

# RACEGUIDE

2024 FIA WEC



## BAPCO ENERGIES 8 HOURS OF BAHRAIN



Round 8, 2024 FIA World Endurance Championship (FIA WEC)

MANAMA,  
KINGDOM OF BAHRAIN

11<sup>th</sup> RUNNING



**36**  
ENTRIES

#WeRaceForChange

THURSDAY

**13**

OCTOBER

**Free Practice 1**  
12:15pm • (90 minutes)

**Free Practice 2**  
5:30pm • (90 minutes)

FRIDAY

**14**

NOVEMBER

**Free Practice 3**  
12:00 noon • (60 minutes)

**Hypercar Qualifying**  
4:40pm • (12 minutes)

**Hyperpole**  
5:00pm • (10 minutes)

SATURDAY

**15**

NOVEMBER



2:00pm  
Start

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



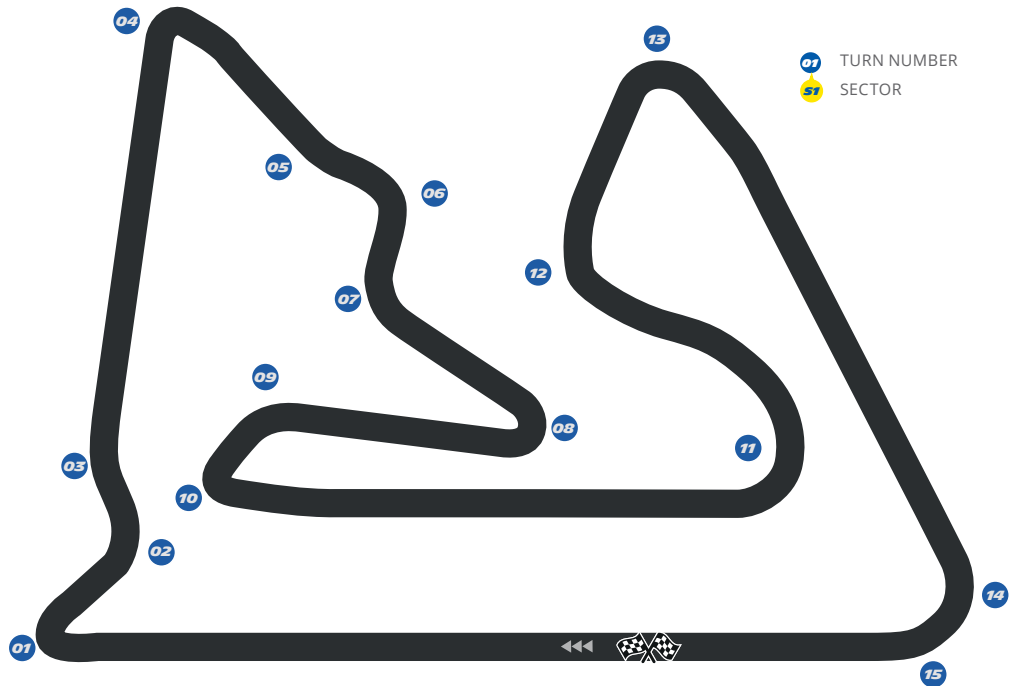
# THE CIRCUIT

## SAKHIR INTERNATIONAL CIRCUIT

- » INAUGURATED IN 2004
- » HAS HOSTED FIA WEC ACTION SINCE 2012
- » DESERT LOCATION
- » LINED BY 1,120 PALM TREES AND LIT BY 495 FLOODLIGHTS AT NIGHT



**FIA WEC**  
**LAP RECORD:**  
LUCAS DI GRASSI  
(Audi R18/Michelin),  
1m38.828s (2016)



**5.412KM**

**15**  
TURNS

**CLOCKWISE**



## 2024 8 HOURS OF BAHRAIN

Last round of the 2024 FIA WEC

13th FIA WEC race to be held at Sakhir International Circuit (two races in 2021)

Half of the duration takes place after nightfall

Porsche, Toyota and Ferrari can all still win the 2024 Manufacturers' title

Eight different drivers can still win this season's Drivers' title

All 18 Hypercars on Michelin tires

The circuit will host a Rookie Test on the Sunday after the race. Michelin has also organized a test there on Tuesday, November 5

**93<sup>RD</sup> ROUND OF THE FIA WORLD ENDURANCE CHAMPIONSHIP**



## THE 2023 RACE



- » **Winners:**  
Buemi/Hartley/Hirakawa (Toyota GR010 Hybrid/Michelin), 249 laps
- » **Pole-Position:**  
Brendon Hartley (Toyota GR010 Hybrid/Michelin), 1m46.564s
- » **Fastest race lap:**  
Kamui Kobayashi (Toyota GR010 Hybrid/Michelin), 1m50.139s
- » **Top speed:** Kamui Kobayashi (Toyota GR010 Hybrid/Michelin), 301kph
- » 1-2 finish and the 2023 world title for Toyota/Michelin
- » Victory and the 2023 Drivers' title for Buemi/Hartley/Hirakawa
- » Last FIA WEC appearance for the LMGT E Am class
- » Landmark all-women LMGT E Am win for Bovy/Gatting/Frey (Porsche/Michelin)

## MICHELIN'S BAHRAIN RECORD

- 2012** Tréluyer/Fässler/Lotterer (Audi R18 e-tron quattro/Michelin)
- 2013** Davidson/Buemi/Sarrazin (Toyota TS030 Hybrid/Michelin)
- 2014** Wurz/Sarrazin/Conway (Toyota TS040 Hybrid/Michelin)
- 2015** Dumas/Jani/Lieb (Porsche 919 Hybrid/Michelin)
- 2016** Di Grassi/Duval/Jarvis (Audi R18/Michelin)
- 2017** Buemi/Davidson/Nakajima (Toyota TS050 Hybrid/Michelin)
- 2019** Conway/Kobayashi/Lopez (Toyota TS050 Hybrid/Michelin)
- 2020** Conway/Kobayashi/Lopez (Toyota TS050 Hybrid/Michelin)
- 2021 6 Heures :** Conway/Kobayashi/Lopez (Toyota TS050 Hybrid/Michelin)
- 8 Heures :** Buemi/Nakajima/Hartley (Toyota TS050 Hybrid/Michelin)
- 2022** Conway/Kobayashi/Lopez (Toyota GR010 Hybrid/Michelin)
- 2023** Buemi/Hartley/Hirakawa (Toyota GR010 Hybrid/Michelin)

## MICHELIN STATISTIC

The 6 Hours of Fuji saw Porsche claim its 20th FIA World Endurance Championship victory with Michelin. It was also the make's second win of the season with the 963 Hypercar. Porsche Penske Motorsport provisionally tops the Manufacturers' points table and could add a fourth world endurance title with Michelin to its record, three weeks after clinching the North American IMSA WeatherTech SportsCar Championship crown, also with Michelin.



## **PIERRE ALVES**

(Manager, Endurance Racing Programs, Michelin Motorsport)



We go to the last race of the season at Sakhir with all the data we have collected in the course of 2024. It is a particularly abrasive circuit, where traction, stability and braking performance are all key, so we have chosen the medium- and hard-compound MICHELIN Pilot Sport slicks. At last year's 8 Hours of Bahrain, everyone chiefly ran the hard option and it delivered the consistency required to double stint. This season, though, we have seen strong performances on our medium slick, even with track temperatures in excess of 40°C. Our technical advisors will therefore use

“ **TRACTION,  
STABILITY  
AND BRAKING  
PERFORMANCE ARE  
ALL KEY** ”

the four hours of free practice to work with our partners to evaluate the grip, consistency and wear of both options to establish the best choice for Saturday's race which kicks off at 2pm, one of the hottest moments of the day. It will finish in darkness under floodlights eight hours later at 10pm. The track usually ensures some spectacular racing because of the numerous overtaking opportunities it provides, especially down the pits straight and braking for Turn 1, then again into Turns 4 and 11. Good wear-management will be one of the big factors in deciding who wins the 2024 FIA WEC titles.



## **MICHELIN'S FIA WEC RECORD**

**92  
WINS**

**WITH 6 DIFFERENT MANUFACTURERS**  
including Toyota (47 wins) and Porsche (20)

**WITH 51 DIFFERENT DRIVERS**  
including Buemi (25 wins), Hartley (22) 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	26 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*	-3,3°
Minimum FRONT camber at static ride height*	-1,0°
Minimum REAR camber at static ride height*	-2,8°
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

18 HYPERCAR PROTOTYPES REPRESENTING 8 MANUFACTURERS

## #2 CADILLAC RACING

Cadillac V-Series.R (LMDh)



E. BAMBER  
 A. LYNN  
 S. BOURDAIS

## #99 PROTON COMPETITION

Porsche 963 (LMDh)



H. TINCKNELL  
 N. JANI  
 J. ANDLAUER

## #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  
 J. GOUNON  
 F. HABSBURG

## #36 ALPINE ENDURANCE TEAM

Alpine A424 (LMDh)\*



C. MILESI  
 M. SCHUMACHER  
 M. VAXIVIERE



# HYPERCAR MICHELIN PARTNERS

18 HYPERCAR PROTOTYPES REPRESENTING 8 MANUFACTURERS

**#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

**#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

## THE MICHELIN-EQUIPPED HYPERCAR PROTOTYPES

















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



# HYPERCAR STANDINGS

## FIA WORLD ENDURANCE HYPERCAR CHAMPIONSHIP

<b>MANUFACTURERS</b>		<b>R1</b>  2/03	<b>R2</b>  21/04	<b>R3</b>  11/05	<b>R4</b>  15-16/06	<b>R5</b>  14/07	<b>R6</b>  1/09	<b>R7</b>  15/09	<b>R8</b>  2/11	<b>TOTAL</b>
1 <sup>st</sup>	<b>PORSCHE</b> 	39	18	26	25	18	10	25		<b>161</b>
2 <sup>nd</sup>	<b>TOYOTA</b> 	23	25	12	36	26	25	4		<b>151</b>
3 <sup>rd</sup>	<b>FERRARI</b> 	18	13	18	50	10	19	6		<b>134</b>

<b>DRIVERS</b>		<b>R1</b>  2/03	<b>R2</b>  21/04	<b>R3</b>  11/05	<b>R4</b>  15-16/06	<b>R5</b>  14/07	<b>R6</b>  1/09	<b>R7</b>  15/09	<b>R8</b>  2/11	<b>TOTAL</b>
1 <sup>st</sup>	<b>ANDRÉ LOTTERER</b> 	38	18	18	25	18	8	25		<b>150</b>
1 <sup>st</sup>	<b>KÉVIN ESTRE</b> 	38	18	18	25	18	8	25		<b>150</b>
1 <sup>st</sup>	<b>LAURENS VANTHOOR</b> 	38	18	18	25	18	8	25		<b>150</b>
2 <sup>nd</sup>	<b>ANTONIO FUOCO</b> 	12	13	15	50	8	15	2		<b>115</b>
2 <sup>nd</sup>	<b>MIGUEL MOLINA</b> 	12	13	15	50	8	15	2		<b>115</b>
3 <sup>rd</sup>	<b>NICKLAS NIELSEN</b> 	12	13	15	50	8	15	2		<b>113</b>
3 <sup>rd</sup>	<b>KAMUI KOBAYASHI</b> 	15	25	6	36	13	18	0		<b>113</b>
3 <sup>rd</sup>	<b>NYCK DE VRIES</b> 	15	25	6	36	13	18	0		<b>113</b>

### 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.







## WEEK&GO GREEN GUIDE TO BAHRAIN

Find out more about major Bahrain attractions, from the Pearling Path, Qalat Al Bahrain and the country's National Museum, to the souk and Jeradah Island which is surrounded by turquoise waters reputed for their scuba diving.



## BAHRAIN TRIVIA



- » Bahrain is a Persian Gulf archipelago made up of 33 islands
- » The main island is connected to Saudi Arabia by the King Fahd Causeway
- » Bahrain's capital Manama is situated in the north of the country
- » Sakhir is situated in a central desert region (92% of the country is desert)
- » Sakhir Palace is a huge palace near Zallaq built in 1901

## MICHELIN AND BAHRAIN



- » In 2004, Bahrain became the first Gulf state to host a Formula 1 grand prix. Fifteen cars contested the race on Michelin tires.
- » Michelin locked out the 2005 F1 GP podium in Bahrain with Renault, Toyota and McLaren.
- » Michelin won the Bahrain Grand Prix in 2006 with Fernando Alonso (Renault).
- » Audi, Porsche and Toyota have all won endurance races in Bahrain with Michelin.
- » All of Toyota's different FIA WEC prototypes have won in Bahrain on Michelin tires.
- » A Michelin-partnered Porsche Carrera Cup Middle-East race is also on the bill in Bahrain.
- » A Rookie Test will be held at Sakhir International Circuit on November 3.



# WHAT'S NEW IN 2024

## CLASSES

Only two classes: Hypercar and LMGT3

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

# 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 shoot-out 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.

**WEC**  
FIA WORLD ENDURANCE  
CHAMPIONSHIP



**MICHELIN**

OFFICIAL TIRE PARTNER



**OUR VICTORIES,  
YOUR GAIN!**



## **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**

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>5</sup>



**MICHELIN**