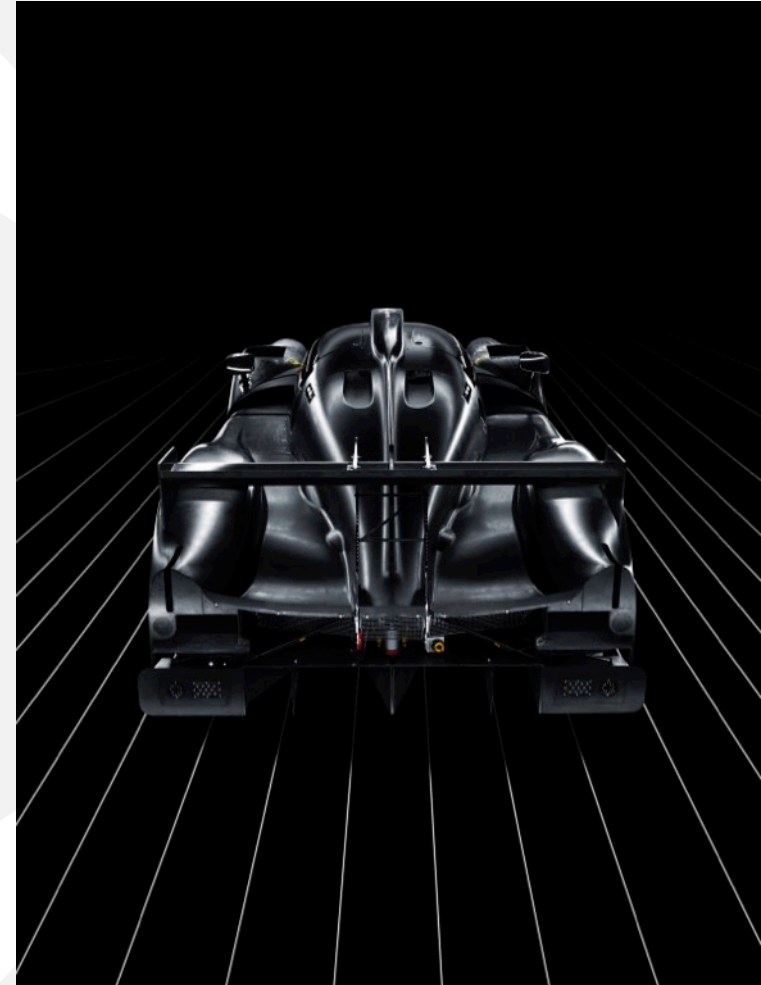
All technical regulations, as outlined by the ACO, have been complied with the Ligier JS P3's design.

BODYWORK

- The sport-prototype complies with the ACO regulations, following the latest aerodynamic development phase.

AERODYNAMICS

- The Ligier JS P3 benefits from the work in collaboration with **Exa** the modelling and the study of fluid movements, Computational Fluid Dynamics, so as to reach an optimal configuration of the aerodynamic balance.



LIGIER

JS P3

ELECTRONICS

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- Power box
- Switch panel
- Cosworth steering wheel
- Paddle shift
- Magneti Marelli Engine Control Unit
- Alternator
- Electric starter



LIGIER

JS P3

BRAKES, RIMS & SUSPENSION

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BRAKES – Brembo kit

- Master cylinder
- 6-piston callipers
- Front and rear 14" steel discs
- Pads
- Disc carriers

RIMS

- Magnesium
- 18" diameter, 12.5" front width , 13" rear width

SUSPENSION

- Optimized suspension geometry
- Type:
 - Double wishbone, pushrod and spring-damper combination
 - 3-way latest generation of dampers
- Adjustable anti-roll bar system
- 3rd element front and rear





ENGINE & TRANSMISSION

Mandatory for the LMP3 category

ENGINE

- Manufacturer: Nissan
- Model: VK50
- Nb cylinders and configuration: V8
- Capacity: 5000 cc
- Max power output: 420 hp
- Max torque: 550 Nm
- Management: Magneti Marelli



TRANSMISSION

- X-Trac 6-speed sequential gearbox
- Semi-automatic paddle shift system
- Oil-exchanger-cooled gearbox

LIGIER

JS P3



HABITABILITY & SAFETY

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The Design Office has paid special attention to the habitability, the comfort and the security of the Ligier JS P3:

- The cockpit can welcome small drivers (1.60m / 60kg) as well as larger drivers (1.95m / 110kg) in complete safety, thanks notably to adjustable pedals (3 available positions).
- Driver's comfort is optimised thanks to a wide driver shell and plenty of space, both around the chest and the legs.
- The driving position is identical to the one in the Ligier JS P2, relatively recumbent, which makes the longitudinal Gs easier to manage.

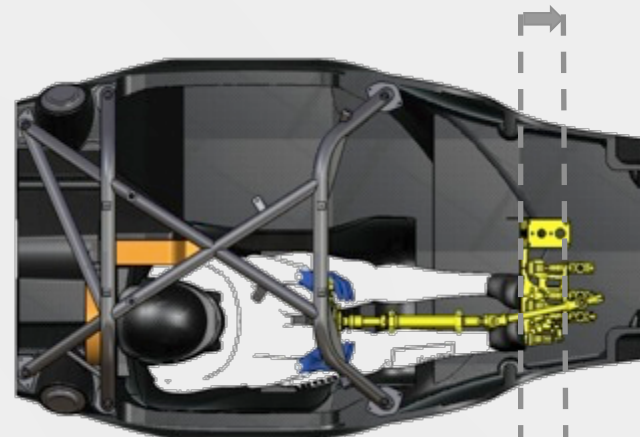
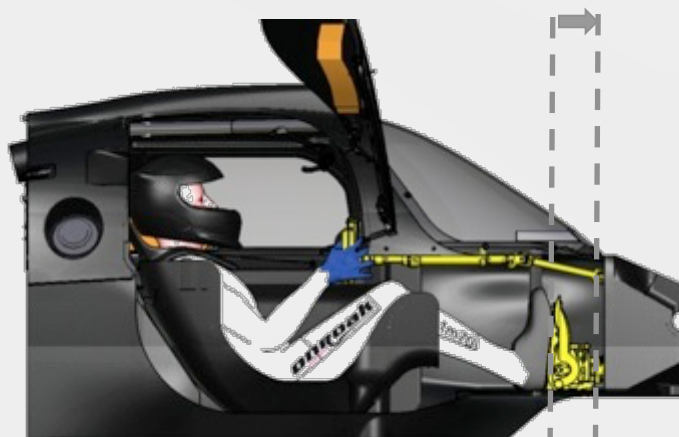
What's more, with the monocoque equipped with passenger seatbelt fixations, it's possible to install a second seat in complete safety.

LIGIER

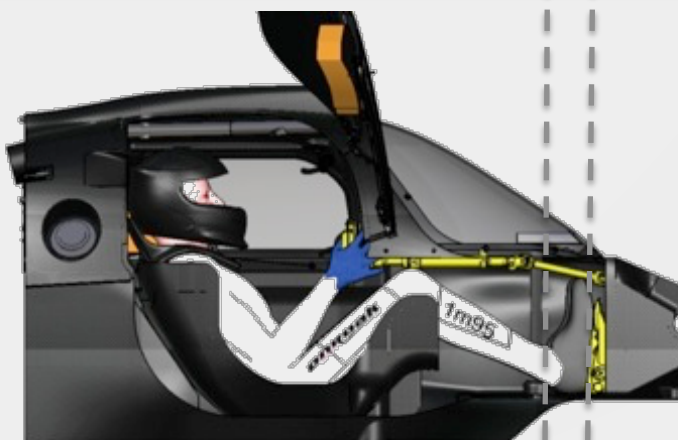
JS P3

HABITABILITY & SAFETY

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Simulation for a driver of 1.70 m / pedals in position 1



Simulation for a driver of 1.95 m / pedals in position 3

VENTILATION

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Due to the work done in collaboration with  , the aerodynamic efficiency, in terms of air penetration and downforce, is completed by an optimisation of the air circulation at the heart of the cockpit: an asset for the comfort and safety of the driver.

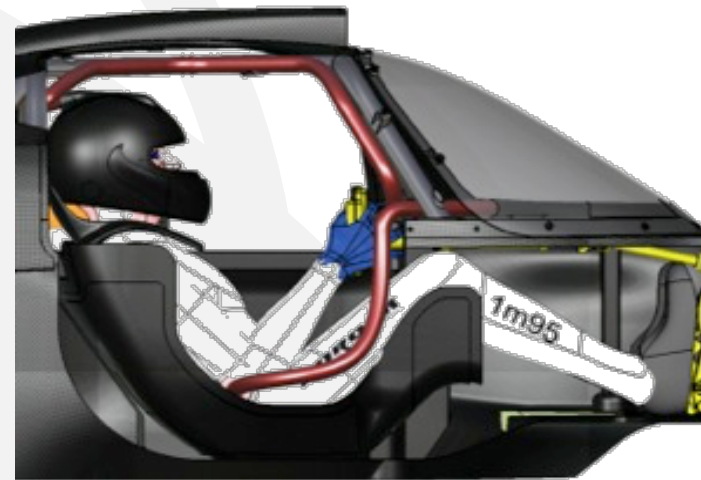
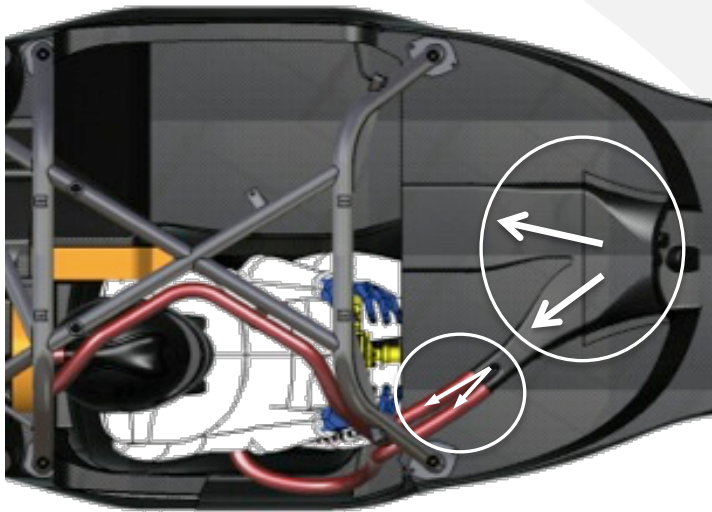
A dynamic entrance with a watertight conduit through the nose of the car allows for air circulation and distribution into the cockpit from below.

A dynamic entrance at the base of the wind-screen sends air into a conduit intended to ventilate the cockpit while still respecting the temperature regulations imposed by the technical regulations. A second conduit is intended for the ventilation and the comfort of the driver, which offers the possibility to fix connecting tubes to the driver's special equipment.

This technology allows for the direct flow of air towards the chest and the top of the head of the driver, for a better regulation of body temperature.

VENTILATION

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The first tube is for the flow of air towards the driver's helmet
The second tube is for the flow of air towards the driver's overalls.

The Research and Development team at [stand21](https://stand21.com) has been working with Onroak Automotive Design Office so as to offer helmets and overalls that can be connected directly to the ventilation conduits.

ONROAK AUTOMOTIVE'S SERVICES

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As well as design, production and commercialisation, Onroak Automotive also accompanies its clients in the operation of its sport-prototypes



■ CUSTOMER SUPPORT

Alongside a traditional after-sales service, the manufacturer offers a global technical support solution and a dedicated service throughout the season for the teams running their Ligier models in the CN, LMP3 and LMP2 categories.

Representatives of the manufacturer travel to many events so as to offer on-track technical support and a spare parts service.



■ OPERATIONS

Thanks to their experience and knowledge of the issues and needs of a racing team, Onroak Automotive offers, in collaboration with OAK Racing, tailor-made services for private and professional teams. These services, via the presence and the involvement of engineers and mechanics, cover the logistical and technical assistance in the operation of the LMP sport prototypes throughout the world.

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THE STRENGTHS OF ONROAK AUTOMOTIVE

- Manufacturer of LMP2 cars since 2012: 30 LMP2 chassis built, combining the Morgan LM P2 Evo and the Ligier JS P2
- Manufacturer of LMP3 cars since 2015 : 40 Ligier JS P3 chassis built and delivered in 8 months
- An international customer support service already in place in Europe, the USA and in Asia
- Facilities with accommodation and VIP reception areas at the heart of the 24 Hours of Le Mans circuit
- 5 championships titles, 35 victories, 92 podiums, 44 pole positions and 44 fastest race laps in just 5 years
- An international presence in LMP in 2016 with 26 cars entered by 20 teams from 9 countries in ELMS, 3 cars entered by American and Mexican teams in the FIA WEC and 2 cars entered in the North American Endurance Cup
- The most represented manufacturer in the LMP2 category at the 24 Hours of Le Mans in 2016 with 11 LMP2 and three different engines

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