

# RACEGUIDE

2021 MICHELIN FORMULA E



**JULY 24-25**

**ROUNDS 12 AND 13**

2020/21 ABB FIA FORMULA E WORLD CHAMPIONSHIP

**LONDON (UNITED KINGDOM)**

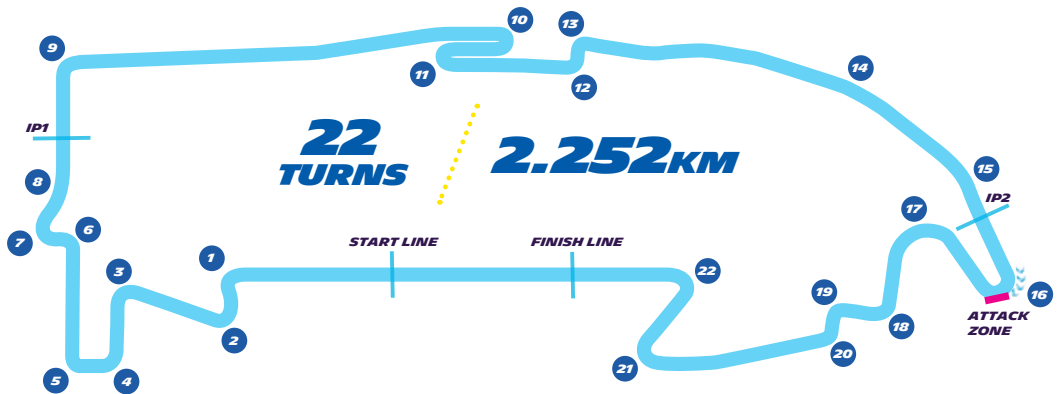


### VARIETY

Since its creation in 2014, the Formula E Championship has taken teams to so many varied and unusual locations. The drivers have raced outside Beijing's Olympic stadium and through the streets of Miami, in the centre of Paris and on the aprons of Berlin's former Tempelhof Airport, and now indoors at the London ExCel exhibition center. In terms of weather, too, they have had to contend with record-high temperatures in Chile, to practically freezing point in Morocco, and with the same tire every time!

## HEINEKEN® LONDON E-PRIX

3<sup>RD</sup> RUNNING



### EXCEL CIRCUIT

A course inside and around the ExCel London exhibition center on the northern quay of the Royal Victoria Dock on the left bank of the River Thames



### TIMETABLE

	ROUND 12	ROUND 13
	JULY 23	
Shakedown (15 minutes)	11:15am	
Free Practice 1 (45 minutes)	5:00pm	
	JULY 24	JULY 25
Free Practice 2 (30 minutes)	9:00am	
Free Practice 3 (45 minutes)		8:00am
Qualifying (in four groups)	11:00am	10:00am
Super Pole (20 minutes)	11:37am	10:37am
E-Prix (45 minutes + 1 lap)	3:04pm	2:04pm

Local time

### THE 2016 E-PRIX

**WINNERS**  
**RACES 1 AND 2**  
**Nicolas Prost**  
 (Renault e.dams), 33 laps



**POLE-POSITIONS**  
**RACE 1**  
**Nicolas Prost** (Renault e.dams)  
**RACE 2**  
**Sébastien Buemi**  
 (Renault e.dams)

A bumpy, narrow circuit in Battersea Park  
 Both races won by Nicolas Prost (Renault e.dams)  
 Sébastien Buemi (Renault e.dams) crowned 2015/2016 Formula E Champion



## THE UNITED KINGDOM AND RENEWABLE ENERGIES/ SUSTAINABLE MOBILITY

The British government has committed to reducing greenhouse-gas emissions by 80 percent by 2050 compared with 1990

In 2020, renewable energies took over as the chief source of electricity-generation, ahead of fossil fuels

Windfarms produced 24 percent of the electricity generated in the United Kingdom in 2020

There are more than 3,000 offshore wind turbines in operation or being built in the United Kingdom

The United Kingdom will host COP26 in Glasgow, Scotland, in November  
London's underground rail network is expected to become emissions-free by 2030. Some 16 percent of the energy it consumes is currently 'green'

London is equipped with 6,000 electric-vehicle battery charging stations

There are 4,000 electric taxis on the streets of London

In May 2021, the electric and hybrid car market increased by 14 percent. There are more than 500,000 electric or hybrid vehicles on the UK's roads

## MICHELIN GREEN GUIDE

Vibrant, colorful and cultural London never ceases to charm visitors. The Michelin Green Guide and Michelin Weekend Green Guide are the ideal companions to discover the British capital's past and present!



## MICHELIN STATISTIC



The 2021 London E-Prix will take the total distance completed by Formula E's Michelin-equipped winners since the inaugural e-prix in Beijing in 2014 past the 7,000-kilometer threshold. Michelin was a founding partner of motor racing's first major series for electrically-powered single-seater racing cars which gained FIA world championship status this year.



**JÉRÔME MONDAIN,**  
Formula E Manager  
Michelin Motorsport

## WE HEAD TO A COMPLETELY NEW VENUE IN LONDON

This weekend we head to a completely new venue in London where the drivers will get to race indoors, on a resin-based track surface. We have no idea what sort of grip it will give, but all the data we have accumulated in all sorts of conditions around the world over the past seven years suggests we can be confident. The fact that some of the London E-Prix will

take the cars indoors actually changes little. It's more the contrast in grip levels and the temperature inside and outside the building that will be bigger issues. That said, the MICHELIN Pilot Sport EV's has a proven record of being able to adapt and we are keen to get the drivers' early feedback after shakedown and the first free-practice session.

## THE 2021 LONDON E-PRIX AND THE MICHELIN PILOT SPORT EV

### MICHELIN PILOT SPORT EV



Developed specifically for the FIA Formula E Championship

The first 18-inch single-seater racing tire

The first single-seater racing tire capable of competing in dry and wet conditions

The first tire capable of lasting an entire race meeting

<b>Size (front/rear)</b>	Front: 245/40 R 18 / Rear: 305/40 R 18
<b>Width (front/rear)</b>	245mm / 305mm
<b>Tread width (front/rear)</b>	240mm / 270mm
<b>Sidewall height (front/rear)</b>	98mm / 122mm (i.e. 40 percent of tread width)
<b>Rim diameter</b>	18 inches
<b>Weight (front/rear)</b>	Front: 8kg / Rear: 10kg
<b>Type of tread pattern</b>	Asymmetric, non-directional
<b>Usage</b>	Circuits, street circuits, asphalt, concrete, wet or dry weather
<b>Number of tires taken for this race</b>	192 (24 cars x 8 tires)
<b>Weight saving per set of four tires</b>	9kg for 4 tires (Season 6 vs Season 1)
<b>Embedded Michelin tire monitoring sensors (TMS)</b>	Automatic transmission of encrypted tire pressure data



# MICHELIN PILOT SPORT EV

**MICHELIN  
PILOT  
SPORT EV**  
THE WINNING  
TIRE  
RANGE

THE REVOLUTIONARY  
**MICHELIN PILOT SPORT EV:**  
LIGHTER AND MORE ENERGY-  
EFFICIENT THAN EVER

## A REVOLUTIONARY RACING TIRE, IN MORE WAYS THAN ONE!

Developed specifically for the world's first all-electric single-seater motor racing championship, the new MICHELIN Pilot Sport EV is an exceptionally versatile tire that was designed by Michelin Motorsport's engineers to cover the entire race day (free practice, qualifying, race), whatever the weather, as required by the technical regulations that govern the series.

**Another exceptional characteristic of the tire is its size.** The MICHELIN Pilot Sport EV was effectively the first ever single-seater tire to feature an interior diameter of 18 inches, a disruptive concept put forward by Michelin Motorsport and approved by the FIA (Fédération Internationale Automobile). The fact that 18-inch wheels

have become a common feature of road cars enables Michelin Motorsport's engineers and chemists **to carry over the lessons they learn on the racetrack to everyday tires, in keeping with the firm's 'track to street' policy.**

The MICHELIN Pilot Sport EV (front: 245/40 R 18 / rear: 305/40 R 18) is tall and narrow in the interests of energy efficiency, which equates to longer range. Its low sidewalls also flex less, resulting in the generation of less heat, which **in turn means reduced energy consumption**, a valuable benefit for Formula E's latest-generation 'Gen2' Spark SRT 05Es.

**The MICHELIN Pilot Sport EV is a connected tire, too**, thanks to an embedded RFID chip which facilitates tracking, from production through to recycling.

## FORMULA E: A HI-TECH LAB FOR MICHELIN

As part of its **VISION plan**, Michelin is targeting the production of tires that incorporate 100% recycled, regenerated and bio-sourced materials by 2050. The extreme conditions encountered in Formula E enable Michelin to incubate new ideas and accelerate the introduction of sustainable materials. The proportion of sustainable materials employed for the textiles that go into the MICHELIN Pilot Sport EV Formula E tire is notably high.

## THE MICHELIN PILOT SPORT EV: THE HEIR

The MICHELIN Pilot Sport EV returns to the British capital for the first time in five years. In 2016, the London E-Prix was held on a narrow, bumpy, leaf-strewn circuit in Battersea Park. The track provided little grip but Michelin's Formula E tire overcame the uncustomary conditions to contribute to two close races.

As a founding partner of Formula E, Michelin pioneered a fresh approach to world class motor racing with the development of a single, treaded 18-inch Pilot Sport for the series.

This exceptionally versatile tire is capable of performing in wet and dry conditions alike and has evolved over successive seasons to match the constantly-improving performance of the electric single-seaters that star in the championship. Michelin's current Formula E challenger is 20 percent lighter than the original, but at the same time it is appreciably more efficient, in line with the increasingly higher



power output of the cars' power units which today deliver 250kW (335hp).

The third-generation Pilot Sport EV for Formula E benefits from the experience Michelin has gained over six seasons and at some 70 e-prix across the world. A number of the race-proven technologies it packs have been carried over to the MICHELIN Pilot Sport EV for road-going hybrid and electric sports cars.

The latter also benefits from a hard rubber compound for the central part of the tread for optimal grip, plus a more efficient compound for the shoulders to reduce energy consumption, not to mention MaxTouch Construction™ technology which maximizes the size of the contact patch to optimize acceleration, braking and cornering performance.

Available in a choice of 16 sizes for 18- to 22-inch rims, the MICHELIN Pilot Sport EV delivers outstanding grip in wet and dry weather and, in addition to its durability, extends the range of high-performance electric cars by up to 60 kilometers.

PILOT SPORT EV  
FIA FORMULA E



For track use

PILOT SPORT EV



For road use

(high-performance electric vehicles)

PILOT SPORT 4S



For track use

PILOT SPORT 4 SUV



For road and occasional track use

PILOT SPORT 4



For road use

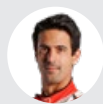


# ENTRY LIST

## 2021 LONDON E-PRIX

### AUDI SPORT ABT SCHAEFFLER FORMULA E TEAM

AUDI E-TRON FE07



#### N°11 Lucas DI GRASSI (BRA)

Races: 80  
Victories: 11  
Pole positions : 3

Fasted race laps: 7  
Podiums : 34



#### N°33 René RAST (DEU)

Départs : 18  
Victory: 0  
Pole position : 0

Fasted race lap: 1  
Podiums : 2



### ENVISION VIRGIN RACING AUDI E-TRON FE07

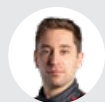


#### N°37 Nick CASSIDY (NZL)

Races: 11  
Victory: 0  
Pole positions : 2

Fasted race lap: 0  
Podiums : 2

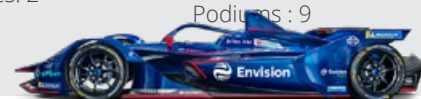
ROOKIE



#### N°4 Robin FRIJNS (NED)

Départs : 56  
Victories: 2

Pole position : 1  
Fasted race lap: 1  
Podiums : 9



### BMW I ANDRETTI MOTORSPORT BMW iFE.21



#### N°27 Jake DENNIS (GBR)

Races: 11  
Victory: 1  
Pole position : 1

Fasted race lap: 0  
Podium : 1

ROOKIE



#### N°28 Max GÜNTHER (DEU)

Races: 32  
Victories: 3

Pole position : 0  
Fasted race lap: 0  
Podiums : 4



### DRAGON / PENSKE AUTOSPORT PENSKE EV-4



#### N°7 Sergio SETTE CAMARA (BRA)

Races: 17  
Victory: 0  
Pole position : 0

Fasted race lap: 0  
Podium : 0



#### N°6 Joël ERIKSSON (SWE)

Races: 4  
Victory: 0  
Pole position : 0

Fasted race lap: 0  
Podium : 0

ROOKIE



### DS TECHEETAH DS E-TENSE FE20



#### N°25 Jean-Eric VERGNE (FRA)

Départs : 78  
Victories: 10

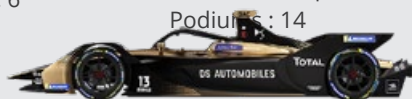
Pole positions : 11  
Fasted race laps: 4  
Podiums : 25



#### N°13 Antonio Felix DA COSTA (PRT)

Départs : 76  
Victories: 6

Pole positions : 6  
Fasted race laps: 3  
Podiums : 14



### MAHINDRA RACING MAHINDRA M7ELECTRO



#### N°29 Alexander SIMS (GBR)

Départs : 35  
Victory: 1  
Pole positions : 3

Fasted race laps: 2  
Podiums : 3



#### N°94 Alex LYNN (GBR)

Départs : 38  
Victory: 0  
Pole position : 1

Fasted race lap: 0  
Podium : 1



# ENTRY LIST

## 2021 LONDON E-PRIX

### MERCEDES-BENZ EQ FORMULA E TEAM

#### MERCEDES-BENZ EQ SILVER ARROW 02



#### N°5 Stoffel VANDOORNE (BEL)

Départs : 35  
Victories: 2  
Pole positions : 3  
Fasted race laps: 3  
Podiums : 6



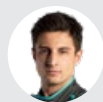
#### N°17 Nyck DE VRIES (NED)

Départs : 22  
Victories: 2  
Pole position : 1  
Fasted race laps: 2  
Podiums : 3



### JAGUAR RACING

#### JAGUAR I-TYPE V



#### N°20 Mitch EVANS (NZL)

Départs : 59  
Victories: 2  
Pole positions : 2  
Fasted race laps: 4  
Podiums : 9



#### N°10 Sam BIRD (GBR)

Races: 80  
Victories: 11  
Pole positions : 6  
Fasted race laps: 6  
Podiums : 22



### NIO 333 FE TEAM

#### NIO 333 001



#### N°8 Oliver TURVEY (GBR)

Départs : 69  
Victory: 0  
Pole position : 1  
Fasted race lap: 0  
Podium : 1



#### N°88 Tom Blomqvist (GBR)

Départs : 19  
Victory: 0  
Pole position : 0  
Fasted race lap: 0  
Podium : 0



### TAG HEUER PORSCHE FORMULA E TEAM

#### PORSCHE 99X ELECTRIC



#### N°36 André LOTTERER (DEU)

Départs : 47  
Victory: 0  
Pole positions : 2  
Fasted race laps: 3  
Podiums : 7



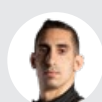
#### N°99 Pascal WEHRLEIN (DEU)

Races: 28  
Victory: 0  
Pole positions : 2  
Fasted race laps: 3  
Podiums : 2



### NISSAN E.DAMS

#### NISSAN IMO2



#### N°23 Sébastien BUEMI (CHE)

Départs : 78  
Victories: 13  
Pole positions : 14  
Fasted race laps: 7  
Podiums : 29



#### N°22 Oliver ROWLAND (GBR)

Départs : 36  
Victory: 1  
Pole positions : 5  
Fasted race laps: 2  
Podiums : 4



### ROKIT VENTURI RACING

#### Mercedes-Benz EQ SILVER ARROW 02



#### N°48 Edoardo MORTARA (CHE)

Départs : 43  
Victories: 2  
Pole position : 0  
Fasted race lap: 0  
Podiums : 6



ROOKIE

#### N°71 Norman NATO (FRA)

Départs : 11  
Victory: 0  
Pole position : 0  
Fasted race lap: 1  
Podium : 0



# FIA FORMULA E

## DRIVERS' STANDINGS

		R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	TOTAL
		 SAU	 SAU	 ITA	 ITA	 ESP	 ESP	 MCO	 MEX	 MEX	 USA	 USA	 GB	 GB	 DEU	 DEU	
		26/02	27/02	10/04	11/04	24/04	25/04	08/05	19/06	20/06	10/07	11/07	24/07	25/07	14/08	15/08	
1	<b>SAM BIRD</b>		-	25	18	-	-	6	-	-	3	29					81
2	<b>ANTÓNIO FÉLIX DA COSTA</b>		-	15	-	6	3	-	28	8	-	16					76
3	<b>ROBIN FRIJNS</b>		-	22	12	-	9	-	19	-	10	4					76
4	<b>EDOARDO MORTARA</b>		18	-	-	12	-	2	-	15	25	-					72
5	<b>NICK CASSIDY</b>		-	-	-	3	12	-	4	-	18	15	18				70
6	<b>JEAN-ÉRIC VERGNE</b>		-	-	25	-	2	6	13	-	4	18	-				68
7	<b>RENÉ RAST</b>		13	-	8	-	10	8	-	19	2	1	-				61
8	<b>MITCH EVANS</b>		15	-	16	8	-	-	15	4	2	-	-				60
9	<b>PASCAL WEHRLEIN</b>		10	1	6	15	-	-	-	4	12	-	12				60
10	<b>NYCK DE VRIES</b>		29	3	-	-	25	-	-	2	-	-	-				59
11	<b>OLIVER ROWLAND</b>		8	6	1	-	-	12	8	-	18	6	-				59
12	<b>LUCAS DI GRASSI</b>		2	4	-	-	6	1	1	25	-	15	-				54
13	<b>STOFFEL VANDOORNE</b>		4	-	3	26	15	-	-	6	-	-	-				54
14	<b>MAXIMILIAN GÜNTHER</b>		-	-	2	10	-	-	10	-	6	25	1				54
15	<b>JAKE DENNIS</b>		-	-	-	-	4	29	-	10	11	-	-				54
16	<b>ALEXANDER SIMS</b>		6	-	-	18	-	-	-	12	-	-	8				44
17	<b>ALEX LYNN</b>		-	-	4	-	1	16	2	1	8	-	2				34
18	<b>ANDRÉ LOTTERER</b>		-	-	-	-	-	18	-	-	-	4	10				32
19	<b>NICO MÜLLER</b>		-	10	-	2	18	-	-	-	-	-	-				30
20	<b>SÉBASTIEN BUEMI</b>		-	-	10	1	-	-	-	-	-	9	-				20
21	<b>NORMAN NATO</b>		-	-	-	1	-	10	-	-	-	-	6				17
22	<b>OLIVER TURVEY</b>		1	8	-	-	-	4	-	-	-	-	-				13
23	<b>SÉRGIO SETTE CÂMARA</b>		-	12	-	-	-	-	-	-	-	-	-				12
24	<b>TOM BLOMQVIST</b>		-	-	1	4	-	-	-	-	-	-	-				5
25	<b>JOEL ERIKSSON</b>		-	-	-	-	-	-	-	-	-	-	-				0

# REGULATIONS

## 2021 ABB FIA FORMULA E WORLD CHAMPIONSHIP

### CARS (SINGLE-SEATERS)

- Spark STR-05e / chassis: Dallara / battery: McLaren Applied Technologies.
- **Maximum length:** 5,200mm.
- **Maximum width:** 1,800mm.
- **Maximum height:** 1,250mm.
- **Minimum weight:** 900kg, including driver and battery and/or capacitor (maximum: 280kg).
- Maximum power, electric powertrain: 250kW (335hp) for free practice and qualifying, 200kW (270hp) during races.
- Gearbox: six speeds maximum.
- Only 1 MGU may be used.
- Allocation per race number: 2 electric motors, 2 gearboxes, 2 inverters and 1 battery pack for the season.



### TIRES

- A single type of tire (pattern and construction).
- No mid-race tire changes.
- Allocation of 1.5 sets (3 front + 3 rear) of new tires per driver for single race and 2 sets (4 front + 4 rear) per driver for double headers.
- All tires are returned to Michelin after every event.
- In the case of a puncture during a practice session, the use of a marked tire is authorised (identified by FIA).
- Can be inflated using air only.
- Minimum tire pressures are checked before qualifying and before races.
- In the case of a 'Wet Track', tire pressures may be adjusted in parc ferme.
- Tires must remain visible in the team garages at all times.
- Tires are identified by RFID chips.
- Tire warmers not authorised.

### EVENT FORMATS

- A **Shakedown** session of a maximum duration of 15 minutes + three laps may be organised the day before the race. Power is restricted to 110kW. A maximum of six laps per car.
- **Practice:** Two practice sessions (45 and 30 minutes) in the course of the morning of Race Day. Maximum power: 250kW.
- **Qualifying:** The drivers are divided into four groups of six cars as a function of their championship positions (or of the previous championship order in the case of the season's first race). Each driver has up to two flying laps (only one running at maximum power) to post a qualifying time. The six fastest drivers go on to take part in the Super Pole shootout. Maximum power: 250kW.
- **Super Pole:** Start order is based on the times posted in qualifying, with the 'slowest driver' to lap first, etc. One flying lap only.
- **Grid:** The six places at the front of the grid are reserved for the drivers who take part in the Super Pole session.
- **Race:** Standing start. Maximum duration: 45 minutes + 1 lap. Use of two power outputs mandatory: Normal Mode (200kW / regeneration: 250kW) and Attack Mode (235kW / regeneration: 250kW).
- **Attack Mode:** Power: 235kW (compared with 225kW in 2018/2019). The number and duration of Attack Mode activations is specific to each race and are notified at least one hour before the start. The cockpit halo lights up when a car is in Attack Mode.
- **FanBoost:** A temporary 100kJ power boost (minimum: 240kW/maximum: 250kW) for five drivers chosen by a fan vote. To be activated once, but not before the 22<sup>nd</sup> minute of the race.

### POINTS-SCORING SYSTEM

**Race result:** 1<sup>st</sup>, 25 points • 2<sup>nd</sup>, 18 points  
3<sup>rd</sup>, 15 points • 4<sup>th</sup>, 12 points • 5<sup>th</sup>, 10 points  
6<sup>th</sup>, 8 points • 7<sup>th</sup>, 6 points • 8<sup>th</sup>, 4 points  
9<sup>th</sup>, 2 points • 10<sup>th</sup>, 1 point.

**Pole Position:** 3 points.

**Fastest drivers in the qualifying groups:**  
1 point

**Fastest race lap:** 1 point  
(if driver classified inside the top 10).

