



# TT OR NOT TT?

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What is a time trial bike worth over an aero-road bike? We test them head-to-head and gather hard data to find the answer





Jamie Wilkins, the feature writer, readies the Look for action



BIKE TEST

The Look delivers a fast ride but its entry-level wheels hamper its performance

Everyone knows that time trial bikes are faster than road bikes, that's why the pros and top amateurs use them. But with all else equal – wheels, clothing, helmet, power output – how much difference is there? Can a lighter aero-road bike go faster on a hilly course? And if you're just getting into time trialling, is a specific bike the first thing you need, or the last?

To find out, we paired up an aero-road bike and a TT bike and tested them back-to-back on two different courses using a power meter for pacing. Representing aero-road bikes we have the slender and very integrated Look 795 Light with mechanical Dura-Ace and Mavic Aksiums at £5499; our TT bike is the new £5599 Orbea Ordu Ltd M20i, featuring Ultegra Di2 and Vision Metron wheels. Both are storied brands, with long histories in professional racing.

Look has a reputation for innovation (it invented the clipless pedal in 1984) and is held in high esteem. That prestige comes with a price and while it's slightly less expensive than the Orbea, it comes on modest training wheels. The key idea behind the 795 Light is integration – Look is obsessed with the idea. The shape of the frame is radically different in order to smooth the line from the stem to the top-tube. To alter the bar height, Look's Aerostem is adjustable. The one-piece Zed 3 carbon crankset is a work of art and can be adjusted from 170–172.5–175mm. The seatpost is integrated and Look's E-post 2 cap features a vibration-damping elastomer. But do these features make it a faster, better bike?

Orbea's Ordu Ltd is the Spanish company's new TT bike. It strikes a more even balance between TT and tri, whereas the previous Ordu leant heavily towards the latter and is now demoted to entry-level models. The Ordu Ltd runs from the £3199 M20 up to the M10i at £6799 with Dura-Ace Di2 and Vision Metron 55/81mm wheels. In between are the M10 with Dura-Ace and this M20i with Ultegra Di2 for the same £5599, making for an interesting choice.

While at first glance this looks like many other TT bikes, the Ordu Ltd has a number of interesting and clever features, such as the

widely bowed Freeflow fork designed to minimise turbulence between the air moving past the fork legs and the forward-moving spokes. The tube profiles, too, are subtly different from conventional airfoil shapes, with kinks and flats to control airflow at higher yaw angles and a chopped tail to create a virtual airfoil while staying within the UCI's 3:1 airfoil shape limit. It's designed for Tri Rig's new Omega X brakes, with integrated shapes for optimum aero while retaining the ease of use of regular calliper placement.

### The method

We timed the bikes back-to-back over two set courses, one hilly and a bit technical, the other a flat drag strip with a roundabout at each end, both seven miles long because that's what gave us courses that would be repeatable with minimal chance of traffic interference. While the two courses were ridden a few days apart, we switched bikes as quickly as possible on each day to help ensure the closest possible weather conditions. Within each run, Strava segments provide handy splits for analysis.

Critically, for each test we wore the exact same clothing, shoes and helmet, and used the same wheels: the Look's Mavic Aksium front and a PowerTap GS Amp 35 power meter rear wheel. The latter armed us with power data to ensure that each run was carried out at exactly the same effort by watching the live and average power data on a Garmin 1000. Riding to power is exact and absolute. We rode at just over 300W for each run – a high enough effort to give decent speeds and reveal the aero differences while sufficiently far below my



LOOK 795 LIGHT  
£5499 ★★★★★

#### SPECIFICATION

**Weight** 7.45kg (57cm)  
**Frame** Carbon  
**Fork** Carbon  
**Gears** Shimano Dura-Ace, 50/34, 11–28  
**Brakes** Shimano Dura-Ace  
**Wheels** Mavic Aksium Elite  
**Finishing kit** Look ADH handlebar, Look Aerostem, Look E-post 2, Selle Italia SLR Flow

saddle, 25mm Mavic Yksion Elite Guard tyres

#### HIGHS

Fast, stiff and desirable

#### LOWS

Overly compromised; hard to adjust setup

#### BUY IF

You want a fast bike to do everything... and it has to be a Look

The Look's ride is firm, in spite of the vibration-damping E-Post's elastomer

threshold as to be repeatable. On each bike, we aimed to hold the most aero position possible.

On the flat course, we also did a second run on the Look but using a deep aero front wheel, a skinsuit and a TT helmet to see by how much it could close the gap to the TT bike. There are hundreds of other combinations but we think this test gives useful and revealing information.

Beyond the gathering of empirical evidence, we of course tested both bikes extensively on the control wheels, their standard wheels and also an upgraded set each, and rode them hard. It's all on Strava, too.

### How they ride

The Look 795 should be an £7000 bike with worthy wheels and a sub-7kg weight. Instead, it's £5500, 7.5kg and hobbled with disappointing Mavic Aksium Elites, the same wheels seen on a £1700 Cannondale CAAD12. They're slow and undermine the frame's very high stiffness, plus the brake tracks picked up and embedded shards of metal in the pads – scoring the rims. Not good. The ride is firm, in spite of the E-Post's elastomer, and there isn't clearance for 25mm tyres fitted to wide aero rims, such as the Conti GP4000S II on Enve 4.5s that we tried to free the 795 from the Aksiums.

On 4.5 tubs instead, the Look felt much →

An aero helmet can make a huge difference to your time trialling





Deep-section rims contribute to the Orbea's speed

The Ordu is fast. Like, instantly impressive, 'oh wow, gimme more of this' fast

### Aero kit to go faster

While you may think that a time trial bike that looks like a skunkworks project by the US Air Force stealth division would be the best possible weapon in your war against the wind, it's by far the smallest return for your money and also one of the lesser gains outright.

Your priorities should be a TT helmet, skinsuit and clip-on aero bars, all of which give massive gains (c.1.5-mins each over 25miles, depending on

your speed as the faster you ride the bigger the gain). Wheels save lots of time as well but obviously cost more. A set of 50-65mm aero wheels will be fast and still usable in road events and all conditions, then add a disc rear later for a great setup. An aero-road helmet splits the difference between non-aero and TT lids so they're a compromise but a good option if you can only have one.

8.72kg and, while it doesn't hide its cables to the extent of Boardman or Canyon's flagships, it's easy to adjust and the Vision TriMax cockpit is both really comfortable and flex-free. The Prologo saddle is good and the Tri Rig brakes are strong as well as aero. Best of all though – and partly thanks to the brilliant, fast, stable Vision Metron wheels (here with the optional deeper 81mm rear) – the Ordu is fast. Like, instantly impressive, 'oh wow, gimme more of this' fast. On a firm training ride, it clipped off 40 miles in 1h34m, 25.7mph, in road not TT gear. This is a fast bike and ready to race straight from the shop.

### The results

The hilly course, with nearly 500ft of elevation in seven miles, should have favoured the lighter, more wieldy road bike. The two runs were at an identical 317W. The Look clocked 18:39 (22.6mph av, 39.6mph max, 1:28 @ 350W on the Erlestoke Hill Strava segment); the Orbea, though, went faster and set a time of 18:17 (23.4mph av, 40.5mph max, 1:31 @ 329W on the hill segment). While the road bike climbed a little faster, we hit that climb harder. On a later hill, with one eye on balancing the →



On a firm training ride, the Orbea clipped off 40 miles in 1h34m, 25.7mph, in road not TT gear

better, though never quite as spectacular as such a high-spec setup should. It's stiff and fast but off the pace of the Scott Foil, Canyon Aeroad and Ridley Noah SL. What's more, the Aerostem, E-post and Zed 3 crank conspire to make it hard to live with. Adjusting the stem requires hitting it with a hammer alarmingly hard (we watched a Look technician do it) and it couldn't go low enough to achieve my preferred position, yet the smaller frame size would be too short. This may not apply to everybody, but it's worth checking out first. And to put the wheels in context, both the £5999 Scott Foil and £5400 Noah Ridley have deep-section Zipp 60s, while the £5199 Canyon Aeroad has £1300 Mavic CXR Ultimate 60s. Not training wheels.

The Orbea Ordu Ltd M20i looks to us like the sweet spot in the range. It saves £1200 on the Dura-Ace Di2 version and we'd take this Ultegra Di2 bike over the identically priced M10 with mechanical Dura-Ace any day. Our only niggle is that it has Vision brake levers instead of Shimano's with base bar Di2 shifters. That's one of the best things about Di2 on a TT bike because you often want to shift when you're on the base bar – the start, junctions, climbing...

That aside, the Ordu Ltd is fantastic. It's stiff under power and handles brilliantly, inspiring the confidence to take roundabouts without breaking position. It's light for a TT bike at





If you're getting into time trials, go for a skinsuit, TT helmet and deep wheels first

power and more effort going into the TT bike, the situation was reversed. At these climbing speeds – 17–19mph – the Look's weight advantage is cancelled out by the Orbea's aerodynamics. Coming back down, the TT bike is faster of course, and continues to edge out its lead whenever the speeds are over 20mph.

The flat course was ridden three times at exactly 303W. The Look 795 recorded 17:55 (24.3mph av, 35.1mph max, 1:14 @ 296W on the downhill Strava segment to the turn, 2:49 @ 307W on the longer uphill return); the Orbea Ordu Ltd clocked 17:33 (24.8mph av, 35.6mph max, 1:12 @ 293W on the downhill segment, 2:41 @ 315W on the return). The gap between them is 22 seconds on both courses.

Then we donned a Castelli San Remo 3.2 speedsuit, MET Drone WB helmet and Smart Aero overshoes, and fitted an Enve 8.9 front wheel to the Look. It felt quite quick and we thought it would close up the gap significantly. Instead, it went a massive 29 seconds faster than the Orbea, at 17:04 (25.6mph av, 35.6mph max, 1:10 @ 296W on the downhill segment, 2:41 @ 313W on the return). Its biggest gain came into the wind, pulling 15 seconds on the Orbea in the second mile once up to speed. Extrapolate the results out from seven to 25 miles and the upgraded aero-road bike would win by a minute and a half for the same effort.

Obviously a TT bike such as the Orbea with deep wheels and all the other gear is undoubtedly the fastest option – what's remarkable here is how all the other kit greatly outweighs the switch to a TT bike.

The conclusions are simple: first, if you're getting into time trialling and wondering how to spend your money, go for a skinsuit, TT helmet and deep wheels first (check our reviews and *BikeRadar.com* because there are big differences between the average and best), and clip-on aero bars as well. Then work on your position and power. That may sound obvious but we see a lot of TT bikes being raced on training wheels with road helmets...

Second, if you're trying to choose between an aero-road or TT bike, think about which you will get the most from – aero-road bikes make you faster on every ride and can be made competitive in TTs with a few choice upgrades.

Lastly, if you want the ultimate wind-slicing setup, there's no doubt that a made-for-the-job TT bike is the way to go. We simply advise that you wait until you're committed to it and planning whole seasons of racing. That said, we'd understand if you gave in to temptation and bought a TT scalpel sooner rather than later – getting this fast is just so much fun. **PLUS**



**ORBEA ORDU LTD M20i**  
£5599 ★★★★★

**SPECIFICATION**

**Weight** 8.72kg (L)  
**Frame** Carbon  
**Fork** Carbon  
**Gears** Shimano Ultegra Di2  
**Brakes** Tri Rig Omega X  
**Wheels** Vision Metron 55/81  
**Finishing kit** Vision Metron Trimax TT bar, FSA Energy, Orbea Ordu OMP post, Prologo Tgale PAS saddle, 25mm Vittoria Open CX tyres

**HIGHS**

Super-fast TT rig with impressive stiffness, handling, adjustability and spec

**LOWS**

No base bar Di2 shifters

**BUY IF**

You're a dedicated tester wanting a ready-to-race time trial bike

