

# Cooling Systems Division

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In recent years, due to the full-scale spread of IoT, ICT equipment is required to offer larger capacity and higher speed than ever before.

Particularly for next-generation 5G communication systems, how to secure reliability and handle heat generation within equipment due to high-speed, high-capacity data processing and transmission are issues which need addressing.

Against such a backdrop, fans

are now required to have higher performance and reliability than ever before.

Moreover, fans are expected to have water resistance due to an increasing amount of equipment for outdoor use, such as large heat exchangers, renewable energy inverters, EV charging stands, and digital signage.

Many of these equipment use DC-input fans, however, there is still

a strong demand for AC-input fans.

Using AC fans can be an effective way to simplify equipment design because it eliminates the need for a converter or DC power supply.

To meet such market demands, in 2018, we developed and launched fans with the industry-leading performance and reliability.

Below is an overview of the products we developed in 2018.

## ■ High Airflow Long Life Splash Proof Fan

DC Fan

- 92 × 92 × 38 mm *San Ace 92W 9WL* type

In recent years, there has been a growing demand for fans with higher performance and longer service life in the markets of outdoor ICT equipment and renewable energy inverters.

Also, to cultivate markets such as quick charging stations and digital signage, we need to promote fans that

feature high reliability, long service life, and water resistance.

To respond to such market demands, SANYO DENKI developed and launched the *San Ace 92W 9WL* type High Airflow Long Life Splash Proof Fan.



## ■ High Static Pressure Long Life Counter Rotating Fan

DC Fan

- $60 \times 60 \times 76$  mm *San Ace 60L 9CRLA* type

With the development of communication technology and faster and larger data transfer, today's 2U-sized IT equipment is becoming denser and generating more heat, requiring fans with higher performance than ever before.

Moreover, for high-end equipment, high reliability and long service life are essential.

We offered  $60 \times 60$  mm Long Life

Counter Rotating Fans. However, to keep up with these market changes, we needed a product with higher performance and longer service life.

To respond to such market demands, we developed and launched the *San Ace 60L 9CRLA* type with the industry's highest<sup>(1)</sup> static pressure.



(1) Based on our own research as of March 29, 2018, conducted among equally-sized axial DC fans on the market.

## ■ High Airflow Splash Proof Centrifugal Fan

DC Fan

- $\phi 175 \times 69$  mm *San Ace 175W 9W2T* type

With increased heat generation within our customers' equipment used outdoors, higher airflow is required for our Splash Proof Fans.

Moreover, in new markets such as refrigeration units, air conditioners, and dust collectors as well as outdoor ICT equipment and large inverters, there is a demand for waterproof centrifugal fans with  $\phi 175 \times 69$  mm size.

In response to such market demands, we developed and launched the *San Ace 175W 9W2T* type offering the industry's highest<sup>(2)</sup> airflow and static pressure among IP56-rated waterproof centrifugal fans on the market.



(2) Based on our own research as of August 8, 2018, conducted among equally-sized industrial waterproof centrifugal fans on the market.

## ■ Centrifugal ACDC Fan, Splash Proof Centrifugal ACDC Fan

AC Fan

- $\phi 225 \times 99$  mm Centrifugal ACDC Fan *San Ace 225AD 9AD* type

- $\phi 225 \times 99$  mm Splash Proof Centrifugal ACDC Fan *San Ace 225AD 9AD* type

With cooling fans for outdoor heat exchangers, residential air ventilation systems, and renewable energy inverters, upsizing the fan is a common way of achieving both high airflow and low noise.

In recent years, more and more AC-input large-sized centrifugal fans have been used for such equipment.

In response to such market demands,

we developed and launched the *San Ace 225AD 9AD* type Centrifugal Fans and Splash Proof Centrifugal Fans which offer the industry's highest<sup>(3)</sup> airflow and static pressure.



(3) Based on our own research as of October 11, 2018, conducted among equally-sized waterproof or non-waterproof industrial centrifugal fans on the market.

## ■ High Static Pressure Fan

DC fan

- 36 × 36 × 28 mm *San Ace 36 9HV* type

Typical cooling fans used in 1U servers are 40 × 40 mm in size. However, with increased server and power supply capacities and improved server functionality, servers today are becoming denser, allowing less space for cooling fan installation.

As such, fans smaller than 40 × 40 mm with high cooling performance are required.

In response to such market demands, we developed and launched the *San Ace 36 9HV* type which offers the industry's highest<sup>(4)</sup> airflow and static pressure.

(4) Based on our own research as of December 13, 2018, conducted among equally-sized axial DC fans on the market.



**Tetsuya Yamazaki**

Joined SANYO DENKI in 1997.

SANYO DENKI PHILIPPINES, INC., Design Dept.

Works on the design and development of cooling fans.