



2017

# TECH & FACTS REPORT

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SCOTT PLASMA



# PLASMA 5 CONCEPT

## AERODYNAMICS

The Plasma 5 has been designed to be faster with the rider than without. A moving rider creates a substantial influence on the airflow around the bike and ultimately on the aerodynamic performance. Despite the extra effort required to examine this complex phenomenon, it was closely considered during the development process of the Plasma 5 and had a major influence on the frame design.

## ERGONOMICS

To a large degree, the position of the rider on the bike determines riding performance. The position of the rider directly influences the force distribution during the pedal stroke and consequently determines pedaling efficiency while the position of the rider's upper body directly affects aerodynamic drag. An aerodynamically positioned torso will lower drag therefore improve aerodynamic performance. Saddle and handlebar adjustability were in effect a major topic during the developmental phase. Considering the idea that this bike would be ridden by riders of all shapes and sizes, from World Tour riders to long-distance triathletes, the Plasma 5 offers a wide range of adjustability to follow suit.

## VERSATILITY

The Plasma 5 has been developed to match the needs of triathletes and cyclists alike. While a wide range of adjustability and a modular stem/bar concept ensures that the position requirements of both triathletes and cyclists are sufficiently covered with the same bike, triathletes benefit from a sophisticated storage system. With the exception of the triathlon-specific storage box and an Aero Drink bottle, the Plasma 5 is fully UCI-compliant and can be used in competitions for both sports without restrictions.

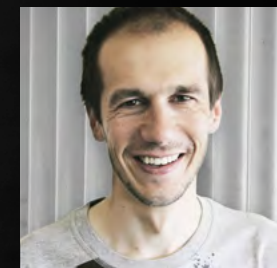
## FUEL STORAGE

Long distance triathletes spend several hours on their bike before switching to the running segment. While aerodynamics and ergonomics are key factors for a fast and efficient bike split, nutrition and hydration are essential to maintain a high pace during both the bike and running legs. With this in mind, the engineering team developed a sophisticated storage system that stands above the rest due to its high degree of usability, while not hampering the aerodynamics of the bike nor the ergonomics of the rider.

THE PLASMA 5 WAS DESIGNED TO ENABLE AN AERO-DYNAMIC FUSION BETWEEN RIDER AND BIKE. BE IT AN AERODYNAMIC FRAME DESIGN THAT TAKES INTO CONSIDERATION THE INTERACTION BETWEEN A MOVING RIDER AND THE BIKE, AN ERGONOMICALLY AND PURPOSE DRIVEN HANDLEBAR THAT OFFERS A WIDE RANGE OF ADJUSTABILITY OR THE PRACTICAL IMPLEMENTATION OF FUEL STORAGE, THE PLASMA 5 TAKES EXTRA STEPS TO MAKE BIKE AND RIDER ONE.

## THE AERODYNAMIC EXPERTS

Benoît Grelier, **Engineer**



"Wide range adjustability especially on the front-end of the bike is key if your goal is to cover the needs of both UCI World Tour cyclists and Ironman Hawaii podium contenders with only one frame."

Frank Oberle, **Product Manager**



"We assessed the current fuel systems on the market and soon realized that we would need to come up with a novel solution to fully meet the needs of long distance triathletes."

Simon Smart, **Technical Director, Smart Aero Technology**



"The influence of the moving rider on airflow and hence frame aerodynamics is a complex phenomenon but definitely needs to be considered when pursuing the goal of developing a high-performance Triathlon and TT-bike."

Sebastian Kienle, **two-time Ironman 70.3 World Champion**



"During the countless feedback and testing sessions with the engineering team I didn't think incorporating all of my feedback into the Plasma 5 would be possible. Yet, they did it - novel aerodynamic frame properties, almost unlimited adjustability and a flawless hydration and nutrition storage system - the Plasma 5 has it all!"





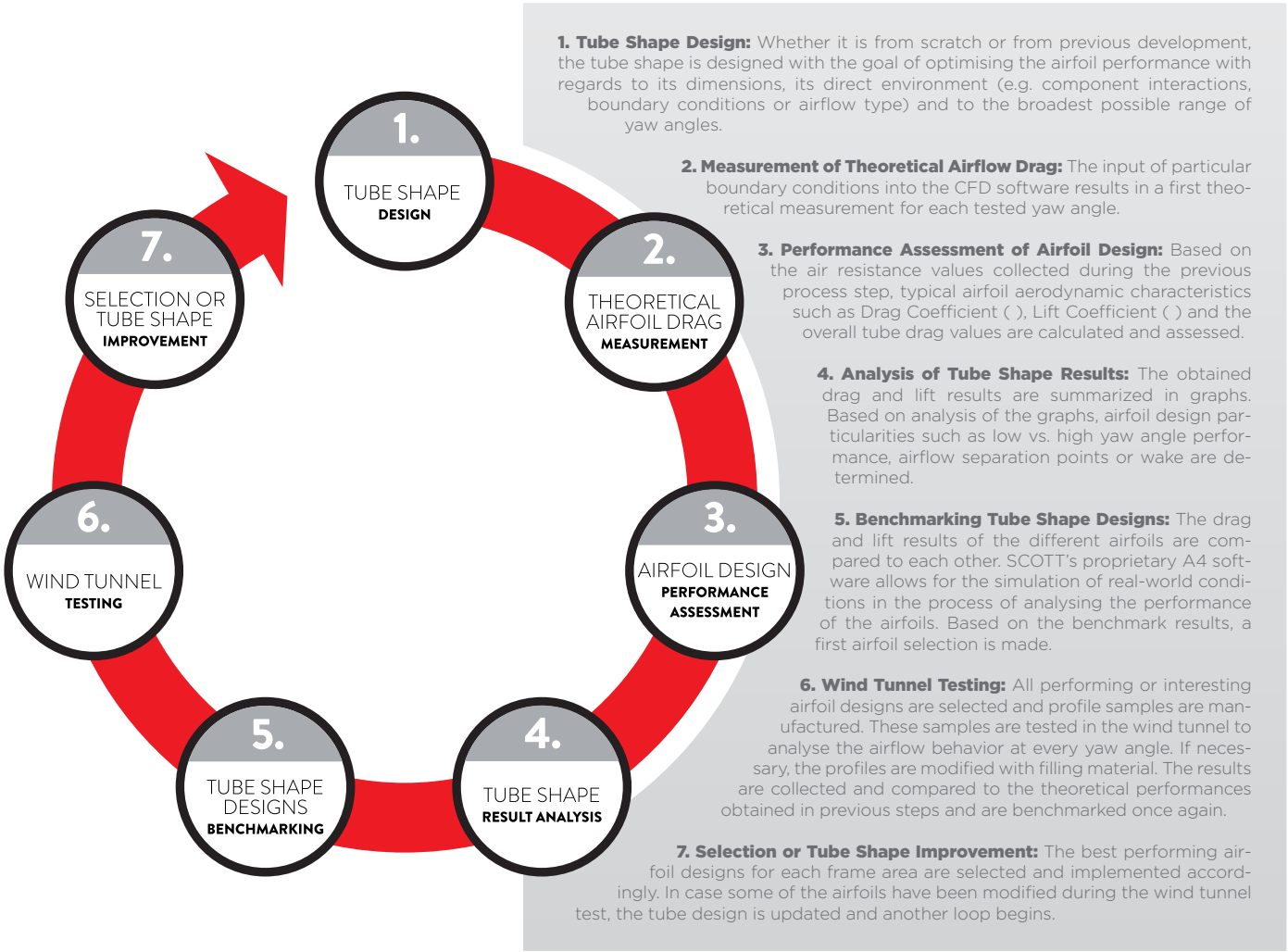
# SCOTT AERODYNAMIC SCIENCE

When the Plasma 3 project was initiated back in 2009, a team of several engineers was created that was fully dedicated to scientific research in aerodynamics along with the development of products based on the gathered findings. Over the past few years, the engineering team has spent a lot of time to turn their research into class-leading products. After the suc-

cessful introduction of the Plasma 3 Triathlon and Time Trial bike, the aero engineers translated their knowledge into an aerodynamically optimized road bike, the Foil. The Foil was successfully used in countless races by the vast majority of SCOTT's World Tour riders. The Plasma 5 constitutes the latest innovation from SCOTT's Aerodynamic Science unit.

## ITERATIVE DEVELOPMENT PROCESS

SCOTT's Aerodynamic Science unit applies a cyclical design process to the development of products. The more iterations are run in an cyclical design process, the more precise the results are. When developing the Plasma 5, three complete iterations were run. A major advantage of this process is the combination of theoretical results with results measured in real-world conditions. First, design concepts are virtually tested by means of CFD analysis. Second, the results obtained from CFD analysis are validated in the wind tunnel under simulated real-world conditions. While in the first wind tunnel test the bike designs are tested under isolated circumstances, further testing follow that included mannequins, actual riders, and a number of environmental variables to ensure accurate test results reflecting real-world riding conditions.





# PLASMA 5 TECHNOLOGIES

## AIRFOIL INNOVATION

The airflow that meets the bike when in motion has different boundary conditions depending on the area of the frame as it may have been disturbed by components and/or moving elements such as the wheels or the rider's body. The seat tube region for example, is a complex area in this regard, as it is close to the spinning rear wheel, moving rider's legs and crank set. In this area, the airflow velocity, its direction and its pressure are different from those encountered in the headtube area, for example, where neither components nor parts of the rider's body disturb the airflow before meeting the frame. As a result, the airfoil design of different aerodynamically relevant frame regions needs to be modified according to the airflow conditions that occur in these areas. Therefore the engineering team developed an airfoil concept with a set of variable parameters that can be customised for every airflow characteristic in each aero zone of the frameset. The F01-X230 parametric airfoil features excellent aerodynamic properties. In areas where undisturbed airflow meets the bike the truncation ratio of the leading edge and the transition radius are increased and the trailing edge is decreased. Airfoil designs with modifications as illustrated above are used in areas such as the upper down tube, headtube and the handlebar where "clean" airflow conditions occur.

In areas where perturbed airflow meets the frame (e.g. seat tube, chain stays or lower down tube) the F01-X230 airfoil features a decreased truncation ratio and transition radius and an increased trailing edge that might even be flat in the most extreme case. This early truncation has two main advantages. First, the airflow is detached early enough to avoid airflow interactions and to prevent any airflow reattachment from occurring too early. Elements positioned behind these airfoils benefit from its wake and are "shielded" and protected from the wind, which lowers the overall drag of the bike-rider system. Second, these airfoils decrease high pressure areas. When in motion, the front wheel creates airflow that runs in the opposite direction than the airflow that circulates around the fork blade due to the propulsion of the bike. If these airflows meet, they create high pressure zones which increases drag and can cause downwash. The early truncation on the fork blades allows a reduction of the airfoil chord length without compromising aerodynamics while reducing high pressure zones.

PLASMA 5 TRI

7%

AVERAGE DRAG REDUCTION COMPARED TO PLASMA 3

PLASMA 5 TT

5%

AVERAGE DRAG REDUCTION COMPARED TO PLASMA 3

3 | COMPLETE  
PROCESS LOOPS

SCOTT AERODYNAMIC SCIENCE

AIRFOILS EXPLAINED

**Leading Edge:**  
In this section the airflow will first meet the airfoil.

**Transition Radius:**  
This section consists of a convex shape, usually a circular-arc segment that is intended to build a transition between the leading edge and the trailing edge.

**Trailing Edge:**  
This section consists of a convex shape, usually a circular-arc segment that either determines the detachment of the airflow or enables an optimal airflow transition to an element that is positioned behind the airfoil.



The F01-X230 parametric airfoil implemented on the Plasma 5



STEM INTEGRATION

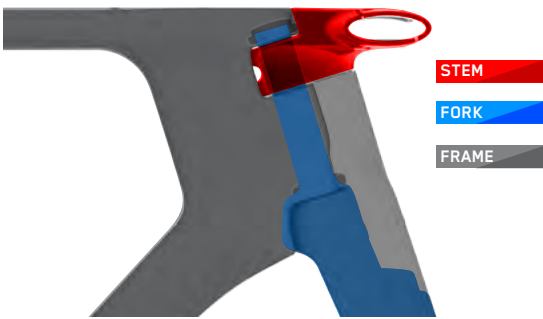
The engineers at SCOTT have identified 5 key performance features of the stem-headtube construction on a TT/Triathlon bike: adaptability, aerodynamics, stiffness, weight and integration. When all five performance factors are taken into consideration, stem integration is an elaborate topic. Few solutions for the headtube and stem construction currently on the market achieve an uncompromised combination of the above illustrated performance features. A novel solution was required to cover these features without compromises. The assessment of different design solutions led to the selection of a construction in which the stem is attached to the steerer tube in between the bearings. This solution allows for the following advantages:

ADAPTABLE

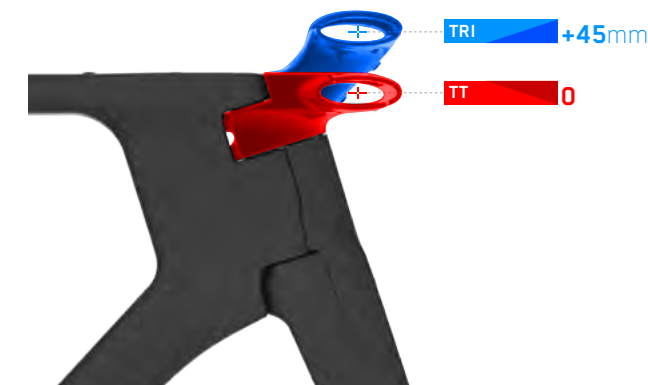
For the Plasma 5 there are two stem options available: while the TT stem stays in line with the top tube and allows for a very low position on the bike the riser stem (Triathlon configuration) increases handlebar stack by 45mm while maintaining the reach of the TT stem and allows for the installation of the clip-on Aero Drink.

STIFF

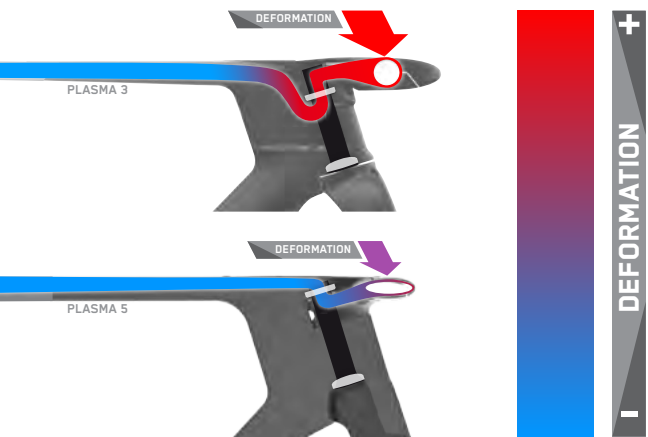
Thanks to the standard inner steerer tube construction and because the distance between the upper and lower bearings is optimised – upper and lower bearings are positioned at both ends of the headtube – the construction increases headtube torsional stiffness substantially. The monobloc construction of the stem and its closed body design allows for a stiffer connection between handlebar and frame than that of adjustable or modular stems. In addition, the new stem design features a more direct connection between the stem and the frame compared to the previous construction on the Plasma 3. The force applied to the handlebar when pedalling out of the saddle is transferred through a direct path that reduces deflection of the steerer tube and headtube. Overall the headtube torsional stiffness has been improved by 47% compared to the Plasma 3.



Integrated headtube and stem design concept



TT vs. Triathlon stem on the Plasma 5



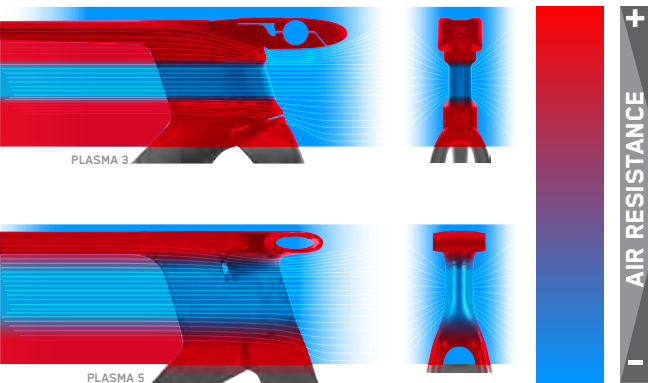
Stiffness benefits of the new headtube design: on the Plasma 5 the stem and frame are directly linked which improves stiffness substantially and benefits power transfer and direct handling.

LIGHTWEIGHT

unlike external steerer tubes, the standard steerer tube construction does not require considerable reinforcement to resist the strong lateral and frontal loads applied on the fork. Moreover, the stem design on the Plasma 5 which features a direct link between the fork and stem has a lower overall weight compared to existing solutions. Despite the increased complexity of the frame construction featuring a direct connection between the frame structure, the bearings and the stem, fewer reinforcements are required for the top tube, headtube and down tube areas compared to existing solutions. While there is no weight penalty on the frame itself the new stem design saves about 90g compared to the stem of the Plasma 3.

AERODYNAMIC

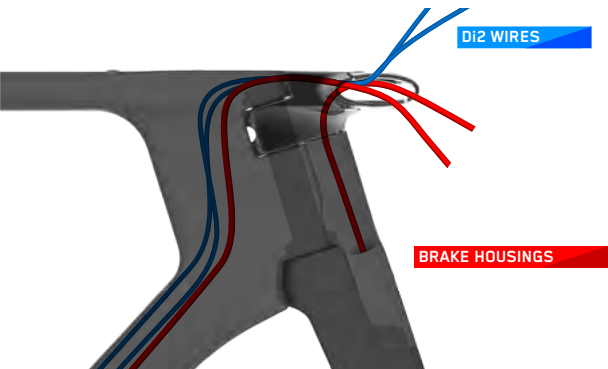
The upper bearing is positioned behind the upper part of the stem. In a low stem configuration, the upper bearing is in line with the stem and the top tube. Consequently, there is no need to widen the headtube to optimize airflow around the upper bearing as the stem is already covering the bearing. Unlike many typical standard steerer tube constructions where the frame's leading edge is not aerodynamically optimised, the front brake cover plays the role of an aerodynamic fender and improves the aerodynamic properties of the leading edge.



The new headtube and stem construction optimizes airflow and decreases aerodynamic drag.

INTEGRATION

The upper part of the new stem allows for internal cable routing: the front and rear brake cable housings and the shifting wires are routed out of the handlebar



Internal cable routing at the front end of the Plasma 5

<b>-90G</b> COMPARED TO THE PLASMA 3 STEM	<b>+47%</b> HEADTUBE TORSIONAL STIFFNESS COMPARED TO THE PLASMA 3	<b>+45MM</b> STACK INCREASE WITH RISER STEM
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PLASMA 5 AERIA HANDLE BAR

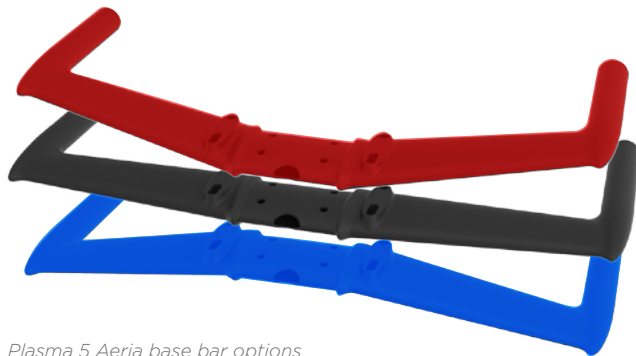
The upper body position is the most important factor when it comes to aerodynamic performance of the bike-rider system. At the same time, the upper body position needs to be ergonomic as the rider has to maintain this position up to several hours when competing in a long distance triathlon. For the Plasma 5 SCOTT partnered with the renowned handlebar manufacturer Profile Design. This partnership allowed for the development of a handlebar concept that features a wide range adjustability, a high-degree of compatibility, allows for proper integration of cables and wires and incorporates the airfoil innovation of the Plasma 5.

BASE BAR

The base bar has been specifically designed for the Plasma 5 and features an ultra-flat clamping area while the cross-sectional bar profile features the F01-X230 airfoil. In addition, the base bar allows for a complete integration of brake housings and electronic shifting wires. Amongst all the bars that were tested the Plasma 5 Aeria proofed to be the best with regard to aerodynamic performance. At the same time, the bar features a very stiff construction to ensure immediate power transfer. It complies with the 3:1 UCI rule and can thus be used during UCI events. To ensure optimal fit, SCOTT offers three different base bars:

- **+30mm rise/420mm width (c-c):** designed for tall riders and riders that ask for a more upright body position.
- **Flat/420mm width (c-c):** matching fit for the majority of rider's competing in triathlons and time trials.
- **-30mm drop/400mm width (c-c):** specifically designed for small sizes and very low handlebar positions.

All three base bars feature a longer reach than standard base bar models. The reach can be cut by up to 15mm to make sure the rider can achieve their preferred base bar reach. In addition, the bar sweep is kept at a minimum for sufficient knee clearance when pedalling out of the saddle.



Plasma 5 Aeria base bar options

3

BASE BAR  
OPTIONS  
AVAILABLE

22.2MM

BRACKET DIAMETER  
COMPATIBLE WITH ALMOST  
ANY EXTENSIONS AVAILABLE

75MM

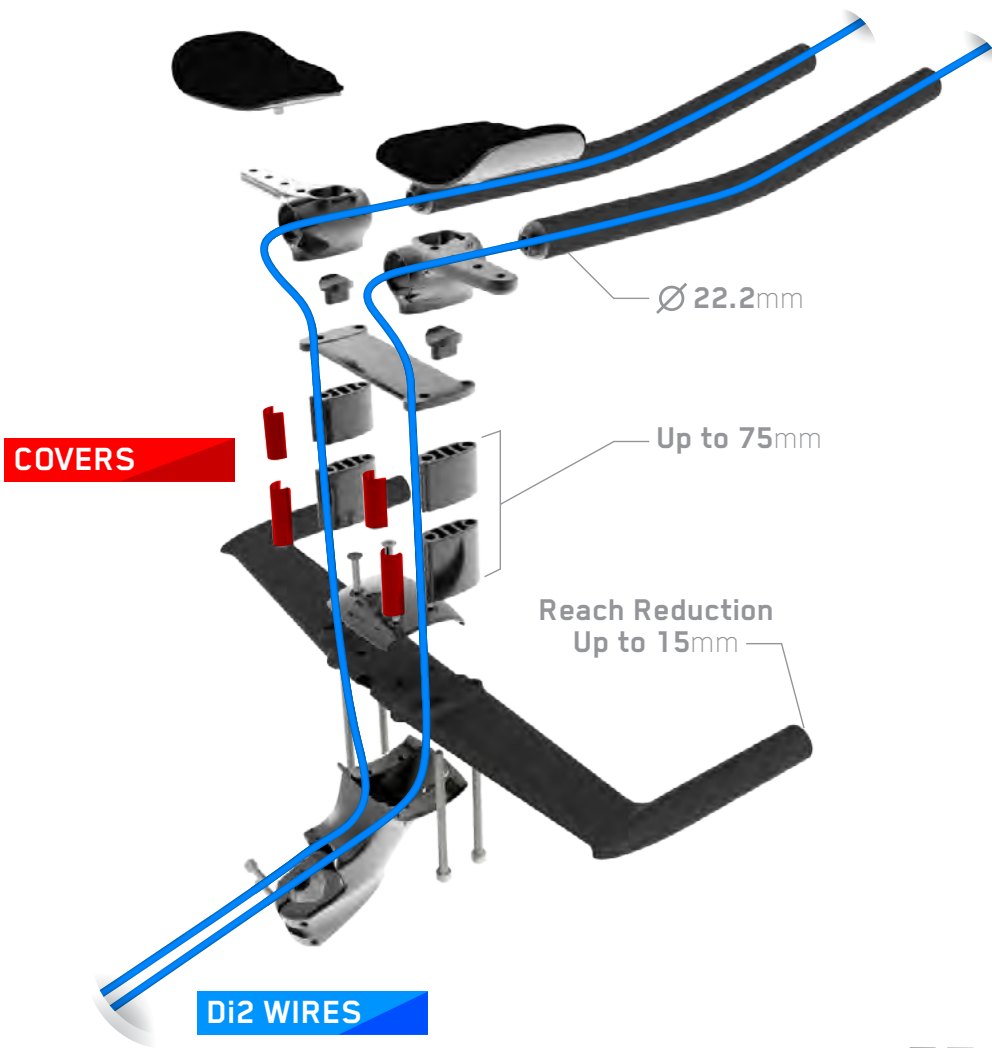
HEIGHT ADJUSTMENT  
WITH SPACER

SPACERS AND EXTENSION BRACKET

The spacer and extension brackets have been designed specifically for the Plasma 5 and allow for a height adjustment of up to 75mm for the arm rests and extensions. The trailing edge of the spacer features a removable cover that provides easy access to the internal channel where the electronic shifting cables are routed. The extension clamping system features a Ø22.2mm (7/8") clamping standard to maintain interchangeability with all of the available extension from Profile Design and most other brands.

EXTENSIONS AND ARM RESTS

Profile Design developed a new extension and arm rest kit that perfectly matches the needs of Sebastian Kienle and many other professionals. The sweep bend extension is angled at its end in order to provide an ergonomic but more aerodynamic hand position due to the reduction of the gap between extension and forearm. The new pad construction features a narrower mounting option and a lower pad design. The new design improves the aerodynamic performance of the bike's front end while maintaining the same comfort, adjustment range and handling precision.



Exploded view of the stem and Aeria handle bar



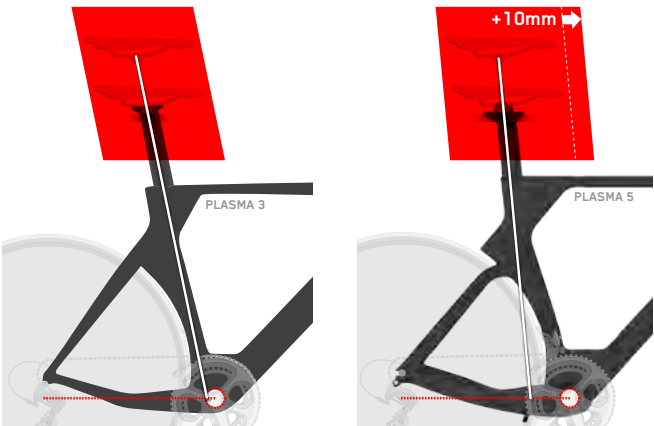


SEAT CLAMP ADJUSTABILITY AND SEAT POST OFFSET

Compared to the Plasma 3, the seat post of the Plasma 5 is not in line with the seat tube but rather at an angle. The resulting saddle clamp adjustment range remains almost identical independent of saddle height. In addition, the seat post has been modified and features an additional 10mm of horizontal adjustment.

+10MM

HORIZONTAL SEAT CLAMP ADJUSTMENT OF THE PLASMA 5 SEATPOST



Saddle adjustment range comparison between Plasma 3 and Plasma 5

MULTI-FUEL AERO STORAGE

Hydration and nutrition storages are key features on Triathlon bikes, especially for long distance races. The engineers at SCOTT have therefore dedicated part of the project to the integration of (fuel) storage for the triathlon version of the Plasma 5. Most of the currently available systems are aftermarket products that can be installed on almost every bike but are inevitably limited in many areas. After an extensive assessment of different solutions, the development team decided to go for a vertical bottle design which is mounted below the extensions, in front of the headtube and for a storage box which can be installed on the top tube right behind the stem. These storage systems offer a high usability due to easy installation, refilling and cleaning. Both storage systems are located on the bike in a way that the rider can access them without leaving the aero position. The storage systems are removable and only need to be installed on the bike when actually used. After all, the storage system improves the overall aerodynamic performance of the Plasma 5 with the triathlon configuration.



Multi-fuel storage system on the Plasma 5

PLASMA 5 AERO DRINK

In further collaboration with Profile Design, the engineers developed a novel aerodynamic hydration system. The aero drink features a clip-on connection which allows for installation and removal of the bottle in a matter of seconds. While the clip-on connection ensures a firm fixation to the stem, the bottle offers a secondary connection to the front brake cover. This secondary connection features a soft interface that avoids vi-

brations and movements. The hydration system offers a low-weight body from dishwasher-safe material with a large filling opening to save time while refilling and ensuring compatibility even with the widest bottle caps. A smooth bottle-frame intersection lowers aerodynamic drag due to an optimized airflow recirculation behind the bottle.

STORAGE BOX

The storage box features a two-cell design which allows for the separation of different contents (e.g. bars/gels or new content/waste). The divider is removable in order to allow for a single, large storage compartment as well, offering space for up to 8 energy bars. The storage box features a solid body shell to optimize airflow while offering enough knee clearance

for the rider. The rubber top cap grants easy access and ensures washability while drain holes at the bottom of the box prevent water accumulation on the inside. The storage box offers a standard 64mm assembly bolt interface and can be replaced with a standard bottle cage.

S (550ML) / M (625ML)

SIZE-SPECIFIC AERO DRINK VOLUME

2 CELL DESIGN OF THE STORAGE BOX

REMOVABLE DIVIDER

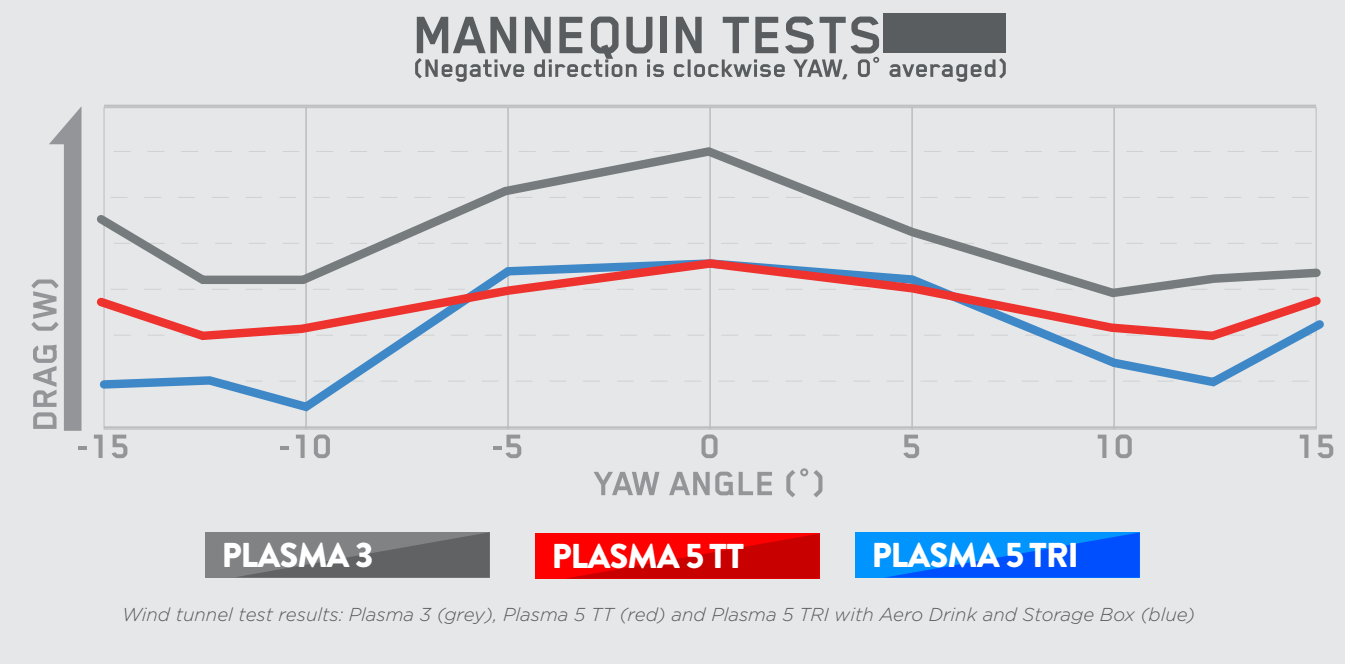
UP TO 8

ENERGY BARS STORAGE BOX VOLUME

AERO ADVANTAGE

THE TRIATHLON CONFIGURATION OF THE PLASMA 5 USES THE RISER STEM AND THEREFORE PROVIDES A HIGHER BAR POSITION WHICH IS NO LONGER IN LINE WITH THE TOP TUBE. WITHOUT ANY ADAPTATIONS THIS WOULD IMPEDE THE AIRFLOW IN THE TOP TUBE AREA. THE HYDRATION SYSTEM AND THE STORAGE BOX OPTIMIZE THE AIRFLOW AROUND THE TOP TUBE AREA AS WELL AS THE FRONTAL SURFACE AS A RESULT OF THE MOUNTED HYDRATION SYSTEM. MOREOVER, THE INSTALLATION OF THE HYDRATION SYSTEM IN FRONT OF THE HEADTUBE PROVIDES A LONGER LEADING EDGE,

REDUCING THE HIGH PRESSURE ZONES ON THE LEADING EDGE IMPROVING AERODYNAMIC PERFORMANCE. WIND TUNNEL TESTING REVEALED SIMILAR DRAG RESULTS FOR THE TT AND TRIATHLON CONFIGURATION OF THE PLASMA 5 AT LOW YAW ANGLES (-7° TO +7°) WHILE AT HIGHER YAW ANGLES THE TRIATHLON CONFIGURATION PROVED TO HAVE EVEN BETTER AERODYNAMIC PERFORMANCE THAN THE TT CONFIGURATION. COMPARED TO THE PLASMA 3, WE SEE AN AVERAGE DRAG REDUCTION OF 7% FOR THE TRIATHLON VERSION AND 5% FOR THE TT VERSION OF THE PLASMA 5.





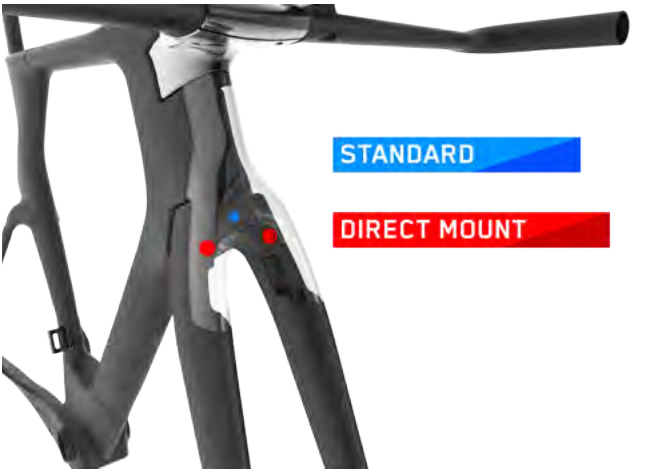
BRAKE INTEGRATION

The Plasma 5 features integrated front and rear brakes. The assessment of different brakes available on the market led the engineers to choose a standard Shimano direct-mount rear brake as it offered the best performance while matching the construction of the Plasma 5. For the front brake, however, the existing solutions did not match the expectations of the development team. The influence of the front brake on aerodynamic performance is more significant compared to the rear brake. The front brake design is largely determined by aerodynamic objectives. Although aerodynamic performance is key, the construction shouldn't be made at the expense of braking performance or adjustability. The development team chose to go for a dual pivot / center pull front brake design due to its aerodynamic efficiency, its ability for integration and its overall braking efficiency. The center pull makes it easy to design a front cover that is an aerodynamic appendix and allows for an efficient leading edge of the headtube. This also saves some weight as this leading edge is no longer a structural part of the frame. The Plasma 5 front brake was developed in collaboration with brake manufacturer TEKRO. The cooperation with TEKRO resulted in a high-performance brake calliper that is compatible with most of TEKRO's hardware, facilitating maintenance. While the aerodynamic performance of this construction is beyond doubt, the braking performance has

2 FRONT BRAKE MOUNT INTERFACES

COMPATIBLE WITH DIRECT MOUNT AND CALIPER BRAKES

been improved drastically by means of the following modifications. First, the brake features an improved leverage ratio due to the increased length of the lever arms. At the same time, this modification results in a wider range of pad travel within a stable and efficient leverage ratio. Second, the brake features a stiffer construction thanks to a brake booster that keeps the brake bolts from flexing under loads and a dual-lever arm construction that lowers the torsional stress within the lever arm. Third, a lower building construction saves volume for the brake cover design and improves the aerodynamic properties while at the same time increasing the leverage ratio. After all, the front brake mount is designed to fit the latest Shimano Direct Mount interface, meaning that any direct mount brake can be assembled on the new Plasma 5. Additionally, the fork features the standard brake interface, which means any brake with a standard design can be retrofitted on the Plasma. In both cases, however, the brake cover cannot be fitted on the front end.



The different brake mount options are highlighted in red (Direct Mount) and blue (Caliper)

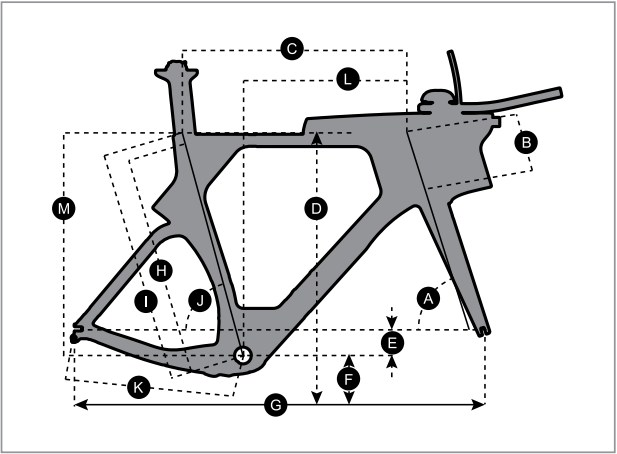
INTERNAL CABLE ROUTING FOR ELECTRONIC

The Plasma 5 frame is compatible with both electronic and mechanical groupsets. The frame offers internal cable routing from the extension to the rear derailleur and an internal battery mount in the seat post.

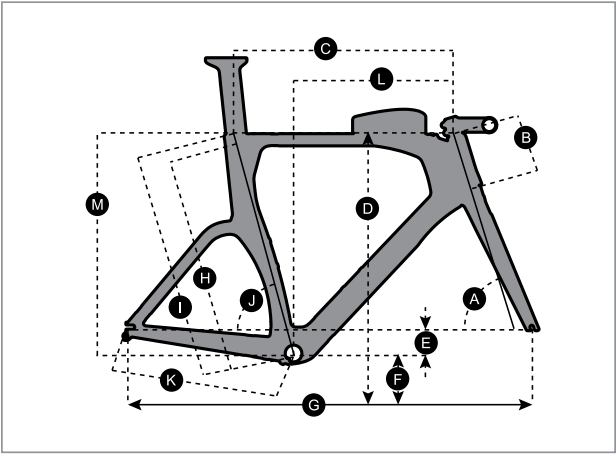
UCI-COMPLIANT

The Plasma 5 frame and fork with both TT and Triathlon stem configurations is fully UCI-compliant. However, the Plasma 5 Aero Drink and the Storage Box have been designed to cover the specific needs of triathletes and are not UCI-compliant.

GEOMETRY



PLASMA: PREMIUM, RC



PLASMA: 10, 20

PLASMA: PREMIUM, RC

	S/51		M/54		L/57		XL/60	
A HEAD TUBE ANGLE	72.0 °		73.0 °		73.0 °		73.5 °	
B HEAD TUBE LENGTH	110.0 mm	4.3 in	138.0 mm	5.4 in	170.0 mm	6.7 in	199.0 mm	7.8 in
C TOP TUBE HORIZONTAL	524.0 mm	20.6 in	544.0 mm	21.4 in	564.0 mm	22.2 in	583.0 mm	23.0 in
D STANDOVER HEIGHT	779.0 mm	30.7 in	809.0 mm	31.9 in	839.0 mm	33.0 in	869.0 mm	34.2 in
E BB OFFSET	-65.0 mm	-2.6 in	-65.0 mm	-2.6 in	-65.0 mm	-2.6 in	-65.0 mm	-2.6 in
F BB HEIGHT	269.0 mm	10.6 in	269.0 mm	10.6 in	269.0 mm	10.6 in	269.0 mm	10.6 in
G WHEEL BASE	965.0 mm	38.0 in	983.0 mm	38.7 in	1,009.0 mm	39.7 in	1,029.0 mm	40.5 in
H BB CENTER TO TOPTUBE CENTER	514.8 mm	20.3 in	544.6 mm	21.4 in	574.4 mm	22.6 in	604.2 mm	23.8 in
I BB CENTER TO TOP OF SEATTUBE	529.8 mm	20.9 in	559.6 mm	22.0 in	589.4 mm	23.2 in	619.2 mm	24.4 in
J SEAT ANGLE	74.0 °		75.0 °		75.0 °		76.0 °	
K CHAINSTAY	403.0 mm	15.9 in	403.0 mm	15.9 in	403.0 mm	15.9 in	403.0 mm	15.9 in
L REACH	380.0 mm	15.0 in	397.0 mm	15.6 in	414.0 mm	16.3 in	430.0 mm	16.9 in
M STACK	510.0 mm	20.1 in	540.0 mm	21.3 in	570.0 mm	22.4 in	600.0 mm	23.6 in
N STEM LENGTH	85.0 mm	3.3 in	85.0 mm	3.3 in	85.0 mm	3.3 in	85.0 mm	3.3 in

PLASMA: 10, 20

	S/51		M/54		L/57		XL/60	
A HEAD TUBE ANGLE	72.0 °		73.0 °		73.0 °		73.5 °	
B HEAD TUBE LENGTH	100.0 mm	3.9 in	128.0 mm	5.0 in	159.0 mm	6.3 in	199.0 mm	7.8 in
C TOP TUBE HORIZONTAL	526.0 mm	20.7 in	546.0 mm	21.5 in	566.0 mm	22.3 in	583.0 mm	23.0 in
D STANDOVER HEIGHT	769.0 mm	30.3 in	799.0 mm	31.5 in	829.0 mm	32.6 in	869.0 mm	34.2 in
E BB OFFSET	-65.0 mm	-2.6 in	-65.0 mm	-2.6 in	-65.0 mm	-2.6 in	-65.0 mm	-2.6 in
F BB HEIGHT	269.0 mm	10.6 in	269.0 mm	10.6 in	269.0 mm	10.6 in	269.0 mm	10.6 in
G WHEEL BASE	965.0 mm	38.0 in	983.0 mm	38.7 in	1,009.0 mm	39.7 in	1,029.0 mm	40.5 in
H BB CENTER TO TOPTUBE CENTER	504.9 mm	19.9 in	534.7 mm	21.0 in	564.4 mm	22.2 in	604.2 mm	23.8 in
I BB CENTER TO TOP OF SEATTUBE	519.9 mm	20.5 in	549.7 mm	21.6 in	579.4 mm	22.8 in	619.2 mm	24.4 in
J SEAT ANGLE	74.0 °		75.0 °		75.0 °		76.0 °	
K CHAINSTAY	403.0 mm	15.9 in	403.0 mm	15.9 in	403.0 mm	15.9 in	403.0 mm	15.9 in
L REACH	383.0 mm	15.1 in	400.0 mm	15.7 in	417.0 mm	16.4 in	430.0 mm	16.9 in
M STACK	500.0 mm	19.7 in	530.0 mm	20.9 in	560.0 mm	22.0 in	600.0 mm	23.6 in
N STEM LENGTH								



PLASMA PREMIUM

250239



<b>FRAME</b>	Plasma 5 / IMP technology / HMX TT / TRI Geometry / Plasma HMX seatpost / Replaceable hanger / UCI approved	<b>BRAKE LEVERS</b>	Shimano Di2 ST-R9160	<b>HUB (FRONT)</b>	Zipp 404
<b>FORK</b>	Plasma 5 1"-11/8" Carbon / integrated	<b>BRAKES</b>	Front: SCOTT T KB136 Rear: Shimano Dura Ace BR-R9110R, direct mount	<b>HUB (REAR)</b>	Zipp 808
<b>HEADSET</b>	Syncros Integrated 1-11/8" drop-in headset	<b>CRANKSET</b>	Shimano Dura-Ace FC-R9100 Hollowtech II 39/53 T	<b>CHAIN</b>	Shimano Dura Ace CN-HG901-11
<b>REAR DERAILLEUR</b>	Shimano Dura-Ace RD-R9150 22 Speed Electronic	<b>BB-SET</b>	Dura Ace BB-R9100-PB	<b>CASSETTE</b>	Shimano Dura Ace CS-R9100 11-25
<b>FRONT DERAILLEUR</b>	Shimano Dura-Ace FD-R9150 Electronic Shift System	<b>HANDLEBAR</b>	Profile Plasma 5 Aeria, flat, 420mm Profile T5+Carbon	<b>SPOKES</b>	Zipp 404 / 808
<b>SHIFTERS</b>	Shimano Di2 SW-R9160	<b>HANDLEBAR STEM</b>	Profile Plasma 5 TRI, 30°, 85mm	<b>RIMS</b>	F: Zipp Carbon 404 Firecrest CC R: Zipp Carbon 808 Firecrest CC 18 Front / 24 Rear
		<b>SEATPOST</b>	Plasma HMX with Ritchey WCS clamp adjustable head	<b>TIRES</b>	Continental Grand Prix 4000s II 700x25C
		<b>SEAT</b>	Syncros RR1.0 TRI	<b>WEIGHT</b>	Check website

PLASMA 10

250241



<b>FRAME</b>	Plasma 4 / IMP technology / HMF TT / TRI Geometry / Plasma HMX seatpost / Replaceable hanger / UCI approved	<b>BRAKES</b>	Front: Shimano Ultegra direct mount Rear: Shimano Ultegra, direct mount	<b>HUB (FRONT)</b>	Formula RB 25
<b>FORK</b>	Plasma 4 11/8" Carbon / integrated	<b>CRANKSET</b>	Shimano Ultegra FC-6800 39/53 T	<b>HUB (REAR)</b>	Formula RB 2611
<b>HEADSET</b>	Syncros Integrated 45mm drop-in headset	<b>BB-SET</b>	Shimano SM-BBR60	<b>CHAIN</b>	Shimano CN-6800
<b>REAR DERAILLEUR</b>	Shimano Ultegra RD-6800 22 Speed	<b>HANDLEBAR</b>	Profile OZERO TT Profile T2+ Carbon J5	<b>CASSETTE</b>	Shimano Ultegra CS-6800 11-25
<b>FRONT DERAILLEUR</b>	Shimano Ultegra FD-6800	<b>HANDLEBAR STEM</b>	Profile 1/ZeroSeven 11/8"-31.8mm-7°	<b>SPOKES</b>	CN - Standard Black 2mm
<b>SHIFTERS</b>	Shimano Dura AceSL-BSR1 bar end	<b>SEATPOST</b>	Plasma HMX with Ritchey WCS clamp adjustable head	<b>RIMS</b>	Syncros Race 22 Aero Profile 24 Front / 28 Rear
<b>BRAKE LEVERS</b>	Profile Design 3 / one A	<b>SEAT</b>	Syncros RR2.0 TRI	<b>TIRES</b>	Continental Grand Sport Race 700x25C Fold
				<b>WEIGHT</b>	Check website

PLASMA RC

250240



<b>FRAME</b>	Plasma 5 / IMP technology / HMX TT / TRI Geometry / Plasma HMX seatpost / Replaceable hanger / UCI approved	<b>BRAKE LEVERS</b>	Shimano Di2 ST-6871	<b>HUB (FRONT)</b>	Formula RB 25
<b>FORK</b>	Plasma 5 1"-11/8" Carbon / integrated	<b>BRAKES</b>	Front: SCOTT T KB136 Rear: Shimano Ultegra BR-6810R, direct mount	<b>HUB (REAR)</b>	Formula RB 2611
<b>HEADSET</b>	Syncros Integrated 1-11/8" drop-in headset	<b>CRANKSET</b>	Shimano Ultegra FC-6800 39/53 T	<b>CHAIN</b>	Shimano CN-HG701-11
<b>REAR DERAILLEUR</b>	Shimano Ultegra RD-6870 22 Speed Electronic	<b>BB-SET</b>	Ultegra SM-BB72-41B	<b>CASSETTE</b>	Shimano Ultegra CS-6800 11-25
<b>FRONT DERAILLEUR</b>	Shimano Ultegra FD-6870 Electronic Shift System	<b>HANDLEBAR</b>	Profile Plasma 5 Aeria, flat, 420mm Profile T5+Carbon	<b>SPOKES</b>	CN - Standard Black 2mm
<b>SHIFTERS</b>	Shimano Di2 SW-R671	<b>HANDLEBAR STEM</b>	Profile Plasma 5 TRI, 30°, 85mm	<b>RIMS</b>	Syncros Race 22 Aero Profile 24 Front / 28 Rear
		<b>SEATPOST</b>	Plasma HMX with Ritchey WCS clamp adjustable head	<b>TIRES</b>	Continental Grand Sport Race 700x25C Fold
		<b>SEAT</b>	Syncros RR1.5 TRI	<b>WEIGHT</b>	Check website

PLASMA 20

250242



<b>FRAME</b>	Plasma 4 / IMP technology / HMF TT / TRI Geometry / Plasma HMX seatpost / Replaceable hanger / UCI approved	<b>BRAKES</b>	Front: Tektro T731F Rear: Tektro T741R	<b>HUB (FRONT)</b>	Formula RB 25
<b>FORK</b>	Plasma 4 11/8" Carbon / integrated	<b>CRANKSET</b>	Shimano FC-RS500 34/50 T	<b>HUB (REAR)</b>	Formula RB 2611
<b>HEADSET</b>	Syncros Integrated 45mm drop-in headset	<b>BB-SET</b>	Shimano SM-BBR72	<b>CHAIN</b>	Shimano CN-5800
<b>REAR DERAILLEUR</b>	Shimano 105 RD-5800 22 Speed	<b>HANDLEBAR</b>	Profile T2 Profile T2+	<b>CASSETTE</b>	Shimano 105 11-28
<b>FRONT DERAILLEUR</b>	Shimano 105 FD-5800	<b>HANDLEBAR STEM</b>	Profile 1/ZeroSeven 11/8"-31.8mm-7°	<b>SPOKES</b>	CN - Standard Black 2mm
<b>SHIFTERS</b>	Shimano Dura AceSL-BSR1 bar end	<b>SEATPOST</b>	Plasma HMX with Ritchey WCS clamp adjustable head	<b>RIMS</b>	Syncros Race 22 Aero Profile 24 Front / 28 Rear
<b>BRAKE LEVERS</b>	Profile Design 3 / one A	<b>SEAT</b>	Syncros RR2.0 TRI	<b>TIRES</b>	Continental Ultra Sport 700x25C
				<b>WEIGHT</b>	Check website





## EUROPEAN CHAMPION, WORLD CHAMPION, HOUR RECORD HOLDER

A concept is only really proven if it achieves outstanding results in reality. The Plasma 5 concept proved to be exceptional in a very short time period. Even before it was officially introduced in July of 2014, Sebastian Kienle won the IM European Championships aboard the new Plasma 5. Later in the year, he set a milestone in his own career and in the history of SCOTT Sports by winning the IM World Championships in Hawaii. In the first 12 months after its introduction, SCOTT Triathletes won 10 IM events. The Plasma 5, however, is not only made for triathlon and has been proven in cycling alike. In October of 2014, Matthias Brändle from IAM Cycling set a new hour record on a Plasma 5 that had been optimized for the track.

Team Orica-GreenEDGE claimed silver at the 2014 TTT World Championships and won the opening TTT at the 2015 Giro d'Italia claiming the maglia rosa. These are only some of the biggest achievements of IAM Cycling and Orica-GreenEDGE on the new Plasma 5. Watch out, there's more to come!



#### **TECH & FACTS REPORT PLASMA**

<http://mdb.SCOTT-sports.com/pindownload/login.do?pin=LGX54XOZDNIX>  
PIN-Code: LGX54XOZDNIX

#### **STUDIO SHOTS PLASMA**

<http://mdb.SCOTT-sports.com/pindownload/login.do?pin=383F112MVSAZ>  
PIN-Code: 383F112MVSAZ

#### **DETAIL SHOTS PLASMA**

<http://mdb.SCOTT-sports.com/pindownload/login.do?pin=WM8FDLZS9SSE>  
PIN-Code: WM8FDLZS9SSE

#### **ACTION SHOTS PLASMA**

<http://mdb.SCOTT-sports.com/pindownload/login.do?pin=A2HS1L5LCLW4>  
PIN-Code: A2HS1L5LCLW4

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## **TECH AND FACTS REPORT**

**2017 SCOTT PLASMA LINEUP**

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