

RACEGUIDE

2021 MICHELIN FORMULA E



AUGUST 14-15

ROUNDS 14 AND 15

2021 ABB FIA
FORMULA E WORLD
CHAMPIONSHIP

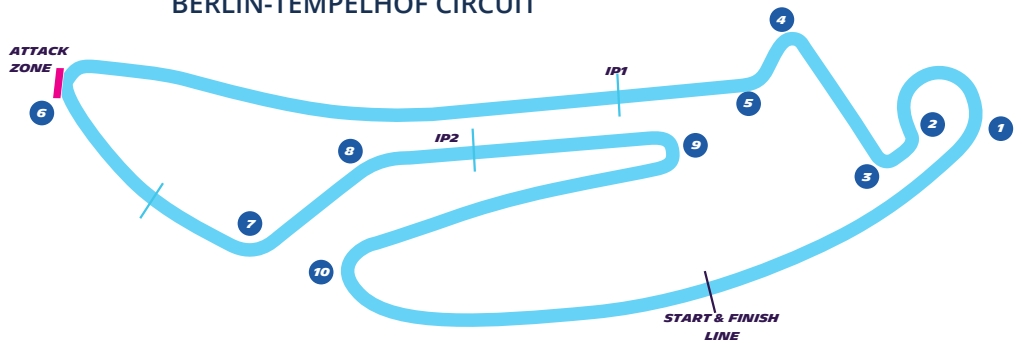
**BERLIN
(GERMANY)**



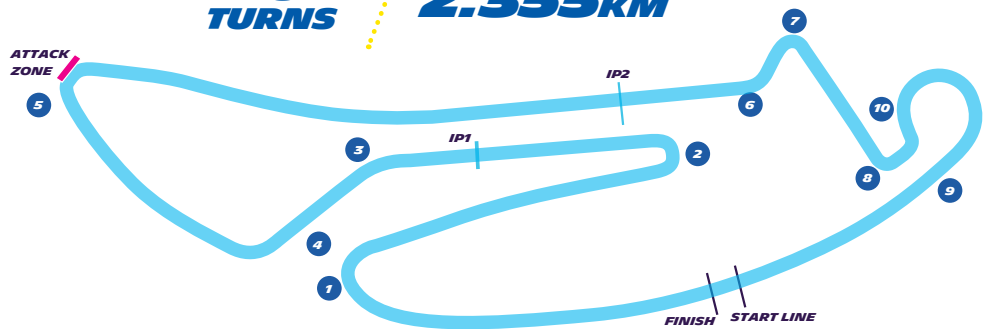
2021 BERLIN E-PRIX

7th RUNNING

BERLIN-TEMPELHOF CIRCUIT



10 TURNS / **2.355KM**



Anticlockwise on Saturday / Clockwise on Sunday

The abrasive concrete surface is exceptionally hard on tires

..... ABRASIVE

The MICHELIN Pilot Sport EV faces its last challenge of the campaign at Berlin-Tempelhof where the circuit's surface is one of the coarsest, most abrasive and most demanding of the championship. Last season, the venue hosted no fewer than six e-prix, but Michelin's Formula E tire rose to the occasion to deliver a successful combination of consistency and performance every time. This weekend, the first race will be run in the clockwise direction and the second will be anticlockwise.

TIMETABLE

	ROUND 14	ROUND 15
	AUGUST 13	
Shakedown (15 minutes)	2:00pm	
Free Practice 1 (45 minutes)	5:00pm	
	AUGUST 14	AUGUST 15
Free Practice (30 minutes)	8:00am	8:00am
Free Practice (30 minutes)		9:30am
Qualifying and Super Pole	10:00am	11:30am
E-Prix (45 minutes + 1 lap)	2:04pm	3:34pm

Local time

THE 2020 RACES



The pandemic-hit 2020 FIA Formula E Championship concluded with six rounds in Berlin. Da Costa won two races to claim the 2020 Drivers' crown. Vandoorne and Mercedes wrapped up their maiden Formula E campaigns with their first wins. The MICHELIN Pilot Sport EV proved as fast in the wet as they were in the dry.



WINNERS

- Races 1 and 2: Antonio Felix da Costa (DS Techeetah)
- Race 3: Max Günther (BMW | Andretti Motorsport)
- Race 4: Jean-Eric Vergne (DS Techeetah)
- Race 5: Oliver Rowland (Nissan e.dams)
- Race 6: Stoffel Vandoorne (Mercedes EQ FE Team)



RENEWABLE ENERGY AND SUSTAINABLE MOBILITY IN GERMANY

Almost 20 percent of Berlin's surface area is forested

In the first half of 2020, more than half of Germany's electricity came from renewable sources

Wind farms were the main source of electricity in Germany in 2020 (25.6%)

The German government is looking to cut its greenhouse gas emissions by 65 percent by 2030 (compared with 1990)

In 2011, Germany announced it would halt nuclear energy in 2022 and coal-fired power stations by 2035

Feldheim in southwest Berlin was the first German municipality to become energy-independent

Last month, Germany achieved its objective of having a million electric vehicles on its roads. The target is now 10 million EVs by 2030

The country is to provide 1,000 additional ultrafast 150kW battery charging stations by 2023

The market share of electric and hybrid vehicles in Germany is 22 percent

Tesla plans to begin vehicle production at its Berlin Gigafactory plant this summer

MICHELIN GREEN GUIDES

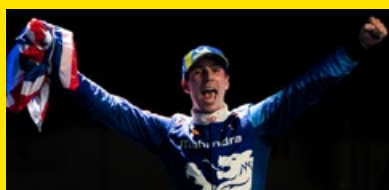
Make the most of your visit to multicultural Berlin with Michelin's Week&Go Green Guide. The Michelin Green Guides to south and north/central Germany are the ideal companions for touring the country.



MICHELIN STATISTIC

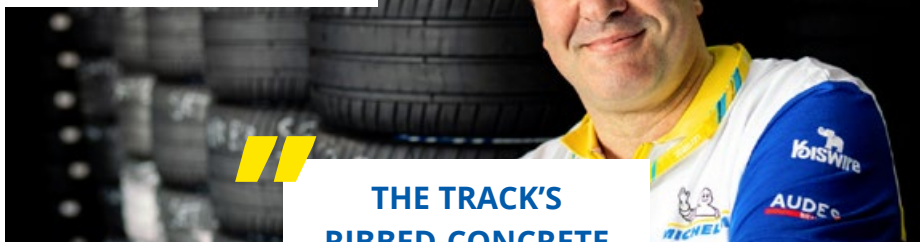


As a founding partner of the FIA Formula E Championship, Michelin has helped 20 different drivers reach the top step of the rostrum since 2014. The most recent addition to the list is Briton Alex Lynn, winner of one of July's London races. The most successful driver to date is Switzerland's Sébastien Buemi (13 victories).



JÉRÔME MONDAIN

Formula E Manager
Michelin Motorsport



THE TRACK'S RIBBED-CONCRETE SURFACE IS THE MOST ABRASIVE OF THE SEASON

This is Formula E's seventh trip to Berlin since 2014 and, last year, there were no fewer than six races on the bill to wrap up the 2020 season. This time around, the drivers will get to lap the circuit at the former Tempelhof Airport in both directions: anticlockwise on Saturday and clockwise on Sunday. The two Berlin

E-Prix are being considered as separate races and not as a double-header, and the tire allocation is eight new MICHELIN Pilot Sport EVs per car instead of the usual six. The track's ribbed-concrete surface is the most abrasive of the season but it also offers good grip, regardless of the conditions.

THE 2021 BERLIN 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

Size (front/rear)	Front: 245/40 R 18 / Rear: 305/40 R 18
Width (front/rear)	245mm / 305mm
Tread width (front/rear)	240mm / 270mm
Sidewall height (front/rear)	98mm / 122mm (i.e. 40 percent of tread width)
Rim diameter	18 inches
Weight (front/rear)	Front: 8kg / Rear: 10kg
Type of tread pattern	Asymmetric, non-directional
Usage	Circuits, street circuits, asphalt, concrete, wet or dry weather
Number of tires taken for this race	192 (24 cars x 8 tires) for each race
Weight saving per set of four tires	9kg for 4 tires (Season 6 vs Season 1)
Embedded Michelin tire monitoring sensors (TMS)	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 aprons of Berlin's former Tempelhof Airport hold few secrets for the MICHELIN Pilot Sport EV. Not only did Formula E pay its first visit to the German city as long ago as Season 1, but last year's program included six races, with the layout rearranged several times to add to the challenge of the track's particularly abrasive surface.

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

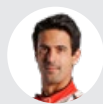


ENTRY LIST

2021 BERLIN E-PRIX

AUDI SPORT ABT SCHAEFFLER FORMULA E TEAM

AUDI E-TRON FE07



N°11 Lucas DI GRASSI (BRA)

Races: 82
Victories: 11
Pole positions: 3

Fasted race laps: 7
Podiums: 34



CHAMPION
2016/2017



N°33 René RAST (DEU)

Races: 20
Victories: 0
Pole position: 0

Fasted race lap: 1
Podiums: 2



ENVISION VIRGIN RACING AUDI E-TRON FE07

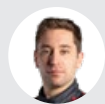


N°37 Nick CASSIDY (NZL)

Races: 13
Victories: 0
Pole positions: 2

Fasted race lap: 0
Podiums: 2

ROOKIE



N°4 Robin FRIJNS (NED)

Races: 58
Victories: 2
Pole position: 1

Fasted race laps: 2
Podiums: 9



BMW I ANDRETTI MOTORSPORT BMW iFE.21



N°27 Jake DENNIS (GBR)

Races: 13
Victories: 2
Pole position: 1

Fasted race lap: 0
Podium: 2

ROOKIE



N°28 Max GÜNTHER (DEU)

Races: 34
Victories: 3
Pole position: 0

Fasted race lap: 0
Podiums: 4



DRAGON / PENSKE AUTOSPORT PENSKE EV-4



N°7 Sergio SETTE CAMARA (BRA)

Races: 19
Victories: 0
Pole position: 0

Fasted race lap: 0
Podium: 0



N°6 Joël ERIKSSON (SWE)

Races: 6
Victories: 0
Pole position: 0

Fasted race lap: 0
Podium: 0

ROOKIE



DS TECHEETAH DS E-TENSE FE20



N°25 Jean-Eric VERGNE (FRA)

Races: 80
Victories: 10
Pole positions: 11

Fasted race laps: 4
Podiums: 25



CHAMPION
2017/2018
et 2018/2019



N°13 Antonio Felix DA COSTA (PRT)

Races: 78
Victories: 6
Pole positions: 6

Fasted race laps: 3
Podiums: 14



CHAMPION
2019/2020



MAHINDRA RACING MAHINDRA M7ELECTRO



N°29 Alexander SIMS (GBR)

Races: 37
Victories: 1
Pole positions: 3

Fasted race laps: 2
Podiums: 3



N°94 Alex LYNN (GBR)

Races: 40
Victories: 1
Pole positions: 2

Fasted race lap: 0
Podiums: 3



ENTRY LIST

2021 BERLIN E-PRIX

MERCEDES-BENZ EQ FORMULA E TEAM

MERCEDES-BENZ EQ SILVER ARROW 02



N°5 Stoffel VANDOORNE (BEL)

Races: 37
Victories: 2
Pole positions: 4

Fasted race laps: 3
Podiums: 6



N°17 Nyck DE VRIES (NED)

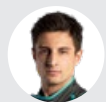
Races: 24
Victories: 2
Pole position: 1

Fasted race laps: 2
Podiums: 5



JAGUAR RACING

JAGUAR I-TYPE V



N°20 Mitch EVANS (NZL)

Races: 61
Victories: 2
Pole positions: 2

Fasted race laps: 5
Podiums: 10



N°10 Sam BIRD (GBR)

Races: 82
Victories: 11
Pole positions: 6

Fasted race laps: 6
Podiums: 22



NIO 333 FE TEAM

NIO 333 001



N°8 Oliver TURVEY (GBR)

Races: 71
Victories: 0
Pole position: 1

Fasted race lap: 0
Podium: 1



N°88 Tom Blomqvist (GBR)

Races: 21
Victories: 0
Pole position: 0

Fasted race lap: 0
Podium: 0



TAG HEUER PORSCHE FORMULA E TEAM

PORSCHE 99X ELECTRIC



N°36 André LOTTERER (DEU)

Races: 49
Victories: 0
Pole positions: 2

Fasted race laps: 3
Podiums: 7



N°99 Pascal WEHRLEIN (DEU)

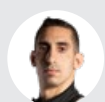
Races: 30
Victories: 0
Pole positions: 2

Fasted race laps: 3
Podiums: 2



NISSAN E.DAMS

NISSAN IMO2



N°23 Sébastien BUEMI (CHE)

Races: 80
Victories: 13
Pole positions: 14

Fasted race laps: 7
Podiums: 29



N°22 Oliver ROWLAND (GBR)

Races: 38
Victories: 1
Pole positions: 5

Fasted race laps: 2
Podiums: 4



ROKIT VENTURI RACING

Mercedes-Benz EQ SILVER ARROW 02



N°48 Edoardo MORTARA (CHE)

Races: 45
Victories: 2
Pole position: 0

Fasted race lap: 0
Podiums: 6



N°71 Norman NATO (FRA)

Races: 13
Victories: 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	NYCK DE VRIES		29	3	-	-	25	-	-	2	-	-	18	18			95
2	ROBIN FRIJNS		-	22	12	-	9	-	19	-	-	10	4	-	13		89
3	SAM BIRD		-	25	18	-	-	6	-	-	3	29	-	-			81
4	JAKE DENNIS		-	-	-	-	4	29	-	10	11	-	-	25	2		81
5	ANTÓNIO FÉLIX DA COSTA		-	15	-	6	3	-	28	8	-	-	16	4	-		80
6	ALEX LYNN		-	-	4	-	1	16	2	1	8	-	2	18	26		78
7	NICK CASSIDY		-	-	-	3	12	-	4	-	18	15	18	-	6		76
8	MITCH EVANS		15	-	16	8	-	-	15	4	2	-	-	-	15		75
9	EDOARDO MORTARA		18	-	-	12	-	2	-	15	25	-	-	2	-		74
10	RENÉ RAST		13	-	8	-	10	8	-	19	2	1	-	11	-		72
11	PASCAL WEHRLEIN		10	1	6	15	-	-	4	12	-	12	1	10			71
12	JEAN-ÉRIC VERGNE		-	-	25	-	2	6	13	-	4	18	-	-	-		68
13	STOFFEL VANDOORNE		4	-	3	26	15	-	-	6	-	-	-	6	3		63
14	LUCAS DI GRASSI		2	4	-	-	6	1	1	25	-	15	-	8	-		62
15	MAXIMILIAN GÜNTHER		-	-	2	10	-	-	10	-	6	25	1	-	8		62
16	OLIVER ROWLAND		8	6	1	-	-	12	8	-	18	6	-	-	-		59
17	ANDRÉ LOTTERER		-	-	-	-	-	18	-	-	-	4	10	13	-		45
18	ALEXANDER SIMS		6	-	-	18	-	-	-	12	-	-	8	-	-		44
19	NICO MÜLLER		-	10	-	2	18	-	-	-	-	-	-	-	-		30
20	SÉBASTIEN BUEMI		-	-	10	1	-	-	-	-	-	9	-	-	-		20
21	NORMAN NATO		-	-	-	1	-	10	-	-	-	-	6	-	-		17
22	SÉRGIO SETTE CÂMARA		-	12	-	-	-	-	-	-	-	-	-	-	4		16
23	OLIVER TURVEY		1	8	-	-	-	4	-	-	-	-	-	-	-		13
24	TOM BLOMQVIST		-	-	1	4	-	-	-	-	-	-	-	-	-		5
25	JOEL ERIKSSON		-	-	-	-	-	-	-	-	-	-	-	-	1		1

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 22nd minute of the race.

POINTS-SCORING SYSTEM

Race result: 1st, 25 points • 2nd, 18 points
3rd, 15 points • 4th, 12 points • 5th, 10 points
6th, 8 points • 7th, 6 points • 8th, 4 points
9th, 2 points • 10th, 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).

