



64 CyberAir 3 CRAH units ensure the most efficient cooling of DataLine NORD's IT load.

# STULZ equips leading Russian data center with highly efficient CyberCool 2 chillers

When combined, DataLine's Tier III data centers in the eastern and northern sectors of Moscow have an installed output of over 30 megawatts. The latest DataLine NORD 4 extension, measuring some 12,000 m<sup>2</sup>, is the first project in Russia to use STULZ's highly efficient CyberCool 2 chillers. Free Cooling coils with a generous surface area allow the highly efficient air conditioning system to run in Free Cooling mode or flexible Mixed mode for about 80 percent of annual runtime, thus saving up to 50 percent on the energy costs of air conditioning compared with conventional solutions.

## THE FACTS

### Client

DataLine

### Task

Cooling of DataLine NORD 4 expansion

### Our solution

- Chilled water System
- Indirect Free Cooling
- Air distribution through Raised Floor

### Hardware

- Room cooling unit CyberAir 3 1000CW
- Chiller CyberCool 2 ESO8702A HF

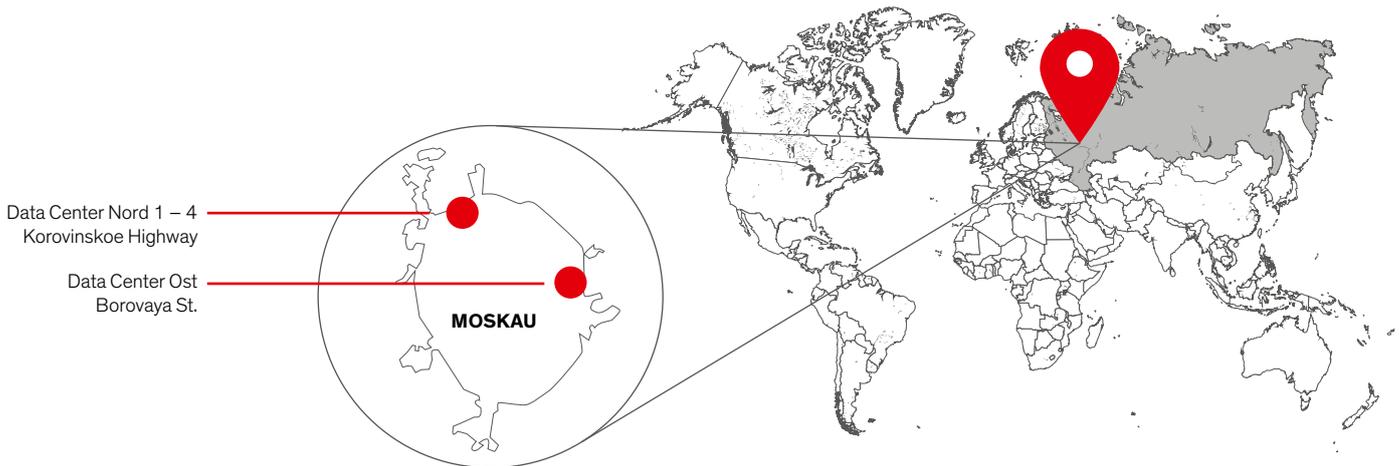
### Benefit

Cooling System works 80% of the year in free cooling mode. Reducing energy costs to comparable systems to 50%



NORD site consists of four Tier 3 data centers – NORD 1, NORD 2, NORD 3, NORD 4. In 2015, NORD 4 data center was commissioned (total floor space – 11,700 m<sup>2</sup>, 2,016 racks). The project of NORD 4 is certified in accordance with TIER III Uptime Institute standard. In 2016 the facility, and the processes of operation have also been certified by Uptime Institute.

#### The data centers located in Moscow, Russia



## THE CUSTOMER

DataLine is part of the Inline Technologies Group holding company and is the leading Russian supplier of colocation, IT outsourcing and cloud services. This specialist for commercial data center services operates seven state-of-the-art data centers in Moscow. Sites 1 to 3 are to the east (Boroyava St.) and there are four more data centers to the north (Korovinskoye St.) of the Russian capital.

## THE PROJECT

Data center NORD 4 is the latest expansion of the DataLine group of data centers and with a power consumption of over 18 megawatts, it is currently one of the largest data centers in the Russian IT market. In a white space area measuring 4250 m<sup>2</sup>, DataLine NORD 4 provides space for around 2,000 server racks. The first construction phase started in August 2013. Design, infrastructure and operations management meet the requirements of the Tier III standard (Uptime Institute) and are currently going through the final certification process.



With a power consumption of 18 megawatts and a white space of over 4250 m<sup>2</sup>, the NORD 4 site is one of the largest data center in the Russian IT market.

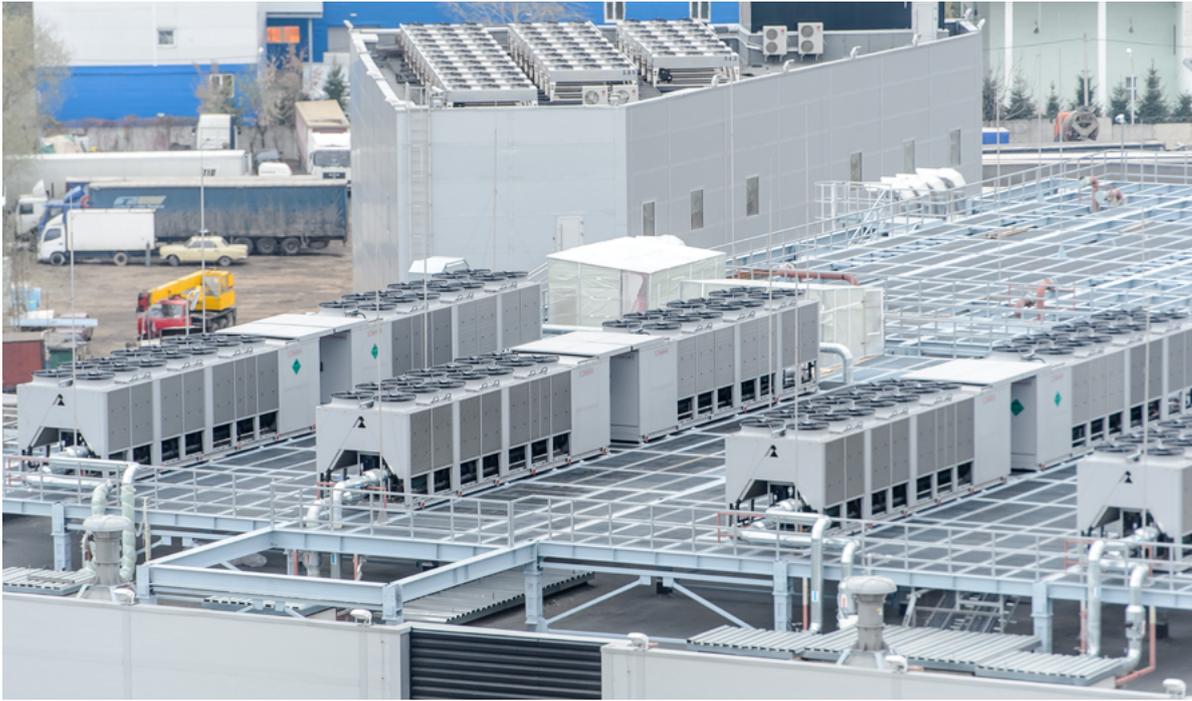
## IMPLEMENTATION

### **DataLine NORD 4** – installation of new CyberCool 2 chillers

DataLine was convinced of the capacity of CyberCool 2 chillers during a load test at the STULZ test center. Distributor and partner for STULZ solutions in Russia, I-CLIMATE, then began initial work on the project in collaboration with lead contractor AMD TECHNOLOGII. The initial installation work at the NORD 4 data center then followed in 2014. In total, STULZ supplied 64 CyberAir 3 chilled water closed-circuit air conditioning units with circulating air for raised-floor air conditioning and seven CyberCool 2 chillers with a total refrigeration output of 6500 kW. In early 2015, I-CLIMATE began commissioning 32 indoor air conditioning units and four chillers designed with N+1 redundancy – activation of the second power stage is currently in preparation.

### **DataLine OST 1** – chillers replaced during ongoing operation

In parallel with the new construction phase at DataLine NORD 4, the air conditioning technology of the OST 1 data center was also updated to the state of the art. The process replaced two existing chillers with highly efficient STULZ CyberCool 2 chillers. The replacement took place during ongoing operation of the data center, without any load shedding. This was made possible by detailed preparation and excellent planning by I-Climate. To achieve this, the expert engineers from STULZ's official partner prepared an individual specification for the new chillers to restrict installation time to an absolute minimum. It was possible to re-start the new data center air conditioning system within just 24 hours of dismantling the old one – thanks among other things to the unique integration concept of the CyberCool 2 chillers.



Seven CyberCool 2 chillers with a cooling capacity of 6500 KW are working 80% of the year in energy efficient free cooling mode, taking advantage of the russian climate

## THE RESULT

With their combination of Free Cooling and mechanical generation of cold in flexible Mixed mode, the CyberCool 2 chillers from STULZ make a significant contribution to the high level of efficiency of DataLine NORD 4. The combination of multi-functional operation and generously dimensioned Free Cooling coils has allowed compressor running time to be cut significantly compared with conventional solutions. Today, the CyberCool 2 chillers operate in Free Cooling mode or in flexible Mixed mode for around 80 percent of the year. A special high-temperature return cooling system based on the STULZ AHF series was also developed for DataLine in order to keep energy losses in the refrigerant circuit to a minimum. Furthermore, additional diffusers reduce the power consumption of the fans and ensure that the air conditioning solution in this urban district operates at a low noise level.

## ABOUT STULZ

STULZ is one of the world's leading solution provider of energy efficient temperature and humidity management technology, specifically for mission critical applications. Backed by over 40 years of experience, STULZ is one of the foremost pioneers in the field of air conditioning solutions for dependable applications and Data Centers. STULZ air conditioning equipment is developed and manufactured primarily in Germany, to the very highest standards of quality and in line with exceptionally stringent testing criteria.

The STULZ product range includes traditional room cooling, high-density cooling, chillers, container modules and air handling units with adiabatic cooling. All systems are available with Indirect Free Cooling. STULZ offers Direct Free Cooling for CRAC systems, air handling units and modular Data Centers. Together with its various sizes, extensive additional options and modularity, STULZ therefore boasts a product range that is unique in the world and can make optimum air conditioning a reality for practically every Data Center project.

For further information about our services and products please visit our website

[www.stulz.com](http://www.stulz.com)