

Heya, guys! Mikha'el here to give you all another Metal Gear calc, and this time it's gonna be a funny one. It's gonna be some infrared laser timing shenanigans with Solid Snake! So, in [this VSBW blog](#) I already calculated the speed at which he moves in-tandem with the laser and even justified the lasers being legit. So check that out as it's imperative for this calc.

Now, check this out. Solid Snake can punch while the laser moves. The clips used are in different instances, but the punching should still be replicable in the instance of the lasers. So... How fast is he moving? Well, time to calc some apparent speed, shall we?

[Keep the video paused when clicking the link and go 1 frame forward](#) (done by pressing either the period key). As we can see, he can punch forward in 1 frame at a framerate of 30 FPS. So... Using this timeframe, [this calculator](#) and [Solid Snake's height of 1.82 meters](#)...

Solid Snake apparent punch speed:  $(0.795 \text{ meters} * 2 * \pi * (1/4)) / (1/30 \text{ seconds}) = 37.4634923940582844 \text{ m/s}$

Now for the apparent speed of the laser, we take the movement of the laser over the same time period. [As we can see here doing the same procedure as above](#), the laser moves around half of Snake's body height in that same 1 frame at an FPS of 30. So!

Laser apparent speed:  $0.91 \text{ meters} / (1/30 \text{ seconds}) = 27.3 \text{ m/s}$

Now for the actual speed! Just divide the speeds.

Actual Snake punching speed:  $37.4634923940582844 \text{ m/s} / 27.3 \text{ m/s} = 1.3723c$  (FTL)

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