Noctua at Computex Taipei 2024

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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:

- NH-D15 G2
- NF-A14x25 G2
- Next-gen 120mm fan
- Next-generation dual tower 120mm CPU cooler
- Thermosiphon development project
- Seasonic PRIME TX-1600 Noctua Edition power supply
- Ampere Altra family CPU coolers
- NVIDIA GH200 cooling solution
- Kaelo wine cooler

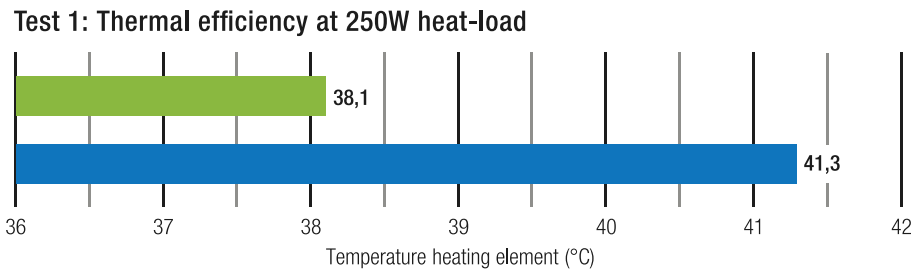
NH-D15 G2

- New fans with superior P/Q performance and speed-offset for acoustic optimisation
- 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, NA-TPG1 thermal paste guard for AM5, NA-ISW1 shim-washers for improved contact on LGA1700
- 3 different versions for optimal contact quality in all scenarios:
  - **NH-D15 G2** (standard version, medium base convexity like other Noctua heatsinks)
  - **NH-D15 G2 LBC** (Low Base Convexity)
  - **NH-D15 G2 HBC** (High Base Convexity)
- **Current ETA:** June 2024

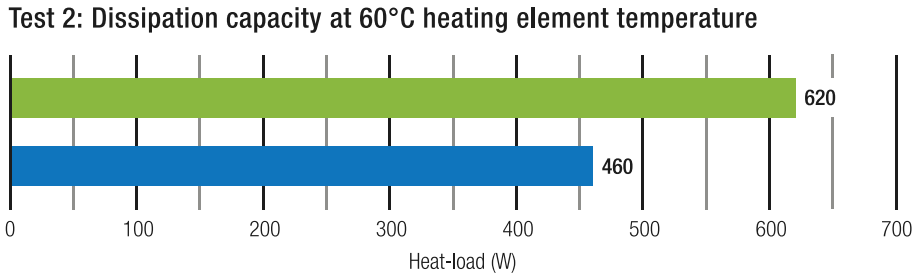
A new performance benchmark:
Noctua Standardised Performance Rating (NSPR)

Noctua's Standardised Performance Rating (NSPR) is a platform-independent classification system that allows customers to assess and compare the efficiency of Noctua CPU coolers at a glance: The higher the NSPR score, the better the heatsink's performance. With a score of 228, the NH-D15 G2 sets a new benchmark.

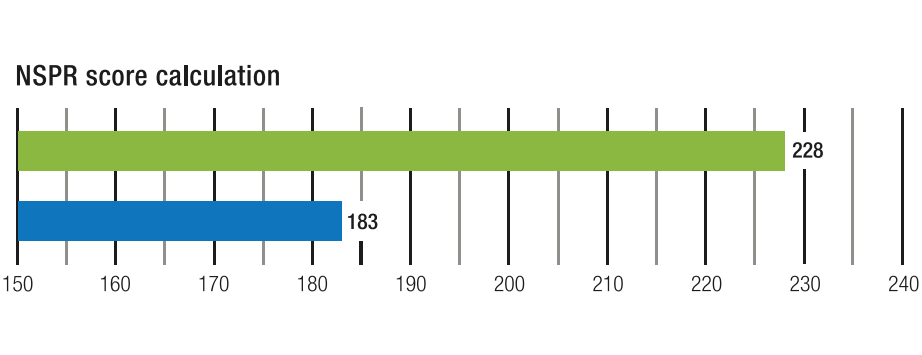
The first basis for the NSPR is a measurement of thermal efficiency at a fixed heat-load that is chosen according to the performance class of the heatsink. In this test, the NH-D15 G2 performs 3.2°C better than the original NH-D15:



The second basis for the NSPR is a measurement of dissipation capacity that reflects a cooler's ability to sustain high heat-loads. For this test, the heat-load is increased until a temperature of 60°C is reached and kept stable for 15 minutes. In this test, the NH-D15 G2 managed a massive 160W boost over the original NH-D15 and pushed beyond 600W:



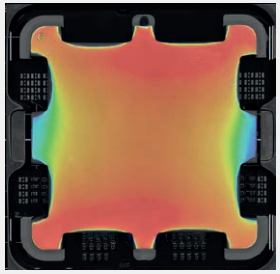
The results of both tests are then combined and balanced by multiplying the first result by ten and dividing the heat-load of the second test by ten (see https://noctua.at/nspr). This gives an NSPR score of 228 for the NH-D15 G2 versus 183 for the original NH-D15, making the G2 the first cooler to break the barrier of 200 and easily Noctua's best performing model to date:



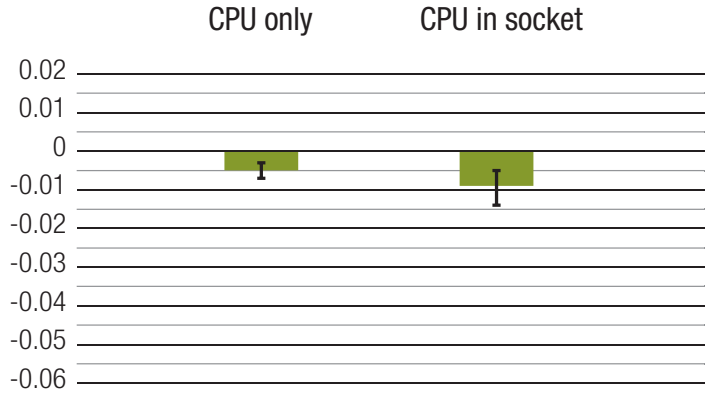
For further information about the Noctua Standardised Performance Rating, please visit: https://noctua.at/nspr

NH-D15 G2 Heatsink contact quality explained

AMD AM5

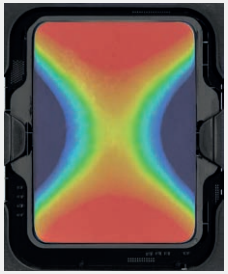


Deviation from flatness (north to south, mm)

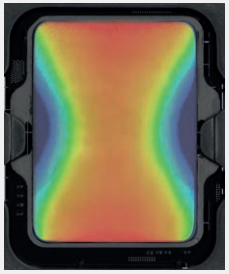


Intel LGA1700

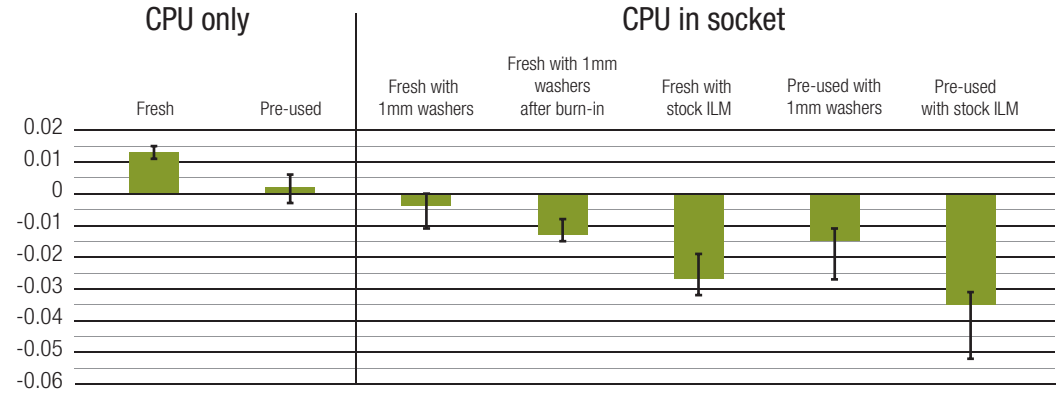
Full ILM pressure



Reduced ILM pressure (1mm washers)



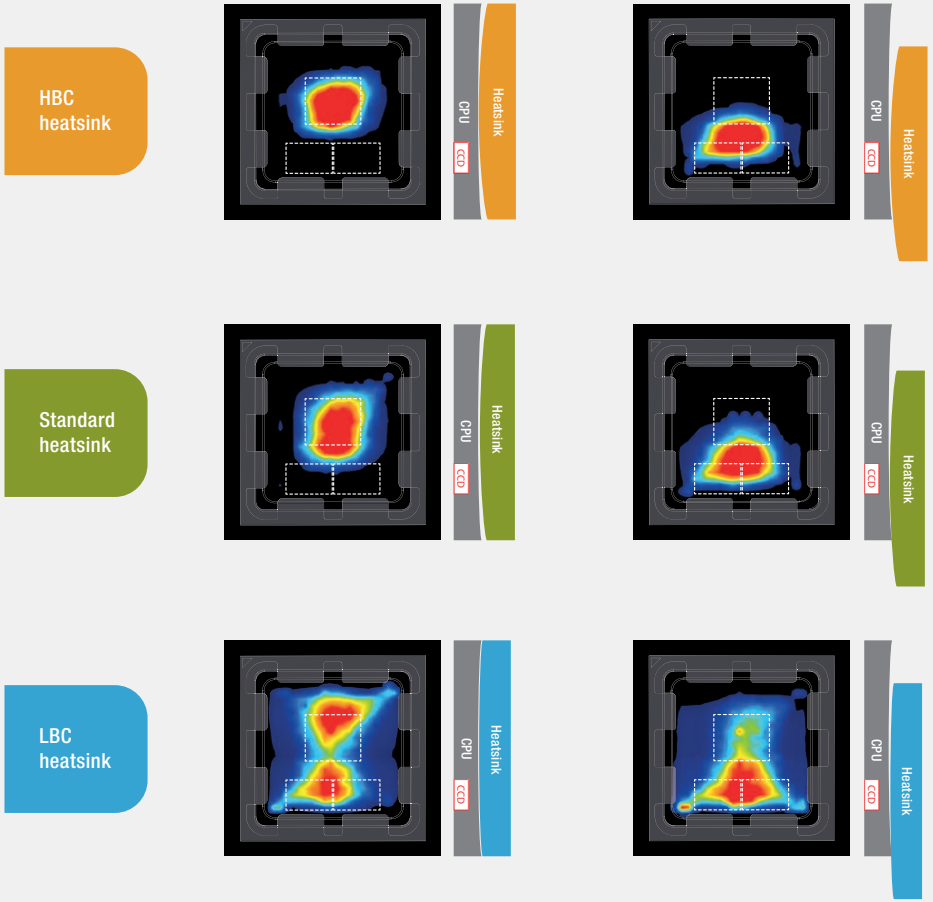
Deviation from flatness (north to south, mm)



NH-D15 G2 Heatsink contact quality explained

AMD AM5

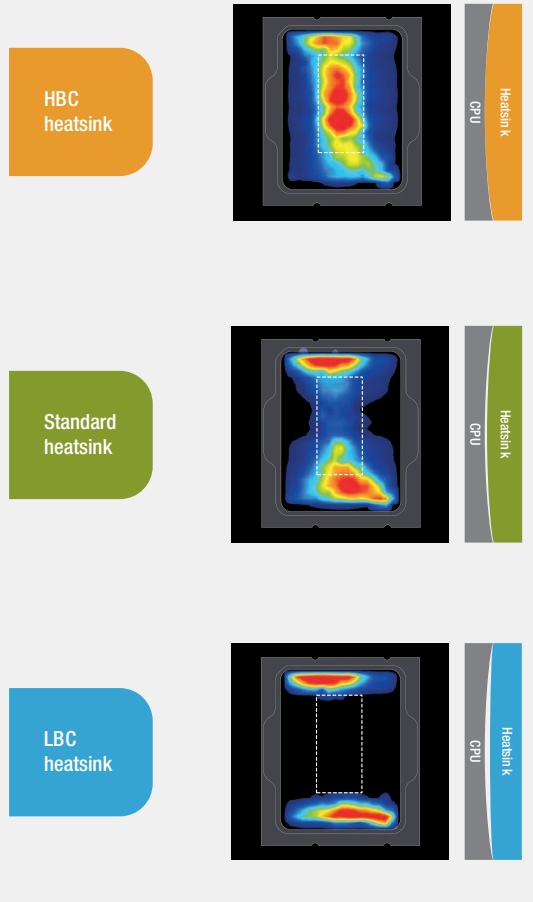
Standard mounting



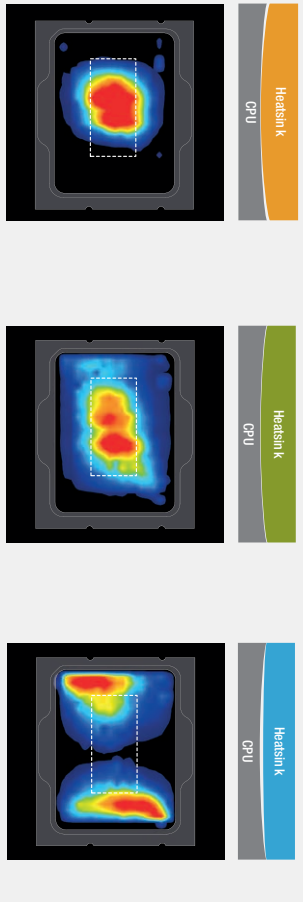
Offset mounting

Intel LGA1700

Full ILM pressure

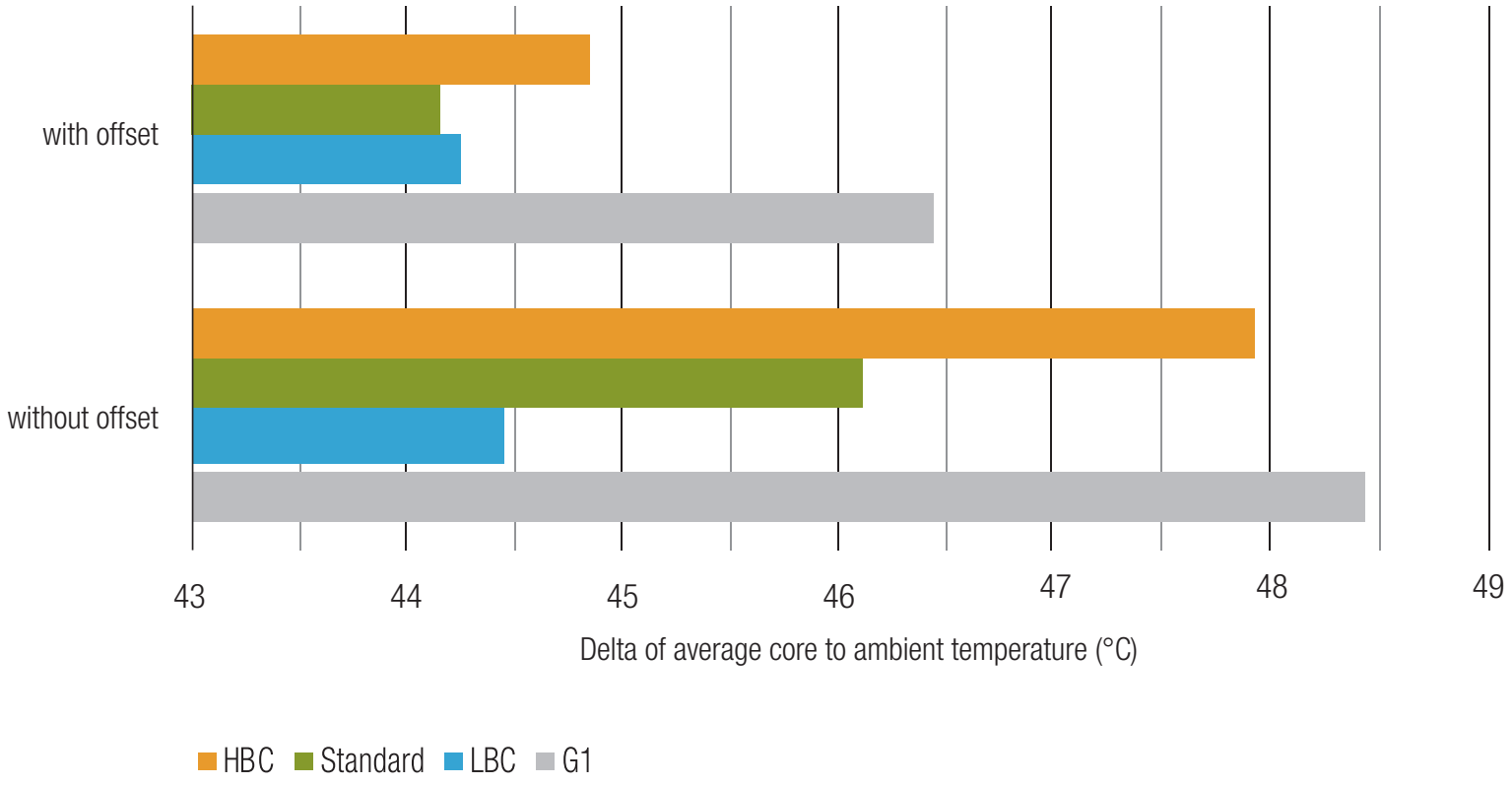


Reduced ILM pressure (1mm washers)



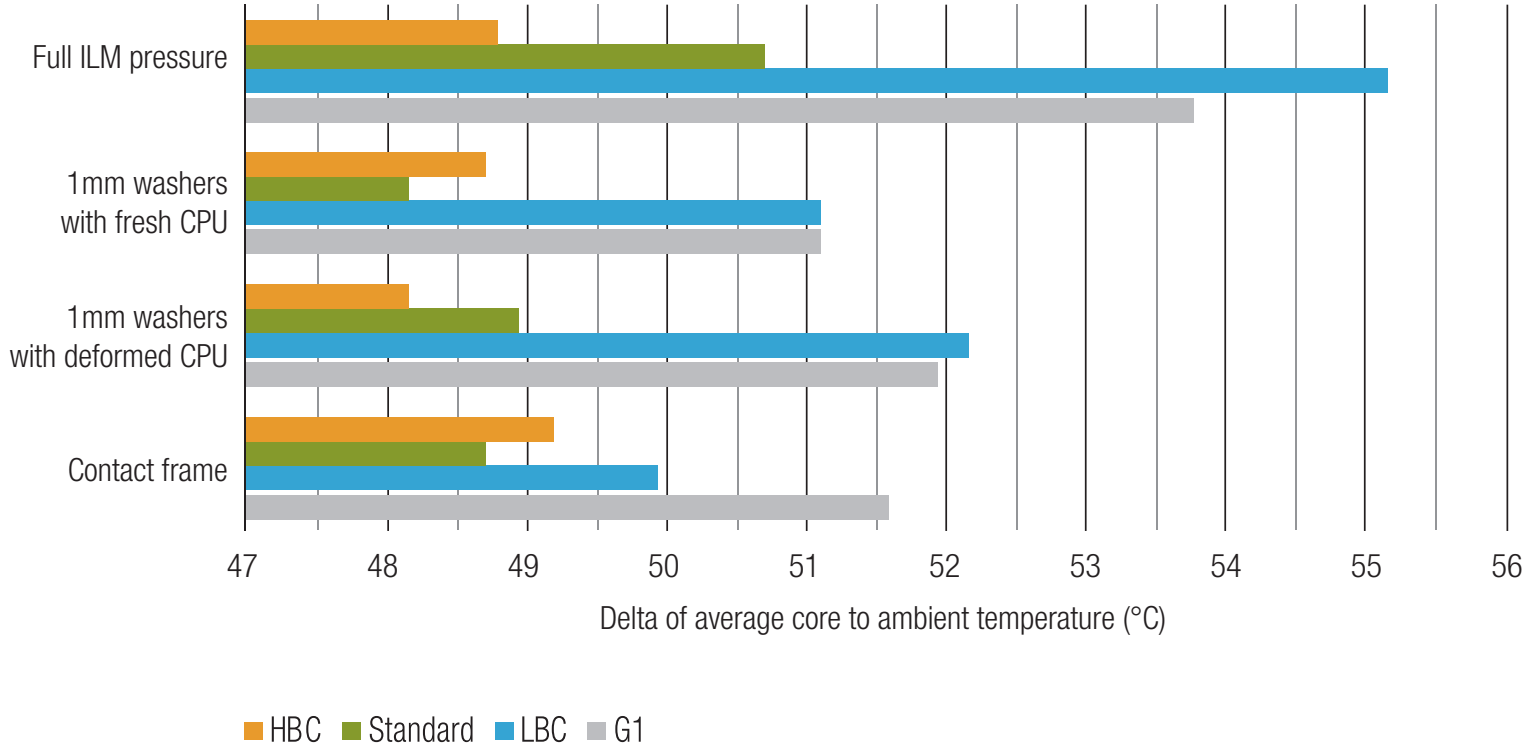
NH-D15 G2 Heatsink contact quality explained

Thermal performance AMD Ryzen 9 7950X (180W)



NH-D15 G2 Heatsink contact quality explained

Thermal performance Intel Core i9-13900K (250W)



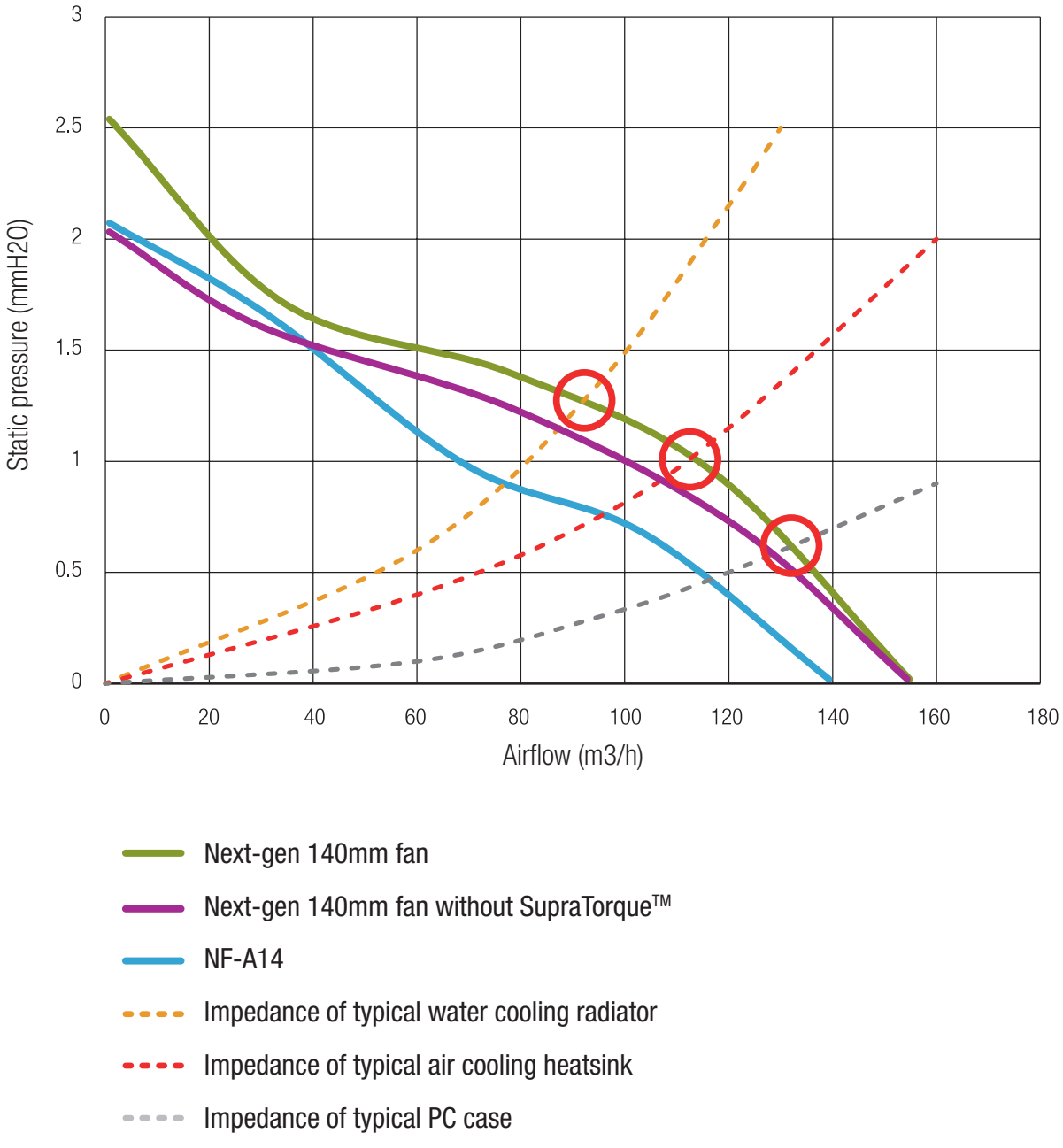
NF-A14x25 G2

- Progressive-Bend impeller made from Sterrox® liquid-crystal polymer pushes air out towards the highest efficiency blade areas
- Centrifugal Turbulator hub for better flow attachment and optimised fluid distribution across the impeller
- Winglets reduce tip vortices and thereby increase efficiency
- Ultra-tight tip clearance (0.7mm) for superior performance on heatsinks and radiators
- Ultra-high efficiency etaPERF™ motor with Smooth Commutation Drive 2 for superb running smoothness and SupraTorque™ for additional torque headroom
- Proven SSO2 bearing and Advanced Acoustic Optimisation (AAO) frame design
- **ETA** June 2024 (round frame) / September 2024 (square frame) / Q1 2025 (chromax.black)

NF-A14x25 G2 Performance

Highly optimised P/Q curve for all applications

The sophisticated aerodynamic design of our next-gen 140mm fan allows for a pressure-to-airflow (P/Q) curve that is extremely strong in the critical mid-section. This makes the fan a true jack-of-all-trades with excellent performance in both static pressure and airflow demanding applications.

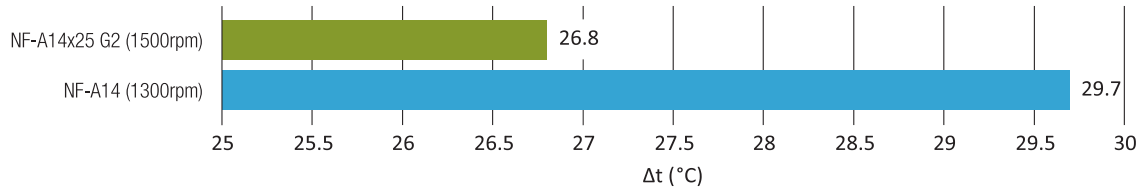


NF-A14x25 G2 Performance

NF-A14x25 G2 vs. NF-A14

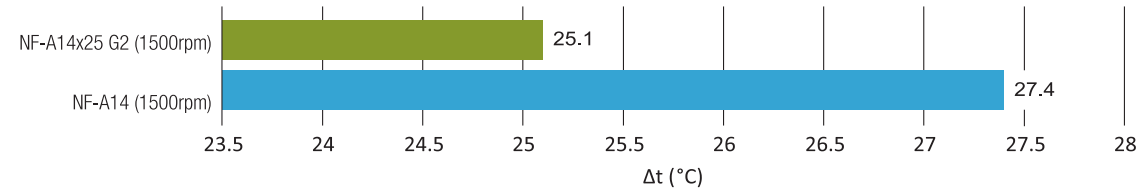
Cooling performance on 140x36mm water cooling radiator

(200W hotspot heat-load, noise-normalised)



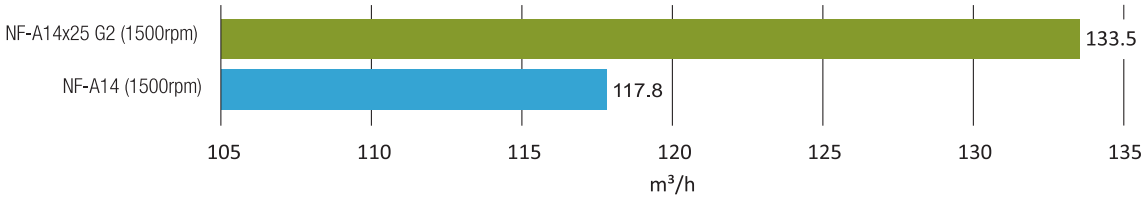
Cooling performance on NH-U14S

(320W uniform heat-load, noise-normalised)



Case cooling performance

(airflow through typical resistance)



Next-gen 120mm fan

- Further improved performance over the award-winning NF-A12x25
- Same aerodynamic design approach and feature set as NF-A14x25 G2
- Progressive-Bend impeller made from Sterrox® liquid-crystal polymer pushes air out towards the highest efficiency blade areas
- Centrifugal Turbulator hub for better flow attachment and optimised fluid distribution across the impeller
- Winglets reduce tip vortices and thereby increase efficiency
- Ultra-tight tip clearance (0.5mm) for superior performance on heatsinks and radiators
- Ultra-high efficiency etaPERF™ motor with Smooth Commutation Drive 2 for superb running smoothness and SupraTorque™ for additional torque headroom
- **Current ETA:** Q1 2025

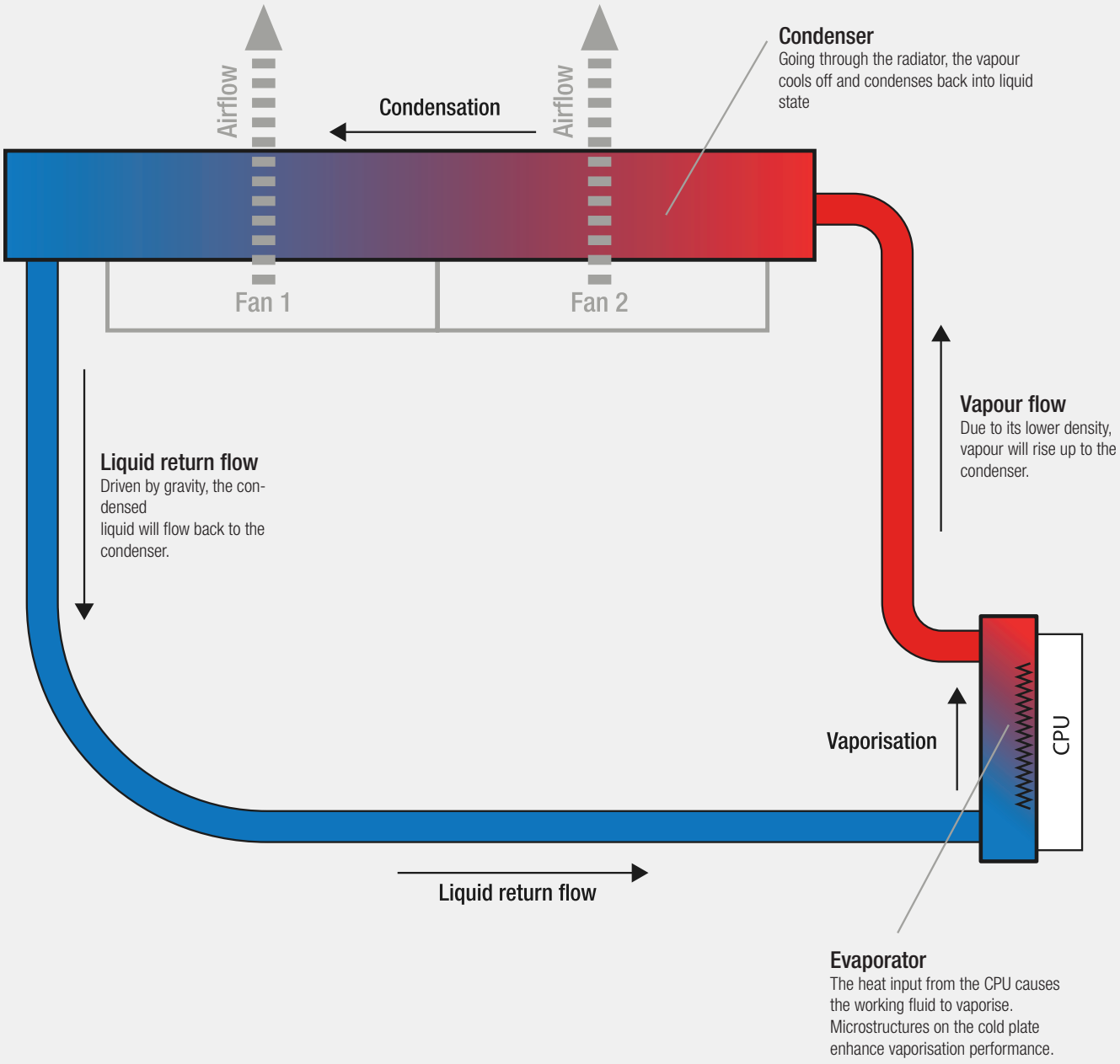
Next-generation dual tower 120mm CPU cooler

- NH-D15 level performance in a 120mm form factor
- 8 heatpipes
- Two next-gen 120mm fans
- Torx® based SecuFirm2+™ mounting system with offset option for AM5 and NM-SD1 screwdriver
- NT-H2 thermal paste, NA-TPG1 thermal paste guard for AM5, NA-ISW1 shim-washers for improved contact on LGA1700
- **Current ETA:** Q2 2025

Thermosiphon development project

- Two-phase thermosiphon CPU cooler with flexible tubing
- Exclusive development partnership with Calyos, expert in developing and supplying two-phase cooling solutions for aviation, renewable energy and automotive industries
- Development target: Providing the form factor, convenience and performance levels of all-in-one water cooling solutions without the drawbacks – no moving parts: no pump noise, no vibrations, no failures!
- 240/360mm form factor for top-exhaust position mounting (gravity dependent operation)
- Long-term project in early development stage, no ETA or pricing projections

Two-phase thermosiphon cooler working principle

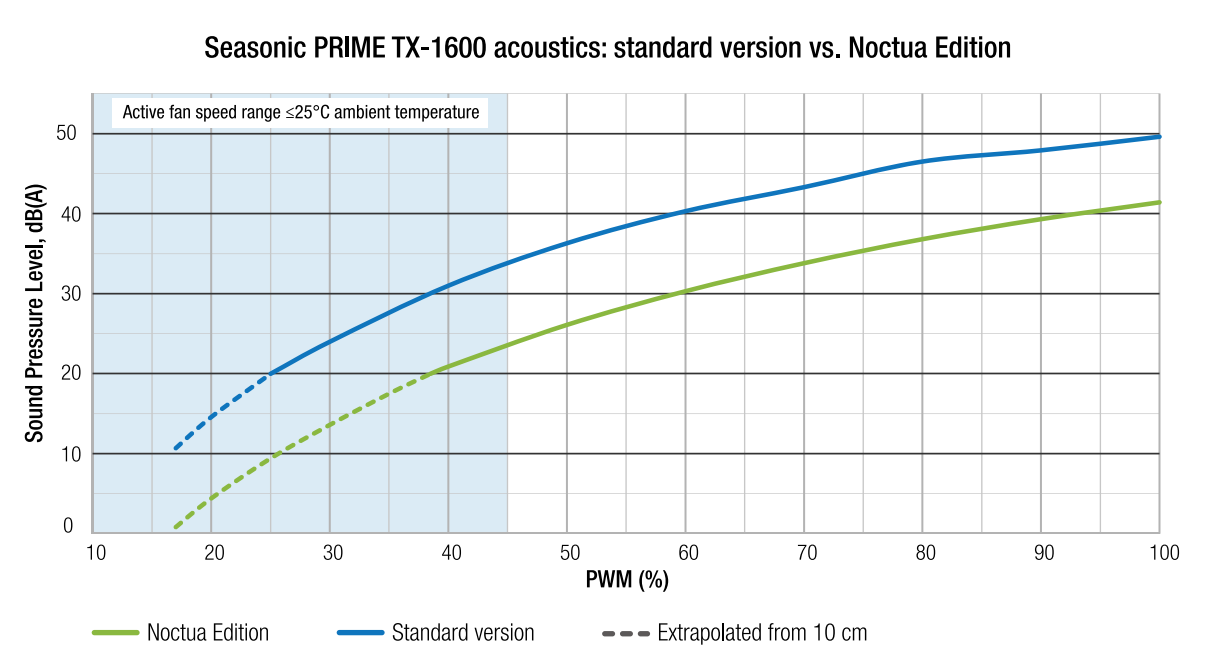


Seasonic PRIME TX-1600 Noctua Edition power supply

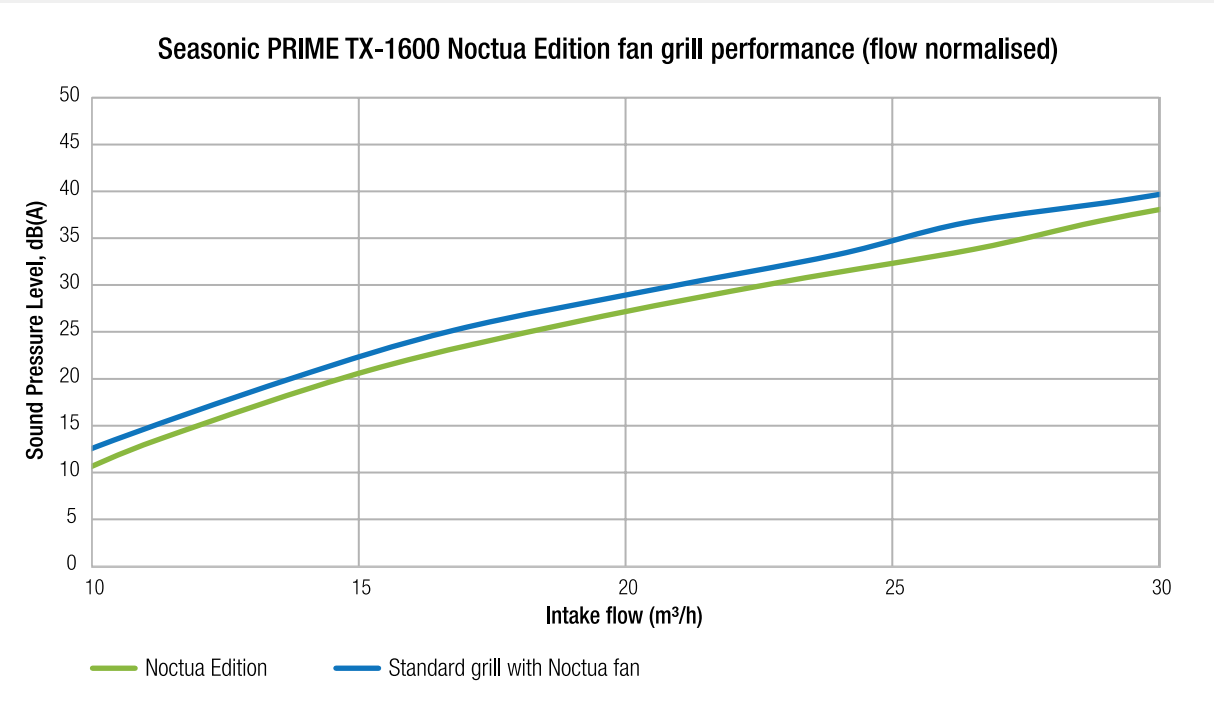
- Ultra-quiet Noctua Edition of the award-winning Seasonic PRIME TX-1600 1600W power supply
- ~8-10dB(A) lower noise levels thanks to the Noctua NF-A12x25 fan and custom designed, highly optimised fan grill
- Semi-passive operation: Fan stays off until 50% load at up to 25°C ambient temperature for virtually noise-free operation, slowly ramps up to near inaudible levels with increasing loads
- ATX 3.1 and PCIe 5.1 compliant, 12V-2×6 connector for safely powering high-end graphics cards
- Fully modular, Noctua themed cabling for clean and tidy builds
- Titanium level energy efficiency (94% at 50% load, 80 PLUS® Titanium and Cybenetics ETA Titanium certified)
- **Current ETA:** Q4 2024

How much quieter is the Noctua Edition of the Seasonic PRIME TX-1600?

The Seasonic PRIME TX-1600 Noctua Edition is around 8-10dB(A) quieter than the regular model across the entire fan speed range:



This massive improvement is mainly due to the superior performance-to-noise efficiency of the award-winning Noctua NF-A12x25 120mm fan as compared to the regular model's 135mm unit. However, the Noctua Edition's custom-designed, highly optimised fan grill also contributes to its superior acoustic performance:



From the airflow vs. dB(A) chart, it can be seen that the contribution of the Noctua Edition's fan grill is significant with around 2dB(A) lower noise levels at the same flow performance.

Ampere Altra family CPU coolers

- Based on the proven models for Intel Xeon and AMD Threadripper or Epyc platforms
- Customised contact surface for Ampere Altra and Altra Max Arm processors with up to 128 cores
- SecuFirm2™ mounting system for LGA4926
- Ideal for building whisper-quiet Arm based workstations, development platforms or servers for noise-sensitive environments
- Pre-applied NT-H2 thermal paste
- Now available through Newegg.com

NVIDIA GH200 cooling solution

- Prototype for cooling NVIDIA GH200 Grace Hopper superchips (Grace CPU and Hopper GPU)
- Integrating two customised NH-U12A heatsinks for CPU and GPU cooling with a proprietary base plate for memory cooling and installation
- Supporting up to 1000W total heat emission
- Perfect for running GH200 systems in local environments where noise levels are a concern (e.g. for local HPC applications, self-hosted open source LLMs, fine-tuning LLMs on local data due to latency or privacy concerns, etc.)
- **Current ETA:** Q4 2024 (for B2B clients on per order basis)

Kaelo wine cooler

- Featuring a customised Noctua NF-P14r 140mm fan for near inaudible cooling
- Designed for integration into bar tables, dining tables, kitchen countertops or other surfaces
- TEC-based cooling setup insulates the bottle to maintain its original temperature, no manual temperature setting required
- Boost mode can chill bottles by 3-4°C
- Precise temperature control, no overchilling or condensation from ice buckets
- Available through www.kaelo.co.uk

KAELO