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Newsletter



Staffan Bauman, Sales Director,
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Supporting You in Your Decarbonisation Journey

Welcome to our Summer newsletter.

Thanks to all the old friends and new who came to see us at the recent Nordbygg Exhibition. After the restrictions during the pandemic, it was good to meet face-to-face and catch up.

The show provided an excellent launchpad to introduce some timely new Carrier products to the market. In particular, our award-winning OptiClean air scrubber attracted a lot of interest. Based on high efficiency HEPA filters, the unit is proven to rapidly reduce concentrations of virus sized particles in the air. For high traffic areas, such as reception areas, school classrooms and shop check-outs, it is an effective

way of reducing risks and improving IAQ.

Also showcased on our stand were stretch ceiling air conditioning solutions, based on Carrier's collaboration with Barrisol, the world leader in this field. For outstanding indoor air quality and comfort, this technology really is unbeatable.

A major theme on everyone's agenda is of course decarbonisation. It is going to affect every aspect of our lives in the months and years ahead. With Carrier's high efficiency, low-carbon heating, cooling and ventilation technologies, we have the solutions you need on your journey to net zero. We will be here to support you every step of the way.

Carrier Showcases Latest Technology at Nordbygg '22

Carrier's recent presence at Nordbygg 22 provided a great opportunity to show some of our latest technology innovations, and underline our standing as a leader in the regional HVAC market.

The focus was on healthy building solutions, chillers, fan coils units, and specialist ceiling solutions for enhanced IAQ and comfort.

A key product in our healthy buildings offering is the OptiClean air scrubber and negative air machine. For more details, turn to the back page.

Attracting a lot of interest on the stand was a walk-in demonstration cube, showing the high quality ambience and comfort created by Carrier and Barrisol's ceiling air conditioning system. One option uses a stretched membrane to create a ceiling plenum, via which conditioned air is delivered using Carrier fan coil units, with zero draft and imperceptible noise. For more details also see the back page.

On the chiller side, we put the focus on ultra low and reduced GWP solutions, operating on HFO and R-32 refrigerant. For more details on our new HFO scroll chillers for industrial process applications, see page 3.



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Carrier Celebrates 120th Anniversary of Modern Air Conditioning



In 1902, our founder, Willis Carrier, invented modern air conditioning. Carrier's innovation has gone on to enable entire industries, power new possibilities and impact lives in all corners of the world.

So let's celebrate the past and look forward to the future. Because after 120 years, the invention that changed everything is still changing the world.

120 years ago, before we had chewing gum, radios, Einstein's theory of relativity, or airplanes, Willis Carrier came up with one cool invention: modern air conditioning. Originally developed to solve humidity problems affecting a printing press in Brooklyn, New York, Carrier's innovation has gone on to transform the way we live, enable the birth of new industries, and literally make modern life as we know it possible.

Since Carrier's invention 120 years ago, modern air conditioning – and the company born out of it – has changed the way people live, work, learn and play across the globe. It has kept travelers cool and comfortable on trains and ships, fueled the skyward expansion of cities around the world, helped preserve history and supported the start of the digital age.

Wellbeing

"At Carrier, we put people and the planet first by developing new technology that enhances wellbeing and improves health and safety, while reducing emissions and preserving our planet," said Staffan Bauman, Sales Director, Carrier Nordics & Baltics.

"We have been at the forefront of innovation since 1902, and we are ready for the next 120 years of providing sustainable solutions."

Today, Carrier's forward-thinking solutions build on the ingenuity of Willis Carrier's pioneering invention. We innovate to solve for some of the world's greatest challenges, including climate change and public health. For example:

Carbon footprint

• As part of our 2030 Environment, Social & Governance (ESG) Goals, we are targeting carbon neutrality across our operations and aiming to reduce our customers' carbon footprint by more than one gigaton.

• As COVID-19 shined a light on the critical importance of public health, we launched our Healthy Buildings Program to provide healthier and safer indoor environments. Products such as our OptiClean air scrubber and negative air pressure machine – that rapidly reduces concentrations of ultra-fine, virus-sized particles in the air – help reduce risks as part of a mitigation strategy.

With 120 years to be proud of, we're looking ahead to the next 120, as the innovation that changed everything is still changing the world.

1902
Willis Carrier designs the first modern air-conditioning system to solve a production problem at the Sackett & Wilhelms printing plant in Brooklyn, New York.

1913
Willis Carrier develops the Carrier Air Humidifier, designed to humidify the air in one room, such as an office or laboratory.

1922
Willis Carrier unveils his single most influential innovation, the centrifugal refrigeration machine (or "chiller").

1926
Carrier introduces the first home air conditioner, a solution that would ultimately help give rise to the American suburbs.

1946
San Antonio, Texas, touts "the World's First Air-Conditioned City Bus."

1949
Carrier announces that New York City's four biggest and most modern postwar skyscrapers would be air-conditioned from top to bottom by Carrier's Conduit WeatherMaster system.

1977
The University of Riyadh receives two centrifugal chillers, the first delivery of what would become the largest comfort cooling installation in the Middle East.

1993
Carrier is instrumental in launching the U.S. Green Building Council® and is the first company in the world to join the organization.

1993
Carrier Transicold introduces environmentally sound R134a refrigerant to the industry, coinciding with the production of the 100,000th container unit.

2008
Beijing National Stadium, often referred to as the "Bird's Nest", uses Carrier air-handling units to cool athletes participating in the international games.

2011
Carrier introduces the Infinity® heat pump with Greenspeed™ intelligence, offering the greatest heating efficiency of any air source heat pump.

2020
TIME names Carrier's OptiClean™ air scrubber a Best Invention of 2020.

2022
The world celebrates the 120th anniversary of modern air conditioning – an invention that fundamentally improved the way we live, work and play.

120 YEARS
STILL CHANGING THE WORLD

Carrier Adds Free Cooling and Enhanced Heat Recovery to R-32 Scroll Chillers

Carrier has introduced high-performance heat recovery and free cooling options to its AquaSnap® 30RBP air-cooled scroll chiller range on lower global warming potential (GWP) R-32 refrigerant, providing even greater energy savings and further reducing operating costs for end users.

Carrier was the first European manufacturer to introduce a fully optimised scroll chiller range on R-32. AquaSnap units also have an outstanding seasonal energy performance ratio (SEER) for cooling of up to 6.62, reducing indirect greenhouse gas emissions resulting from energy use. The latest heat recovery and free cooling options extend energy savings, further reducing greenhouse gas emissions.

The heat recovery system enables chillers to produce domestic hot water up to 80deg C, while continuing to provide cooling, useful for applications such as hotels, hospitals and industrial processes requiring hot water. The free cooling option makes use of favourable ambient and load conditions, harnessing free cooling from the environment to augment or replace mechanical cooling via the chiller's compressors, reducing energy consumption and running costs.

Two versions of free cooling are available. Partial free cooling is designed for applications with a variable primary cooling load, such as offices and healthcare, which may also have a constant residual cooling need. Examples include computer suites or scanner facilities. The total free cooling option is designed for applications with a constant



cooling need throughout the year, such as industrial processes and data centres.

"Heat recovery and free cooling can deliver significant energy savings for most applications," said Eric Pollet, Marketing Product Manager, Chillers and Heat Pumps, Carrier HVAC. "Free-cooling is particularly

valuable in higher latitudes, where cooler climates offer the greatest opportunities for harnessing natural ambient conditions rather than relying on mechanical cooling. Under these conditions, it is possible for free cooling to meet most of an application's cooling needs, delivering huge savings"

HFO R-1234ze Chillers for Industrial Process Applications

Carrier has introduced the AquaForce® Vision 30KAV with PUREtec™ HFO refrigerant, a new line of high-performance, compact process cooling chillers with ultra-low global warming potential (GWP) refrigerant R-1234ze.

The new chiller line is optimised for industrial processing such as food manufacturing, pharmaceuticals, chemicals, plastics, metal industries and applications requiring ultra-reliable cooling down to -12degC.

Carrier's AquaForce Vision 30KAV



air-cooled, variable-speed screw chillers are designed to minimise energy consumption and impact on the environment while maximising performance

and ease of installation and maintenance. The chiller is available in four sizes, spanning capacities from 280 kW to 800 kW into -4degC/-8degC medium temperature process cooling and from 530 kW to 1300 kW into 12/7degC high-temperature process cooling or comfort cooling.

The chiller's compact design, with a physical footprint one-third less than standard 30KAV chillers, enables it to be deployed where space is tight without compromising performance.



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Carrier and Barrisol Ceiling Solutions for IAQ & Comfort



Carrier has collaborated with Barrisol®, the world-leader in HVAC ceiling solutions, to develop a range of integrated air conditioning solutions that deliver outstanding comfort, enhanced indoor air quality (IAQ), and low-operational costs.

The advanced ceiling solutions provide a high-quality, stable indoor environment, and the highest levels of aesthetic design and are ideal for any application where precise control of temperature and very low air velocities are required.

Through their combination of low velocity air flow, draft elimination, and ability to maintain highly stable temperatures throughout the occupied space, Carrier® and Barrisol® advanced ceiling solutions achieve a comfort rating of Class A* for both cooling and heating, the highest possible under ISO 7730, the relevant international standard for measuring thermal comfort in buildings.

The Carrier® and Barrisol® ceiling air conditioning system is available in two options: the Barrisol Clim® featuring Carrier® products and the Barrisol Cloud Clim® featuring Carrier® products. Barrisol Clim® featuring Carrier® product technology uses a ceiling made from a bio-sourced membrane that is stretched and fixed in position, spanning a room. Air conditioning is delivered into the ceiling void by a concealed Carrier fan coil unit (FCU), and is gently diffused

downward through the gap between the membrane edge and the walls – with such low velocity it is barely noticeable.

Air is extracted from the conditioned space vertically upwards, along the outer walls via a concealed bulkhead, and back to the FCU. It is then filtered, heated or cooled, mixed with fresh air and returned to the room via the ceiling void.

Installation for contractors is quick and easy, with structural fixtures that can be rapidly removed for servicing.

Components are designed to help buildings achieve the highest levels of environmental performance. For example, ceiling membranes are made from 100% recyclable material that contains a plant-based plasticiser, and weak A+ class in terms of VOCs emissions (volatile organic compounds). Support profiles are made from 80% recycled aluminium.

For enhanced IAQ, the Barrisol Pure Clim® featuring Carrier® option uses ultra-violet (UV-C) lamps within the ceiling void to target pathogens as part of a healthy buildings programme.

The Barrisol Cloud Clim® featuring Carrier® product technology version of the system uses modules that are suspended from the ceiling, through which conditioned air is delivered into the room. Air can be fed into ceiling modules via an FCU concealed nearby or located in a plenum.

OptiClean Rapidly reduces levels of virus-sized airborne particles

Independent tests have shown that Carrier's OptiClean™ air scrubber and negative air pressure machine rapidly reduces concentrations of ultra-fine, virus-sized particles in the air.

The research, carried out by the UK Building Research Establishment (BRE), demonstrated that OptiClean cuts levels of airborne particulates in the critical size range (up to 1µm diameter), which encompasses viruses and virus-containing aerosolised droplets, by around two thirds within 30 minutes. Moreover, the results show OptiClean is as effective when located in the corner of a room as at the centre.

Sealed room

The BRE tests were conducted in a sealed room into which high levels of ultrafine airborne particulates were introduced.

Particle sizes were carefully controlled to mimic virus-sized particles and ultra-fine aerosolised droplets. Within 30 minutes of being activated, OptiClean reduced the concentration of these particles in the air by a factor of three, maintaining the reduction for extended periods.

