SILENT WINGS 4

PLEASE NOTE

The information in this document is under embargo until Tuesday, June 14, 2022, at 13.00 CET / 7.00 EDT. Please do not publish any Silent Wings 4 or Silent Wings Pro 4 information that you received from this document, or from be quiet! or people acting on behalf of be quiet! prior to the embargo date, and please do not make the information available to people outside your organization.
From the embargo date on, you are welcome to publish all information on the Silent Wings 4 fan series contained in this document or that you acquired in non-confidential communication with representatives from be quiet!.

The planned release date for Silent Wings 4 and Silent Wings Pro 4 is July 19, 2022, with a press release announcement on July 5, 2022. This may be subject to change. Please do not publish any content with images, videos, or test data of the Silent Wings 4 series products that you created yourself before the (preliminary) review embargo date on July 19. Your contact person at be quiet! will update you further.

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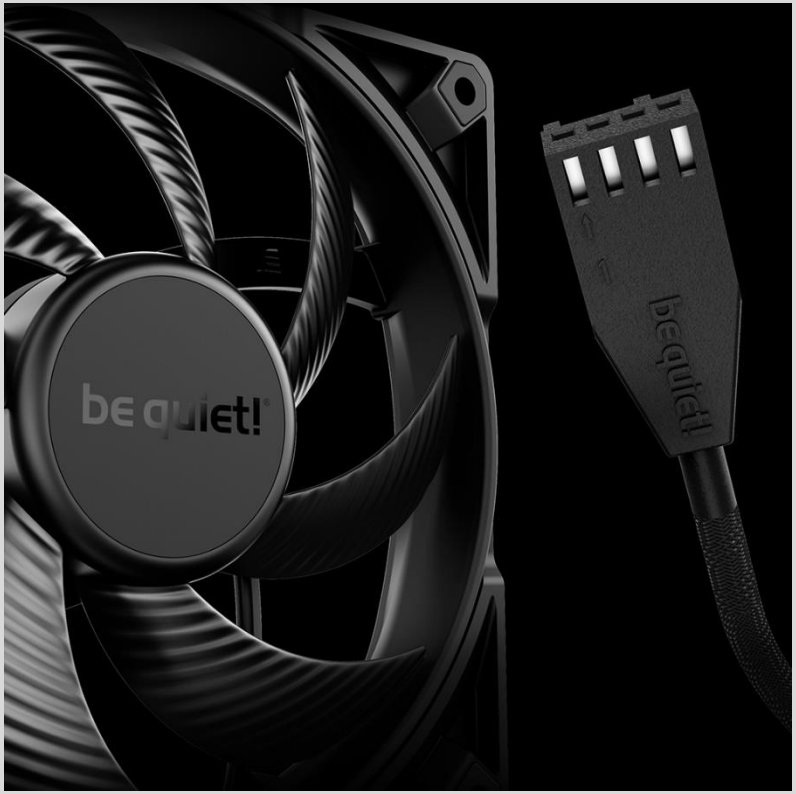
SILENT WINGS 4



DEVELOPMENT

Silent Wings 3 was an extremely successful fan and well-liked by customers and media alike. Following in its footsteps would not be easy, so be quiet! took time to decide where they would want to take their flagship fan series next.

While some ideas, like the durable and convenient connector of the Silent Wings Pro 4 are over ten years old and could not be realized in any project since then, actual development for the Silent Wings 4 series started in 2017, about a year after Silent Wings 3's release.

In 2018, be quiet! decided on the first features and the general focus. Silent Wings 4, which became clear very early, should be geared towards more performance, especially on radiators, while maintaining a low noise profile.

2019 was used for extensive simulations and building a 3D model of Silent Wings 4.

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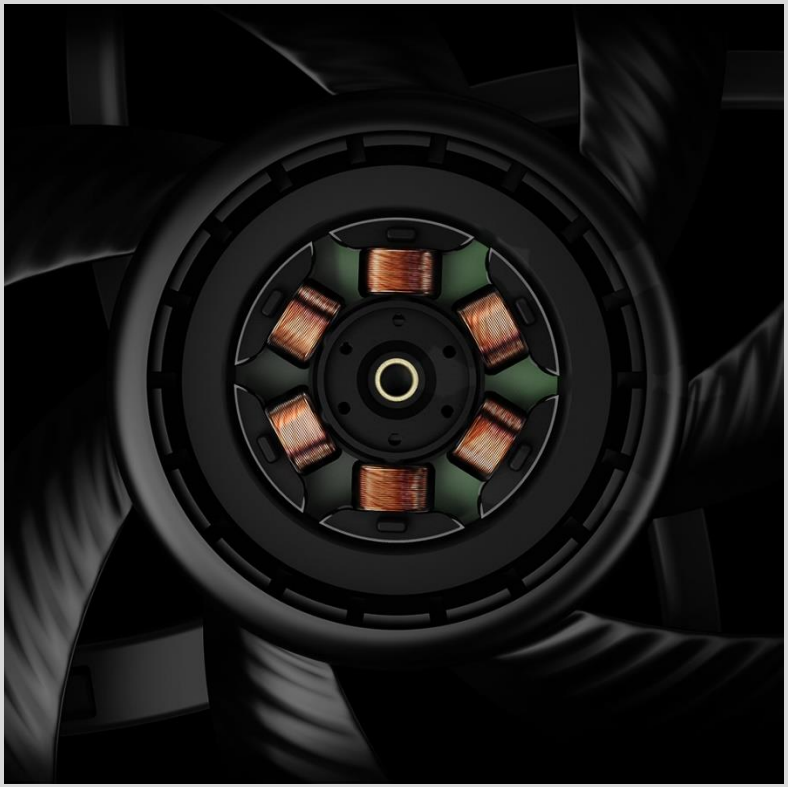

DEVELOPMENT

The first 3D-printed prototype was finished in early 2020. Now be quiet! had to test and tweak each prototype generation to get closer to the desired results.

Work on the tooling started in early 2021. At the same time, a patent application for the speed switch was filed in relevant regions.

Silent Wings 4 and Silent Wings Pro 4 are the best fans be quiet! has ever conceived. Allowing a higher range of up to 3,000 RPM is a new direction that should appeal to a new audience who values performance over silence. At the same time, the Silent Wings 4 series offers a huge RPM range and is extremely silent up to common speed, allowing the user to choose what best suits their needs.

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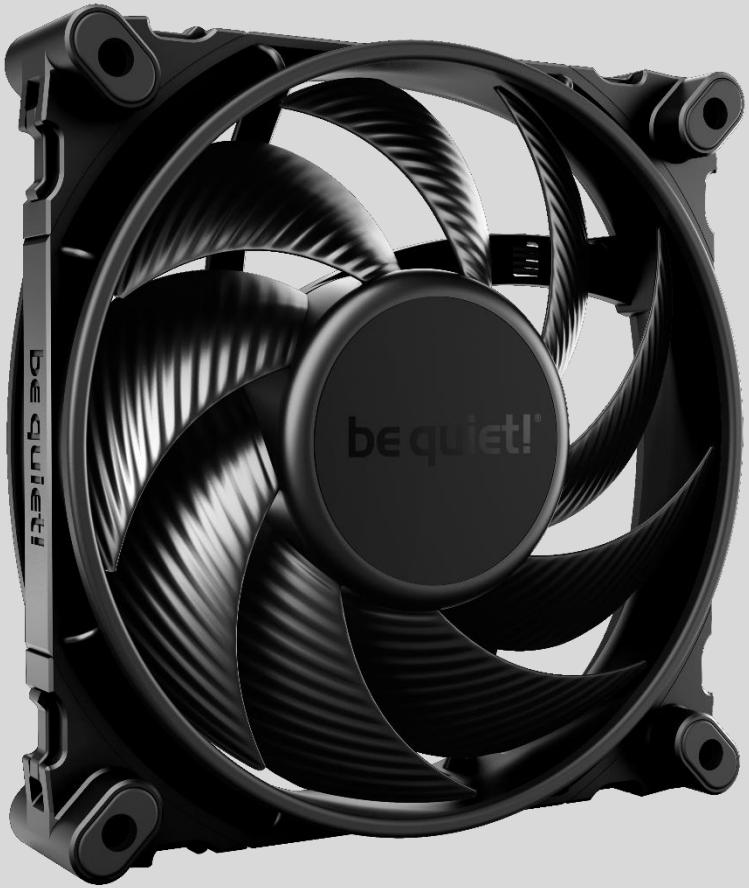

NO COMPROMISE SILENCE AND PERFORMANCE

The new generation of Silent Wings combines established and proven strengths like the 6-pole fan motor and the fluid-dynamic bearing for smooth and silent operation with new and improved features like a smaller tip clearance and optimizations for higher air pressure and airflow. Silent Wings 4 manages to spin faster and put out more performance at similar noise levels as its predecessor.

Highlights of the Silent Wings 4:

- New blade arrangement and smaller tip clearance for improved performance on heat sinks and radiators
- 6-pole fan motor for less power consumption and vibration
- Virtually inaudible operation at regular speed
- Fluid-dynamic bearing enables a super-long life span of 300,000h
- Higher maximum RPM
- User-friendly mounting mechanism for easier installation with two mounting options

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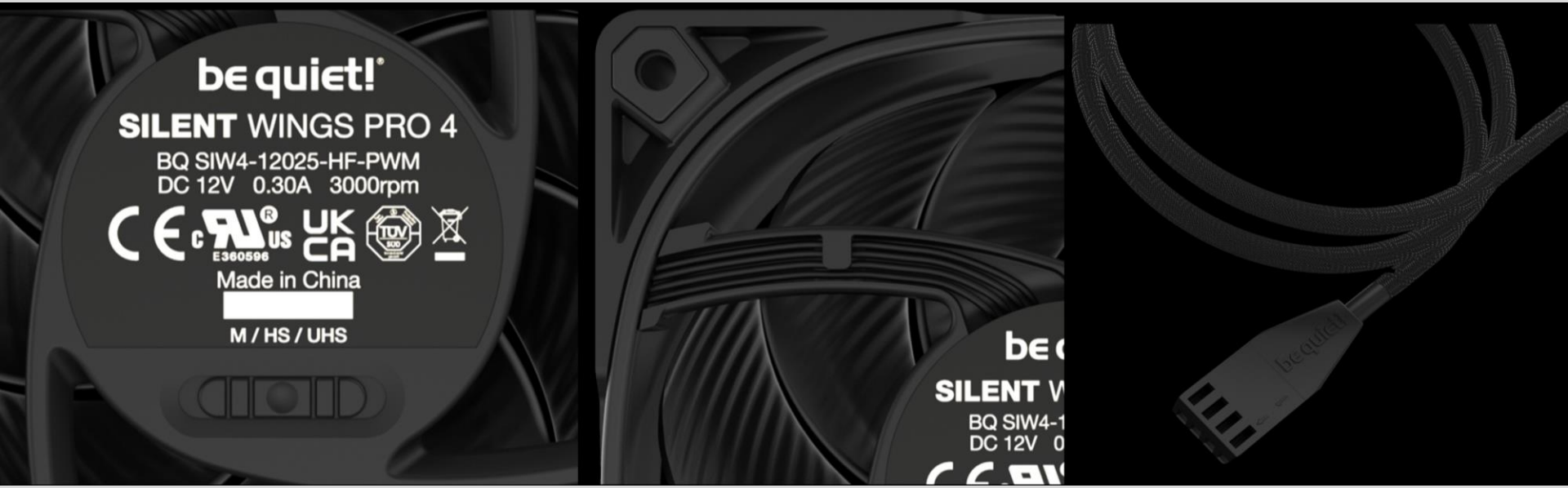

ADDITIONAL FEATURES OF SILENT WINGS PRO 4

- Speed switch allows changing between medium, high and ultra-high speed in a second
- Higher maximum RPM range
- Three mounting corner solutions for any use case: radiator optimized, anti-vibration mounting, plastic mounting
- Premium sleeved fan cable with an easy-to-handle 4-pin connector

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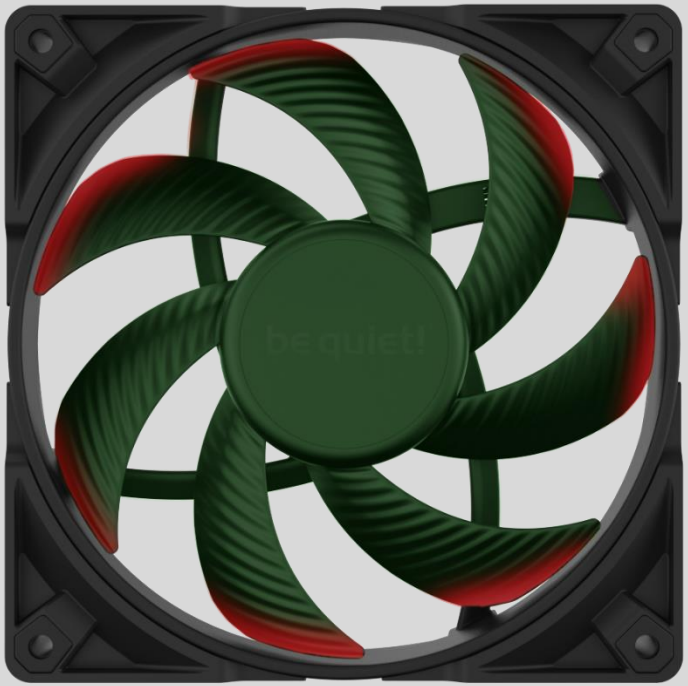

SMALLER TIP CLEARANCE FOR HIGH AIR PRESSURE

The blade tip of an axial fan is spinning faster than the part directly connected to the hub. This results in higher air pressure near the fan frame, as illustrated in the graphic to the left by the red areas. The higher the distance between the blade tip and frame, the more air leaks. A tighter tip clearance increases the fan's overall air pressure and airflow.

be quiet! has reduced the already low tip clearance of 1.2mm from Silent Wings 3 to 1mm for both the 120mm and 140mm versions of Silent Wings 4 and Silent Wings Pro 4, to make use of a larger portion of the available area and generate higher pressure. The optimized combination of the fan blade and frame design and tip clearance ensures enthusiast-level performance ready to face any challenge under noise-normalized conditions.

The exhaust of the fan frame is funnel-shaped, which distributes the cool air over a larger area, increasing the performance on radiators.

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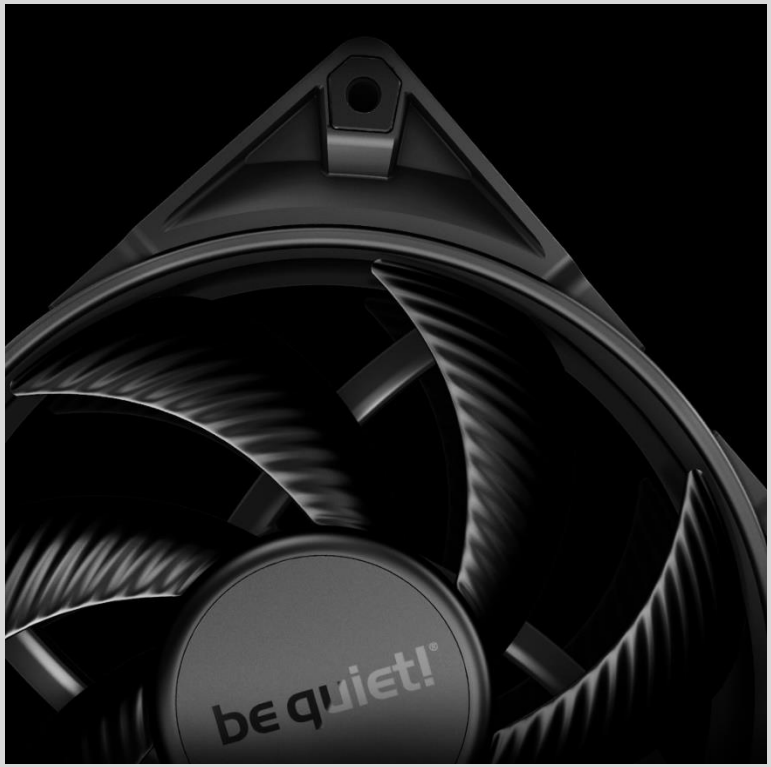

MOUNTING CORNERS FOR DIFFERENT USE-CASES

Silent Wings 4 comes with mounting corners for convenient push-pin installation and corners for installation via screws.

Silent Wings Pro 4 includes mounting corners that are specially designed for use on radiators as well. In internal tests, these radiator corners performed 0.8K better than the regular mounting corners on a Silent Loop 2 240mm at 1,600 RPM and on a heat dummy with 250 watts waste heat output.

This effect becomes more prevalent at lower RPM.

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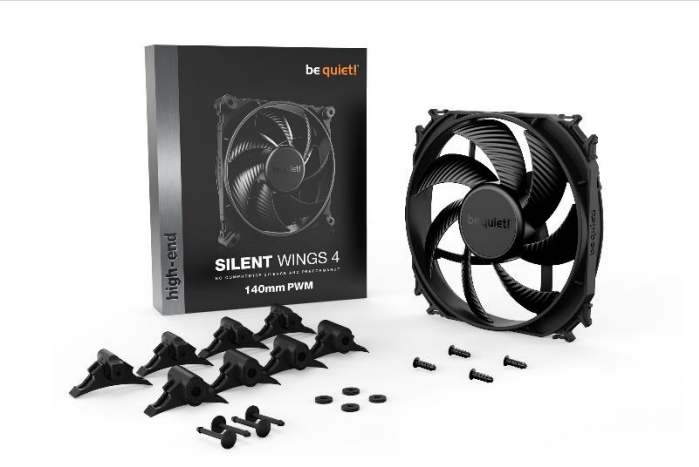

WHAT MATERIALS ARE USED?

For fan blades, frame and mounting corners, be quiet! is using polybutylene terephthalate (PBT), reinforced with up to 30% fiber glass. This material does not show any signs of impeller creep at the specified maximum RPM of 3,000, even after long periods.

Long-term tests with Silent Wings 3 showed that even if the fans are spinning non-stop at maximum speed (~1,450 RPM) for 4+ years, the impeller creep with this material is neglectable.

Working with PBT also allows be quiet! to achieve its smooth, black signature design.

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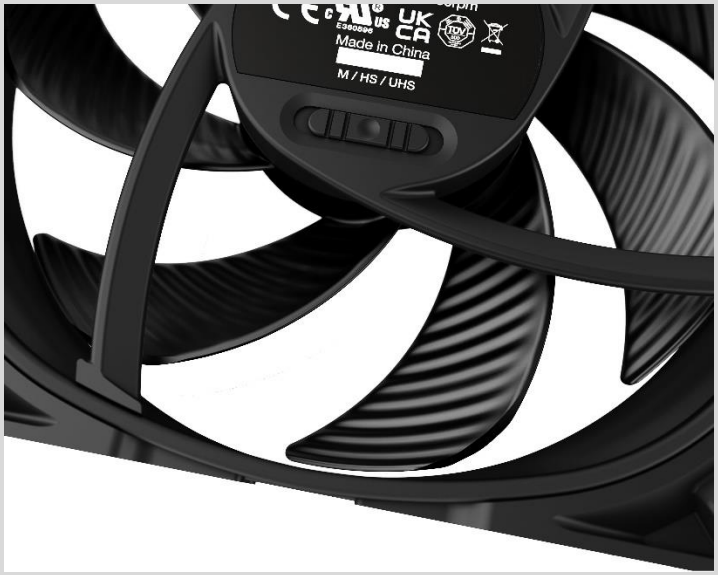

WHAT DOES THE SPEED SWITCH DO?

The speed switch of Silent Wings Pro 4 is a patent pending technology, that allows users to change the maximum RPM of its stored PWM profiles.

The speed switch helps keep the SKU portfolio clean, as Silent Wings Pro 4 is essentially three products in one and makes a low-noise cable obsolete. It is ideal for users who are not interested in fine-tuning their PWM fan curves and they can simply select the desired maximum speed with a switch and do not have to worry about anything else.

While flipping the speed switch during operation is possible without damaging the fan, most users will select their preferred mode during installation.

FAN SPEED

	Variant	Max. speed	Min. speed
Silent Wings 4	120mm	1600 RPM	~10-15% of maximum RPM
	140mm	1100 RPM	
	120mm PWM	1600 RPM	
	140mm PWM	1100 RPM	
	120mm PWM high-speed	2500 RPM	
	140mm PWM high-speed	1900 RPM	
Silent Wings Pro 4	120mm PWM	1600 RPM (medium) 2500 RPM (high-speed) 3000 RPM (ultra-high-speed)	
	140mm PWM	1100 RPM (medium) 1900 RPM (high-speed) 2400 RPM (ultra-high-speed)	

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	Silent Wings 4	Silent Wings Pro 4
Variants	3-pin | PWM | PWM high-speed	PWM
Sizes	120mm | 140mm	120mm | 140mm
Speed switch	X	medium | high-speed | ultra-high-speed
New blade arrangement	√	√
Smaller tip clearance	√	√
6-pole fan motor	√	√
Fluid-dynamic bearing	√	√
Mounting options	screwed | push-pin	screwed | push-pin | radiator optimized
Sleeved fan cable with 4-pin connector	standard sleeve	high-grade sleeve
be quiet! fan sticker	stealth black	stealth black

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	SILENT WINGS 4 140mm PWM high-speed	**SILENT WINGS 4 140mm PWM**	**SILENT WINGS 4 140mm**	**SILENT WINGS 4 120mm PWM high-speed**	**SILENT WINGS 4 120mm PWM**	**SILENT WINGS 4 120mm**
Art. No.	BL097	BL096	BL095	BL094	BL093	BL092
Launch (preliminary)	Announcement: July 5 2022 Sales start and review embargo: July 19 2022					
Price MSRP $ | MSRP €	23.90$ | 24.90€	23.90$ | 24.90€	23.90$ | 24.90€	22.90$ | 23.90€	22.90$ | 23.90€	22.90$ | 23.90€

SILENT WINGS PRO 4

	SILENT WINGS PRO 4 140mm PWM	**SILENT WINGS PRO 4 120mm PWM**
Art. No.	BL099	BL098
Launch (preliminary)	Announcement: July 5 2022 Sales start and review embargo: July 19 2022	
Price MSRP $ | MSRP €	31.90$ | 32.90€	30.90$ | 31.90€