

## Arctic P12 Max Fan Simple Characterization

This document describes a very simple characterization made on one Arctic P12 Max Fan unit with the purpose of simply having an idea of the average current that the unit consumes whenever turning it On. Therefore, this is by far not a professional characterization and more units and a more rigorous methodology must be followed to achieve representative results, which is not the end-goal of this work. Having that in mind, also know that for each measurement taken, it was guaranteed that the Fan was completely turned Off and was not either consuming or emitting any current at all, at least that was observable from an oscilloscope. Also, note that no sophisticated circuit was employed for these measurements and that only the Fan was connected directly to a Modular D.C. Power Supply. Finally, know that the measurements were taken with a multimeter.

Arctic P12 Max Fan Characterization Measurements			
$V_{cc}$ (Volts)	Maximum $I_{avg}$ (Amperes)	$I_{ss}$ (Amperes)	$t_{ss}$ (seconds)
12	0.89	0.29	7
10	0.7	0.24	6
8	0.6	0.19	5.5
6	0.42	0.135	5.5
4	0.34	0.08	5

**NOTE:**  $I_{ss}$  = Current at estabilization, and  $t_{ss}$  = Time required to reach estabilization.

**OBSERVATION 1:** This fan emits oscillatory voltage each time you cut off its power. Also, the CFM is not the same with respect to the input PWM if you are increasing it and lowering it back over and over (probably due to the oscillatory voltage). As a result, it is expected that this fan will not have its CFM changed linearly with respect to an input PWM given to it due to the explained behavior.