Product Brief

Intel® Laminar Coolers

Thermal solutions designed for all locked 65W boxed desktop processors*.

Intel® Laminar Coolers cater to a wide range of needs, offering value beyond the silicon for a variety of solutions.

- **For Gamers:** Coolers are not only attractive, but also perform and scale with brand tiers
- **For Commercial Users:** Help to lower BOM costs, meet sustainability requirements, and reduce size without compromising on quality or acoustics
- **For Creators:** Coolers provide the necessary performance while maintaining clean aesthetics

These coolers are Intel-validated and backed, ensuring reliability and quality.

FEATURING:
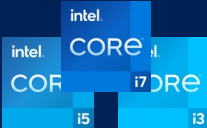
Intel® Laminar Coolers, 2nd Gen | Intel® Laminar Coolers, 1st Gen

*Available for all locked 14th, 13th, 12th Gen Intel® Core™ desktop processor SKUs and all locked Intel® Core™ Ultra desktop processor (Series 2) SKUs.

Intel® Laminar Coolers: **Product Highlights**

Intel® Laminar Coolers are designed to help properly cool your CPU by dissipating heat and be aesthetically appealing. All of this while delivering you the performance you desire that complements select Intel processors.

	2ND GENERATION		1ST GENERATION	
	Intel® Laminar **RH2 Cooler**	Intel® Laminar **RM2 Cooler**	Intel® Laminar **RH1 Cooler**	Intel® Laminar **RM1 Cooler**
Intel-Validated Compatibility	✓ Available w/ 65W Intel® Core™ Ultra 9 desktop processor (Series 2) SKUs	✓ Available w/ 65W Intel® Core™ Ultra 7 & 5 desktop processor (Series 2) SKUs	✓ Available w/ 65W 14th Gen, 13th Gen, and 12th Gen Intel® Core™ i9 desktop processor SKUs	✓ Available w/ 65W 14th Gen, 13th Gen, and 12th Gen Intel® Core™ i7/i5/i3 desktop processor SKUs
Controllable aRGB Lighting	✓		✓	
Sound Power Level	2.2 BA Near-silent Performance	3.6 BA Quiet Performance	2.6 BA Near-silent Performance	3.9 BA Quiet Performance
Heat Sink Base/Core Material	Larger / Copper Heat Column	Copper	Larger / Copper Heat Column	Copper
Three-year Limited Warranty	✓	✓	✓	✓
Helps Meet Eco Label Compliance		✓ With use of recycled plastics		
Purchasing method	Only sold with Intel Processors	Only sold with Intel Processors	Only sold with Intel Processors	Sold with Intel processors & bulk pack via distis

Intel® Laminar Coolers, 2nd Gen
Product Specifications

Intel® Laminar RH2 Cooler

Available in-box with (65W) Intel® Core™ Ultra 9 desktop processor (Series 2) SKUs

Intel® Laminar RM2 Cooler

Available in-box with (65W) Intel® Core™ Ultra 7 & 5 desktop processor (Series 2) SKUs

THERMAL SOLUTION SPECS

Overall Height	Up to 71mm (top of fan to bottom of heat sink)
Overall Size	Up to 103mm x 103mm
Mass	Up to 450g
Sound Power Level	2.2 BA (1400 RPM, 40C inlet, 65W); 4.7 BA (max RPM)
Sound Pressure Level	<16 dBA (1400 RPM, 40C inlet, 65W)
Base Power Support	65W
Fan Type	PWM controlled variable speed fan
LEDs	aRGB LED light ring and white LED Intel logo
Connector Types	4-pin and 5V aRGB
Operating Voltage	13.2V max, 12.0V rated, 10.8V min
Current (peak)	Up to 450mA
Max RPM (+/- 5%)	Up to 3000 RPM
Min RPM (+/- 20%)	1000 RPM
Operating Temp	0 to 70C
Operating Humidity	85% relative humidity @ 55C
Fan Protection	Locked-rotor/polarity protected
Sense Frequency	2 pulses/Rev, 12V pull-up with 10Kohm
PWM Frequency	25KHz +/- 5KHz
PWM Pull-up Voltage	5.25V max
PWM Duty Cycle Range	0–100%

Overall Height	Up to 47mm (top of fan to bottom of heat sink)
Overall Size	Up to 100mm x 100mm
Mass	Up to 340g
Sound Power Level	3.6 BA (2400 RPM, 40C inlet, 65W); 4.6 BA (max RPM)
Sound Pressure Level	26 dBA (2400 RPM, 40C inlet, 65W)
Plastic	18% Post Consumer Recycled Plastic, including Ocean Bound Plastic
Base Power Support	65W
Fan Type	PWM controlled variable speed fan
Connector Types	4-pin
Operating Voltage	13.2V max, 12.0V rated, 10.8V min
Current (peak)	Up to 400mA
Max RPM (+/- 5%)	Up to 3250 RPM
Min RPM (+/- 20%)	600 RPM
Operating Temp	0 to 70C
Operating Humidity	85% relative humidity @ 55C
Fan Protection	Locked-rotor/polarity protected
Sense Frequency	2 pulses/Rev, 12V pull-up with 10Kohm
PWM Frequency	25KHz +/- 5KHz
PWM Pull-up Voltage	5.25V max
PWM Duty Cycle Range	0–100%

HEAT SINK SPECS

Heat sink fin material	Aluminum
Heat sink base/core material	Copper Heat Column
Heat sink fastener* material	Stainless Steel

Attaches to supplied backplate

Heat sink fin material	Aluminum
Heat sink base/core material	Copper

For additional Intel® Laminar RH2 Cooler specs and support, click here.

For additional Intel® Laminar RM2 Cooler specs and support, click here.

Intel® Laminar RM2 Coolers
Sustainability

Helps Meet Eco Label Criteria

Supports EPEAT Compliance

The Intel® Laminar RM2 Cooler is designed with sustainability in mind, incorporating 18% post-consumer recycled (PCR) plastic, including ocean-bound (OBT) plastic. Additionally, the impeller of the cooler contains 25% PCR plastic, while the fan bracket is made with 30% PCR plastic.

Supports Customer Goals & Values

Product Carbon Footprint Reduction

The use of post-consumer recycled (PCR) plastic in the Intel® Laminar RM2 cooler reduces its carbon footprint by 7% compared to a cooler made entirely of virgin plastic. This reduction is particularly advantageous for government and educational institutions that have carbon footprint reduction goals.

*Intel is committed to the continued development of more sustainable products, processes, and supply chain as we strive to prioritize greenhouse gas reduction and improve our global environmental impact. Where applicable, environmental attributes of a product family or specific SKU will be stated with specificity. Refer to the 2023 Corporate Responsibility Report for further information.

Intel® Laminar Coolers, 1st Gen
Product Specifications

Intel® Laminar RH1 Cooler

Available in-box with 14th Gen , 13thGen, and 12th Gen Intel® Core™ i9 desktop processor (65w) SKUs

Intel® Laminar RM1 Cooler

Available in-box with 14th Gen , 13thGen, and 12th Gen Intel® Core™ i7/i5/i3 desktop processor (65w) SKUs and in bulk pack

THERMAL SOLUTION SPECS

Overall Height	Up to 69mm (top of fan to bottom of heat sink)		Overall Height	Up to 47mm (top of fan to bottom of heat sink)
Overall Size	Up to 103mm x 103mm		Overall Size	Up to 100mm x 100mm
Mass	Up to 450g		Mass	Up to 350g
Sound Power Level	**2.6 BA** (1600 RPM, 40C inlet, 65W); **4.5 BA** (max RPM)		Sound Power Level	**3.9 BA** (2400 RPM, 40C inlet, 65W); **4.6 BA** (max RPM)
Sound Pressure Level	16 dBA (1600 RPM, 40C inlet, 65W)		Sound Pressure Level	29 dBA (2400 RPM, 40C inlet, 65W)
Base Power Support	Up to 65W (14th Gen, 13th Gen, and 12th Gen Intel® Core™ Desktop Processors)		Base Power Support	Up to 65W (12th Gen and 13th Gen Intel® Core™ Desktop Processors)
Fan Type	PWM controlled variable speed fan		Fan Type	PWM controlled variable speed fan
LEDs	aRGB LED light ring and white LED Intel logo		Connector Types	4-pin
Connector Types	4-pin and 5V aRGB		Operating Voltage	13.2V max, 12.0V rated, 10.8V min
Operating Voltage	13.2V max, 12.0V rated, 10.8V min		Current (peak)	Up to 400mA
Current (peak)	Up to 450mA		Max RPM (+/- 5%)	Up to 3150 RPM
Max RPM (+/- 5%)	Up to 3000 RPM		Min RPM (+/- 20%)	600 RPM
Min RPM (+/- 20%)	1000 RPM		Operating Temp	0 to 70C
Operating Temp	0 to 70C		Operating Humidity	85% relative humidity @ 55C
Operating Humidity	85% relative humidity @ 55C		Fan Protection	Locked-rotor/polarity protected
Fan Protection	Locked-rotor/polarity protected		Sense Frequency	2 pulses/Rev, 12V pull-up with 10Kohm
Sense Frequency	2 pulses/Rev, 12V pull-up with 10Kohm		PWM Frequency	25KHz +/- 5KHz
PWM Frequency	25KHz +/- 5KHz		PWM Pull-up Voltage	5.25V max
PWM Pull-up Voltage	5.25V max		PWM Duty Cycle Range	0–100%
PWM Duty Cycle Range	0–100%			

HEAT SINK SPECS

Heat sink fin material	Aluminum
Heat sink base/core material	Copper Heat Column
Heat sink fastener* material	Stainless Steel

Attaches to supplied backplate

Heat sink fin material	Aluminum
Heat sink base/core material	Aluminum

Notices & Disclaimers

Intel technologies may require enabled hardware, software or service activation.

No product or component can be absolutely secure.

Your costs and results may vary.

Includes the effect of Intel Thermal Velocity Boost, a feature that opportunistically and automatically increases clock frequency above single-core and multi-core Intel Turbo Boost Technology frequencies based on how much the processor is operating below its maximum temperature and whether turbo power budget is available. The frequency gain and duration is dependent on the workload, capabilities of the processor and the processor cooling solution.

Performance varies by use, configuration and other factors. Learn more at www.Intel.com/PerformanceIndex.

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