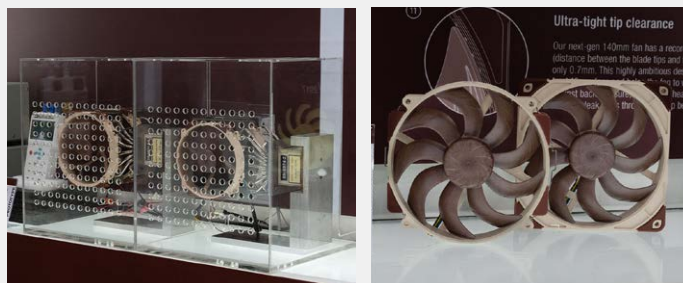




Noctua at Computex Taipei 2023

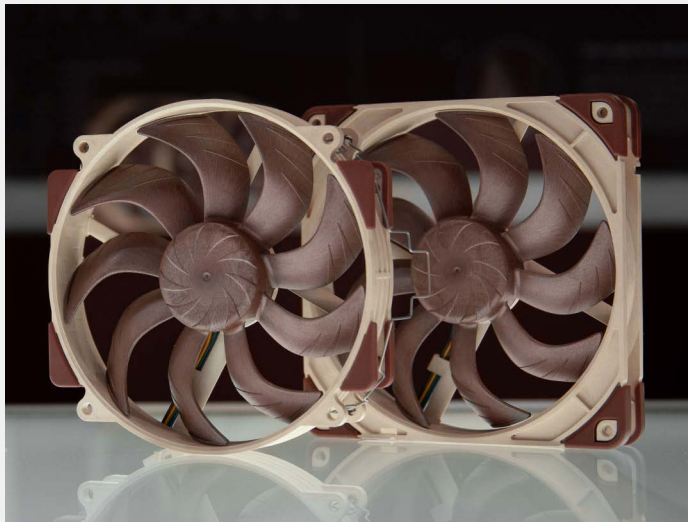
Noctua at Computex Taipei 2023



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-gen 140mm A-series fan
- 2nd generation NH-D15 CPU cooler
- Offset AM5 mounting
- Direct die cooling for AMD AM5
- chromax.black versions of NH-D12L, NH-D9L and NH-L9x65
- Next-gen AMD Threadripper coolers
- NF-A4x10 24V 40mm fan
- 60x15mm A-series fan
- 24V to 12V voltage converter

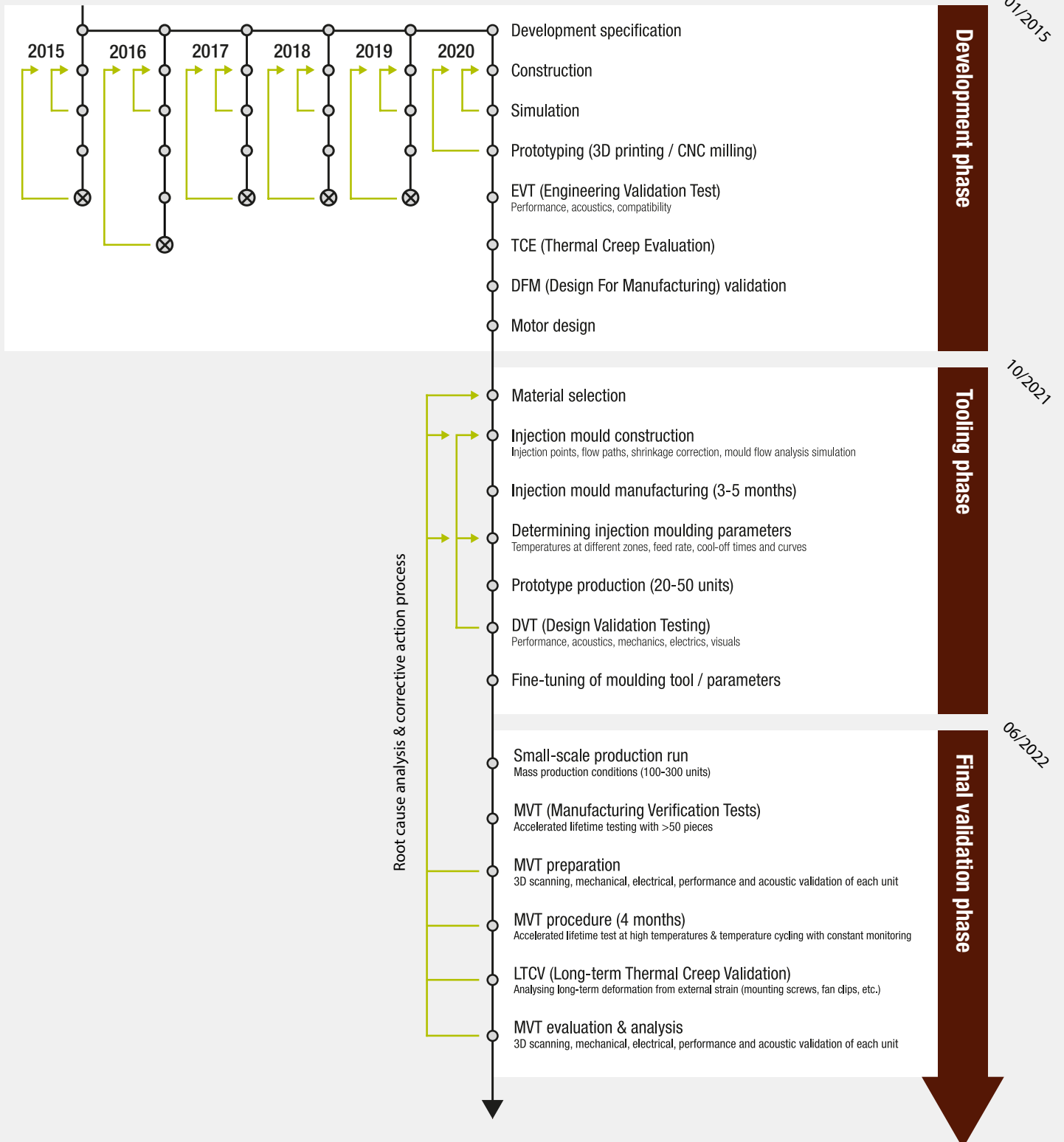
Next-gen 140mm A-series fan



- 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
- Current ETA: Q1 2024

Next-gen 140mm A-series fan

Development process



Current target: 12/2023
Mass production

2nd generation NH-D15



- Next-gen 140mm fans with superior P/Q characteristics
- Tailored fin stacks with reduced fin pitch (1.6 instead of 1.9mm), 20% more surface area
- 8 instead of 6 heatpipes
- Offset design for better PCIe clearance, 9mm less overall depth
- Torx® based SecuFirm2+™ mounting system with offset option for AM5 and NM-SD1 screwdriver
- NT-H2 thermal paste and NA-TPG1 thermal paste guard
- Current ETA: Q2 2024

Offset mounting for AMD AM5

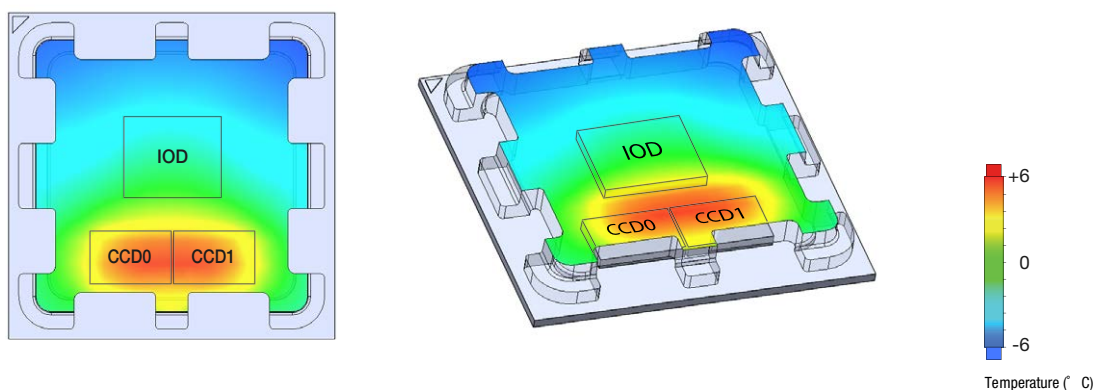


- 7mm offset shifts the heatsink directly over the hotspot of AM5 Ryzen CPUs
- Better contact over the processor's CCD(s) and more even heat distribution typically improve temperatures by 1-3°C
- Compatible with most Noctua CPU coolers since 2005 (e.g. NH-D15(S), NH-D14, NH-U14S, NH-U12A, NH-U12S, NH-U12P, NH-U9S, etc.)
- Bars can be installed in standard (0mm) or offset (-7mm) position
- Available June 2023 for a service charge of EUR/USD 3.90 (Noctua website) or EUR/USD 4.90 (Amazon)
- Black versions for chromax.black heatsinks
- To be included with Noctua multi-socket CPU coolers from late 2023

Offset AM5 mounting: technical backgrounds

AMD's latest Ryzen processors use a so-called chiplet architecture rather than a traditional monolithic chip design. Whereas monolithic designs combine all chip components (e.g. cores, cache, I/O parts) into a single die, chiplet designs use separate dies for individual components. In the case of AMD's latest Ryzen CPUs, there is one I/O die and, depending on the model, one or two Core Complex Dies (CCDs) that contain the CPU cores. These CCDs are responsible for the majority of the processor's total heat emission and, since they are located towards the south (lower) side of the processor package rather than in the centre, they create a hotspot in this region:

Hotspot location of AMD AM5 processors

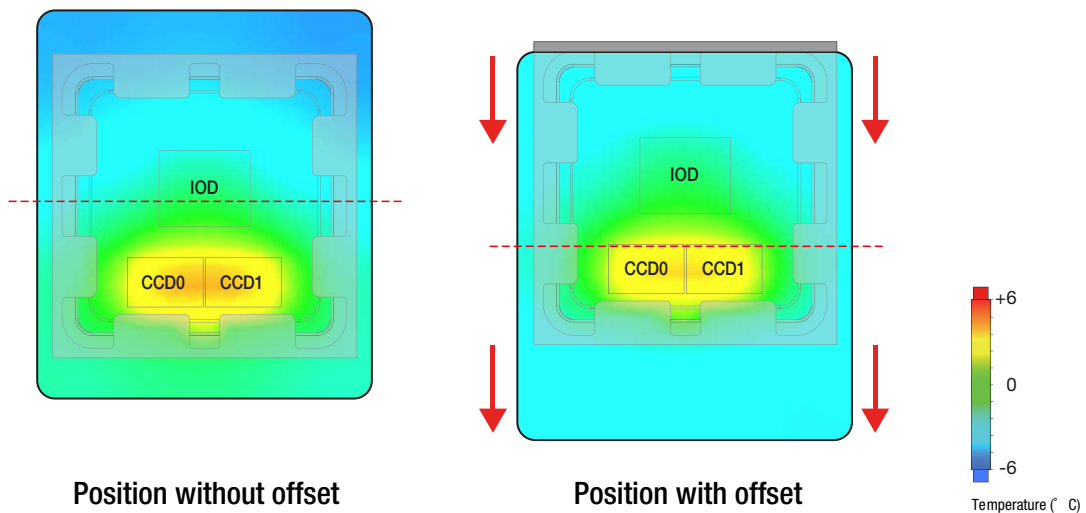


This is where Noctua's new offset mounting steps in: It enables customers to install their heatsinks shifted towards the south side of the socket by 7mm, putting them right above the hotspot created by the CCD(s). This has two key benefits: Firstly, optimal contact pressure will be applied where it matters the most, thereby ensuring the most efficient thermal transfer between the CCD(s) and the heatsink. Secondly, with the heatsink being centred above the hotspot, the heat distribution throughout the base of the cooler will be more even, which results in a better balance of the thermal load across the heatpipes and the entire fin surface area.

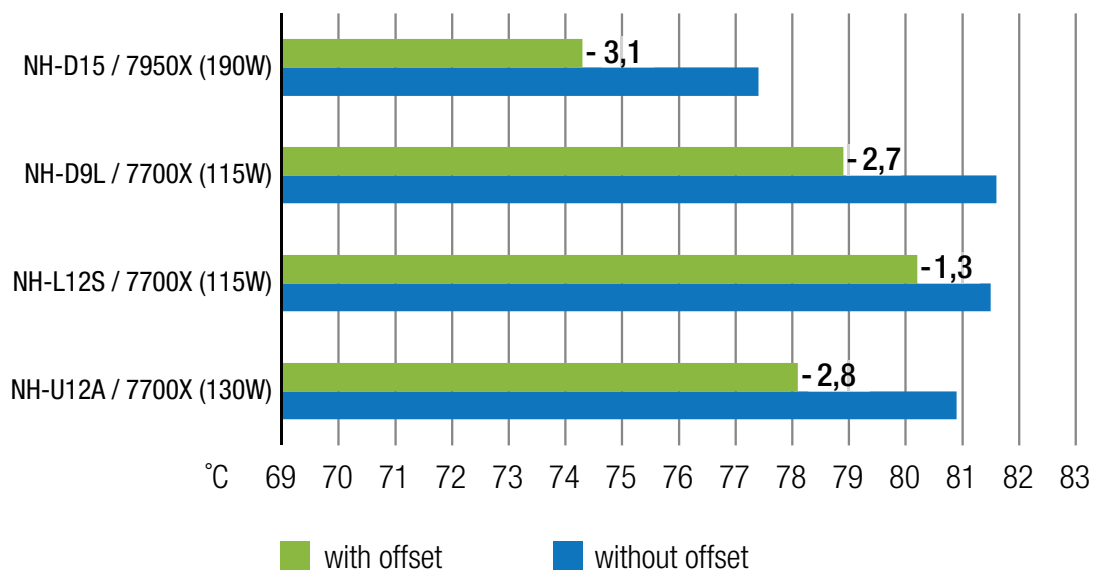
In sum, the superior contact and better heat distribution throughout the cooler base that are made possible by the offset mounting can significantly reduce CPU temperatures with typical improvements in the range of 1-3°C.

Offset AM5 mounting: technical backgrounds

Heat distribution through the cooler base



Temperature reduction from offset mounting

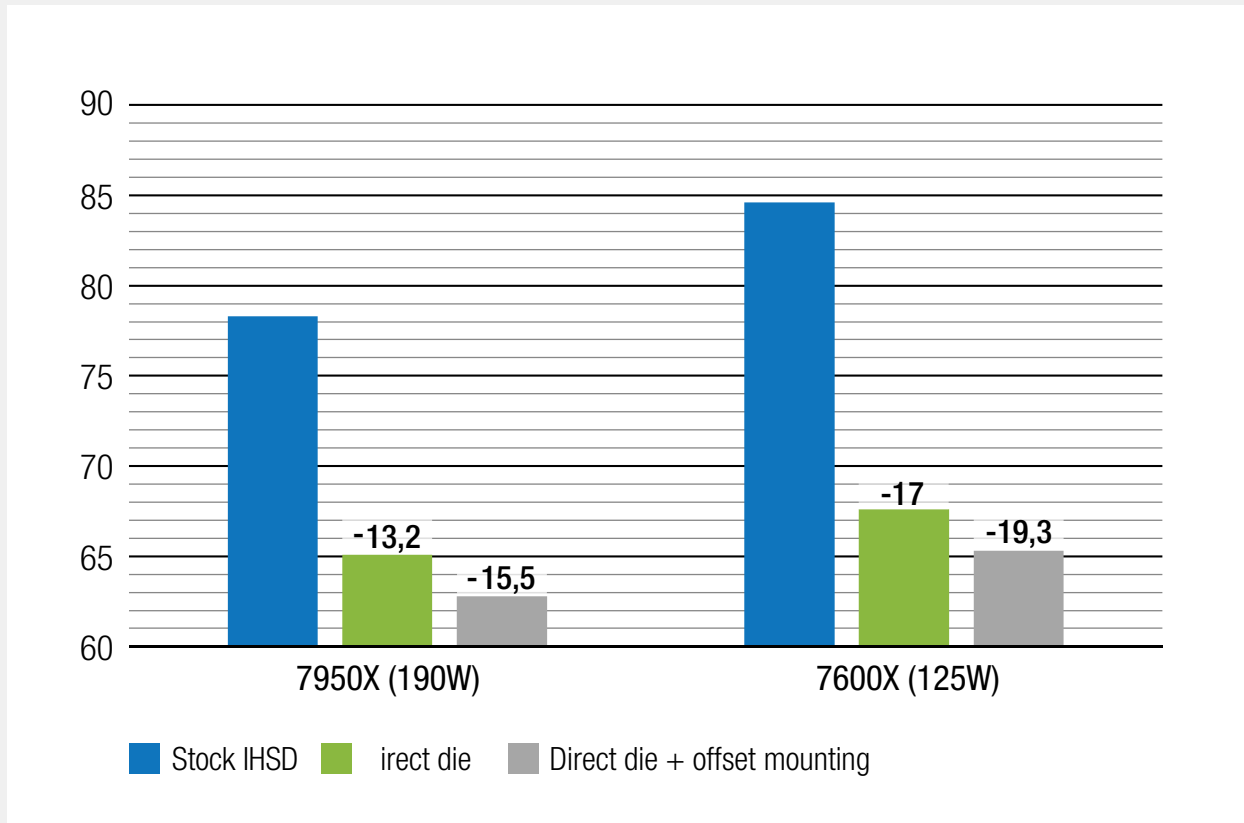


Direct die mounting kit for delidded AMD AM5



- Developed in cooperation with Roman “der8auer” Hartung
- Significantly improved thermal transfer, typical gains in core temperatures of 10-15°C
- Ideal in combination with offset mounting (additional gains of up to 2°C)
- Compatible with most Noctua CPU coolers since 2005 (e.g. NH-D15(S), NH-D14, NH-U14S, NH-U12A, NH-U12S, NH-U12P, NH-U9S, etc.)
- Available June 2023 for a service charge of EUR/USD 4.90 via Noctua’s website
- STL files will be shared on [Printables.com](https://www.printables.com) so that customers can 3D-print the spacers themselves

Temperature reductions from direct die cooling (NH-D15)



Developed in cooperation with professional overclocker and direct die cooling expert Roman “der8auer” Hartung, the NM-DD1 is a mounting spacer kit that makes it possible to use a wide range of Noctua CPU coolers on delidded AMD AM5 processors. Removing the processor’s integrated heat spreader (delidding) and putting the heatsink directly onto the dies allows for much more efficient thermal transfer and can thereby lower CPU temperatures significantly, with typical gains in the range of 10-15°C.

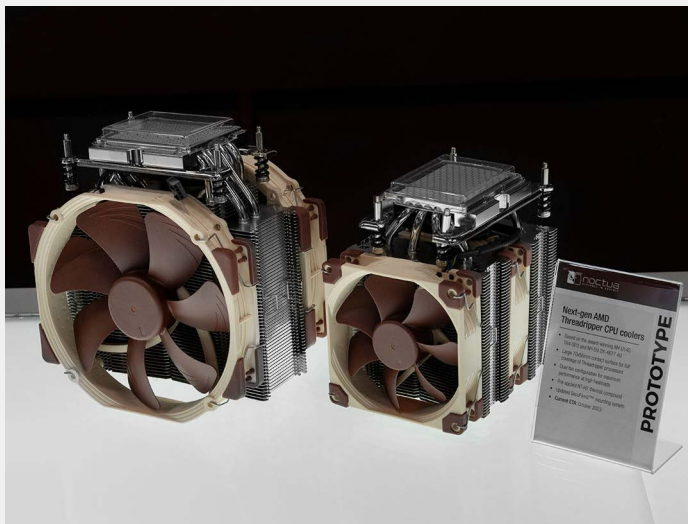
Noctua’s offset AM5 mounting bars (NM-AMB12, NM-AMB13, NM-AMB14, NM-AMB15) allow users to achieve lower temperatures not only on regular AM5 CPUs, but also on delidded ones as the pressure will be more concentrated over the CCDs. Typically, using the offset mounting option with direct die cooling can yield additional gains of up to 2°C.

New chromax.black line CPU coolers



- All-black versions of the award-winning NH-D12L, NH-D9L and NH-L9x65
- 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
- Including the new offset mounting for AMD AM5
- Current ETA: Q4 2023

Next-gen AMD Threadripper CPU coolers



- Based on the award-winning NH-U14S TR4-SP3 and NH-D9 DX-4677 4U
- Large 70x56mm contact surface for full coverage of Threadripper processors
- Dual fan configuration for maximum performance at high heatloads
- Pre-applied NT-H2 thermal compound
- Updated SecuFirm2™ mounting system
- Current ETA: October 2023

24V NF-A4x10 fan



- 24V version of the award-winning NF-A4x10
- Ideal upgrade/replacement 4cm fan for 3D printing (hot end or part cooling) and other 24V applications
- Supports RPM monitoring and PWM-based speed control
- NA-AC9 adaptor cable for popular 3D printers with JST XHP-2 2.5mm headers (e.g. Creality Ender 3 & CR-10, Anycubic Mega)
- OmniJoin™ adaptor set for connecting the fan to proprietary fan headers
- Reduced and fully recyclable all-cardboard packaging (65% less volume)
- Current ETA: Q4 2023

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
- Reduced and fully recyclable all-cardboard packaging
- Current ETA: Q4 2023

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)
- Current ETA: June 2023