



# Noctua NF-S12A PWM 120mm Quiet PC Fan

\$21.95

## Product Images



## Short Description

The NF-S12S-PWM is Noctua's latest 120mm PWM premium quality fan that offers full flexibility in quiet to ultra-quiet case cooling thanks to its Advanced Acoustic Optimisations. Specifically conceived for pressure demanding applications such as CPU cooling, the classic NF-P12 120mm fan helped to found Noctua's reputation as a top-tier manufacturer of premium quality quiet cooling components and still impresses users with its exquisite quietness and superb performance. The NF-S12A marks the third generation of Noctua's signature S12 series quiet case fans, which have received more than 250 awards and recommendations from the international press.

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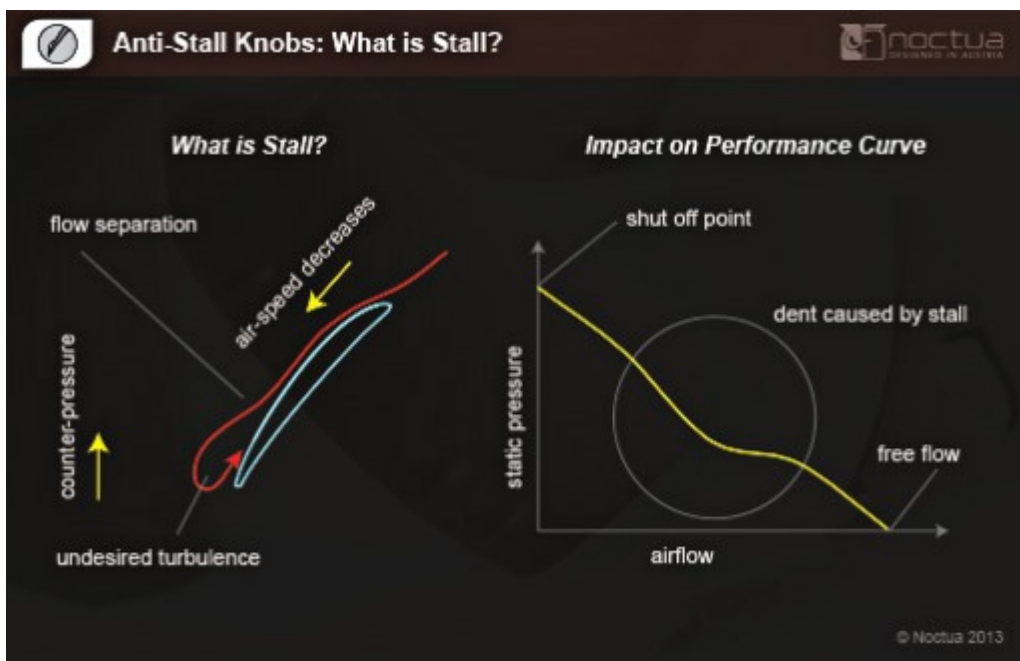
## Features

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Featuring a further refined blade design with Anti-Stall Knobs that works in tandem with the new AAO or Advanced Acoustic Optimisation frame. The NF-S12A improves the airflow/noise efficiency of its renowned predecessor by up to 8%. The PWM version sports Noctua's custom designed [NE-FD1](#) IC for fully automatic speed control via 4-pin fan headers and comes with a Low-Noise-Adaptor to reduce the maximum speed during PWM control from 1200 to 900rpm. Its superb running smoothness, and Noctua's trusted premium quality make it an elite choice for quiet case cooling.

### Noctua's Advanced Acoustic Optimisation Frame

Noctua's AAO (Advanced Acoustic Optimisation) frames feature integrated anti-vibration pads as well as Noctua's proprietary Stepped Inlet Design and Inner Surface Microstructures, both of which further refine the fan's performance/noise efficiency.

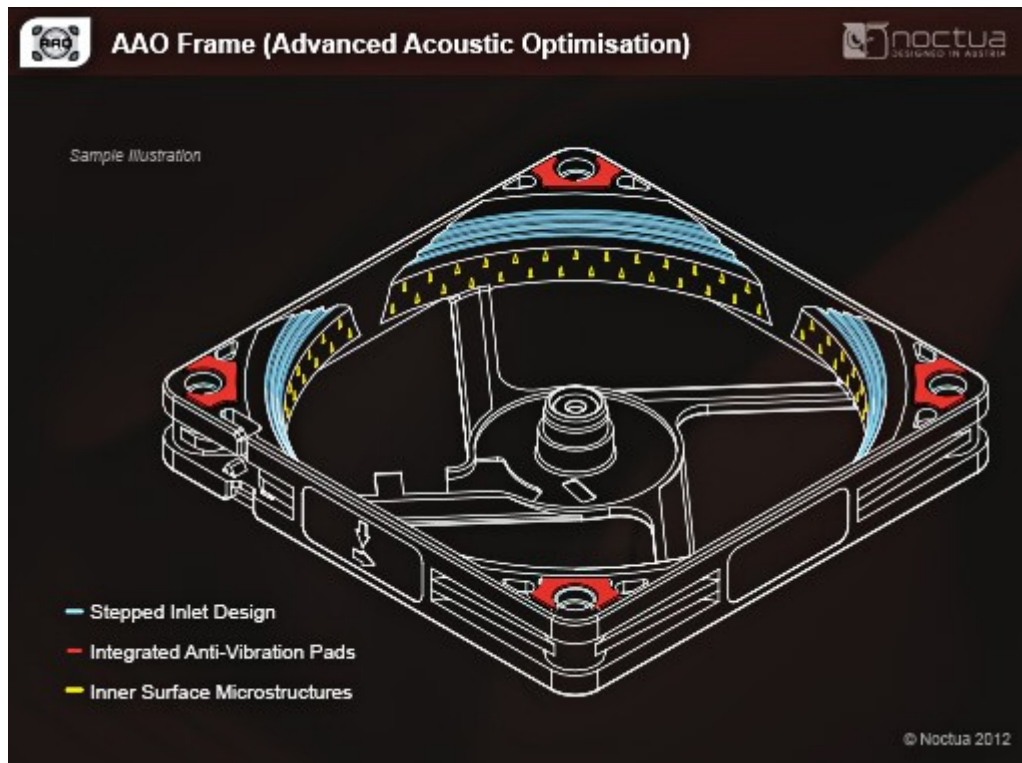


Advanced Acoustic Optimisation Frame

### Anti-stall Knobs: What is Stall?

Noctua's S12 series fans impellers use a high angle of attack in order to achieve superior airflow. However, impellers with high angles of attack are typically more prone to undesired stall and flow separation

phenomena that can occur when the fan is working against higher impedance such as when blowing through tight fan filters or when used on heatsinks and radiators.



What is Stall?

In these situations when the fan is building up high pressure but less air is moving through, the speed of the air particles flowing alongside the suction side of the fan blades gradually decreases towards the trailing edge. The lower the speed and the higher the counter-pressure, the higher the risk of the air particles becoming detached from the blade surface. This flow separation phenomenon known as stall leads to undesired turbulence, reduced efficiency and translates into a dent in the fan's performance curve.

## Integrated Anti-Vibration Pads

Integrated Anti-Vibration Pads made from extra-soft silicone minimise the transmission of minute vibrations while maintaining full compatibility with all standard screws and other mounting systems.

## Smooth Commutation Drive 2

The latest version of Noctua's advanced Smooth Commutation Drive system ensures superb running smoothness by eliminating torque variations and switching noises. This makes the NF-S12A remarkably quiet even at very close distance.

## Stepped Inlet Design

Noctua's Stepped Inlet Design adds turbulence to the influx in order to facilitate the transition from laminar flow to turbulent flow, which reduces tonal intake noise, improves flow attachment and increases suction capacity, especially in space restricted environments.

## Inner Surface Microstructures

With the tips of the fan blades ploughing through the boundary layer created by the Inner Surface Microstructures, flow separation from the suction side of the blades is significantly suppressed, which results in reduced blade passing noise and improved airflow and pressure efficiency.

## Package Contents

As expected from Noctua, the fan is well packaged and is supplied with both the usual fan mounting screws and also rubber fan mounts to isolate the fan from the case ensuring that no vibrations from the fan can reach the case. An in-line resistor (L.N.A) is included and this simply lowers the voltage and therefore the overall speed of the fan if the default range of speeds are too high. A Molex adapter allowing you to power the fan from the PSU, an extension cable and a PWM splitter cable are also included.

## Specifications

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## Additional Information

Brand	Noctua
SKU	NF-S12A-PWM
Weight	0.6000
Color	Brown
Fan Dimensions	120mm
Fan Width	25mm
Fan Connection	4-Pin PWM
Fan Voltage	12 VDC
Fan RPM	1200
Fan CFM	62
Fan Noise (dB)	18

### Internet Reviews

#### ThermalBench Review:

The Noctua NF-S12A FLX is available for purchase for \$24.95 from Performance PCs in the USA as of the date of this article. If that is too steep a price for you, then also consider the PWM variant, that does not come with the ULNA or 3 pin to Molex adapter, at \$19.95 instead. Finally, there is also the NF-S12A ULN at \$23.95 which does not come with the ULNA but has a lower max RPM of 800 with the LNA resulting it being 600. I would personally go with the PWM variant for the lower price as well as expecting a finer, broader range of control if the other Noctua PWM fans tested so far are any indication. The adapter and extension cables go for ~\$5-6 in total so that contributes to the price too. If using this as a case fan, then the included soft rubber mounts will also contribute in the decision.

This is a prime example of price/performance shoots up at the higher end. The build quality, packaging and unboxing experience all contribute to that feeling as well. Noctua markets this as a case/ventilation fan so it does punch above its weight in a higher impedance situation as well but mostly because of lower noise than actual airflow through a radiator. As a case fan, I would imagine this is really hard to beat. But taking the \$24.95 price tag into consideration, and knowing there are other fans that perform better or similarly, built to a similar quality and cost less makes this a harder buy for water coolers who tend to get a lot more fans than air coolers.

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