

IT TAKES TIME TO MAKE WHEELS THIS FAST.

BORA ULTRA WTC 45

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33/45/60

#THEBEAUTYOF SPEED

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Campagnolo

THE BEAUTY OF SPEED



INTRODUCING THE BORA™ ULTRA WTO

Stiffer, lighter and more aerodynamic, the new Bora™ Ultra WTO series showcases *the beauty of speed*.

Since 1994, Campagnolo's Bora™ series has set the standard for high-performance racing wheels, with each evolution bringing considerable real-world performance increases.

The iconic Italian cycling brand now unveils its latest iteration in the range, **the new Bora™ Ultra WTO series, a range-topping wheelset available disc brake-only, in 33, 45 and 60mm rim-depth formats.**

The new model takes an evolutionary leap ahead of its predecessors, with significant **improvements to aerodynamics, stiffness and weight**, unlocked by a forward-thinking design process at the brand's Vicenza HQ.

Beauty is the brand's forte however, and aesthetics certainly haven't been forgotten amid the innovation.

The introduction of aerodynamic (and easy to maintain) internal nipples, a redesigned hub and new rim made from proprietary ultra-light carbon fiber, all adds up to an extraordinarily fast wheelset.

Elegant copper-shaded Campagnolo branding decorates the wheel's rim and hub, complete with a timeless and discrete desaturation effect that hints at something truly special beneath the surface.

#THEBEAUTYOFSPEED



It takes time to make wheels this fast.

Like all Campagnolo® wheels and groupsets, the Bora™ Ultra WTO has been designed, developed, tested and produced - from start to finish - entirely in house.

Every element is Campagnolo's own - be it spoke, rim or hub - and part of a cohesive and uncompromising vision for speed.

The new wheels have been nearly 3 years of dedicated research and development in the making and employ several innovative Campagnolo-patented technologies designed to increase speed, improve aerodynamics and reduce weight.

TECHNICAL SPECS

BORA ULTRA WTO

Weight (pair, N3W™, exc. lockring/valve)	1385g (33mm), 1425g (45mm), 1530g (60mm)
Max. recommended system weight	120kg
ASTM classification	1

Rim:

Material	H.U.L.C UD high-strength carbon fibre, C-LUX finish
Tyre compatibility	2-Way Fit™ - Tubeless, tubeless-ready, clincher
Recommended tyre size	700c, aerodynamically optimised for 25mm
Rim height	33mm / 45mm / 60mm
Internal width	21mm (33) - 19mm (45-60)
External width	27.4mm (33) - 26.1mm (45-60)

Hubs:

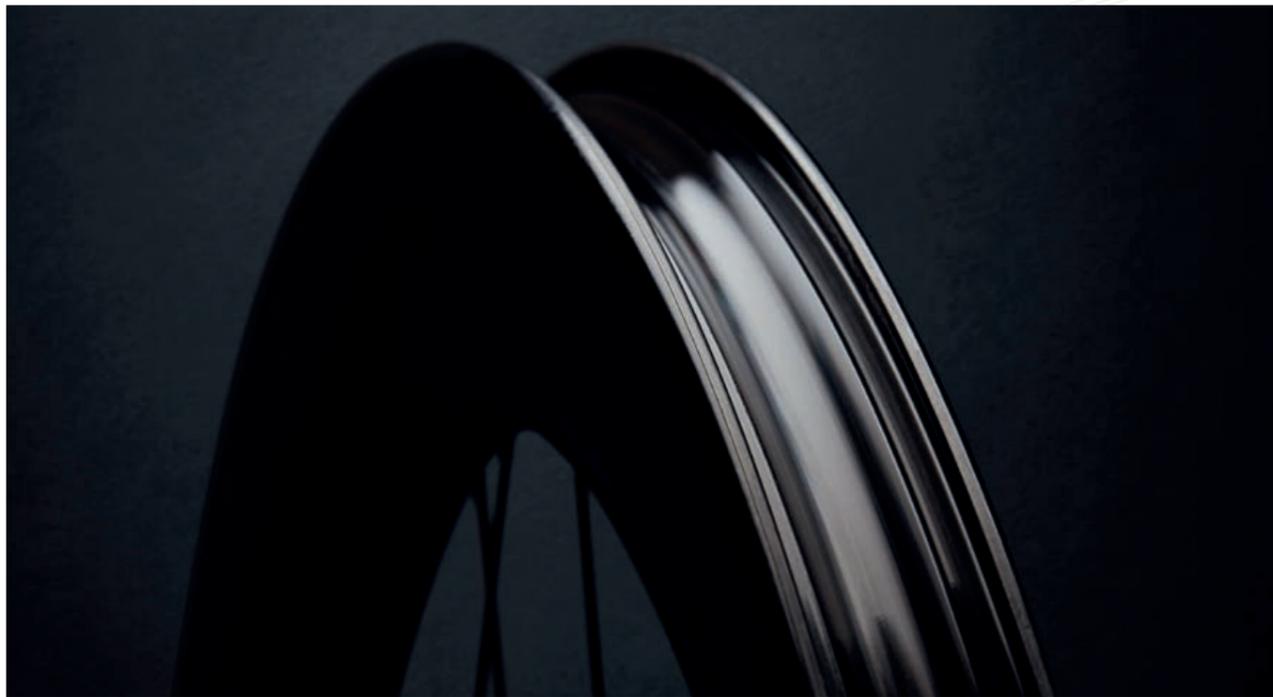
Front hub type	Carbon body with integrated radial flange
Front hub width	12 x 100mm
Rear hub type	Aluminium body, 36 tooth ratchet freehub
Rear hub width	12 x 142mm
Axle type	Aluminium thru axle
Bearings	CULT™ ceramic, cup and cone
Brake interface	AFS disc
Freehub compatibility	N3W™, XDR, HG

Spokes & Nipples:

Spokes	24, elliptical, straight-pull, double-butt, 1.5mm
Spoke pattern	G3™
Nipples	Aluminium Aero Mo-Mag™, self-locking, internal

Supplied with:

Aero Mo-Mag™ nipple maintenance kit, tubeless valves, AFS lockrings, Campagnolo® wheel bags, Campagnolo® accessories bag, tyre levers, Campagnolo® N3W™ Z11 adapter (with N3W™ freehub version).



WTO & Aerodynamics

The new Bora™ Ultra WTO (WTO denoting 'Wind Tunnel Optimised') series reflects a balanced evolution of our WTO platform; designed to offer unparalleled aerodynamic performance in real-world conditions.

The design of each component of the wheel enables maximum aerodynamic penetration: at certain angles, the wind is transformed from an obstacle into a valuable ally for the rider.

During the design and development process, every decision is made with a single purpose: to optimise performance, balanced by the benefits of other features.

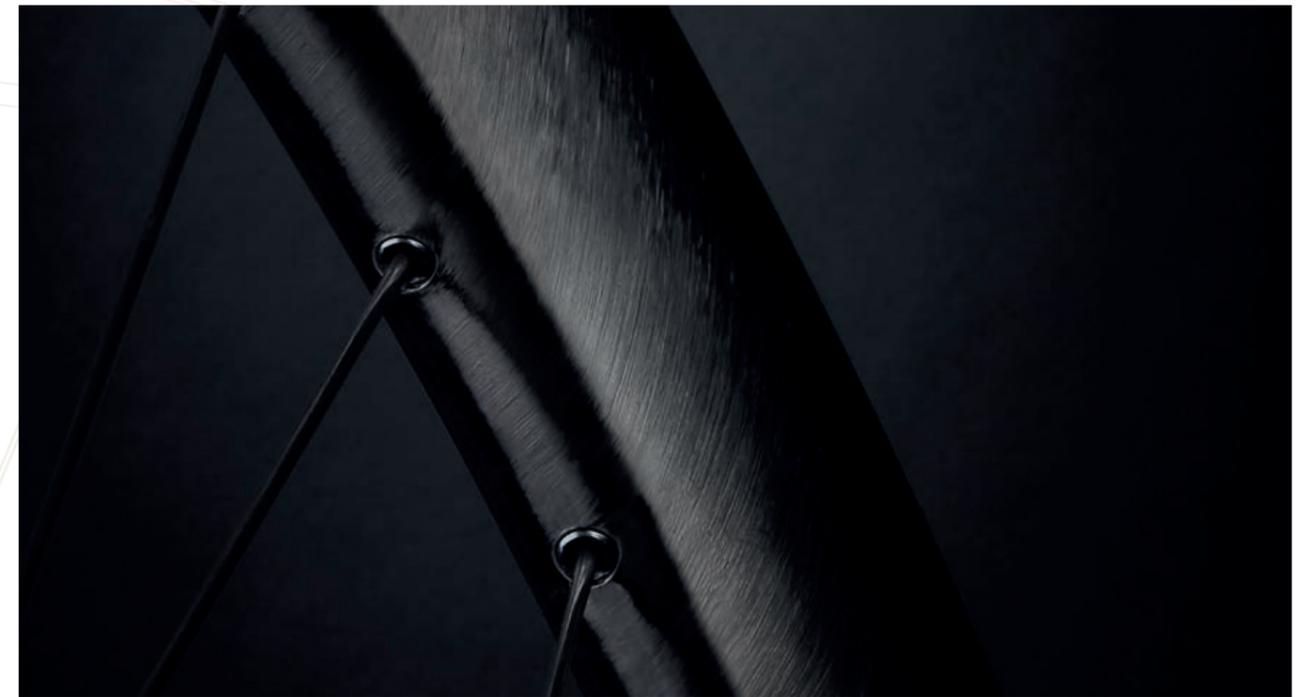
WTO carbon rims have a rounded profile and C-LUX unidirectional finish, optimised in the wind tunnel, the aerodynamic carbon fibre and aluminium hubs and elliptical spokes combined with the new Aero Mo-Mag™ system are all proof of this.

The design of the WTO rim enables maximum aerodynamic penetration: with a wind angle of between 10° and 20° - a condition which occurs for 80% of the time spent in the saddle - this wheel is unrivalled when it comes to overcoming air resistance.

The unidirectional lacquer-free carbon rim also delivers the stiffness and lightness typical of Campagnolo®, two key factors that enable optimal performance to be achieved on the bike.

The tapered design of central area of the hub reduces the frontal area of the component, while the special design of the flanges helps to reduce turbulence in the air flow, and the elliptical section of the 24 spokes drastically reduces resistance when moving forwards. Nothing in the design has been left to chance.

The profile of the Bora™ Ultra WTO rim, with an internal width of 21mm (33mm height) and 19mm (45 and 60mm height), is aerodynamically optimised for 25mm road tires.



Aero Mo-Mag™

The Bora™ Ultra WTO (WTO denoting 'Wind Tunnel Optimised') is designed to offer unparalleled aerodynamic performance in real-world conditions. To achieve this, Campagnolo® has introduced Aero Mo-Mag™ internal nipples. **Hidden inside the rim, this latest iteration of Campagnolo's Mo-Mag™ technology allows for cleaner and more efficient airflow when coupled with Campagnolo's aero elliptical spokes.**

Aerodynamics isn't the only benefit of the patented technology, as the Mo-Mag™ system allows Campagnolo® to mould the nipple and valve holes into the rims, negating entirely the need to drill holes in the carbon fiber. This increases internal strength, and reduces localised stress, which in turn increases the wheelset's fatigue life. Internalising the nipples in such a way also guarantees perfect alignment, resulting in an even more accurate wheel build.

The benefits don't stop there however, as no drilled holes in the 2-Way Fit™ rim bed means no need for rim tape, so fitting tubeless, tubeless-ready and clincher tires proves a seamless affair.

The Aero Mo-Mag™ system even averts the traditional pitfalls of internal nipples by guaranteeing ease-of-adjustment with a supplied tool, meaning **spoke tension can be increased or decreased, even with the tire still in place.**

Equally important is Campagnolo's construction with glass-fiber reinforced polymer plates between the rim and the nipple to improve the leaning and the fatigue life of the system reducing loads and corrosion probability.



H.U.L.C. Construction

The Bora™ Ultra WTO's rims have been completely redesigned across the range with both weight-loss and continued WTO (Wind Tunnel Optimized) performance in mind.

The new rims, aerodynamically optimised for 25mm tires, are constructed from Campagnolo's Hand Made Ultra-Light Carbon. H.U.L.C is the result of extensive development over decades of in-house carbon fiber moulding, enabling Campagnolo's engineers to optimise the usage of both fiber and bonding resin for the perfect blend of strength, stiffness and light weight.

This means the Bora™ Ultra WTO tips the scales at just 1425g in the 45mm rim format.

C-LUX Finish

Fast wheels must look the part too however, so the rim (and front hub) also sports a stunning mirror-like Campagnolo® Luxury (C-LUX) finish.

This C-LUX finish is so pristinely smooth that it doesn't require lacquer, saving weight.

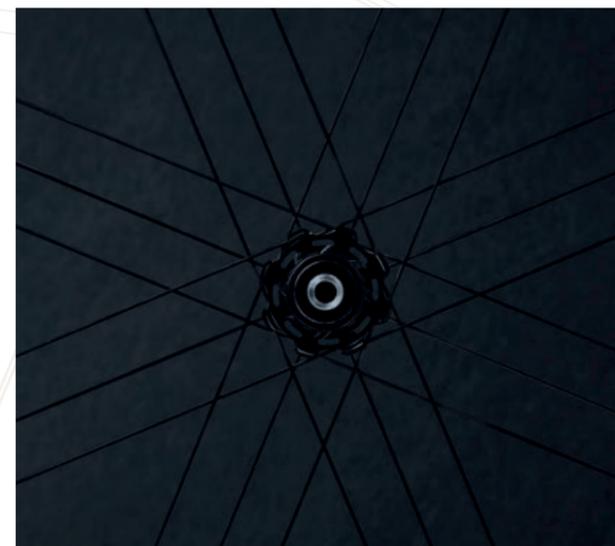
When applied to the rim bed, as Campagnolo® has done for the first time with its new Bora™ Ultra WTO, the scientific precision of C-LUX also helps to ensure the safest possible seating of tubeless tires and further reduces the risk of abrasions to the bead.

CULT™

The Bora™ Ultra WTO benefits from Campagnolo's Ceramic Ultimate Level Technology (CULT™) bearings in both hubs, which are now aerodynamically optimised with a narrower flange.

CULT's precisely engineered ceramic bearings are more durable than traditional steel bearings, reduce wear and tear and are more efficient - offering **5 ½ times less friction** than their standard sealed steel counterparts. **Spinning from a speed of 78 km/h, a Campagnolo® wheel using CULT™ bearings takes a staggering 2 hours and 45 minutes to reach a standstill.** Contrast this with a mere 30 minutes for regular sealed bearings and the performance benefits of CULT™ become crystal clear.

BORA ULTRA WTO



G3™

Aerodynamics, light weight and ease-of-maintenance are a must of course but stiffness is equally crucial for a wheelset of this calibre.

No premium Campagnolo® wheel is complete without the brand's iconic and torsion-negating G3™ spoke pattern - a design born from science as much as it is from art. Campagnolo's asymmetric G3™ system, optimised for disc brakes, improves power transfer and reduces stress during sprinting as well as under heavy braking.

This unique approach, when combined with a truly integrated system - from hub, to spoke, to nipple, and rim - makes the Bora™ Ultra WTO immensely stiff under load, and as fast as it is beautiful.

N3W™

The new wheelset utilises Campagnolo's Next 3 Ways (N3W™) freehub body, first seen in July 2020.

N3W™ is a patented standard for a freewheel body engineered to house Campagnolo® 11, 12 and 13-speed cassettes.

The wheelset is also available with freehub drivers for Shimano HG and SRAM XDR.

N3W™ enables use of up to 13-speed cassettes & provides compatibility with the current 12-speed and 11-speed cassettes using a spacer locking.

A race-winning wheelset

As a mainstay of the sport, Campagnolo's deep-rooted relationship with the very best WorldTour cycling teams has allowed for extensive race testing prior to launch, courtesy of UAE Team Emirates, Lotto-Soudal and Ag2R-Citroen Team.

The Bora™ Ultra WTO has, unbeknownst to many, already won a WorldTour stage; converting Caleb Ewan's explosive power into substantial speed in a tightly-contested bunch sprint finish on Stage 7 of the race.

The wheels have also earned the respect of Tour de France winner Tadej Pogacar. The young Slovenian rode the Bora™ Ultra WTO to a convincing overall victory at the first WorldTour race of the season, adding yet another win to his impressive palmarès. Olympic Champion Greg Van Avermaet has also put the wheelset through its paces throughout the Spring Classics.



The lightest Bora™ Ultra WTO is all-new. Its carbon-bodied disc hub spins freely on Campagnolo's superior CULT™ ceramic bearings, and 24 new straight-pull, aero spokes lace it to the rim. The 33mm tall Hand-Made Ultra-Light Carbon (H.U.L.C) rim is a climber's dream, and its undrilled 21mm wide rim bed is 2-Way Fit™ only, for tyres starting from 25mm.

DISC BRAKE

An aluminium disc rear hub with CULT™ ceramic bearings accepts Campagnolo's futureproof N3W™ freehub body, as well as XDR and HG. New hidden Aero Mo-Mag™ nipples give ultra-clean lines, and are easily adjustable, while the wheelset's svelte 1385g overall mass and aerodynamic efficiency ensures outstanding responsiveness on all gradients.



2-Way Fit™: 1385g





Making it the perfect all-rounder's choice, the Bora™ Ultra WTO 45 has a light, Hand-Made Ultra-Light Carbon (HULC) 2-Way Fit™ rim of exceptional quality. Its 19mm internal width rim is designed for tubeless, tubeless ready or clincher tires from 23mm and aerodynamically optimised for 25mm. With a carbon-bodied disc hub, CULT™ ceramic bearings and hidden Aero Mo-Mag nipples, the Bora™ Ultra WTO 45 is built to gain speed fast and sustain it with ease.

DISC BRAKE

The Bora™ Ultra WTO 45 wheelset tips the scales at just 1425g. Cutting-edge aerodynamics combined with fast-rolling tubeless technology, low rotational mass, and some of the finest hubs available make this profile perfect for the demanding rider looking for extra speed over varied terrain. The aluminium rear hub is compatible with N3W™ freehub body, plus XDR and HG, allowing every rider to experience Bora™ Ultra WTO performance.



2-Way Fit™: 1425g





When outright speed and rigidity is everything, the Bora™ Ultra WTO 60 delivers. Sprinters, rouleurs and time triallists will benefit from the refined aerodynamics and real-world performance of the 60mm tall, Hand-Made Ultra-Light Carbon (HULC) rim. Incredibly slick CULT™ ceramic hub bearings ensure that the hourglass-shaped, carbon fibre disc hub body is every bit as fast as it looks.

DISC BRAKE

From the aluminium rear hub's oversized 36 tooth ratchet and smooth CULT™ ceramic bearings, to the 24 G3 pattern aero elliptical spokes, hidden Aero Mo-Mag™ nipples and undrilled, perfectly finished, Hand Made Ultra-Light Carbon (HULC) 2-Way Fit™ rim, everything about the Bora™ Ultra WTO 60 is designed to help you go faster. The wheelset weighs just 1530g, and is suitable for tires from 23mm.

2-Way Fit™: 1530g



