

# FASTER

FROM EVERY ANGLE.

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RIDE LIFE.  
RIDE GIANT.

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The All-New Propel Advanced SL

## TEST RESULTS

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## ENGINEERED TO BE THE WORLD'S FASTEST AERO BIKE, THE ALL-NEW PROPEL ADVANCED SL FEATURES CUTTING-EDGE TECHNOLOGIES AND UNRIVALED CRAFTSMANSHIP.

The frame's tube profiles have been optimized for aerodynamics and, when pitted against other top competitors' aero road bikes, the Propel Advanced SL offers a savings of nearly a second per kilometer, translating into massive performance gains. The Propel Advanced SL is the fastest bicycle in the aero road category, offering unsurpassed aerodynamics without compromising either stiffness or light weight.



## TECHNOLOGY

### 1 AEROSYSTEM SHAPING TECHNOLOGY

Exhaustive Computational Fluid Dynamics research and wind-tunnel tests conducted with a dynamic mannequin produced data revealing how various tube shapes and assemblages affect each other in a broad range of real-world yaw angles. Engineers used that data to optimize the shape of every tube and junction for overall system aerodynamics.

### 2 GIANT CONTACT SLR AERO INTEGRATED BAR/STEM

An oversized box-section stem, designed for torsional stiffness, and tuned for vertical compliance is seamlessly integrated into a full carbon handlebar with an aero top profile designed to maximize aerodynamic performance.

### 3 SPEEDCONTROL SLR

Proprietary braking system offers powerful, aerodynamic stopping power. A composite reverse-position front brake and seatstay-mounted rear brake are hidden from the wind. The system also features strategic trailing edges that further improve aerodynamics.

### 4 INTEGRATED SEATPOST

As the pioneer of the integrated seatpost, Giant continues to improve its original design with lighter weight (approximately 45 grams of weight savings, compared to a standard composite seatpost), improved aerodynamics and an even greater "tuned" forgiving ride feel. An adjustable saddle clamp offers 10 or 23 millimeters of offset for precise saddle position.

### 5 ADVANCED SL-GRADE COMPOSITE TECHNOLOGY

The highest-performance T-800 raw carbon-fiber material is painstakingly woven in Giant's own composite factory to create the most cutting-edge frames available today. This is the technology used by Giant's world championship-caliber racers as they compete in the most demanding events on the planet. These frames feature the most advanced engineering and construction methods.

### 6 OVERDRIVE 2

Giant's innovative oversized fork steerer-tube design increases front-end stiffness and enhances steering performance. The tapered steerer and oversized bearings (1 1/4-inch top, 1 1/2-inch bottom) boost torsional steering stiffness so you can sprint and corner with supreme precision.

### 7 POWERCORE

A massively oversized bottom-bracket/chainstay area features a fully integrated, 86-millimeter-wide bottom-bracket design. Asymmetric chainstays provide additional stiffness on the driveside and stability on the non-driveside.

### 8 RIDESENSE

Giant's all-new chainstay integrated, wireless data transmitter. The fully integrated, removable transmitter sends wheelspeed and cadence information directly to any ANT+ compatible computer.

### 9 INTERNAL CABLE ROUTING

Frame features unique internal cable porting for sleek, non-cluttered appearance and performance.

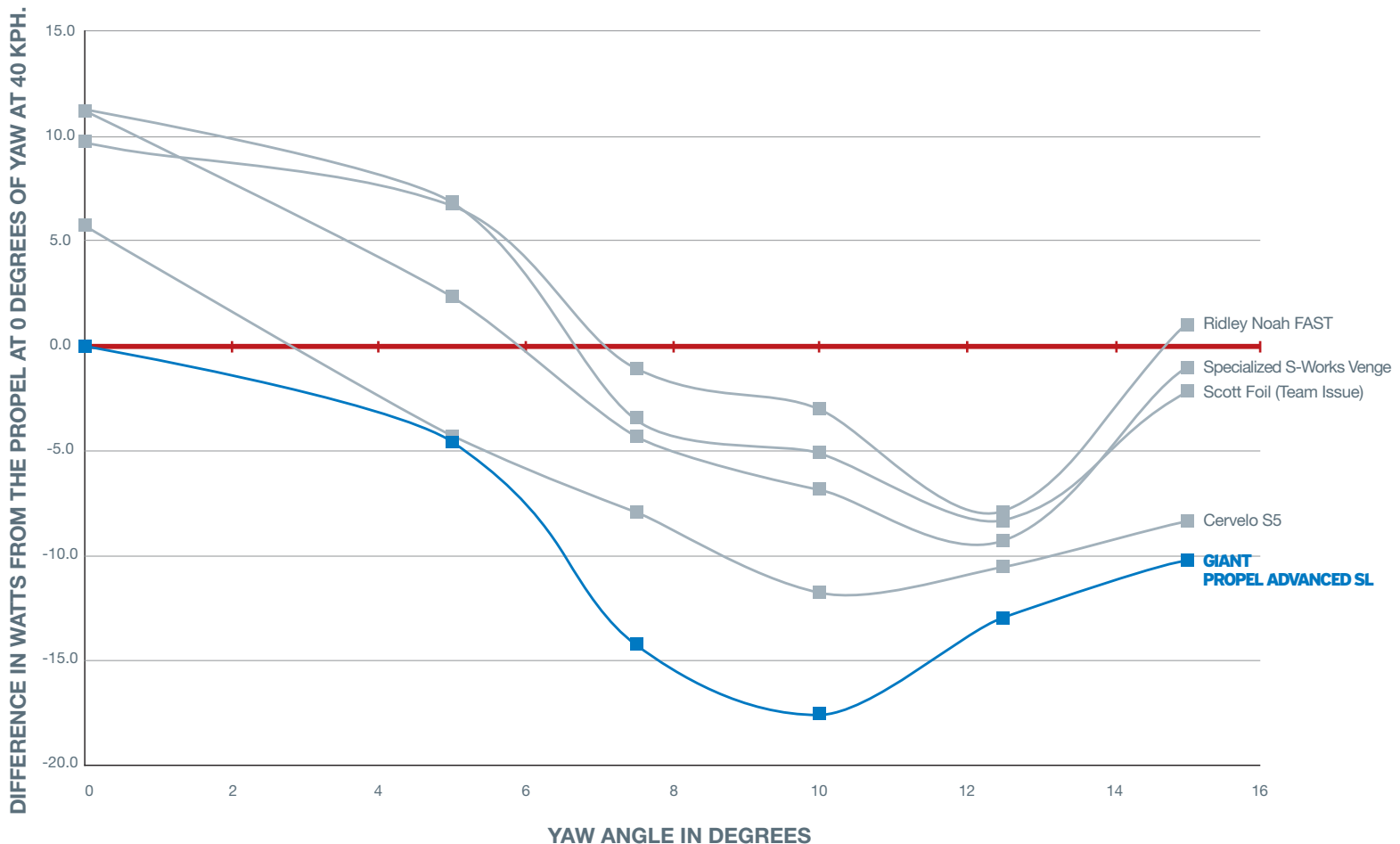


# PROPEL ADVANCED SL

## TEST RESULTS

### AERODYNAMICS

The Propel Advanced SL was tested against competitors' aero road bikes at the ACE wind tunnel in Magny-Cours, France. In order to better simulate actual riding conditions, a dynamic mannequin was employed. An industry first, this allowed Giant to more accurately replicate real-world riding forces and conditions without the variability intrinsic to live athlete testing. Unlike a static mannequin, a dynamic mannequin accurately replicates the aerodynamic effects of a cyclist pedaling a bicycle. The chart below shows how the Propel Advanced SL fared against competitor's aerodynamic road bikes across a broad spectrum of yaw angles (from 0-15 degrees). All changes in wattage are relative to the drag of the Propel Advanced SL at zero degrees of yaw. In order to ensure consistency, all competitors' bicycles were tested with a Giant P-SLR1 wheelsystem, standard handlebar/ stem, Fizik Arione saddle, manufacturer supplied seatpost (or mast) and Shimano Dura-Ace 7900 groupset (excepting for integrated and proprietary components). The Propel Advanced SL was similarly equipped with the exception of these integrated components: SpeedControl SLR brake system, Contact SLR Aero Integrated handlebar/stem and Integrated Seatpost (ISP).





# PROPEL ADVANCED SL

## TEST RESULTS

### AERODYNAMICS

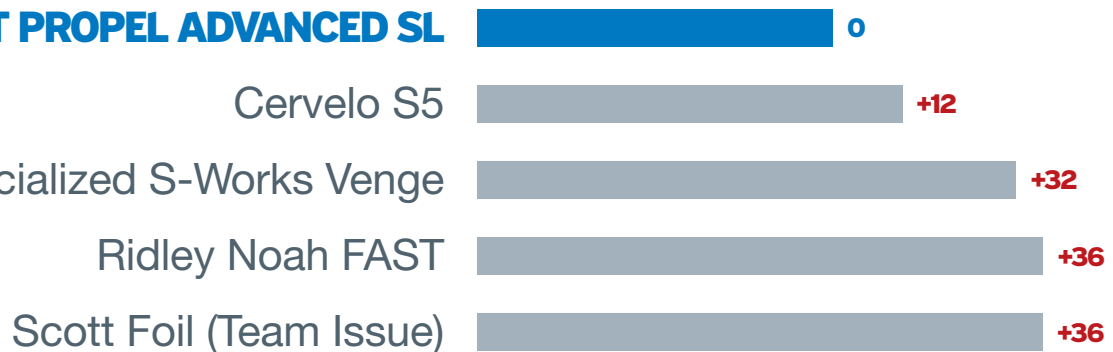
The Propel Advanced SL was developed with Giant's AeroSystem Shaping Technology. Central to AeroSystem Shaping Technology is the belief that an aerodynamic bicycle should perform as well in the real world as it does in the wind tunnel. This means that every change to the design of the Propel Advanced SL was not made in isolation, but rather with a holistic eye towards how every change would impact the bicycles' performance in the real-world—not just the wind tunnel. With this in mind, the Propel Advanced SL was tested with the aid of a dynamic mannequin which allowed for a more accurate understanding of the aerodynamic forces at work in the real-world while still controlling for the variability intrinsic to live-athlete testing. The bar charts below represent the time savings afforded by the Propel Advanced SL over a 40 kilometer time trial. These differences were calculated based on third-party wind tunnel testing conducted at the ACE wind tunnel.

### AERODYNAMIC SUPERIORITY

MODEL	40KPH, 40KM	TIME DIFFERENCE
	<i>minutes</i>	<i>seconds</i>
<b>GIANT PROPEL ADVANCED SL</b>	<b>60</b>	<b>0</b>
Cervelo S5		12
Specialized S-Works Venge		32
Ridley Noah FAST		36
Scott Foil (Team Issue)		36

### 40KM TIME DIFFERENCE IN SECONDS

#### GIANT PROPEL ADVANCED SL





# PROPEL ADVANCED SL

## TEST RESULTS

### WEIGHT

The weights below are for size medium (or equivalent) frames. Included in the weight totals are the frame itself, fork, brakeset (either proprietary, or Shimano Dura Ace 7900) seatpost or integrated seatpost clamp, and headset plug.

### WEIGHT VERSUS COMPETITORS

MODEL	FRAME WEIGHT	FORK WEIGHT	POST/ISP CLAMP	BRAKESET	PLUG	TOTAL	DIFFERENCE
	<i>grams</i>	<i>grams</i>	<i>grams</i>	<i>grams</i>	<i>grams</i>	<i>grams</i>	<i>grams</i>
<b>GIANT PROPEL ADVANCED SL</b>	<b>950</b>	<b>380</b>	<b>144</b>	<b>181</b>	<b>20</b>	<b>1675</b>	<b>0</b>
Scott Foil (Team Issue)	968	352	245	293	50	1908	<b>233</b>
Specialized S-Works Venge	1112	358	200	293	36	1999	<b>324</b>
Ridley Noah FAST	1336	530	143	68	56	2133	<b>458</b>
Cervelo S5	1286	376	230	293	36	2221	<b>546</b>

### TOTAL WEIGHT DIFFERENCE IN GRAMS





# PROPEL ADVANCED SL

## TEST RESULTS

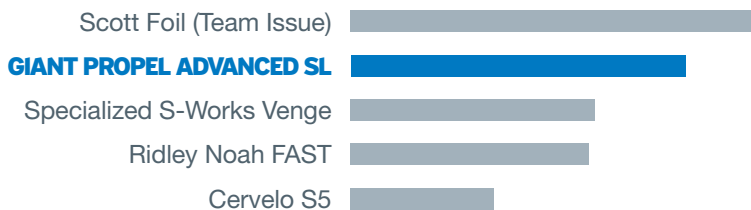
### STIFFNESS

Stiffness was assessed using the protocols established by Germany's *Tour* magazine with size medium (or equivalent) framesets. Unlike many of our competitors, which assess stiffness not with a fork but with a steel bar, Giant tested both steering and pedaling stiffness with the actual fork in place. This provides a far more accurate measure of how a bicycle will perform in real-world conditions, and helps ensure that our testing procedures translate into performance gains that can be felt on the road.

### STIFFNESS VERSUS COMPETITORS

MODEL	REAL FORK STEERING STIFFNESS	REAL FORK PEDALING STIFFNESS
	(Nm/°)	(N/mm)
<b>GIANT PROPEL ADVANCED SL</b>	<b>112.46</b>	<b>65.04</b>
Cervelo S5	99.71	57.49
Specialized S-Works Venge	106.47	65.66
Scott Foil (Team Issue)	117.12	60.10
Ridley Noah FAST	106.26	67.60

#### REAL FORK STEERING STIFFNESS



#### REAL FORK PEDALING STIFFNESS

