Watteam POWERBEAT™ Lab Test #478

Rider Details

Rider: .... *ER*
Weight: *80kg*
Age : *40*
Riding experience: .. *8 years*

Equipment Used

Crank: .. *Ultegra 6800 172.5mm*
Bike: ..... *Trek Speed Concept 7.5*
Power Meters:
1: *POWERBEAT™ Dual*
2: *Tacx Flux Trainer*

Ride Details

Test#:....................................... *478*
Test type: .... *Intervals #6:*

(Z2 20MIN – 180 Watts) - (15 Min 280 Watts at 65 RPM)
(Z2 15MIN – 160 Watts) – 4x (5 Min 330 Watts) - (3 min recovery at 160 Watts)
(Z2 15MIN – 160 Watts)

Our beta tester set up his indoor trainer for a test ride. He went for a Zwift ride around London in a relatively flat course.

His Zwift ride consisted of a circuit around virtual London, with a total elevation gain (simulated through the smart trainer) of 523m (1716 ft.) over 46 kilometers, or 28.5 miles.

He started his ride with 20 minutes of easy zone 2 cruise as a warmup, and then proceeded to ride 15 minutes on a low cadence of 65 RPM, while keeping the watts high around 280. Then, another zone 2 spin for 15 min, followed by 4 repetitions of 5-min high-intensity, 330 watts intervals and 3 min recovery breaks of around 160 watts.

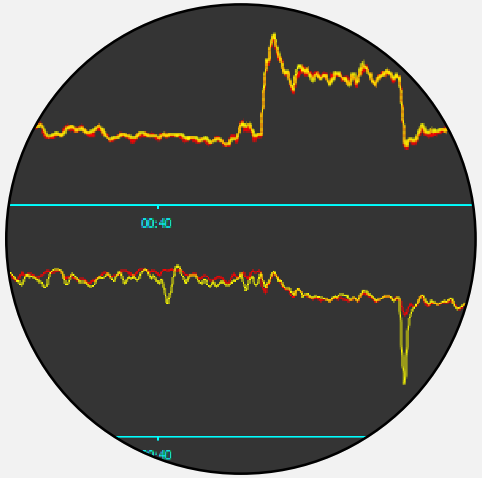
He finished his ride with a 15 min zone 2 recovery spin, riding calmly at 160 watts.

Watteam's lab analysis:

- Both power meters showed good, consistent Power readings.
- Differences in cadence values may stem from the difference in cadence measurement methods in both power meters.
- The Powerbeat Dual had the advantage of measuring each leg individually, providing valuable data like left/right power balance, as well as torque efficiency and pedal smoothness for each leg.

Overall Results and Conclusions:

- Both power meters had good, consistent power reading.
- Slight difference in cadence readings, possibly because of different methods of measuring.
- Powerbeat™ Dual has the benefits of independent leg readings
- Ride covered mostly Zone 2, 3 and 4 Watt range. For next time, let's try spiking it up a little with some higher numbers.



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Crank: *Ultegra 6800 172.5mm*

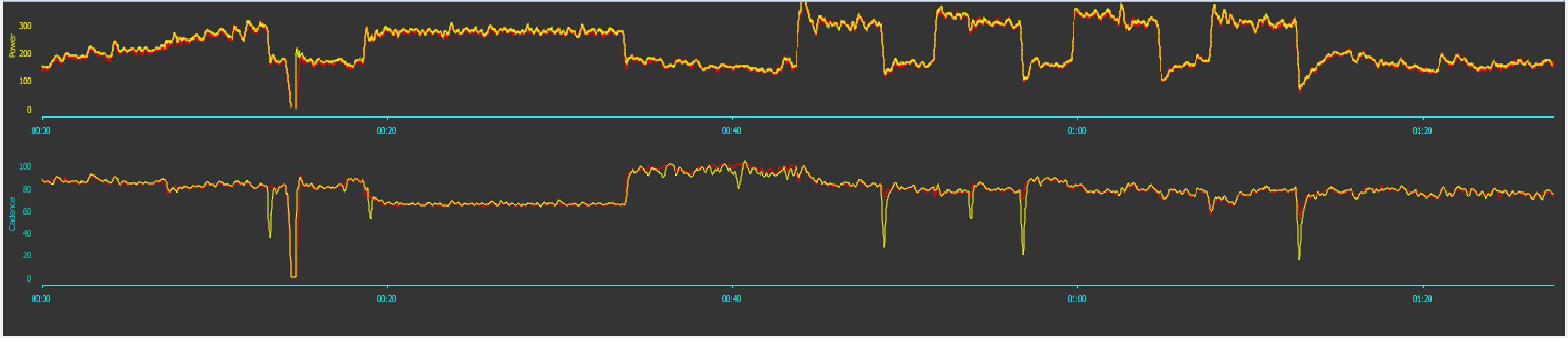
Power Meters: *POWERBEAT™ Dual* vs *Tacx Flux*

Test Conditions: *20˚C, Indoors*

Duration: *1h30m*

POWER AND CADANCE READINGS: The beta tester began his ride with a warmup of 20 minutes, which started low at around 90 watts, and slowly increased in power over the course of 15 minutes, until it peaked at 300 watts, with the remaining 5 minutes being an easy spin at 160 watts. He then began his intervals session.

The session consists of one long - 15-min - low cadence (65 RPM) and high power (280 watt) interval, followed by 10 minutes of recovery at 160 watts, and then 4 reps. of 5 minutes at 330 watts average, with 3 minute rests in between them, at 160 watts. The rider finished the ride with a 15-min recovery spin at around 160 watts.



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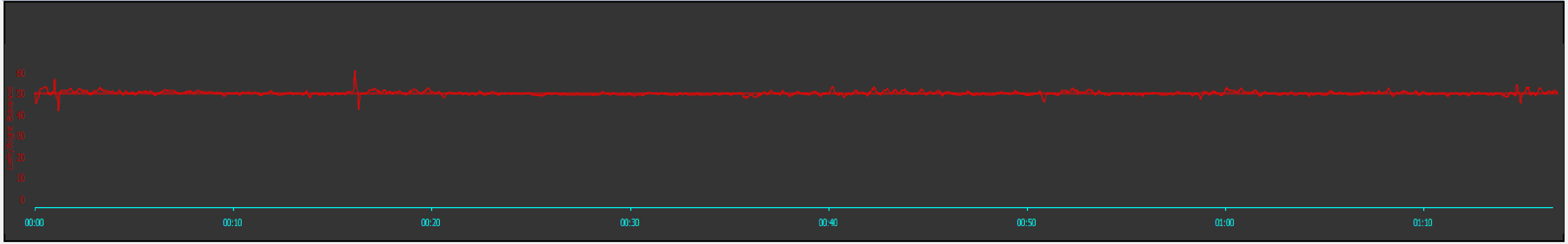
In this closeup of the 4-min intervals, we can see that both power meters are consistent and steady in their power readings, and achieve the same peaks and lows.

Balance Readings:
One of the clear advantages of having a dual-side POWERBEAT™ as you power meter, is the fact that power is measured for each leg individually, before being summed and displayed on your head unit. Our rider can view his left / right balance, along with his pedal smoothness and torque efficiency for each leg, live on his head unit throughout his ride.
Afterwards, our rider can review those measurements and improve his riding efficiency for his next training, helping him realize his potential as a cyclist.



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POWERBEAT™ Dual Field Test – Metrics Summary

Average Power:
POWERBEAT™ Dual: 221Watt
TACX Flux: 225Watt

Left/Right Balance:
POWERBEAT Dual: 50% / 50%
TACX Flux: N/A

Totals

	Duration		Time Moving		Distance (km)		Activities		Work (kJ)		W' Work (kJ)		Elevation Gain (meters)	
Entire Activity	1:27:40		1:27:10		0.000		1		1161		104		0	
Entire Activity	1:27:35	-5	1:27:20	+10	46.516	+46.516	1	+0	1182	+21	111	+7	523	+523

Metrics*

	Cadence (rpm)		Power (watts)		Duration		NP (watts)		Left/Right Balance (%)		Right Torque Effectiveness (%)		Right Pedal Smoothness (%)		Left Torque Effectiveness (%)		Left Pedal Smoothness (%)	
Entire Activity	79		221		1:27:40		248		50.0		83.3		23.7		82.5		22.5	
Entire Activity	79	+0	225	+5	1:27:35	-5	252	+4	0.0	-50.0	0.0	-83.3	0.0	-23.7	0.0	-82.5	0.0	-22.5

Averages

	Athlete Weight (kg)		Speed (kph)		Power (watts)		Heart Rate (bpm)		Core Temperature (C)		Cadence (rpm)	
Entire Activity	75.00		0.0		221		137		38.0		79	
Entire Activity	75.00	+0.00	32.0	+32.0	225	+5	137	+0	38.0	-0.0	79	+0

Maximums

	Speed (kph)		Power (watts)		Heartrate (bpm)		Core Temperature (C)		Cadence (rpm)		W' Expended (%)	
Entire Activity	0.0		441		170		38.6		106		163	
Entire Activity	83.6	+83.6	428	-13	170	+0	38.6	-0.0	113	+7	173	+10

Athlete	Date	Time	Duration	Distance (km)	Average Power (watts)	NP (watts)	Max Cadence (rpm)	Max Power (watts)	Left/Right Balance (%)	
Eran	2018-03-07	19:08:02	01:27:40	0.000	221	248	106	441	50.0	Entire Activity
Eran	2018-03-07	19:08:00	01:27:35	46.516	225	252	113	428	0.0	Entire Activity