

# Cooling Systems Division

Koichi Uchibori

Cooling fans are now equipped in power conditioners of photovoltaic power systems, high-brightness LED lighting devices and charging stations for electric vehicles due to the increase in the amount of heat these devices generate.

Such devices must operate in harsh environments such as outdoors, exposed to wind and rain, therefore the fans they are equipped with must offer a level of water protection and longer life due to being maintenance free.

We have gathered together the splash-proof technology (IP68 class) accumulated by Sanyo Denki and the long-life technology with over

20 years of proven results, to create a high airflow, long-life splash-proof fan 9WL type with higher airflow and static pressure than the conventional splash-proof type. This product is available in the following three models: 60 mm sq., 25 mm thickness, 80 mm sq., 25 mm thickness and 92 mm sq., 25 mm thickness.

The heat resistant fan 9GT type was commercialized for application in severe operating environments such as cold regions and hot regions for air circulation refrigerator or freezer showcases, mobile phone base stations, photovoltaic power systems and so on.

In contrast to our conventional models' operating temperature range of -20°C to +70°C, the new models have an expanded range of -40°C to +85°C.

The fans launched in 2014 are introduced below. These fans are the result of gathering the technologies accumulated by Sanyo Denki to date and have achieved the top performance in the industry. Sanyo Denki will continue to further expand our lineup of high performance products and proceed with product development that can contribute to our customers heat countermeasures.

## ■ High airflow, long-life, splash-proof fan

DC fan

- 60 mm sq. x 25 mm thick "San Ace 60W" 9WL type
- 80 mm sq. x 25 mm thick "San Ace 80W" 9WL type
- 92 mm sq. x 25 mm thick "San Ace 92W" 9WL type

Achieves the highest life and highest airflow in the industry<sup>(\*)</sup> at the same time as having a waterproof and dustproof level equivalent to IP68.

Compared to our conventional splash-proof fan, this product has an expected life 4.5 times longer at 180,000 hours (approx. 20 years).

Power consumption has been reduced 20% and SPL (sound pressure level) has been reduced as much as 3 dB (A) at the same time as improving maximum airflow by 1.2 to 1.7 times

and maximum static pressure by 1.5 to 3.4 times.

This is an optimal product for cooling of communication devices, inverters for photovoltaic power generation and other devices which must operate in harsh environments and for extended periods of time with no servicing.



## ■ Wide temperature range fan

DC Fan

- 40 mm sq. x 28 mm thick "San Ace 40T" 9GT type
- 60 mm sq. x 25 mm thick "San Ace 60T" 9GT type
- 80 mm sq. x 25 mm thick "San Ace 80T" 9GT type
- 92 mm sq. x 25 mm thick "San Ace 92T" 9GT type
- 92 mm sq. x 38 mm thick "San Ace 92T" 9GT type
- 120 mm sq. x 38 mm thick "San Ace 120T" 9GT type

In contrast to our conventional models, which had an operating temperature range of -20°C to +70°C, the new models have an expanded range of -40°C to +85°C. Also, in regards to the expected life, the new models can offer 40,000 hours at an ambient temperature of 85°C.

These features make these fans optimal for application in refrigerating/freezing related devices, LED lighting devices, inverters for photovoltaic power generation, quick chargers for EVs and communication devices.



## ■ Low power consumption fan

DC fan

- 60 mm sq. x 10 mm thick "San Ace 60" 9GA type

As devices becoming smaller and thinner, they are also becoming high performance and generating more heat. Moreover, devices are required to conserve energy in order to respond to the issues of global environmental protection and energy. To meet such demands of our customers, Sanyo Denki has commercialized a low

power consumption fan 9GA type at a new size of 60 mm sq. 10 mm thick.

This product achieves a maximum airflow of 0.62 m<sup>3</sup>/min and a maximum static pressure of 66 Pa at the same time as suppressing power consumption to 3.24 W. This makes it the optimal fan for cooling in narrow spaces such as those in medical equipment and monitors.



## ■ High airflow, long life fan

DC fan

- 92 mm sq. x 38 mm thick "San Ace 92L" 9LG type
- 120 mm sq. x 38 mm thick "San Ace 120L" 9LG type

Achieves the highest airflow, highest static pressure and longest life in the industry<sup>(\*)</sup>. Offers an expected life of 180,000 hours (approx. 20 years) while achieving a maximum airflow 1.6 to 1.8 times and maximum static pressure 3 to 4 times greater respectively compared

with our conventional model.

This is an optimal product for the cooling of communication devices, inverters for photovoltaic power generation and other equipment which requires maintenance-free operation for prolonged periods of time.



(\*) According to a performance comparison at the time of product launch. As an axial current DC fan for industrial application. For fans of the same size. Results from Sanyo Denki inspection.



### Koichi Uchibori

Joined Sanyo Denki in 1997.  
Cooling Systems Division  
Worked on the quality management of fans.