



# RACEGUIDE

2024 FIA WEC



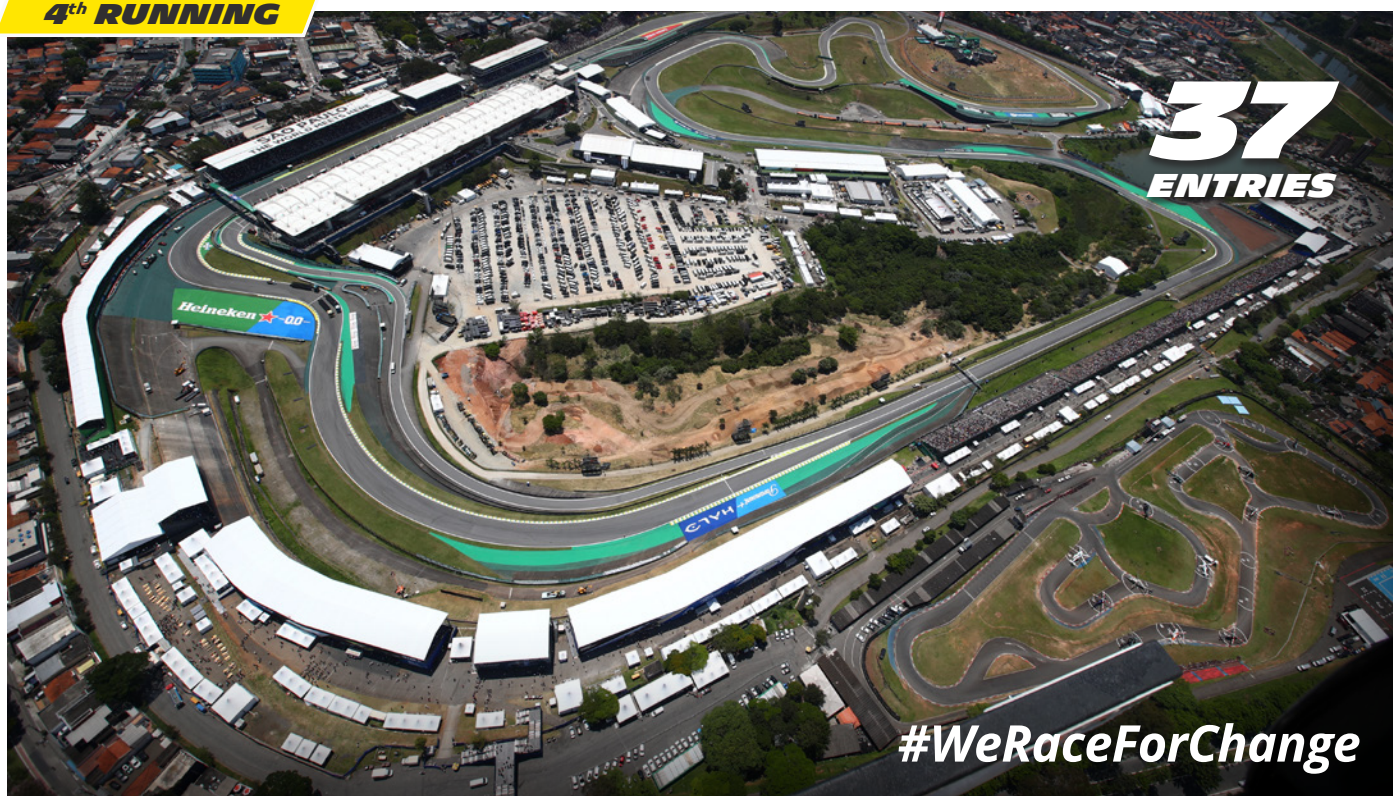
## ROLEX 6 HOURS OF SAO PAULO

Round 5, 2024 FIA World Endurance Championship (FIA WEC)



BRAZIL

4<sup>th</sup> RUNNING



FRIDAY

**12**  
JULY

**Free Practice 1**

10:45am • (90 minutes)

**Free Practice 2**

3:15pm • (90 minutes)

SATURDAY

**13**  
JULY

**Free Practice 3**

10:30am • (60 minutes)

**Hypercar Qualifying**

3:10pm • (12 minutes)

**Hyperpole**

3:30pm • (10 minutes)

SUNDAY

**14**  
JULY



11:30am  
Start

Local time • SOURCE : fiawec.com - information subject to change



# THE CIRCUIT

## AUTODROMO JOSÉ CARLOS PACE

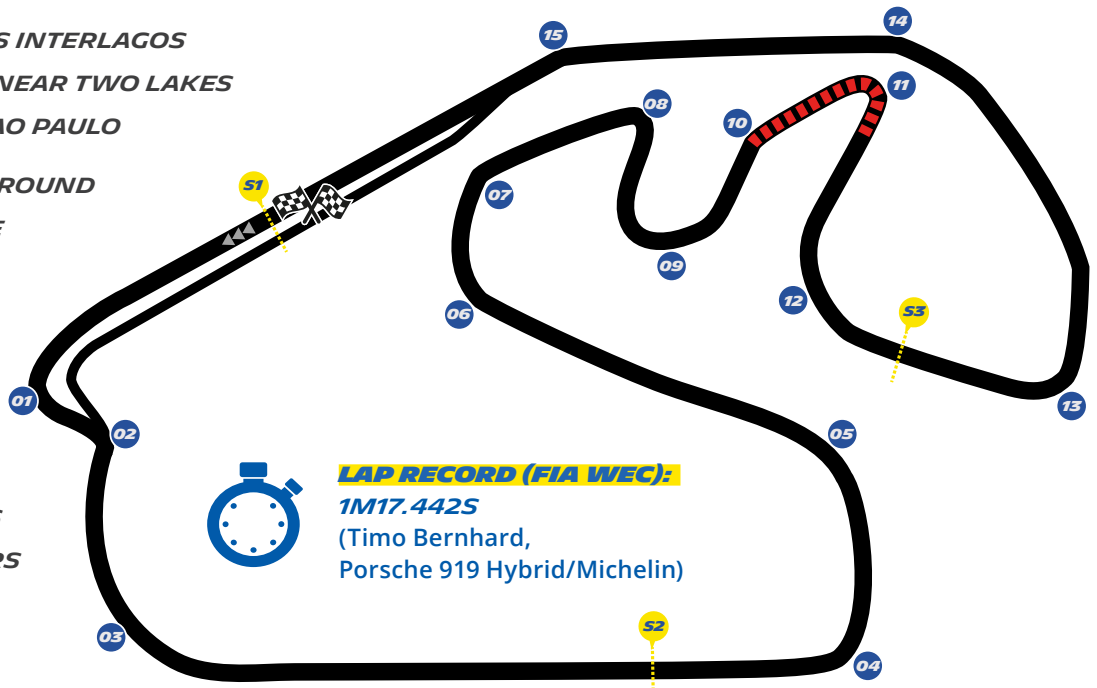
» FORMERLY KNOWN AS INTERLAGOS  
DUE TO ITS LOCATION NEAR TWO LAKES  
SOUTH OF CENTRAL SAO PAULO

» HOSTING AN FIA WEC ROUND  
FOR THE FOURTH TIME

» HILLY AND TWISTY  
(EIGHT TURNS IN  
SECTOR 2)

» 'S DO SENNA' AND  
'CURVA DO SOL' ARE  
TWO OF THE CIRCUIT'S  
BEST-KNOWN CORNERS

» THE START/FINISH  
STRAIGHT IS UPHILL



### LAP RECORD (FIA WEC):

1M17.442S

(Timo Bernhard,  
Porsche 919 Hybrid/Michelin)

**4.309KM**

**15  
TURNS**



**ANTICLOCKWISE**

01 TURN NUMBER  
S1 SECTOR  
S2 HIGH TIRE-STRESS ZONE

# 2024 EDITION

The FIA WEC's first visit to  
Sao Paulo in 10 years

19 Hypercar prototypes  
fielded by 9 different  
manufacturers, all on  
Michelin tires



**90<sup>th</sup> FIA WORLD ENDURANCE CHAMPIONSHIP ROUND**







## **MICHELIN'S 6 HOURS OF SAO PAULO RECORD**

**2012** Wurz/Lapierre  
(Toyota TS030 Hybrid)

**2013** Fässler/Lotterer/Tréluyer  
(Audi R18 e-tron quattro)

**2014** Dumas/Jani/Lieb  
(Porsche 919 Hybrid)



Three of the winners of the three previous editions of the 6 Hours of Sao Paulo are still active in the FIA WEC's Hypercar class: Nicolas Lapierre (2012 winner with Toyota/Michelin), André Lotterer (2013, Audi/Michelin) and Neel Jani (2014, Porsche/Michelin).



## PIERRE ALVES

(Manager, Endurance Racing Programs, Michelin Motorsport)



The FIA World Endurance Championship is back in Brazil, 10 years after its last visit to Sao Paulo which Michelin won with Porsche. At 4.309 kilometers in length, Interlagos is the shortest track of the season.

It is fast, hilly and twisty, and gives the drivers and their tires little opportunity to catch their breath. That said, the loads tires have to deal

// TIRES HAVE  
LITTLE  
OPPORTUNITY  
TO CATCH  
THEIR BREATH //

with are average. Our engineers estimate that the peak loads on the front and rear tires will be 1,000kg and 1,025kg respectively, through Turn 11. Our partners have a choice between the medium and hard MICHELIN Pilot Sport slick, plus our rain tire, although the latter probably won't be needed at this time of the year. Expect temperatures to be between 15 and 25°C.



### MICHELIN'S FIA WEC RECORD

**89**  
WINS

WITH 6 DIFFERENT MANUFACTURERS  
including Toyota (46 wins) and Porsche (18)

WITH 43 DIFFERENT DRIVERS  
including Buemi (24 wins), Hartley (21) and Conway (18)

**11**

MANUFACTURERS'  
WORLD TITLES

**11**

DRIVERS'  
TITLES





# THE MICHELIN PILOT SPORT

## HYPERCAR RANGE



### SLICKS

**Medium** (yellow):  
medium compound / dry conditions / the most versatile option



**Hard** (red): hard compound / dry conditions / high track temperatures / big constraints



### RAIN TIRES

**Wet** (blue): soft compound / wet conditions / versatile

### SLICK ALLOCATIONS

|                   |                  |
|-------------------|------------------|
| Free Practice     | 12 tires         |
| Hyperpole         | 4 tires (medium) |
| Qualifying + Race | 18 tires         |

**SIZES: FRONT: 29/71-18 • REAR: 34/71-18**

Width (cm) / Exterior Diameter (cm) – Interior Diameter (inches)

The MICHELIN Pilot Sports raced by today's sophisticated Hypercar prototypes were developed on simulators in the space of just months but proved competitive and reliable from the outset. Michelin has since continued to work on its reliable, high-performance range of endurance racing tires in response to the demand for superior longevity inline with Michelin's "Everything Sustainable" plan.

The regulations for the 2024 FIA World Endurance Championship restrict the number of different slick specifications to just two (three for Le Mans), plus a single type of rain tire. Tire warming systems are no longer authorized.

These two parameters have led Michelin Motorsport's engineers to work on the compounds of its slicks to make them even more versatile and enhance their warm-up performance.

Meanwhile, the single type of rain tire needs cover a broad spectrum conditions, from damp and drying, to heavy rain. The resulting solution combines a new tread pattern with greater versatility.

All of the Hypercar prototypes (LMH/LMDh) race on MICHELIN Pilot Sports (front: 29/71-18, rear 34/71-18).

### TECHNICAL REQUIREMENTS

|   |                |
|---|----------------|
| Minimum FRONT Stabilized Relative Pressure  | 1,8b = 26,1psi |
| Minimum REAR Stabilized Relative Pressure   | 1,8b = 26,1psi |
| Maximum FRONT camber at static ride height* | -3,0°          |
| Minimum FRONT camber at static ride height* | -1,0°          |
| Minimum REAR camber at static ride height*  | -2,7°          |
| Maximum REAR camber at static ride height*  | -1,0°          |

(\*) For example, if the minimum static camber angle is -3°, competitors may run at -2.5° but not at -3.5°



**HYPERCAR****MICHELIN PARTNERS**

19 HYPERCAR PROTOTYPES REPRESENTING 9 MANUFACTURERS

**#2 CADILLAC RACING**

Cadillac V-Series.R (LMDh)



E. BAMBER  
 A. LYNN  
 S. BOURDAIS

**#11 ISOTTA FRASCHINI**

Isotta Fraschini Tipo6-C (LMH)\*



A. SERRAVALLE  
 C. BENNET  
 J-K. VERNAY

**#5 PORSCHE PENSKE MOTORSPORT**

Porsche 963 (LMDh)



M. CAMPBELL  
 M. CHRISTENSEN  
 F. MAKOWIECKI

**#6 PORSCHE PENSKE MOTORSPORT**

Porsche 963 (LMDh)



K. ESTRE  
 A. LOTTERER  
 L. VANTHOOR

**#7 TOYOTA GAZOO RACING**

Toyota GR010 Hybrid (LMH)



M. CONWAY  
 K. KOBAYASHI  
 N. DE VRIES

**#8 TOYOTA GAZOO RACING**

Toyota GR010 Hybrid (LMH)



S. BUEMI  
 B. HARTLEY  
 R. HIRAKAWA

**#12 HERTZ TEAM JOTA**

Porsche 963 (LMDh)



W. STEVENS  
 C. LLOTT  
 N. NATO

**#38 HERTZ TEAM JOTA**

Porsche 963 (LMDh)



J. BUTTON  
 P. HANSON  
 O. RASMUSSEN

**#15 BMW M TEAM WRT**

BMW M Hybrid V8 (LMDh)\*



D. VANTHOOR  
 R. MARCIELLO  
 M. WITTMANN

**#20 BMW M TEAM WRT**

BMW M Hybrid V8 (LMDh)\*



S. VAN DER LINDE  
 R. FRIJNS  
 R. RAST

**#35 ALPINE ENDURANCE TEAM**

Alpine A424 (LMDh)\*



P-L. CHATIN  
 C. MILES  
 F. HABSBURG

**#36 ALPINE ENDURANCE TEAM**

Alpine A424 (LMDh)\*



N. LAPIERRE  
 M. SCHUMACHER  
 M. VAXIVIERE

**#50 FERRARI AF CORSE**

Ferrari 499P (LMH)



A. FUOCO  
 M. MOLINA  
 N. NIELSEN

**#51 FERRARI AF CORSE**

Ferrari 499P (LMH)



A. PIER GUIDI  
 J. CALADO  
 A. GIOVINAZZI

\* FIA WEC debut



**HYPERCAR****MICHELIN PARTNERS**

19 HYPERCAR PROTOTYPES REPRESENTING 9 MANUFACTURERS

**#63 LAMBORGHINI IRON LINX**

Lamborghini SC63(LMDh)\*



M. BORTOLOTTI  
 E. MORTARA  
 D. KVYAT

**#83 AF CORSE**

Ferrari 499P (LMH)



R. KUBICA  
 R. SHWARTZMAN  
 Y. YE

**#93 PEUGEOT TOTALENERGIES**

Peugeot 9X8 (LMH)



VERSION 2024

M. JENSEN  
 N. MÜLLER  
 J-É. VERGNE

**#94 PEUGEOT TOTALENERGIES**

Peugeot 9X8 (LMH)



VERSION 2024

P. DI RESTA  
 L. DUVAL  
 S. VANDOORNE

**#99 PROTON COMPETITION**

Porsche 963 (LMDh)



N. JANI  
 J. ANDLAUER

\* FIA WEC debut

**THE MICHELIN-EQUIPPED HYPERCAR PROTOTYPES**

| VOITURE                        | POWER UNIT   | POWER         | TRANSMISSION   |
|--------------------------------|--|---------------|--|
| TOYOTA GRO10 HYBRID (LMH)      | 3.5-liter V6 bi-turbo<br>+ Toyota Hybrid System (front wheels) | 500kW + 200kW | four-wheel drive, seven-speed Xtrac sequential gearbox |
| PEUGEOT 9X8 (LMH)              | 2.5-liter V6 bi-turbo<br>+ Peugeot MGU (front wheels)          | 500kW + 200kW | four-wheel drive, seven-speed Sadev sequential gearbox |
| FERRARI 499P (LMH)             | 3-liter V6 bi-turbo<br>+ hybrid system (front wheels)          | 500kW + 200kW | four-wheel drive, seven-speed Xtrac sequential gearbox |
| ISOTTA FRASCHINI TIPO6-C (LMH) | V6 turbo<br>+ MGU (front wheels)                               | 500kW + 200kW | four-wheel drive, seven-speed Xtrac sequential gearbox |
| PORSCHE 963 (LMDh)             | 4.6-liter V8 bi-turbo<br>+ Bosch MGU (rear wheels)             | 500kW + 50kW  | two-wheel drive, seven-speed Xtrac sequential gearbox  |
| CADILLAC V-SERIES.R (LMDh)     | 5.5-liter V8<br>+ Bosch MGU (rear wheels)                      | 500kW + 50kW  | two-wheel drive, seven-speed Xtrac sequential gearbox  |
| ALPINE A424 (LMDh)             | 3.4-liter V6 turbo<br>+ Bosch MGU (rear wheels)                | 500kW + 50kW  | two-wheel drive, seven-speed Xtrac sequential gearbox  |
| BMW M Hybrid V8 (LMDh)         | 4-liter V8 bi-turbo<br>+ Bosch MGU (rear wheels)               | 477kW + 50kW  | two-wheel drive, seven-speed Xtrac sequential gearbox  |
| LAMBORGHINI SC63 (LMDh)        | 3.8-liter V8 bi-turbo<br>+ Bosch MGU (rear wheels)             | 500kW + 50kW  | two-wheel drive, seven-speed Xtrac sequential gearbox  |











# HYPERCAR STANDINGS

## FIA WORLD ENDURANCE HYPERCAR CHAMPIONSHIP

| MANUFACTURERS   |         |   | R1<br>2/03 | R2<br>21/04 | R3<br>11/05 | R4<br>15-16/06 | R5<br>14/07 | R6<br>1/09 | R7<br>15/09 | R8<br>2/11 | TOTAL |
|-----------------|---------|---|------------|-------------|-------------|----------------|-------------|------------|-------------|------------|-------|
| 1 <sup>st</sup> | PORSCHE |  | 39         | 18          | 26          | 25             |             |            |             |            | 108   |
| 2 <sup>nd</sup> | FERRARI |  | 18         | 13          | 18          | 50             |             |            |             |            | 99    |
| 3 <sup>rd</sup> | TOYOTA  |  | 23         | 25          | 12          | 36             |             |            |             |            | 96    |

| DRIVERS         |                  |   | R1<br>2/03 | R2<br>21/04 | R3<br>11/05 | R4<br>15-16/06 | R5<br>14/07 | R6<br>1/09 | R7<br>15/09 | R8<br>2/11 | TOTAL |
|-----------------|------------------|---|------------|-------------|-------------|----------------|-------------|------------|-------------|------------|-------|
| 1 <sup>st</sup> | ANDRÉ LOTTERER   |    | 38         | 18          | 18          | 25             |             |            |             |            | 99    |
| 1 <sup>st</sup> | KÉVIN ESTRE      |    | 38         | 18          | 18          | 25             |             |            |             |            | 99    |
| 1 <sup>st</sup> | LAURENS VANTHOOR |    | 38         | 18          | 18          | 25             |             |            |             |            | 99    |
| 2 <sup>nd</sup> | ANTONIO FUOCO    |    | 12         | 13          | 15          | 50             |             |            |             |            | 90    |
| 2 <sup>nd</sup> | MIGUEL MOLINA    |   | 12         | 13          | 15          | 50             |             |            |             |            | 90    |
| 2 <sup>nd</sup> | NICKLAS NIELSEN  |  | 12         | 13          | 15          | 50             |             |            |             |            | 90    |
| 3 <sup>rd</sup> | KAMUI KOBAYASHI  |  | 15         | 25          | 6           | 36             |             |            |             |            | 82    |
| 3 <sup>rd</sup> | NYCK DE VRIES    |  | 15         | 25          | 6           | 36             |             |            |             |            | 82    |

### ENDURANCE RACING: AN INNOVATION ACCELERATOR FOR MICHELIN

Michelin sees motorsport in general, and endurance racing and the Le Mans 24 Hours in particular, as a means to accelerate innovation. The proportion of renewable or recycled raw materials that go into MICHELIN Pilot Sport endurance-racing rain tires stands at 45 percent.

In 2021, Michelin presented a demonstration tire containing 46 percent recycled or renewable raw materials for the MissionH24 hydrogen fuel-cell racing prototype.

Since last season, the wet rain tires raced by endurance racing's Hypercar prototypes incorporate 45 percent renewable or recycled raw materials.

Motorsport is one of the driving forces behind Groupe Michelin's "Everything Sustainable" plan for 2050.







## MICHELIN GREEN GUIDE

Brazil (surface area: 8.5 million km<sup>2</sup>) is the size of a continent. Its exceptionally diverse attractions range from the Amazon, deserted beaches and spectacular waterfalls, to colonial towns and densely-populated megalopolises, all best discovered during Carnival time.



## SAO PAULO THE CITY AND CIRCUIT



- » Sao Paulo (population: 22 million) is the world's fourth biggest city (UN estimate, 2018)
- » The circuit is in the city's southern suburban sprawl

- » It is called Autodromo José Carlos Pace in memory of the 1975 Brazilian GP winner who died in 1977
- » The circuit is still largely known by its original name Interlagos, the result of its location between two artificial lakes (Guarapiranga and Billings)
- » The first race to be held there was the Grande Premio Cidade de Sao Paulo, in 1940
- » After frequent previous modifications, the circuit's current layout dates back to the 1990s
- » Ayrton Senna's resting place in Morumbi Cemetery is 12km from the circuit. The Brazilian only won twice in F1 at Interlagos

## MICHELIN MOTORSPORT AND SAO PAULO



- » Michelin has scored three F1 pole-positions and three grand prix wins at Interlagos

- » Michelin won at Interlagos with René Arnoux and Renault in 1980
- » Twenty years ago, Michelin won the Brazilian Grand Prix with Juan-Pablo Montoya (Williams)
- » It was at Interlagos, in 2012, that Toyota and Michelin collected their first FIA WEC victory together
- » Michelin has won FIA WEC races at Interlagos with Toyota, Audi and Porsche
- » In 2007, Michelin won the Sao Paulo Mil Milhas (Le Mans Series) with Minassian/Gené (Peugeot 908 HDi FAP)

# WHAT'S NEW IN 2024

## CLASSES

Only two classes: Hypercar and LMGTC3

The Hypercar class covers LMH (hybrid and non-hybrid) and LMDh (hybrid) prototypes

LMH prototypes: Toyota GR010 Hybrid, Peugeot 9X8, Ferrari 499P, Isotta Fraschini Tipo6-C

LMDh prototypes: Porsche 963, Cadillac V-Series.R, Alpine A424, BMW M V8 Hybrid, Lamborghini SC63

## VENUES

### 2 new venues:

Lusail (Qatar), Imola (Italy)

### 2 returning venues:

Sao Paulo (Brazil), COTA (USA)

## QUALIFYING

### New format,

with two sessions per class: Qualifying (12 minutes), followed by a Hyperpole shootout, featuring the 10 fastest cars from Qualifying (10 minutes)

# 2024 CALENDAR

|  |                                     |              |
|--|-------------------------------------|--------------|
| <b>R1</b>  | <b>QATAR 1812 KM</b>                | March 2      |
|  | (Qatar, Lusail)                     |              |
| <b>R2</b>  | <b>6 HOURS OF IMOLA</b>             | April 21     |
|  | (Italy)                             |              |
| <b>R3</b>  | <b>6 HOURS OF SPA-FRANCORCHAMPS</b> | May 11       |
|  | (Belgium)                           |              |
| <b>R4</b>  | <b>LE MANS 24 HOURS</b>             | June 15-16   |
|  | (France)                            |              |
| <b>R5</b>  | <b>6 HOURS OF SAO PAULO</b>         | July 14      |
|  | (Brazil)                            |              |
| <b>R6</b>  | <b>LONE STAR LE MANS</b>            | September 1  |
|  | (Texas, USA)                        |              |
| <b>R7</b>  | <b>6 HOURS OF FUJI</b>              | September 15 |
|  | (Japan)                             |              |
| <b>R8</b>  | <b>8 HOURS OF BAHRAIN</b>           | November 2   |
|  | (Sakhir)                            |              |

# FIA WEC TIRE REGULATIONS

## SPECIFICATIONS

| Number of specifications for dry-weather tires |             |                       | Number of specifications for wet-weather tires |
|--|-------------|-----------------------|--|
| Le Mans 24 Hours                               | Other races | Total over the season |  |
| 3  | 2           | 3                     | 1  |

Two slick specifications for the season for all cars, to be registered 48 hours before the Prologue Test. For individual races, two of the three specifications to be nominated 48 hours at the latest prior to the start of scrutineering (three specifications for Le Mans).

## ALLOCATIONS

| Free Practice | Hyperpole* | Qualifying + Race |              |                |
|---------------|------------|-------------------|--------------|----------------|
|               |            | 6-hour races      | 8-hour races | 10-hour races* |
| 12            | 4          | 18                | 26           | 32             |

(\*) Or of 1812km.

(\*\*) Only the softest tire proposed by the tire manufacturer for this competition will be used for Hyperpole.

- The tire manufacturer must establish identical technical requirements (pressure and camber) for all the Competitors. The non-respect of these requirements by the Competitors may be penalized by the Panel of the Stewards.
- For 29/34 tires: a random draw will be made per Competition and tires will be reattributed randomly to each Competitor by the Technical Delegates. These tires must be used in the "Qualifying + Race" allocation. The details will be defined by the WEC Committee.
- For 31/31 tires: a mechanism of collection and reintroduction of the tires will be defined by the WEC Committee.
- The WEC Committee will be able to modify the random attribution mechanism and the tire collection and reintroduction mechanism at any moment during the season.
- To go from the pit lane to the starting grid before the start of the race, the tires used can be either dry-weather tires or wet-weather tires and will not be counted in the allocation.

## HYPERPOLE

Michelin to select the compound for use in the Hyperpole sessions

The choice of compound for this session will be specified by Michelin, with all 10 cars contesting the shootout on the same type of tire. The four covers employed will be supplied in addition to the competitor's basic allocation but they may not be used for the race itself. Instead, the Hyperpole tires will be retrieved at the end of the session and will be made available to Michelin's partners for private testing at a later date.

## RAIN TIRES

The number of wet-weather tires usable during a Competition is not limited. During practices and the race, wet-weather tires can only be used once the track has been declared wet by the Clerk of the Course / Race Director.

Any chemical and/or mechanical treatment of the tires is prohibited, except for the removal of debris collected on the track.

The tread and profile of the tires must not be modified or recut.

Any process that involves a direct or indirect attempt at modifying the temperature of a tire (compared to the ambient temperature) is forbidden.

Use of storage tents in designated areas is permitted only if they are always ventilated with ambient air and accessible.

**Infringement of the tire allowance:** Stop & Go of 2 minutes per tire.

**Infringement of the tire heating rules:** Stop & Go of 3 minutes during the race.

**Four mechanics and two tire guns allowed** for wheel changes during pit stops. Wheel changes are only allowed when the car is not being refueled.

**Only one tire technician is allowed** to measure tire temperatures and pressures.

**Tire changes may only be carried out on the starting grid up to the five-minute board**, in front of the garage or inside the garage if significant work is being undertaken on the car, on the track in the case of a suspension of the race.

**Each tire must be identified by RFID and barcode.** All references must be declared to the Technical Delegate at least 48 hours before the start of the Competition.





**OUR VICTORIES,  
YOUR GAIN!**



From left to right: the MICHELIN Pilot Sport Endurance (for the World Championship's Hypercars), MICHELIN Pilot Sport<sup>4</sup> S and MICHELIN Pilot Sport<sup>®</sup>

## **MICHELIN PILOT SPORT**

The MICHELIN Pilot Sport is unbeaten in the FIA World Endurance Championship since 2012. Benefit from the grip and precision delivered by the MICHELIN Pilot Sport range of road tires!

**#PerformanceMadeToLast #WeRaceForChange**



**MICHELIN**