



# Super Silence Fan

\*All products are **RoHS** compliant.



**SUNON**<sup>®</sup>

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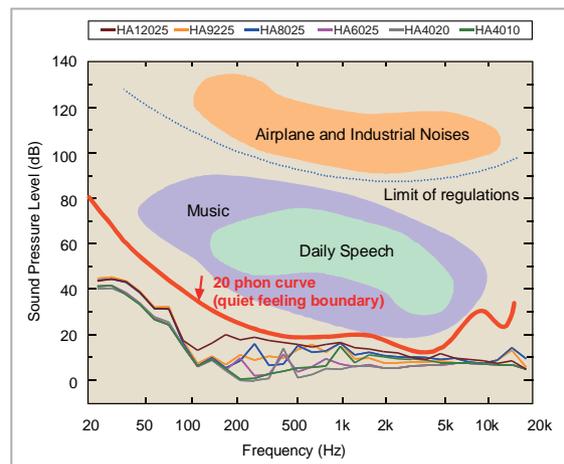
# Super Silence Fan



Incorporating highly ergonomic technology with the lifestyles of the future, Sunon has developed the “Super Silence” fan series, which is characterized by our insistence on maintaining the best environmental quality and paying attention to minute detail. This series is designed and engineered to ensure the best sound quality. Using multidimensional noise analysis, the sound quality has been improved from traditional acoustic norms to psychoacoustic levels. Micro-motor technology has allowed us to create the maximum possible space between fan blades and air channels. With its low rotating speed, the fan performs silently while still maximizing cooling efficiency. “Super Silence” fan series have low voltage characteristic and are designed for a wide range of uses.

These fans have medical, household, commercial, and many other applications. They also will create a soothing and ergonomic user environment and carry on the "Cool" and "Quiet" traditions typical of SUNON products.

Sunon’s “Super Silence” fan series was tested with standard digital home equipment located one meter away from the user. Based upon "ISO 532B hearing sensation" and charts on human auditory reactions that were plotted for different decibel and frequency levels, the threshold noise level for Sunon's Super Silence series' is below 20 phon, the minimum level that is discernible in daily living.



## about Sunon

Sunon was founded in 1980 and has always upheld the philosophy of “Brand, Innovation, and Value” for their business operations. From the start, the Sunon name has become an international trademark that is well recognized and featured on products sold worldwide. Over the years, Sunon has continuously focused on developing and making innovations for their core motor technology, leading the industry in product trends for motors, cooling fans, and cooling modules. Sunon is one of the few operations in the world with a motor R&D team and is fully capable of developing innovative new motor designs. Examples for the R&D efforts are the world’s first MagLev design and Sunon Mighty Mini series, featuring a compact sub-centimeter size that is the world’s smallest and thinnest fan. Today, Sunon is the worldwide leader in precision motors and micro miniature fans, and is widely recognized by the industry as the designated partner for various multinational corporations. Sunon products are widely used in various applications and industries such as information technology, network communications, optoelectronics, and automobile electronics industries, as well as in industrial production equipment, medical equipment, home applications, OA machines, and others.

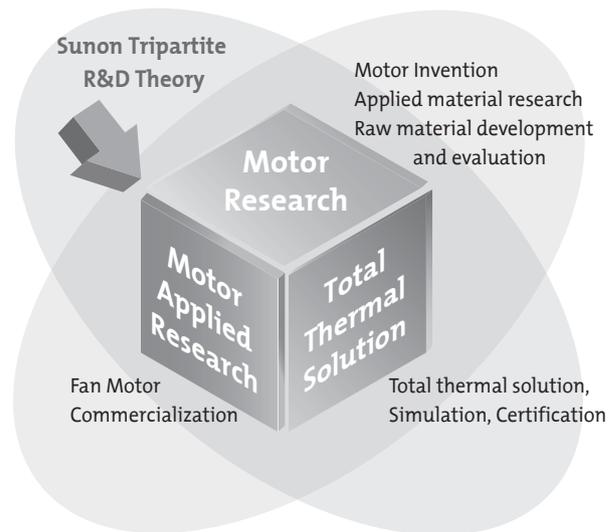
## Sunon Research Center the Driving Engine for Inventions and Innovations

Sunon established the “Sunon Research Center” in Kaohsiung in 2002 to promote and execute the innovation blueprint for Sunon Group. Research labs and engineers from Europe, America, Japan, and China are centralized to form a worldwide technological service network for quick and efficient services.

### Key Modules for Innovating Core Motor Technology

Sunon has been researching their motor technology for over 30 years and adhering to the Sunon R&D Trinity as their innovation roadmap, focusing on the three major technology fields of “Motor Research,” “Motor Applied Research,” and “Total Thermal Solution.” Sunon strives to expand the endless possibilities and optimization of motor applications and will continue to make breakthroughs and product innovations. The efforts will push Sunon to the front of the technology curve and clients will be able to realize their future dream products with the three key Sunon products of motors, cooling fans, and cooling modules.

Sunon has the capacity to design and implement the complete magnetic, mechanical, and driving circuit of a motor to conform to client design specifications. With the efforts of the mechanism and electrical circuit engineering teams, Sunon recognizes the needs of their clients regarding cooling modules and can provide flexible designs for high performance and high quality cooling fans. Sunon utilizes advanced simulation systems and analysis projects that result in an even more accurate heat analysis and heat dissipation design for the system. Subsequently the most efficient total thermal solution can be provided to the client.



## SUNON Sound Quality Analysis and Research

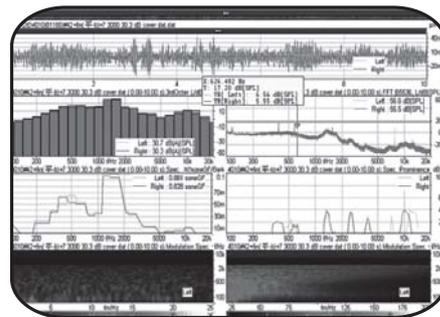
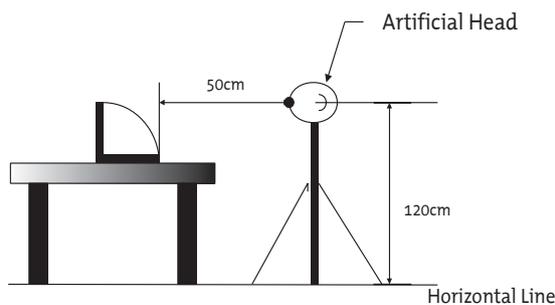
Sunon introduced acoustics engineering in the year 2000 to transform the traditional school of Sound Pressure and Sound Power into the more advanced theory of Sound Quality. Sunon's Sound Quality analysis and research is performed by Head Measurement System (HMS). The HMS system records and simulates the auditory senses of the human ears, where the sounds, vibration, rotation speed, and electrical signals are measured. The software subsequently performs time domain and sound quality parameter analysis to assist the acoustics engineers in allowing Sunon products to feature a more favorable sound quality. The expertise and experience of the acoustics engineer combined with the software analysis will result in an even more user-friendly environment that is rivaled by none.

### Sound Quality Testing

Sound quality is measured in an semi anechoic chamber by means of Head Measurement System (HMS).

The Sound quality of fans can be described according to the objective parameter of sound (Loudness, Tonality, Roughness/Fluctuation, Sharpness).

After the recording of acoustic signals, the data is performed the FFT, order Psycho acoustic And modulation analyses and playback diagnosis in order to improve the sound quality of fans.



### The mobile Sound Quality Laboratory SQLab II

SQLab II is a compact, mobile multi-channel measurement system for acoustic analysis, vibration investigation and sound design. It is used wherever investigation of sound quality should be combined with vibrational measurements.

The comparison of vibrational measurements with acoustic signals enables the user to draw direct conclusions from sound sources and their sound quality. For this purpose, SQLab II is able to measure aurally-accurate recordings of sound events using an Artificial Head and vibration data with accelerometers, etc. at the same time. Thus, correlations between the subjective aural impressions of sound events (airborne sound) and the related sources (vibration, solid-borne sound) as well as transfer mechanisms become apparent. This is the basis for sound optimization. Moreover, SQLab II can be used as a "stethoscope" for error analysis.

### The Analysis Software

It can analyze, filter, display and document acoustic and vibration measurement data in a wide range of modes. Yet an outstanding feature of this software is the possibility of including the aural sense of the human user in signal analysis.

### HEADphone Playback System

The digital 24 bit HEADphone Playback System HPS IV is complementary to the Head Measuring System HMS III. Conditioning of audio data for aurally-accurate playback is via equalization of the acoustic signal in the programmable Equalizer PEQ IV, with subsequent amplification via the Power Amplifier PVA IV.2. Two electrostatic headphones can be connected to the playback system, which are individually calibrated and correspondingly driven.

## Sunon Reliability Verification System

Sunon has 5 reliability testing labs worldwide equipped with the topmost precision verification instruments for testing from the design phase, through pre-production, and into mass production. The complete verification system is computerized and fully automated for precise analysis of product reliability and quality satisfaction to meet the market requirements.

## Sunon Production Network

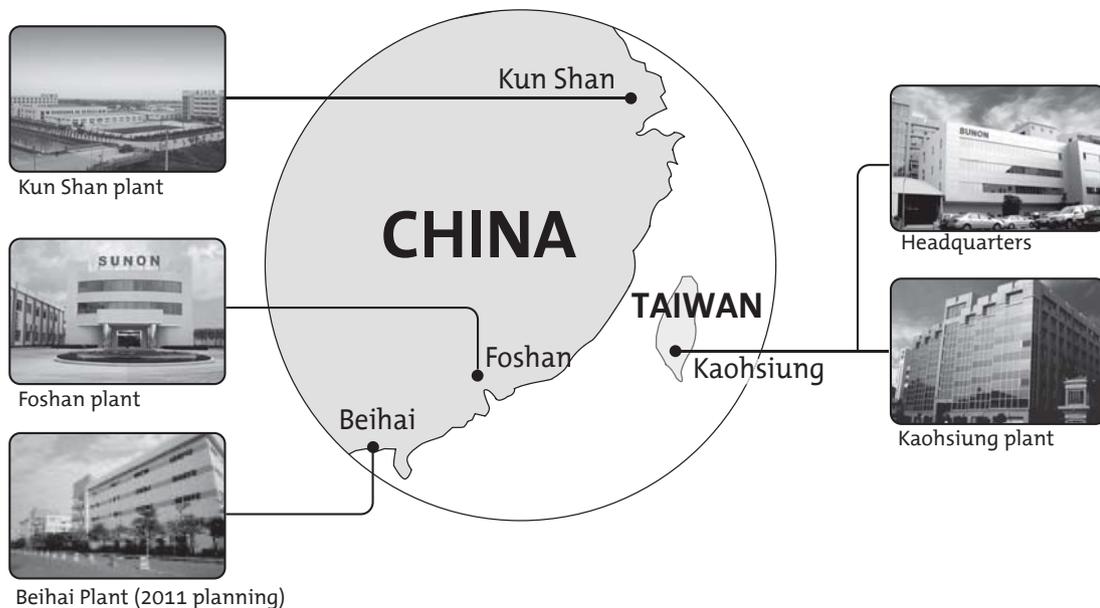
Sunon Group has a total of four manufacturing plants located in both China and Taiwan for production of 8mm~250mm series of fan products, 0.1Watt~60Watt of motor products, and various cooling module products. The overall monthly production output capacity is 20 million units.

In addition to the MES system that provides clients with the best manufacturing quality, Sunon goes well beyond industry standards in production, assembly, inspection equipment design and deployment. Sunon has also committed large amounts of manpower and material resources, and adopted the newest hardware and software equipment, in our quest for quality. For example, an automated production line for cooling products, the self-developed automated inspection machine for the production line, a heat inspection system capable of six simultaneous measurements, and an independent barcode with each cooling product indicate Sunon's commitment.

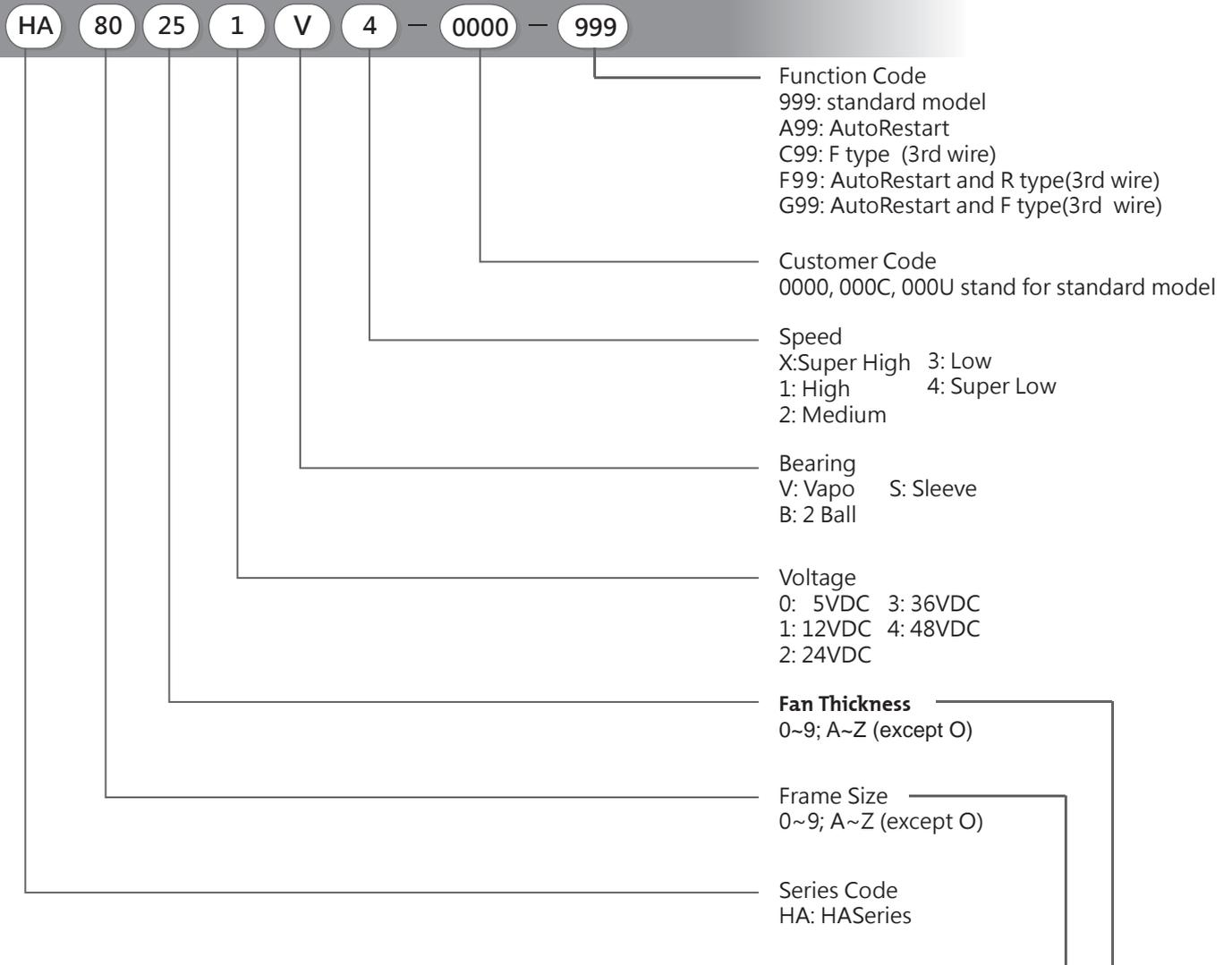
Sunon manufacturing bases have obtained certifications for QS9000, ISO9001, ISO14001, ISO/TS16949, OHSAS18001 and IECQ QC080000. Each product has passed UL, TUV, VDE, CCC, CSA certifications and so on.

**All Sunon products are RoHS compliant from design phase to mass production.**  
**Sunon is the long-term green partner for SONY, CANON, SAMSUNG and various other multinational companies**

Sunon deeply recognizes its corporate duty to protect our earth and the ecosystem and to reduce the use of materials that impact the environment. In light of this, Sunon has been actively promoting green product design, green purchasing, and green manufacturing reforms. All current product series conform to EU RoHS and China RoHS, and Sunon has been selected as the green environment partner for multinational corporations such as SONY, CANON, and SAMSUNG. All of the aforementioned efforts will result in greener products that have the least impact on the worldwide environment.



# SUNON® New Model Numbering System

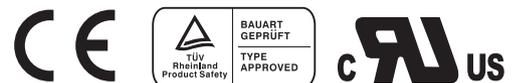


Code	Size(mm)	Code	Size(mm)	Code	Size(mm)	Code	Size(mm)
01~09	01~09	A0~A9	100~109	K0~K9	200~209	V0~V9	300~309
10~19	10~19	B0~B9	110~119	L0~L9	210~219	W0~W9	310~319
20~29	20~29	C0~C9	120~129	M0~M9	220~229	X0~X9	320~329
30~39	30~39	D0~D9	130~139	N0~N9	230~239	Y0~Y9	330~339
40~49	40~49	E0~E9	140~149	P0~P9	240~249	Z0~Z9	340~349
50~59	50~59	F0~F9	150~159	Q0~Q9	250~259		
60~69	60~69	G0~G9	160~169	R0~R9	260~269		
70~79	70~79	H0~H9	170~179	S0~S9	270~279		
80~89	80~89	I0~I9	180~189	T0~T9	280~289		
90~99	90~99	J0~J0	190~199	U0~U9	290~299		

## Certification



## Safety



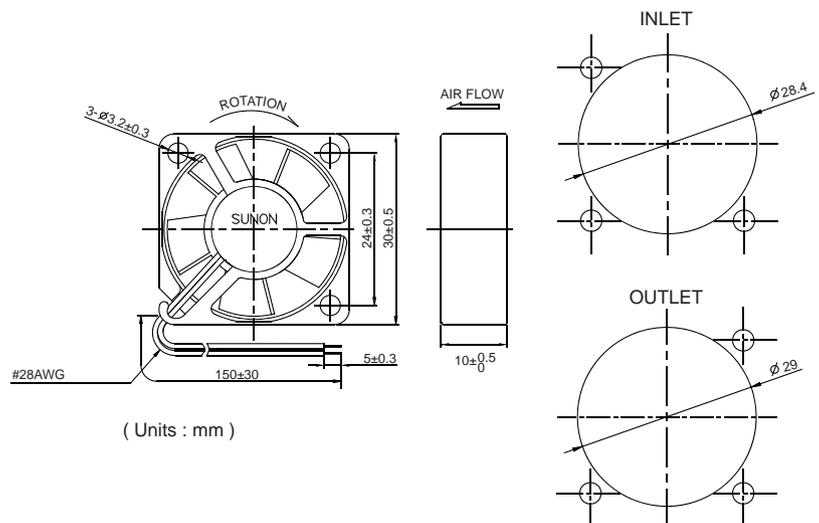
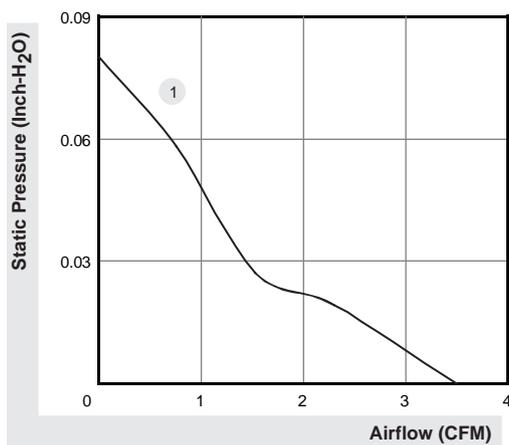
\* Note: For critical or extreme environments, including non stop operation, please contact Sunon and we will gladly provide assistance with your product selection to ensure an appropriate cooling product for your application.  
 \* Note: The "Life Expectancy" of the fan has not been evaluated for use in combination with any end application. Therefore, the Life Expectancy Test Reports(L10 and MTTF Report) that relate to the fan are only for reference.

## 30x30x10 mm

## 3.5 CFM



	P/N	Bearing	Rating Voltage (VDC)	Power Current (mA)	Power Consumption (WATTS)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H <sub>2</sub> O)	Noise (dBA)	Weight (g)	Curve
		● VAPO									
HA30101V3-0000-A99		●	12	36	0.44	7000	3.5	0.08	17.6	8.5	1



\*All model could be customized. Please contact with Sunon Sales.

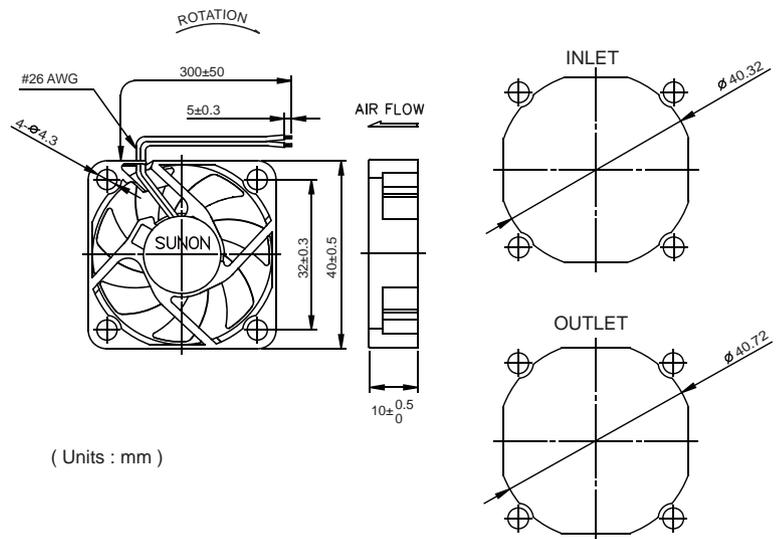
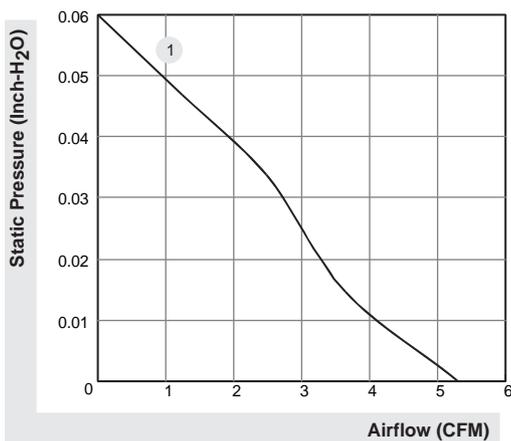
\*Specifications are subject to change without notice. Please Visit SUNON web site at <http://www.sunon.com> for update information.

40x40x10 mm

5.3 CFM



	P/N	Bearing	Rating Voltage (VDC)	Power Current (mA)	Power Consumption (WATTS)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H <sub>2</sub> O)	Noise (dBA)	Weight (g)	Curve
		● VAPO									
HA40101V4-0000-999		●	12	65	0.8	4500	5.3	0.06	18.2	14.7	1



\*All model could be customized. Please contact with Sunon Sales.

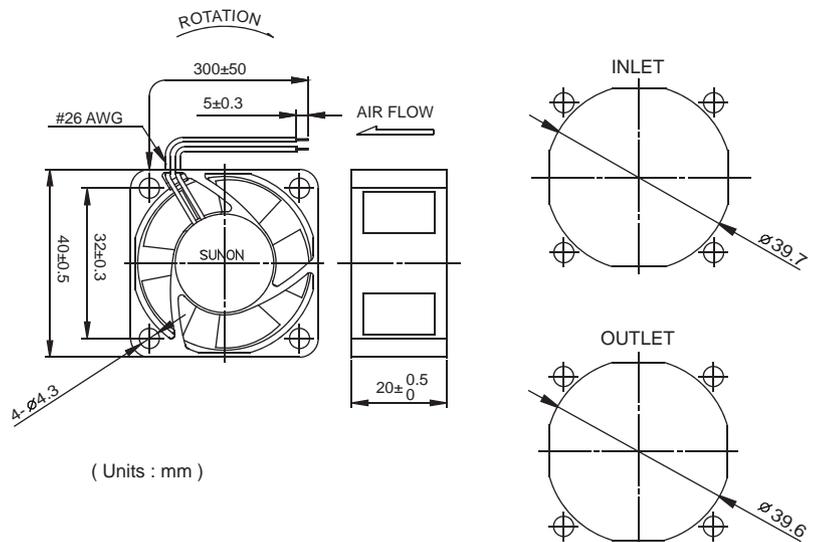
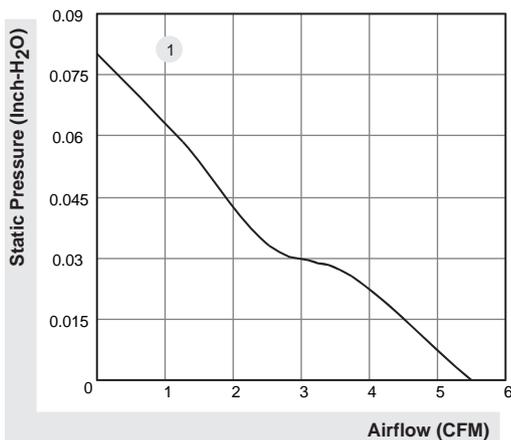
\*Specifications are subject to change without notice. Please Visit SUNON web site at <http://www.sunon.com> for update information.

40x40x20 mm

5.5 CFM



 HA40201V4-0000-999	Bearing	Rating Voltage (VDC)	Power Current (mA)	Power Consumption (WATTS)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H <sub>2</sub> O)	Noise (dBA)	Weight (g)	Curve
	● VAPO	12	45	0.6	4700	5.5	0.08	12.8	30.6	1



\*All model could be customized. Please contact with Sunon Sales.

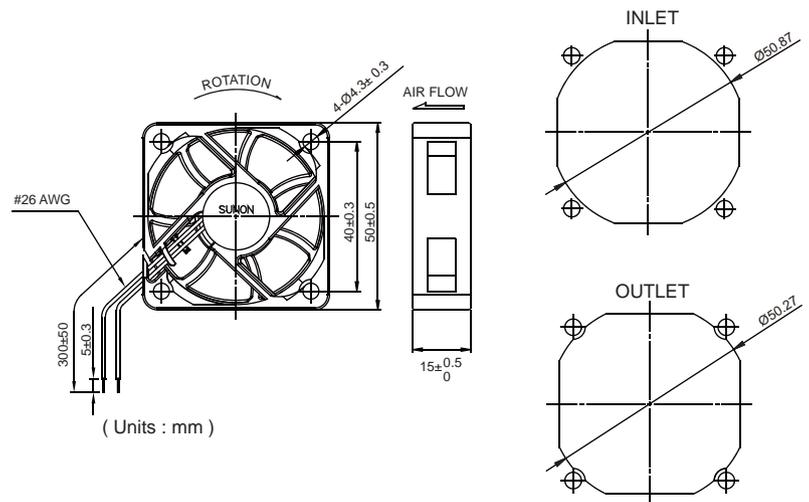
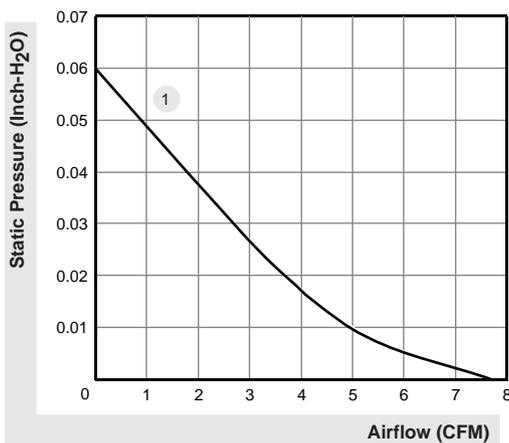
\*Specifications are subject to change without notice. Please Visit SUNON web site at <http://www.sunon.com> for update information.

## 50x50x15 mm

## 7.7 CFM



 HA50151V4-0000-999	Bearing	Rating Voltage (VDC)	Power Current (mA)	Power Consumption (WATTS)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H <sub>2</sub> O)	Noise (dBA)	Weight (g)	Curve
	● VAPO	12	45	0.5	3200	7.7	0.06	17	29	1



\*All model could be customized. Please contact with Sunon Sales.

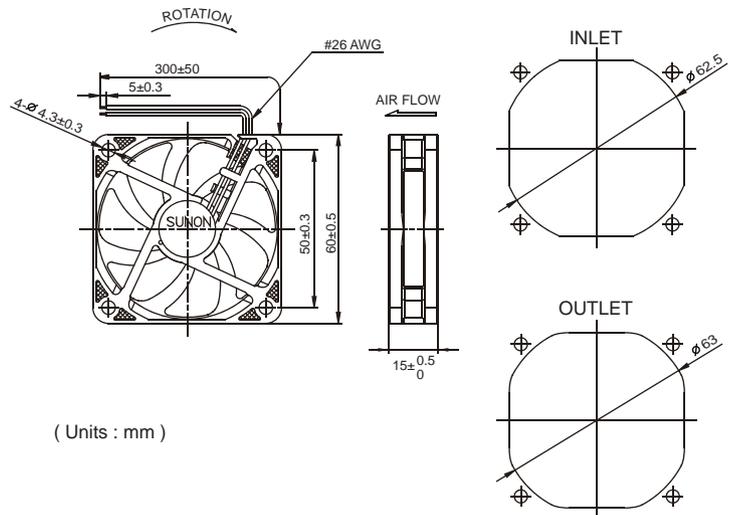
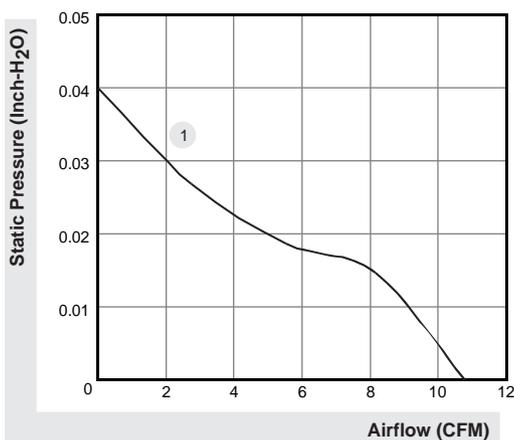
\*Specifications are subject to change without notice. Please Visit SUNON web site at <http://www.sunon.com> for update information.

60x60x15 mm

10.8 CFM



 HA60151V4-0000-999	Bearing	Rating Voltage (VDC)	Power Current (mA)	Power Consumption (WATTS)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H <sub>2</sub> O)	Noise (dBA)	Weight (g)	Curve
	● VAPO	12	52	0.6	2500	10.8	0.04	14.5	36	1



\*All model could be customized. Please contact with Sunon Sales.

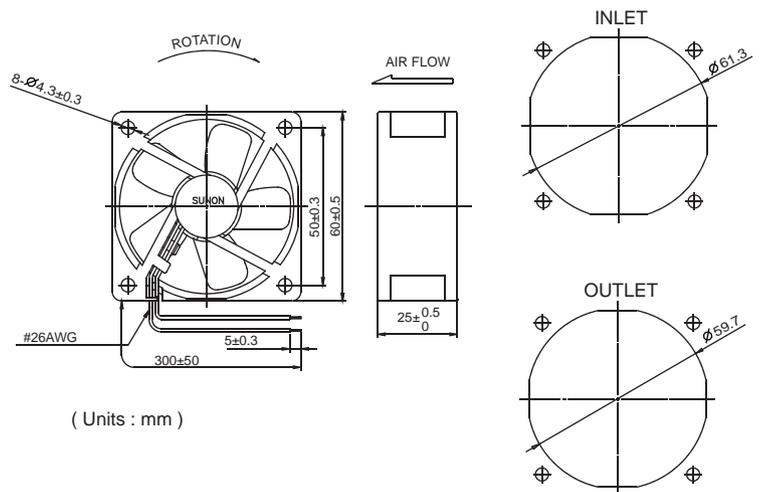
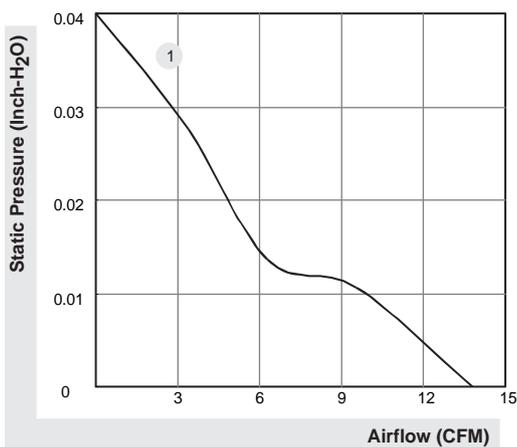
\*Specifications are subject to change without notice. Please Visit SUNON web site at <http://www.sunon.com> for update information.

60x60x25 mm

13.8 CFM



 HA60251V4-0000-999	Bearing	Rating Voltage (VDC)	Power Current (mA)	Power Consumption (WATTS)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H <sub>2</sub> O)	Noise (dBA)	Weight (g)	Curve
	● VAPO	12	60	0.7	2500	13.8	0.04	13.8	41.5	1



\*All model could be customized. Please contact with Sunon Sales.

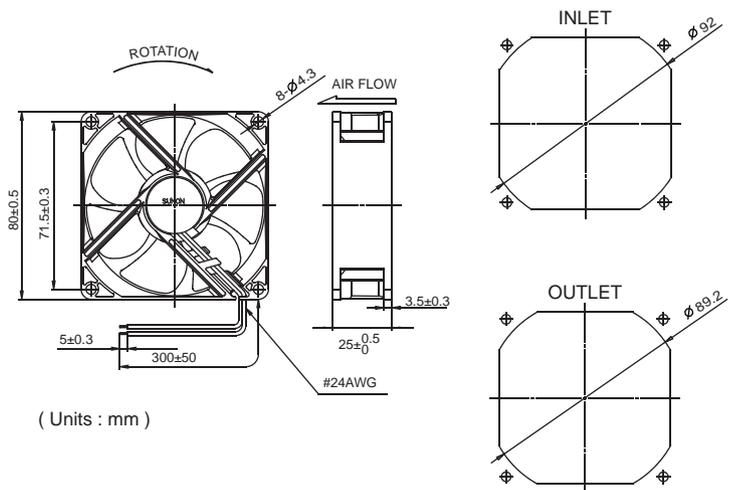
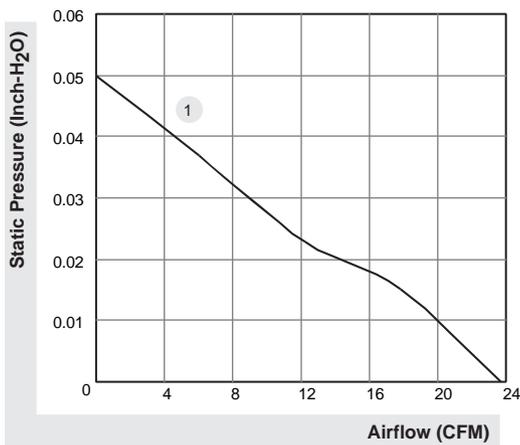
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80x80x25 mm

23.7 CFM



 HA80251V4-0000-999	Bearing	Rating Voltage (VDC)	Power Current (mA)	Power Consumption (WATTS)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H <sub>2</sub> O)	Noise (dBA)	Weight (g)	Curve
	● VAPO	12	66	0.8	2000	23.7	0.05	22.1	62.4	1



\*All model could be customized. Please contact with Sunon Sales.

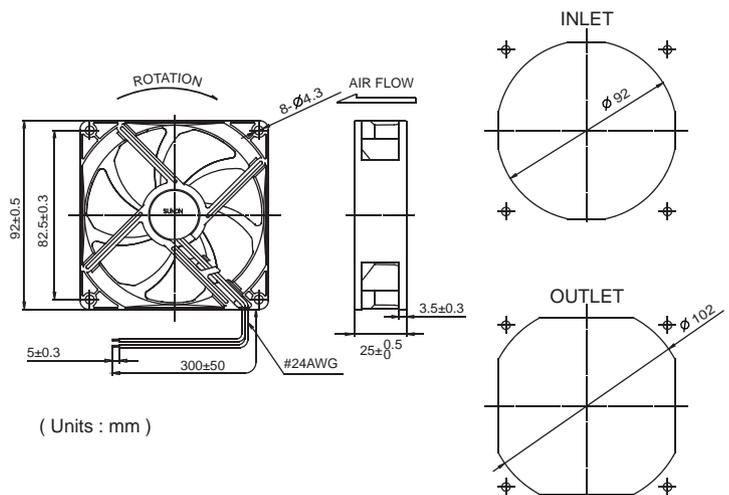
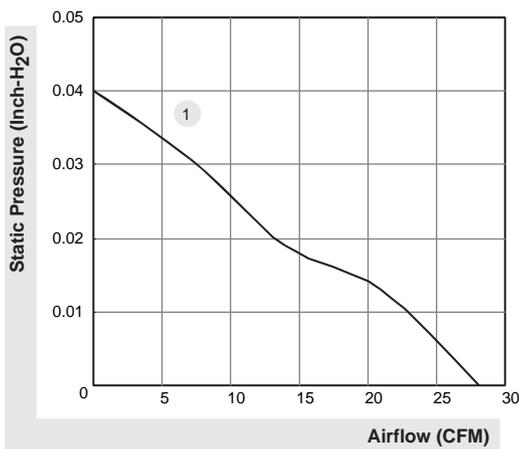
\*Specifications are subject to change without notice. Please Visit SUNON web site at <http://www.sunon.com> for update information.

92x92x25 mm

28.1 CFM



 HA92251V4-0000-999	Bearing	Rating Voltage (VDC)	Power Current (mA)	Power Consumption (WATTS)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H <sub>2</sub> O)	Noise (dBA)	Weight (g)	Curve
	● VAPO	12	73	0.9	1700	28.1	0.04	17.7	69.7	1



\*All model could be customized. Please contact with Sunon Sales.

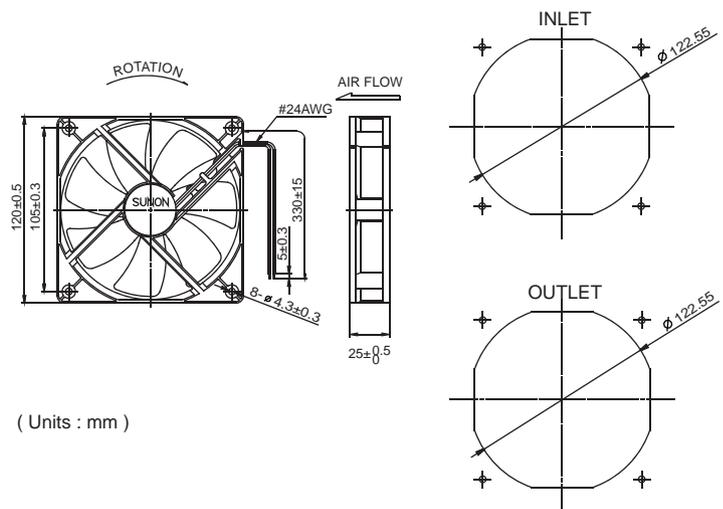
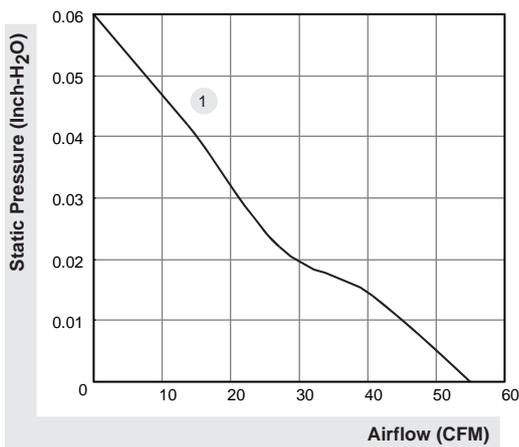
\*Specifications are subject to change without notice. Please Visit SUNON web site at <http://www.sunon.com> for update information.

## 120x120x25 mm

## 55 CFM



Model	Bearing ● 2BALL ○ Sleeve	Rating Voltage (VDC)	Power Current (mA)	Power Consumption (WATTS)	Speed (RPM)	Air Flow (CFM)	Static Pressure (Inch-H <sub>2</sub> O)	Noise (dBA)	Weight (g)	Curve
HAC0251S4-0000-999	○	12	160	1.9	1600	55	0.06	29.6	99	1



\*All model could be customized. Please contact with Sunon Sales.

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SUNON®

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