

Noctua at Computex Taipei 2017



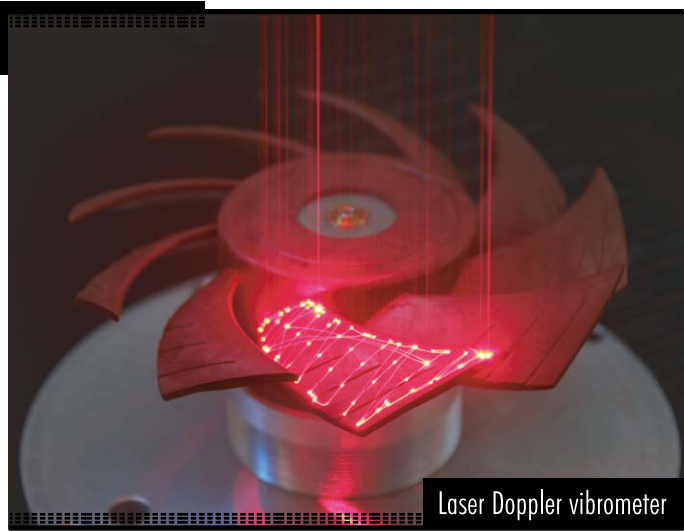
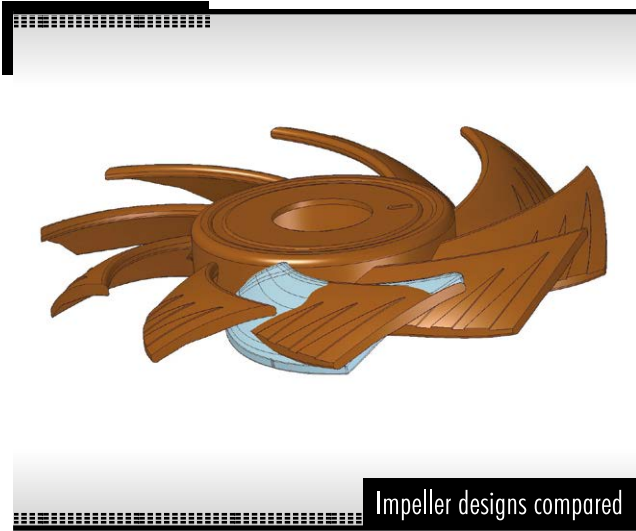
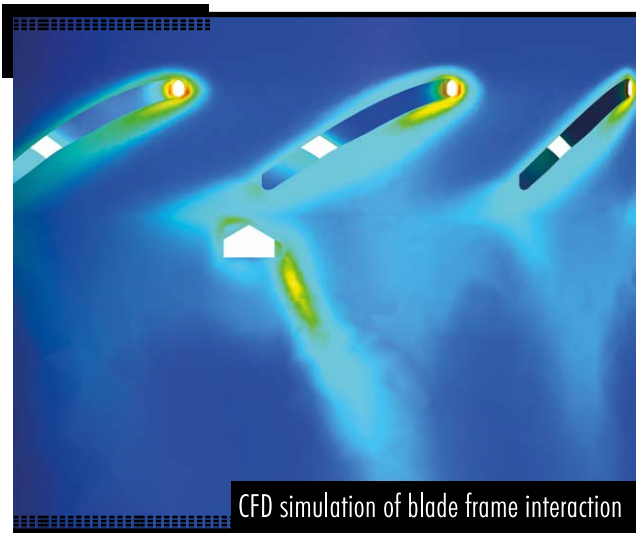
As usual, we would like to give you a brief glimpse of what we are currently working on by displaying some exclusive prototypes and providing a first sneak preview of upcoming new products:

- Next generation A-Series fans (140, 120, 80, 70, 60, 50mm)
- New 5V fans
- AEC-Q100 compliant 24V industrialPPC fans
- 140 and 120mm redux fans with NA-AVP1 support
- chromax fans and cables
- chromax design heatsink covers
- Next-generation 140mm and 120mm single tower heatsinks
- TR4/SP3 heatsinks
- L-type 120mm low profile cooler
- NH-L9a for AM4
- LGA2066 ready!

Next generation 120mm A-series fan: Project history



- Noctua's most intricate fan development project ever
- Initiated in 2012, total development time 4.5 years
- Project volume exceeds those of NF-F12 and NF-S12A combined
- Countless hours of CFD simulations, testing and optimisations
- Numerous new R&D tools: laser Doppler vibrometer, acoustic imaging, new testing protocols
- More than 200 CNC milled prototypes built



Next generation 120mm A-series fan: Sterrox[®] LCP

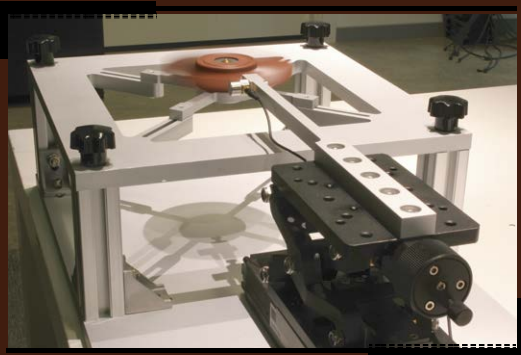


STERROX[®]

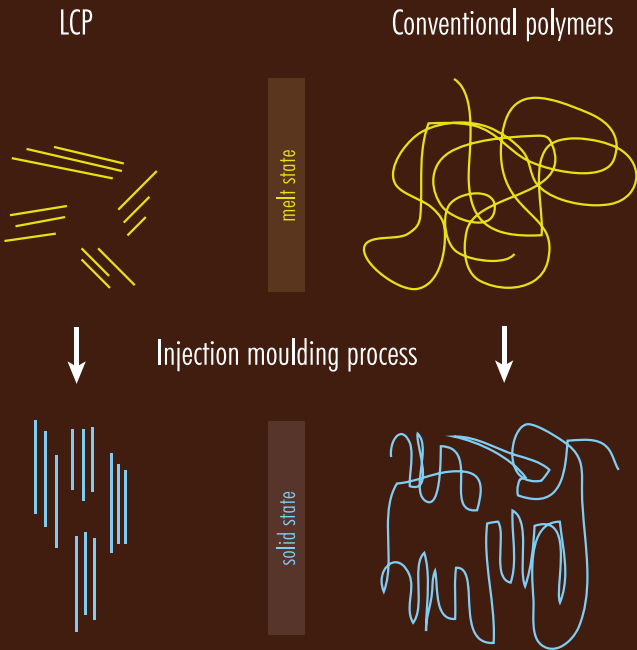
- Record-tight 0.5mm tip clearance poses new challenges in manufacturing (stricter tolerances, impeller creep, etc.)
- Novel Sterrox[®] Liquid Crystal Polymer (LCP) material allows these challenges to be met
- LCPs are used in high-end medical and military applications such as bulletproof vests, combat helmets and other body armour due to their excellent strength-to-weight ratio
- Ordered, rod-like molecular alignment in the melt phase solidifies into a highly oriented, rigid chain structure
- Extreme tensile strength, exceptionally low thermal expansion coefficient, high environmental inertia, minimal shrinkage and long-term creep
- Elasticity modulus and dampening properties ideal for reducing resonance and vibration phenomena



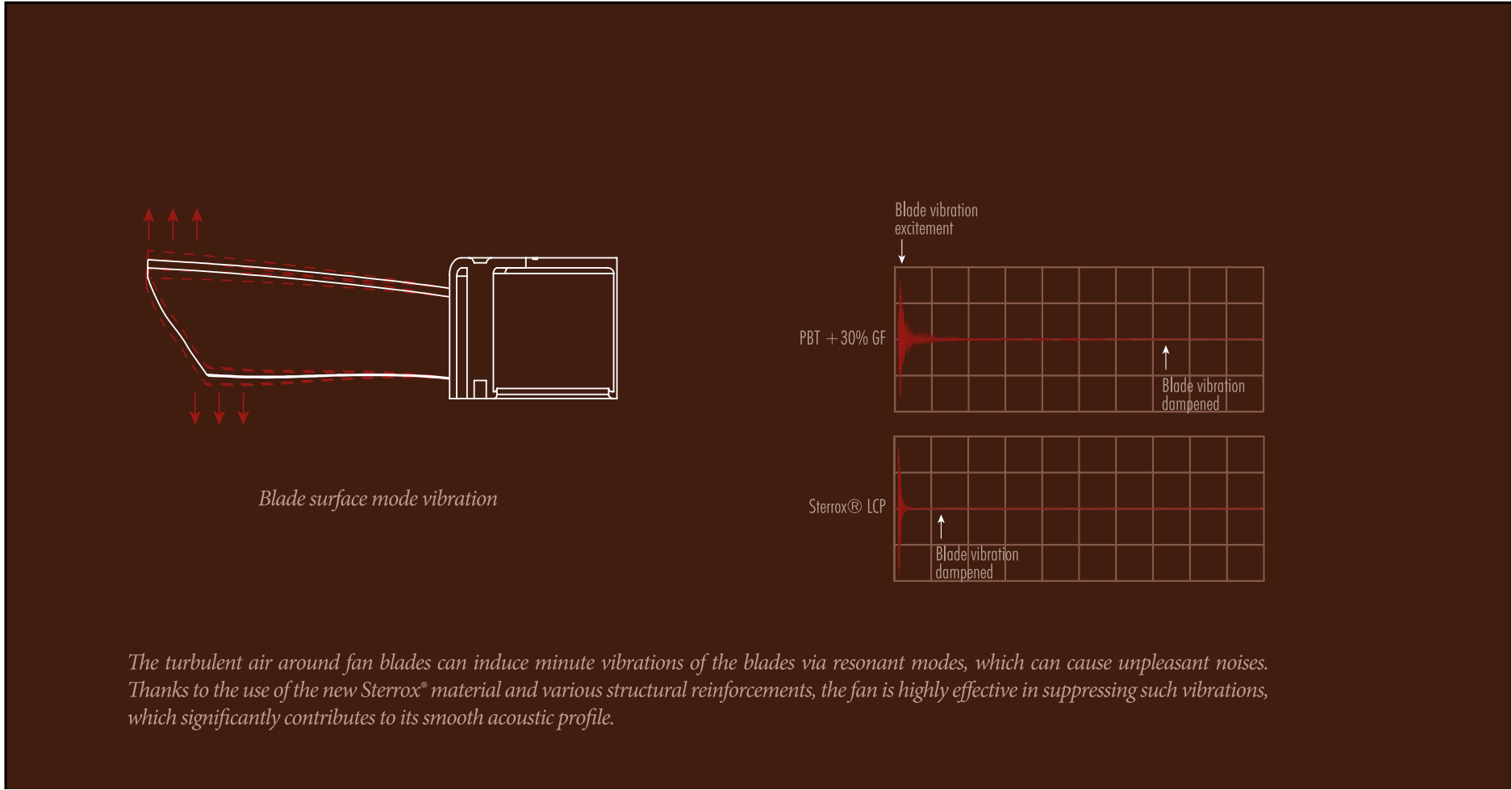
Impeller creep due to centrifugal forces



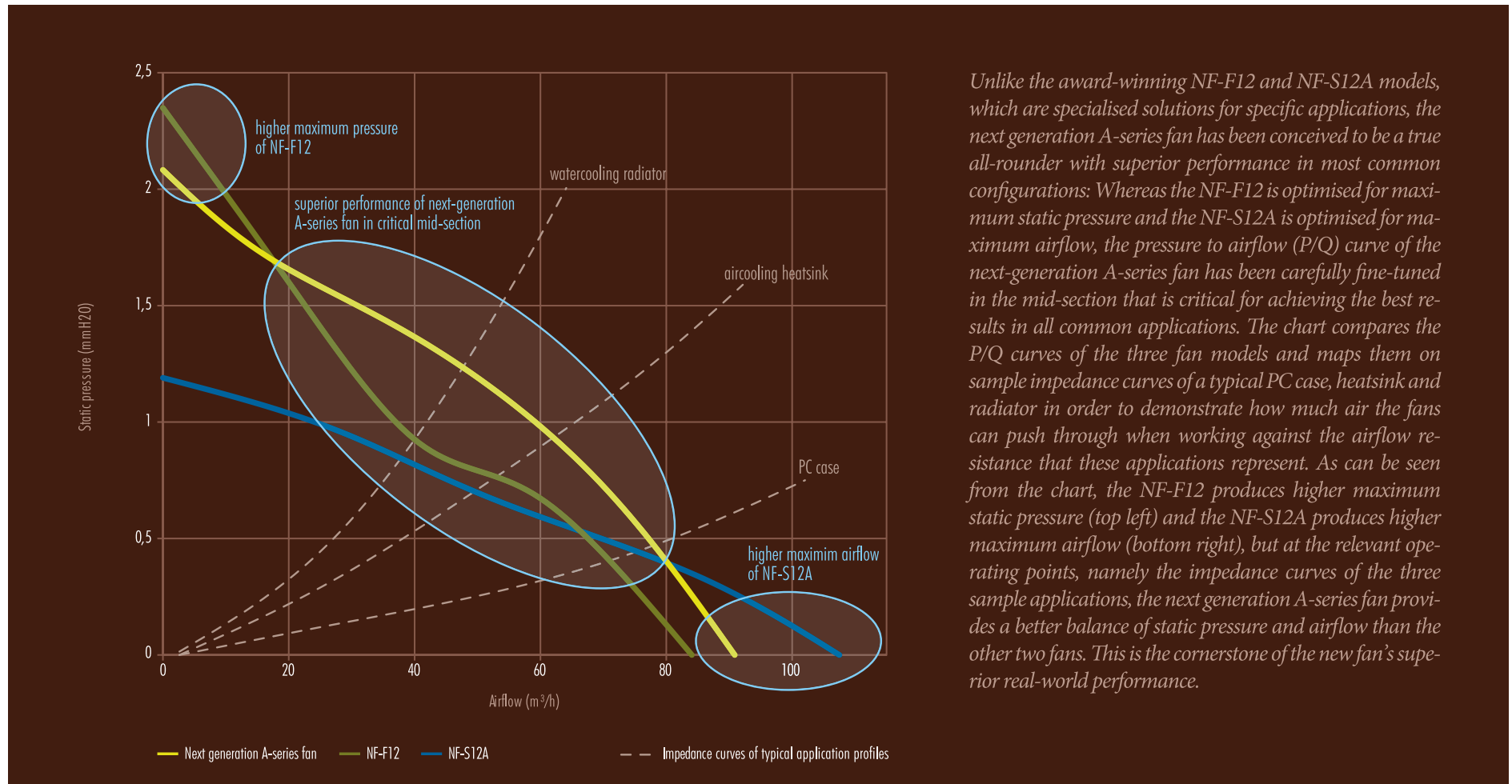
Long-term impeller creep testing



Unlike conventional polymers, which have a chaotic chain orientation both in solid form and in the melt phase, thermotropic LCPs such as Sterrox® show an ordered, rod-like molecular alignment even in the melt phase and solidify into a highly oriented, extremely rigid chain structure.



Performance: P/Q curves compared



Unlike the award-winning NF-F12 and NF-S12A models, which are specialised solutions for specific applications, the next generation A-series fan has been conceived to be a true all-rounder with superior performance in most common configurations: Whereas the NF-F12 is optimised for maximum static pressure and the NF-S12A is optimised for maximum airflow, the pressure to airflow (P/Q) curve of the next-generation A-series fan has been carefully fine-tuned in the mid-section that is critical for achieving the best results in all common applications. The chart compares the P/Q curves of the three fan models and maps them on sample impedance curves of a typical PC case, heatsink and radiator in order to demonstrate how much air the fans can push through when working against the airflow resistance that these applications represent. As can be seen from the chart, the NF-F12 produces higher maximum static pressure (top left) and the NF-S12A produces higher maximum airflow (bottom right), but at the relevant operating points, namely the impedance curves of the three sample applications, the next generation A-series fan provides a better balance of static pressure and airflow than the other two fans. This is the cornerstone of the new fan's superior real-world performance.

Next generation 140mm A-series fan



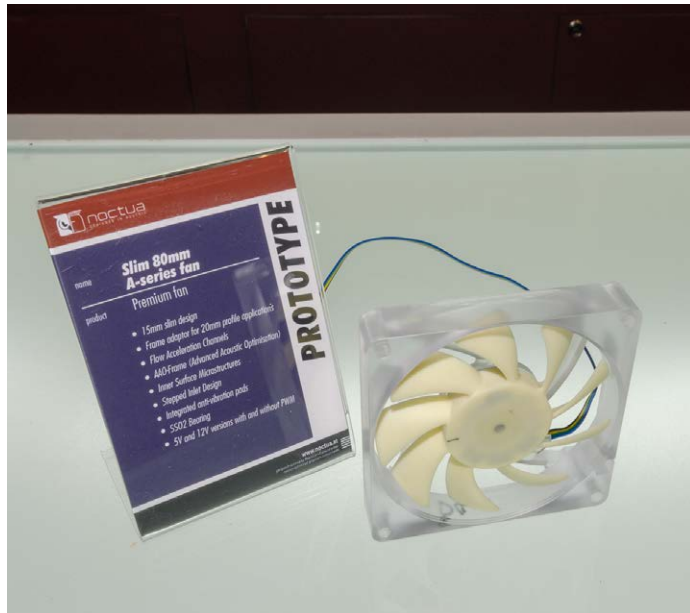
- Impeller made from novel, proprietary liquid-crystal polymer (LCP) compound with fibre-glass reinforcements
- Fine-tuned pressure/airflow (P/Q) curve for heatsinks and radiators
- Ultra-tight tip clearance
- Metal-reinforced hub
- Flow Acceleration Channels
- AAO-Frame (Advanced Acoustic Optimisation)
- 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



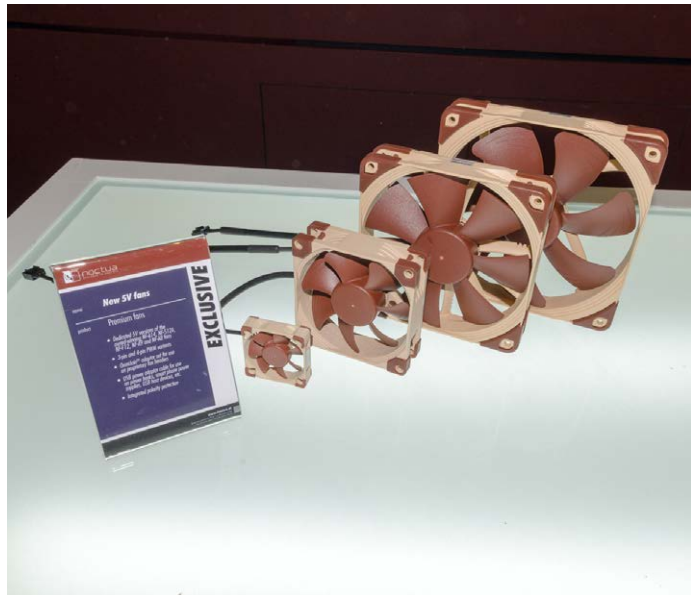
- 15mm slim design
- Flow Acceleration Channels
- AAO-Frame (Advanced Acoustic Optimisation)
- Inner Surface Microstructures
- Stepped Inlet Design
- Integrated anti-vibration pads
- SS02 bearing
- 5V and 12V versions with and without PWM

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-A14, NF-S12A, 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 adaptor for use on power banks, smart phone power supplies, USB host devices, etc.
- Integrated polarity protection

12 & 14cm redux fans with NA-AVP1 support



- NF-S12B redux and NF-P14s redux will support NA-AVP1 anti-vibration pads
- Colour-coordinate redux fans with individual build colour schemes
- NA-AVP1 chromax available in black, white, red, blue, green and yellow

AEC-Q100 compliant 24V industrialPPC fans



- NE-FD4 motor driver IC complies with the Automotive Electronics Council's highly rigorous AEC-Q100 failure-mechanism-based stress test qualification for integrated circuits
- Sophisticated inrush current suppression, extreme electrical robustness, extended burst and surge immunity
- Ideal for 24V-based industrial and automotive applications, sensitive or hostile electronic environments
- Ruggedised fibre-glass reinforced polyamide construction and IP67 certified water and dust protection

12 & 14cm chromax edition fans



- chromax edition fans of the award-winning NF-A15, NF-A14, NF-F12 and NF-S12A
- Black fan and frame design
- Includes 4 swappable anti-vibration pads in black, white, red, blue, green and yellow
- Further anti-vibration pads are available separately
- Optional chromax edition NA-EC1 extension cables and NA-YC1 y-cables in black, white, red, blue, green and yellow

Next-generation 120mm U-type heatsink



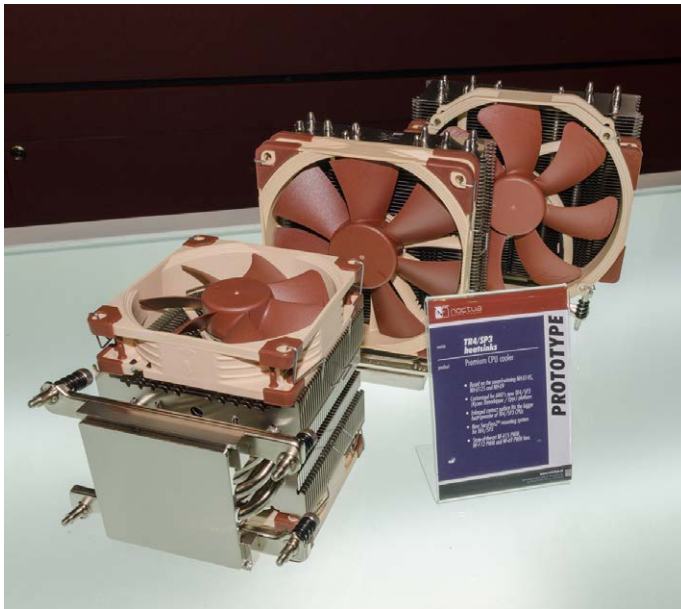
- Based on the award-winning NH-U12S
- 50% more surface area for further improved quiet cooling performance
- 7 instead of 5 heatpipes
- 100% RAM compatibility in single fan mode
- Designed for use with next generation 120mm A-series fan

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
- Designed for use with next generation 140mm A-series fan

TR4/SP3 heatsinks



- Based on the award-winning NH-U14S, NH-U12S and NH-U9
- Customised for AMD's new TR4/SP3 (Ryzen Threadripper / Epyc) platform
- Enlarged contact surface fits the bigger heat-spreader of TR4/SP3 CPUs
- New SecuFirm2™ mounting system for TR4/SP3
- State-of-the-art NF-A15 PWM, NF-F12 PWM and NF-A9 PWM fans

NH-L9 low-profile cooler for AM4



- Based on the award-winning NH-L9a
- Only 37mm total height
- NF-A9x14 PWM fan
- SecuFirm2™ mounting system for AMD AM4 (Ryzen)
- Ideal for Ryzen-based ITX or Small Form Factor (SFF) builds

L-type 120mm low profile cooler



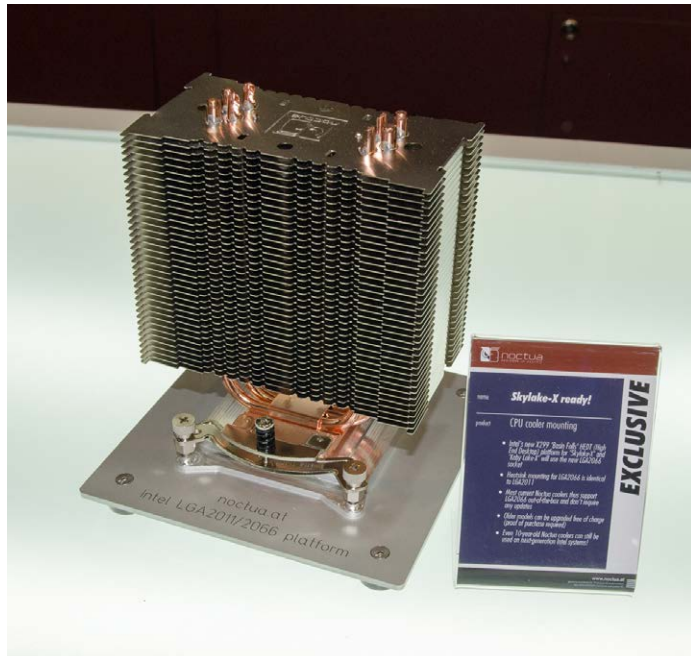
- Based on the award-winning NH-L12
- Next generation slim 120mm A-series fan
- Fan can be installed above or below the fins, blowing upwards or blowing downwards
- SecuFirm2™ mounting with springs for best contact pressure
- Only 70mm total height with the fan installed below the fins

chromax design heatsink covers



- Full colour covers
- Black covers with exchangeable colour inlays
- Ideal for colour-coordinating Noctua heatsinks and individual build themes
- Perfect combination with upcoming chromax line fans or industrialPPC fans and NA-AVP1 chromax pads
- To be available for NH-U12S and NH-D15(S)
- Made from high-quality, powder-coated aluminium

Skylake-X ready!



- Intel's new X299 'Basin Falls' HEDT (High End Desktop) platform for 'Skylake-X' and 'Kaby Lake-X' will use the new LGA2066 socket
- Heatsink mounting for LGA2066 is identical to LGA2011
- Most current Noctua coolers thus support LGA2066 out-of-the-box and don't require any updates
- Older models can be upgraded free of charge