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The Bianchi is very much a conventional carbon-stiff road bike, with clearance for 28mm tyres
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First look
A 12.6kg road bike that breezes up hills under power but doesn't drag without – in traditional Bianchi colours



Tech Spec BIANCHI ARIA E-ROAD

Price: £4500	Transmission:
Sizes: 47, 50, 53, 55, 57 (tested), 59, 61cm	Shimano Ultegra throughout [52-36t crankset, 11-28t cassette, 2x11 dual-control levers]; Shimano SM-BB72-41B bottom bracket; Shimano SM-BB72-41B bottom bracket; Shimano SM-BB72-41B bottom bracket;
Weight: 12.6 kg (57, no pedals)	Shimano SM-BB72-41B bottom bracket; Shimano SM-BB72-41B bottom bracket; Shimano SM-BB72-41B bottom bracket;
Frame & fork: Aria Disc e-Road carbon, Ebikemotion X35-specific, integrated battery, integrated sensor, IWoc One compatible; Bianchi full carbon disc fork with tapered threadless steerer, thru-axle 12x100mm.	Shimano SM-BB72-41B bottom bracket; Shimano SM-BB72-41B bottom bracket; Shimano SM-BB72-41B bottom bracket;
Wheels: Vision Trimax alloy disc, front: 21 bladed spokes 14x1 disc side, 7 radial non-disc side; rear 32x3 single-butted spokes with ebikemotion X35 V.2 hub. Vittoria Rubino IV 700x28C clincher tyres	Shimano SM-BB72-41B bottom bracket; Shimano SM-BB72-41B bottom bracket; Shimano SM-BB72-41B bottom bracket;
	Braking: Shimano BR-R8070 hydraulic disc brakes, 160mm rotors
	Steering & seating: 31.8mm Reparto Corse Aero Compact aluminium alloy handlebar; Reparto Corse 3D forged 6061 alloy stem, rise 8°; Fsa Orbit C-33 1 1/8"-1 1/4" headset. Bianchi Aria Full Carbon Aero seatpost; Selle Royal Seta SI saddle. bianchi.com

Biketest

Amp up your ride

E-bikes don't have to be heavyweight hybrids.

Richard Hallett tests lightweight e-road bikes from Bianchi and Orbea



RICHARD HALLETT
Cycle's
Technical
Editor

An e-road bike is essentially a high-performance pedelec. It incorporates its electric drive system within what looks and, for the most part, rides just like a fast, lightweight road bike. A number of major manufacturers have brought out such machines in the last couple of years, aimed presumably at buyers looking for a bit of help when needed without having to abandon the sensation of speed and efficiency enjoyed by sporting leisure riders – riders like ex-pro racer Sean Yates, who sings the praises of Ribble's Endurance SLe e-road bike.

If there's a common theme among e-road bikes, it's that they're sleek enough to pass, at a glance, for a regular bicycle. The battery pack is hidden within the frame and the motor unit designed for stealth

rather than openly displayed.

Two drive systems dominate: the Fazua Evation, driving the bottom bracket axle and secreted within the frame down tube; and ebikemotion's X35 drive, housed in the rear hub, which is employed on the bikes tested here. Both arrangements have their merits: the Evation's motor and battery can be removed when not wanted, saving some 3.5kg and leaving the bike little heavier than a standard bike; the X35's hub installation, which leaves the transmission and chainset unmodified, creates zero drag when the motor is turned off. It's also lighter, weighing a claimed 3.5kg for the system as installed – battery, motor, charge point, switch button and cabling – against the Evation's 4.7kg.

Frame differences

Equipped with the same ebikemotion X35 drive system, the two bikes offer a near-identical powered assistance experience but are otherwise surprisingly distinct. Paint scheme aside, and the Bianchi's Celeste livery will float many a traditionalist's boat, the most obvious difference is in available tyre clearance.

Where the Aria e-Road is very much a conventional carbon-stiff road bike,

with clearance for the 28mm tyres fitted but little more. Orbea's Gain has enough room for fat 40mm rubber, and could even be considered an e-gravel bike. There's plenty of room for mudguards too, although only the fork has threaded eyelets for stays; the rear end doesn't.

The Gain is still the more versatile of the two, and by some margin the more affordable. It's not obvious why there's such a significant price gap. While the Orbea wears the latest Shimano 11-speed 105 group and the Aria gets Ultegra, they both feature full carbon fibre framesets, arranged to house the drive system, backed up with decent handlebar componentry and competent wheelsets.

Sure, the Aria's carbon fibre 'aero' seatpost adds a touch of class and enhances the aesthetic appeal of what is an undeniably pretty bicycle, but the Orbea is itself well-proportioned, with fine detailing, a more slender down tube that better conceals the battery



Top: The discreet IWoc ONE button is the on/off switch, the mode button, and the charge indicator all in one
Bottom: The Bianchi's carbon fork is on trend with a 12x100 thru-axle and a flat-mount disc calliper

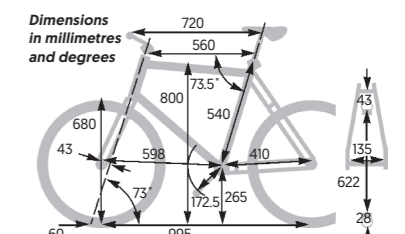
and, enhancing its 'gravel' credentials, asymmetric chainstays. It's also available in a choice of colours, like the orange shown on the facing page.

Components

The Orbea rolls on Mavic Aksium rims and Yksion tubeless tyres. The front wheel is a standard Aksium disc, while at the back the ebikemotion hub is laced into a 32-hole Aksium rim. Several of the rear wheel spokes are short enough to show thread beyond their nipples which, given that the wheel was fairly true, suggests it was built with inconsistent spoke lengths.

Furthermore, the choice of one-cross lacing seems optimistic for a disc-brake rear wheel transmitting power assist.

It didn't get much chance to demonstrate its durability, since the bike came with a left-hand front brake. It's easy to forget after a few miles that one is riding brakes set up the 'wrong' way, with potentially lethal consequences, and it's non-trivial to swap hydraulic



**Go online**

Read Cycling UK's guide to all kinds of e-bikes:

cyclinguk.org/article/guide-electric-bikes

**First look**

A keener priced e-road bike with the same hub drive motor as the Bianchi, and clearance for bigger tyres

Tech Spec

ORBEA GAIN M30

Price: £3,399

Sizes: XS, S, M, L

(tested), XL
Weight: 12.7kg (L, no pedals)

Frame & fork:

Orbea Gain Carbon monocoque carbon frame for flat-mount disc brakes, 135x9 QR. Ebikemotion X35-specific, integrated battery, integrated sensor, IWoc One compatible; Orbea Gain carbon flat-mount fork.

Wheels: Mavic Aksium Elite Disc UST front wheel and rear rim with ebikemotion X35 V.2 hub, 24x2 bladed spokes front, 32x1 pg rear. Mavic Yksion Pro 700x28 UST clincher tyres.

Transmission:

Shimano 105 throughout [50-34t crankset, 11-32t cassette, 2x11sp dual control levers]; KMC e11 Turbo Silver chain; 22 ratios, 32"-122".

Braking: Shimano R7070 hydraulic disc, 160mm rotors.

Steering & seating:

31.8mm FSA Gossamer Compact aluminium handlebar; Orbea OCIII aluminium stem, 6° rise, 110mm; FSA 1-1/8" - 1-1/2" integrated carbon cup ACB headset. Orbea OC-III Carbon 31.6x350mm seatpost; Prologo Kappa Space STN saddle.

orbea.com

► hoses around. (Your Orbea dealer could do this for you if you didn't fancy swapping it.) So I stuck to a shorter but wickedly hilly local circuit on the Orbea and, to avoid confusion, used the front brake only.

On said circuit, the Orbea proved to have a very pleasing ride: it's stable, with precise steering and a stiff bottom bracket. However, the wide top tube, a common feature on contemporary lightweight diamond frames, rubbed my thighs. A deal-breaker for me, this will be of no consequence for many.

There is little to indicate that either cycle is carrying a motor and battery. Fitted with complete Shimano groupsets, both machines offer impressive performance when shifting, braking or pedalling, with no discernible difference in feel between the 105 and Ultegra components. On test, the Aria's hydraulic discs offered greater initial bite, no doubt because the bike is a well-used machine and the discs have undergone the required break-in



Top: Look familiar? It's the same iWoc ONE control button. There's an app available if you need more on-ride information

Bottom: The Orbea's fork has mudguard eyelets but the frame unfortunately doesn't

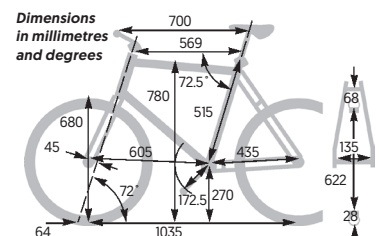
period. Its Vision Trimax front wheel is nicer than the Orbea's Aksium, but the assisted riding experience is remarkably similar, as you might expect given that the two bikes share the same drive system.

E-road riding

The bikes' drivetrains differ significantly only in gearing, with the Aria e-Road boasting a semi-compact 52-36 chainset rather than a 50-34. If only because it came fitted with a right-hand front brake and is closer in size to my regular ride, it proved the more attractive machine with which to

assess the X35 drive's performance over longer rides. As ever with a pedelec, the immediate temptation is to select maximum power and scoot up the nearest hill at some improbable speed. Which is great fun, but not necessarily the best use of the motor's capabilities.

Having enjoyed my regular commute – 15km and 300m of climbing each way – on full boost, I set out on a longer ride



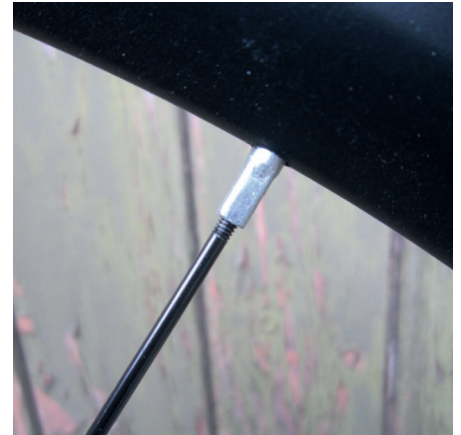


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Above: The charge port for the battery
Near right: 52-36 is fine when you have a motor
Top right: Drag is zero when the motor's off
Bottom right: A too-short spoke (Orbea)



without recharging (via the port above the bottom bracket). Halfway up the next climb, the top-tube mounted iWoc ONE control switch's indicator button turned orange. Obligated by circumstances to complete what would be a 60km ride with another 700m of climbing (this is west Wales), I felt the first icy pang of range anxiety.

Had I uploaded the Bianchi app (there's a similar one for the Orbea), which allows the user to integrate the drive with heart rate and such stuff and offers features like mapping and GPS tracking, I would have had a clear picture of battery level. The app isn't needed to ride the bike, but without it I only knew that the battery had been depleted.

Fear of having to get over a hill or two without assistance took hold, and I dialled back to 'Eco' – the lowest power setting. This gives 30% of the available power, or 75W, which doesn't sound much but turns out to be surprisingly welcome on most climbs. It's not clear precisely how assistance is delivered. Does it vary according to pedal pressure or do you get 75W right up to the 25km/h cut-off? Probably the latter, as soft-peddalling produces pronounced assistance.

Turning to Eco mode resolved a burning question. Inevitably, for any rider, there's a specific gradient where they can easily reach the speed cutoff *with* assistance but struggle to exceed it by even a small amount *without*.

Other options



PINARELLO NYTRO RED ETAP EROAD £10,000

Dogma-based e-road bike with SRAM's wireless RED eTap gearing and the Fazua Evation drive system.
pinarello.com



GIANT ROAD E+1 PRO £3,499

Well-equipped and powered by Giant's powerful SyncDrive Pro mid-motor, but with a substantial and obvious battery.
giant-bicycles.com

This can mean either moderating effort to stay below the cutoff – or working harder than desired. In Eco mode, the 'transition' gradient is shallower and the sensation of drive cutting in or out almost imperceptible, unlike the surge from more powerful modes.

Obviously, Eco mode greatly extends battery life, but the iWoc One nevertheless turned red with 10km and a big hill remaining. Satisfied that I had *some* juice available should I want it, I tackled the climb in Off mode. Riding unassisted, e-road pedelecs are very different from heavier utility machines; their three or four kilo weight penalty is barely noticeable. Since unassisted riding is fine, range anxiety need not put you off longer rides where there's a risk of exceeding battery life. And it's possible to fit one or two auxiliary bottle cage-mounted batteries, which extend the assisted range to as much as 250km... ●

Verdict

Both bikes offer a hugely rewarding assisted-riding experience, especially in hilly terrain, and work amazingly well even without assistance. While the Orbea offers keener value and tremendous versatility, including all-roads riding, Bianchi's offering would not look out of place in a sportive, where either might go unremarked – at least until the first climb!