

# NF-S12A PWM

## Noctua NF-S12A PWM Premium Fan



### LOGISTIC DATA

Product name  
**Noctua NF-S12A PWM**

EAN  
**4716123314929**

UPC  
**842431014252**

Packaging dimensions (HxWxD)  
**212x152x37 mm**

Weight incl. packaging  
**280 g**

Warranty  
**6 years**

Packaging unit  
**40 pcs**

Packaging dimensions / unit (HxWxD)  
**390x390x360 mm**

Weight incl. packaging / unit  
**12.00 kg**

### SCOPE OF DELIVERY

NF-S12A PWM premium fan

Low-Noise Adaptor (L.N.A.)

4-pin y-cable

30cm extension cable

4x anti-vibration mounts

4x fan screws

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. Featuring a further refined blade design with Anti-Stall Knobs that works in tandem with the new AAO (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, SS02 bearing and Noctua's trusted premium quality make it an elite choice for quiet case cooling.

#### Anti-Stall Knobs

The NF-S12A's Anti-Stall Knobs reduce flow separation phenomena in medium to high impedance situations and thereby increase the fan's stall margin. This means that the NF-S12A PWM is even more versatile than its renowned predecessor and can achieve better performance on heatsinks and radiators.

#### Flow Acceleration Channels

The NF-S12A PWM impeller features suction side Flow Acceleration Channels. By speeding up the airflow at the crucial outer blade regions, this measure reduces suction side flow separation and thus leads to better efficiency and lower vortex noise.

#### AAO 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.

#### 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.

#### SS02 Bearing

The NF-S12A PWM features the further optimised second generation of Noctua's renowned, time-tested SS0 bearing. With SS02, the rear magnet is placed closer to the axis to provide even better stabilisation, precision and durability.

#### 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.

#### Custom designed PWM IC with SCD

Supporting fully automatic PWM speed control, the NF-S12A PWM uses Noctua's novel, custom designed NE-FD1 PWM IC that integrates Smooth Commutation Drive (SCD) technology. By providing smoother torque impulses, SCD suppresses PWM switching noises and thus makes the fan quieter at low speeds.

#### Low-Noise Adaptor

The NF-S12A PWM is supplied with a Low-Noise Adaptor (L.N.A.) that reduces the maximum fan speed from 1200 to 900rpm. The L.N.A. can be used either to run the fan at a fixed speed of 900rpm or to cap the maximum speed when using automatic PWM control.

#### Extensive cabling options

The fan's short 20cm primary cable minimises cable clutter in typical applications while the supplied 30cm extension provides extended reach when necessary. Both cables are fully sleeved and the supplied 3:4 pin adaptor allows to connect the fan directly to the power supply.

#### 6 years manufacturer's warranty

Noctua fans are renowned for their impeccable quality and outstanding longevity. Like all Noctua fans, the NF-S12A PWM features an MTTF of more than 150,000 hours rating and comes with a full 6 years manufacturer's warranty.

### SPECIFICATIONS

Dimensions	120x120x25 mm	
Bearing	SS02	
Blade geometry	S-Series with Anti-Stall Knobs	
Max. input power / voltage	1.44 W / 12 V	
MTTF	> 150,000 h	

NF-S12A PWM	w/o adaptor	with L.N.A.
Max. rotational speed (+/-10%)	1200 RPM	900 RPM
Max. airflow	107.5 m³/h	83.2 m³/h
Max. acoustical noise	17.8 dB(A)	10.7 dB(A)
Max. static pressure	1.19 mmH <sub>2</sub> O	0.73 mmH <sub>2</sub> O