

# Noctua at Computex Taipei 2018



As usual, we would like to give you a brief glimpse of what we are currently working on by displaying some exclusive prototypes and providing a first sneak preview of upcoming new products:

- Next-generation A-series fans (140, 80, 70, 60, 50mm)
- New 5V fans
- New chromax chromax line fans
- Desk fan with Airflow Amplification System
- Next-generation 140mm and 120mm single tower heatsinks
- Next-generation 150mm dual tower heatsink
- LGA3647 heatsinks
- New top-flow heatsinks
- chromax.black CPU coolers
- redux line NH-U12 cooler
- chromax heatsink covers for NH-U14S
- 24V voltage converter and 8-way fan hub

# Next-generation 140mm A-series fan



- Impeller made from Sterrox® liquid-crystal polymer (LCP)
- Fine-tuned pressure/airflow (P/Q) curve for heatsinks and radiators
- Ultra-tight tip clearance
- Metal-reinforced hub
- Flow Acceleration Channels
- AAO-Frame (Advanced Acoustic Optimisation)
- Stepped Inlet Design
- Integrated anti-vibration pads
- SS02 bearing

# Slim 140mm A-series fan



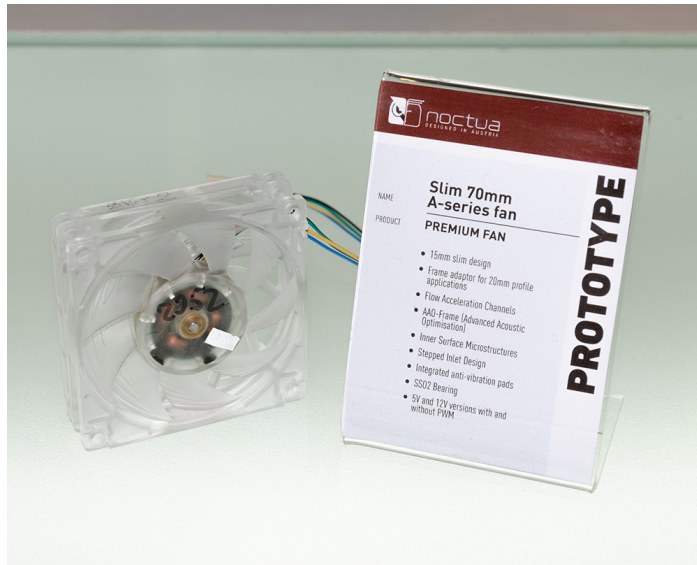
- 15mm slim design
- Metal-reinforced hub
- Flow Acceleration Channels
- AAO-Frame (Advanced Acoustic Optimisation)
- Inner Surface Microstructures
- Stepped Inlet Design
- Integrated anti-vibration pads
- SS02 bearing

# Slim 80mm A-series fan



- 15mm slim design
- Frame adaptor for 20mm profile applications
- Flow Acceleration Channels
- AAO-Frame (Advanced Acoustic Optimisation)
- Inner Surface Microstructures
- Stepped Inlet Design
- Integrated anti-vibration pads
- SS02 bearing
- 5V and 12V versions with and without PWM

# Slim 70mm A-series fan



- 15mm slim design
- Frame adaptor for 20mm profile applications
- Flow Acceleration Channels
- AAO-Frame (Advanced Acoustic Optimisation)
- Inner Surface Microstructures
- Stepped Inlet Design
- Integrated anti-vibration pads
- SS02 bearing
- 5V and 12V versions with and without PWM

# Slim 60mm A-series fan



- 15mm slim design
- Flow Acceleration Channels
- AAO-Frame (Advanced Acoustic Optimisation)
- Inner Surface Microstructures
- Stepped Inlet Design
- Integrated anti-vibration pads
- SS02 bearing
- 5V and 12V versions with and without PWM

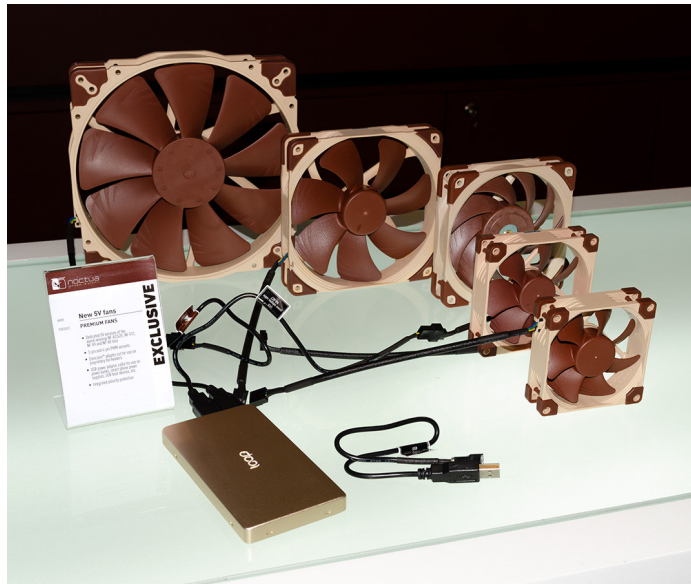
# Slim 50mm A-series fan



- 10mm slim design
- Frame adaptor for 15mm profile applications
- Flow Acceleration Channels
- AAO-Frame (Advanced Acoustic Optimisation)
- Inner Surface Microstructures
- Stepped Inlet Design
- Integrated anti-vibration pads
- SS02 bearing
- 5V and 12V versions with and without PWM



# New 5V fans



- Dedicated 5V versions of the award-winning NF-A20, NF-A14, NF-A12x25, NF-F12, NF-A9 and NF-A8 fans
- 3-pin and 4-pin PWM variants
- OmniJoin™ adaptor set for use on proprietary fan headers
- USB power adaptor cable for use on power banks, smart phone power supplies, USB host devices, etc.
- Integrated polarity protection



# New chromax line fans



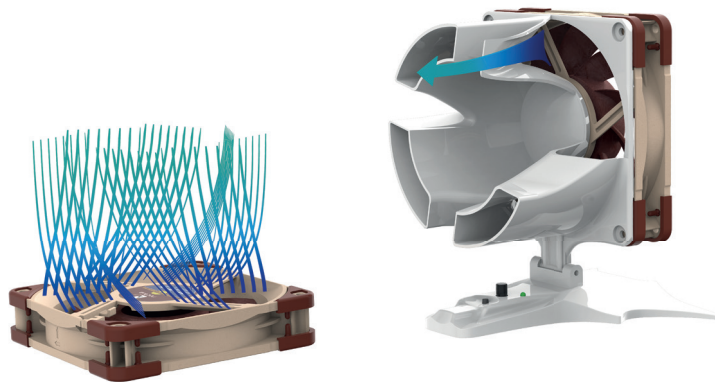
- Award-winning NF-A20 PWM, NF-A12x15 PWM, NF-A9 PWM, NF-A9x14 PWM and NF-A8 PWM fans
- Attractive all-black design
- Swappable red, white, blue, green, yellow and black anti-vibration pads
- Optional coloured cables and anti-vibration mounts

# Desk fan with Airflow Amplification System



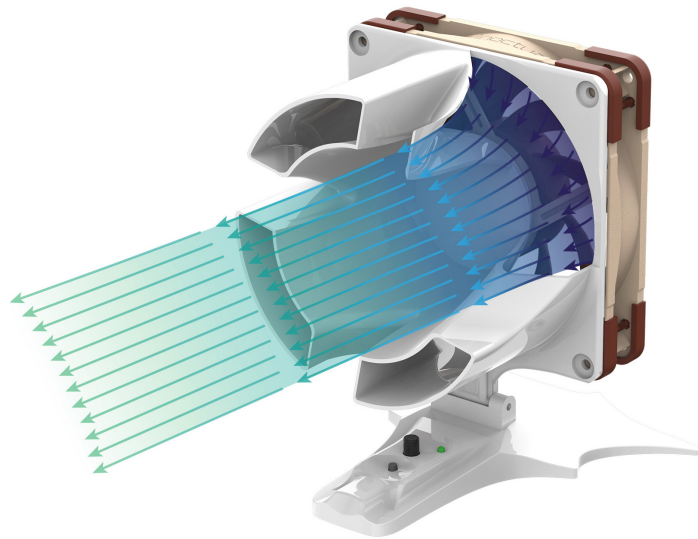
- Strong, focused airflow and exceptional quietness of operation
- Award-winning, next-generation NF-A12x25 120mm fan
- Three-way Airflow Amplification System (AAS) combines helix energy recovery, progressive flow acceleration, and Venturi-effect volume enhancement
- USB powered for easy integration into desk environments and use with power banks

# AAS step 1: helix energy recovery



The air that comes out of an axial fan has a high amount of rotational energy, which results in a helix-shaped flow path. The AAS recovers this rotational energy and uses it to accelerate the airflow. With the inside shape of the AAS funnel carefully fine-tuned to the helix structure produced by the NF-A12x25 fan, it achieves an extremely high rate of energy recovery.

## AAS step 2: progressive flow acceleration



Following the principle of mass continuity, a fluid's speed increases when it's forced through a reduced cross-sectional area, so when the air is driven through the progressively narrowing AAS funnel, air speed increases continuously until it reaches maximum velocity at the outlet.

## AAS step 3: Venturi effect volume enhancement



In accord with the principle of conservation of energy, air pressure must decrease as air velocity increases (Bernoulli's principle). This reduction in pressure that occurs when a fluid flows through a constriction, the so-called Venturi effect, creates a suction force at the outlet, which draws in additional air from the sides and through the cuts of the funnel, thereby enhancing the airflow volume.

$$\text{Bernoulli's equation: } P_{\text{inlet}} + \frac{1}{2} \rho V_{\text{inlet}}^2 + \rho g h_{\text{inlet}} = P_{\text{outlet}} + \frac{1}{2} \rho V_{\text{outlet}}^2 + \rho g h_{\text{outlet}}$$

$P_{\text{inlet}}$  – pressure at the inlet

$P_{\text{outlet}}$  – pressure at the outlet

$V_{\text{inlet}}$  – air velocity at the inlet

$V_{\text{outlet}}$  – Air velocity at the outlet

$\rho$  – density of air

$g$  – gravity

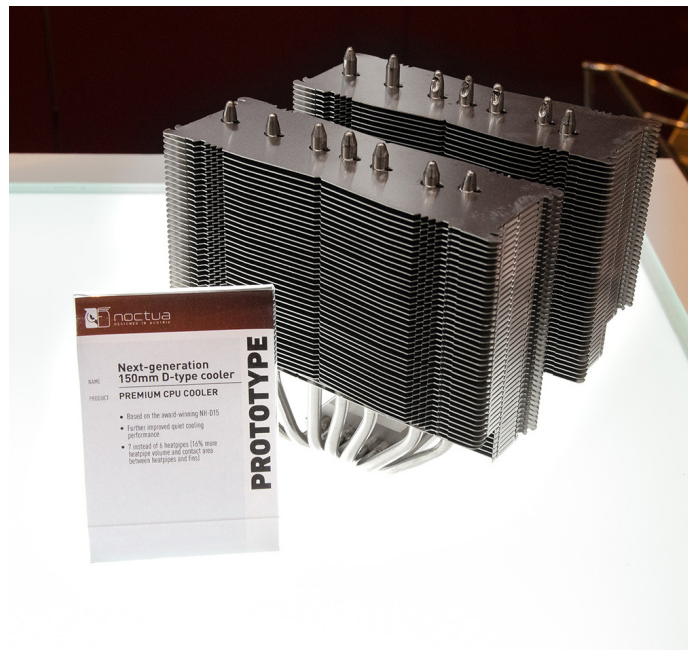
$h$  – elevation head (height difference between inlet and outlet)

# Next-generation NH-U12 CPU cooler



- 5th generation of the award-winning NH-U12 series
- 7 heatpipes and 37% more surface area compared to NH-U12S
- Two state-of-the-art NF-A12x25 120mm fans in push/pull dual configuration
- 140mm class performance in 120mm form factor
- 100% RAM compatibility on Intel LGA115x and AMD AM4 sockets
- Excellent case and PCIe compatibility
- SecuFirm2™ multi-socket mounting system for Intel LGA20xx, LGA115x and AMD AM4, AM3/2

# Next-generation 150mm D-type heatsink



- Based on the award-winning NH-D15
- 7 instead of 6 heatpipes (16% more heatpipe volume and contact area between heatpipes and fins)
- Further improved quiet cooling performance

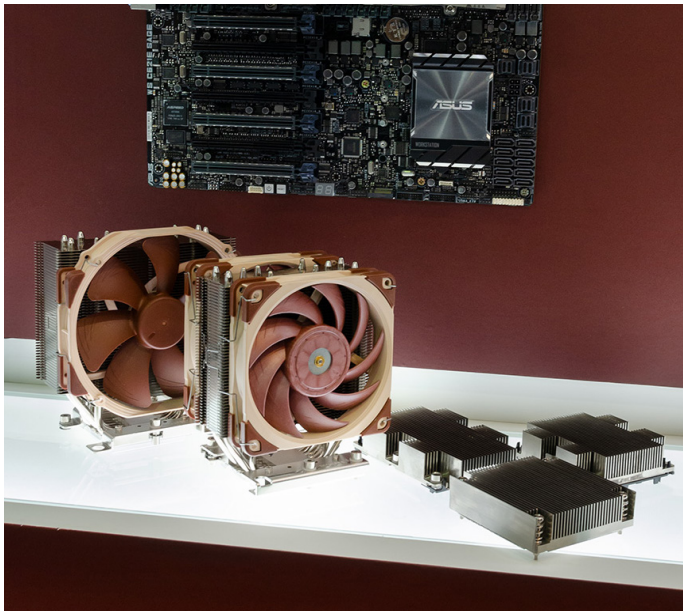


# Next-generation 140mm U-type heatsink



- Based on the award-winning NH-U14S
- 30% more surface area for further improved quiet cooling performance
- 7 instead of 6 heatpipes
- 100% RAM compatibility in single fan mode
- Asymmetric design for better PCIe clearance

# LGA3647 cooling solutions



- Dedicated custom designs for Intel's LGA3647 platform (Xeon Scalable and Xeon-Phi)
- 14 and 12cm format tower coolers for high-end quiet workstations and servers
- Dual fan, dual tower 9cm model combines exceptional performance and 4U compatibility
- 1U and 2U passive models with embedded heatpipes for servers
- Square and narrow type LGA3647 SecuFirm2™ mounting system
- Pre-applied NT-H1 thermal compound and customisable bundles for system integrators

# Next-generation 140mm C-type cooler



- Based on the award-winning NH-C14S
- Further improved quiet cooling performance
- 5/32mm\* lower height (110mm instead of 115/142mm\*)
- 50mm RAM clearance (from 40/65mm\*)

*\*compared to NH-C14S in low-profile / high-clearance mode*

# Next-generation 65mm low-profile cooler



- Based on the award-winning NH-L9x65
- Proven 95x95x65mm form factor and NF-A9x14 PWM fan
- 100% RAM and PCIe clearance on all Intel and most AMD based motherboards (including Mini-ITX)
- Further improved quiet cooling performance
- SecuFirm2™ multi-socket mounting system, now supports AM4 out-of-the-box

# chromax line CPU coolers



- All-black chromax line versions of the award-winning NH-D15, NH-U12S and NH-L9i
- Black heatsink, fan, anti-vibration pads, cables and mounting parts
- Colour-customisable with optional red, blue, white, green and yellow anti-vibration pads and cables as well as chromax line heatsink covers

# redux line NH-U12 cooler



- Based on the award-winning NH-U12S
- Streamlined redux design and package allows for excellent quiet cooling performance at an attractive price point
- High quality NF-P12 redux fan with PWM
- Premium grade SecuFirm2™ multi-socket mounting system
- Optional second fan kit for further improved performance
- Optional faceplates for colour-customisation
- Compatible with NA-HC1 and NA-HC2 chromax line heatsink covers for further customisation



# chromax heatsink covers for NH-U14S



- Compatible with NH-U14S and NH-U14S TR4-SP3
- All-white and all-black covers
- Black cover with exchangeable colour inlays
- Ideal for colour-coordinating NH-U14S heatsinks and individual build themes
- Perfect combination with NF-A15 HS-PWM chromax.black.swap
- Made from high-quality, powder-coated aluminium



# 24V to 12V DC-DC step-down converter



- Allows running any Noctua 12V fan in 24V environments
- Ideal for 24V based 3D printing and industrial applications
- Supports PWM control and RPM monitoring
- Output voltage scales with input voltage to allow voltage-based speed control
- Supports fans with up to 1A and operating temperatures up to 60°C
- Integrated protection against short-circuits, overcurrent and overheating (automatic shutdown)
- Safety fuse prevents eventual damage if the unit is mechanically compromised

# 8 channel PWM fan hub



- Up to 8 fans can be controlled simultaneously
- White status LEDs show connected fans
- Ideal combination with NA-FC1 fan controller
- Power input via 4-pin PWM or S-ATA
- Magnets on the rear side for easy fixture in PC cases