

Human Reaction Testing vs Objective Click Latency

Investigation Findings(Human Trials)

This investigation compared human reaction tests versus RTINGS' objective click latency measurements to determine how well human testing reflects our rig's test results.

Two stimulus-based reaction platforms were used:

- Aimlabs Detection Test
- Human Benchmark Reaction Test

Four gaming mice were tested:

- Logitech G PRO X2 SUPERSTRIKE
- Endgame Gear OP1 8K v2
- Logitech G PRO SUPERLIGHT 2
- Logitech G305 LIGHTSPEED

Overall Reaction Time Performance of Each Mouse

Average reaction time across all testers.

Aimlabs

Mouse	Mean Reaction
Logitech G PRO X2 SUPERSTRIKE	177.3 ms
Endgame Gear OP1 8K v2	185.4 ms
Logitech G PRO SUPERLIGHT 2	194.0 ms
Logitech G305 LIGHTSPEED	206.2 ms

Human Benchmark

Mouse	Mean Reaction
Logitech G PRO X2 SUPERSTRIKE	172.5 ms
Endgame Gear OP1 8K v2	176.1 ms

Mouse	Mean Reaction
Logitech G PRO SUPERLIGHT 2	176.6 ms
Logitech G305 LIGHTSPEED	189.2 ms

Key Takeaway

Across both tests, the SUPERSTRIKE produced the fastest average reaction times, while the G305 was consistently the slowest.

The difference between mice is more pronounced in Aimlabs than in Human Benchmark.

Notably, the OP1 8K v2 and X2 SUPERLIGHT 2 are extremely close in Human Benchmark, with a difference under 1 ms.

Consistency Ranking (Average Standard Deviation)

Lower SD indicates more consistent results.

Aimlabs Consistency

Rank	Mouse	Avg SD
1	OP1 8K v2	10.38 ms
2	X2 SUPERSTRIKE	11.75 ms
3	SUPERLIGHT 2	15.79 ms
4	G305	21.47 ms

Interpretation

The **OP1 8K v2** produced the most stable results in Aimlabs.

Human Benchmark Consistency

Rank	Mouse	Avg SD
1	SUPERLIGHT 2	9.99 ms
2	G305	10.03 ms
3	OP1 8K v2	10.21 ms

Rank	Mouse	Avg SD
4	X2 SUPERSTRIKE	12.91 ms

In Human Benchmark:

- **SUPERLIGHT 2 produced the most consistent results**
- **SUPERSTRIKE showed the largest variability**

Human Benchmark results also showed **tighter SD values overall compared to Aimlabs**. Which is most likely due to the reaction pattern being predictable(anticipation).

X2 SUPERSTRIKE vs Other Mice

Aimlabs Speed Advantage

Compared To	SUPERSTRIKE Faster By
OP1	8.1 ms
SUPERLIGHT	16.7 ms
G305	28.9 ms

The nearly **30 ms gap between the X2 SUPERSTRIKE and G305** could support Logitech's latency claims when compared to older gaming mice. However, the advantage is much smaller when compared to other high-end esports mice such as the OP1.

These differences may also be influenced by **human variability**, discussed later in this report.

Human Benchmark Speed Advantage

Compared To	SUPERSTRIKE Faster By
OP1	3.6 ms
SUPERLIGHT	4.1 ms
G305	16.6 ms

Differences are even smaller in the Human Benchmark test.

The SUPERSTRIKE advantage is most visible in Aimlabs, which may reflect:

- less stimulus anticipation

- more raw reaction measurement

Which Mouse Testers Performed Best With (Speed)

Aimlabs

Mouse	Testers
SUPERSTRIKE	7
OP1	2
SUPERLIGHT	1
G305	0

70% of testers achieved their fastest Aimlabs results with the SUPERSTRIKE.

Human Benchmark

Mouse	Testers
OP1	5
SUPERSTRIKE	4
SUPERLIGHT	1
G305	0

50% of testers achieved their fastest Human Benchmark results with the OP1 8K v2.

Which Mouse Produced the Most Consistent Runs

Aimlabs

Mouse	Testers
SUPERLIGHT	3

Mouse	Testers
G305	3
OP1	2
SUPERSTRIKE	2

Consistency in Aimlabs was **distributed across mice**, with no single mouse dominating.

Human Benchmark

Mouse	Testers
G305	4
SUPERLIGHT	3
OP1	2
SUPERSTRIKE	1

The **G305 produced the most consistent runs overall**, although it was not the fastest mouse.

The **X2 SUPERSTRIKE produced the fewest consistent results** across testers.

Tester-to-Tester Variation (Human Variation)

Aimlabs

Mouse	Tester-to-Tester SD
SUPERSTRIKE	17.99 ms
OP1	25.40 ms
SUPERLIGHT	27.99 ms
G305	23.99 ms

Range:
~18–28 ms

Average:
23.84 ms

This means two testers using the same mouse could differ by **20–30 ms purely due to human factors**.

Example:

James achieved **150.25 ms** using the X2 SUPERSTRIKE, while Sophie recorded **206 ms** using the same mouse. Other testers fell between those values, producing a **55.75 ms spread**.

Human Benchmark

Mouse	Tester-to-Tester SD
SUPERSTRIKE	11.98 ms
OP1	18.17 ms
SUPERLIGHT	11.49 ms
G305	14.19 ms

Range:
~11–18 ms

Average:
13.96 ms

Run-to-Run Variability

Standard deviation measures how much each tester's runs fluctuate around their average.

Test	Avg SD
Aimlabs	14.85 ms
Human Benchmark	10.78 ms

Both tests show similar levels of repeatability, but **Aimlabs is methodologically stronger** because it uses:

- more reaction events (20 clicks vs 5)
- less predictable stimuli

Human Benchmark felt predictable because it follows the same structure:

Red screen → wait → green screen → click

Over repeated runs, testers can begin to anticipate the green flash, which may lead to slightly earlier and more consistent clicks.

Largest Human Gaps (Same Mouse)

Aimlabs

Mouse	Fastest	Slowest	Gap
SUPERLIGHT 2	158.25 ms	252.25 ms	94.0 ms
G305	164.50 ms	251.75 ms	87.25 ms
OP1	160.25 ms	229.25 ms	69.0 ms
SUPERSTRIKE	150.25 ms	206.00 ms	55.75 ms

The SUPERSTRIKE produced the **smallest tester gap in Aimlabs**, suggesting its results were slightly more clustered across users.

Human Benchmark

Mouse	Fastest	Slowest	Gap
OP1	154.25 ms	217.75 ms	63.5 ms
G305	170.00 ms	213.75 ms	43.75 ms
SUPERSTRIKE	151.00 ms	187.50 ms	36.5 ms
SUPERLIGHT	160.00 ms	195.75 ms	35.75 ms

The SUPERLIGHT produced the **smallest tester gap in Human Benchmark**, suggesting its results were slightly more clustered across users.

Overall Testers were closer in reaction time to each other using the X2 SUPERSTRIKE.
(Smallest gaps from fastest to slowest tester)

Key Findings of the Investigation

1. SUPERSTRIKE produced the fastest average reaction times overall

Across both reaction platforms and most testers. Side note here that it also had the most misfires due to the actuation point behind so high/sensitive.

2. OP1 8K v2 was the most stable performer in Aimlabs

It produced the **lowest average variability**.

3. Human reaction testing is too noisy to measure sub-millisecond latency differences

Typical variability observed:

Run-to-run variability

≈ **11–15 ms**

Tester-to-tester variability

≈ **14–24 ms**

Objective speed difference (According to our RTINGS Rig) between OP1 and SUPERSTRIKE:

0.9 ms VS 0.6 ms = **0.3 ms** difference between the two fast mice.

Human reaction testing was able to detect **large latency differences**, such as the slower performance of the G305, the second slowest being the SUPERLIGHT 2 but it could **not reliably distinguish between modern gaming/esports mice** whose latency differences are under 1 ms.

This demonstrates the importance of objective latency measurement systems such as the RTINGS click latency rig.