

BROCHURE

IntrCool

Cool industrial and commercial buildings at 90% lower energy costs

 **World leader in adiabatic cooling**





IntrCool at a glance

Advantages

Best-in-class performance

Superior quality and durability

Extremely energy efficient

Low water consumption

Lowest operating costs

Low maintenance

Always fresh and cool air

Excellent hygiene control

Two-stage vs direct adiabatic cooling



Up to **114%**
wet-bulb efficiency



Up to **7 °C (13 °F)**
lower temperatures



Up to **70%** less
increase in humidity



Up to **30%** less
water consumption

A small green leaf icon.

Powered by nature

DIFFERENT Although it relies on the extremely powerful natural principle of water evaporation, IntrCooll is much more sophisticated than an ordinary evaporative cooler. While it clearly makes sense to copy Mother Nature, it is far from easy to make it work in large buildings and in a wide range of climate conditions.

REDEFINES STANDARDS Oxycom takes evaporative cooling technology to a whole new level with two-stage adiabatic cooling. A self-sustaining chilled water stream supercharges the overall cooling efficiency. With up to 7 °C (13 °F) lower temperatures and 70% less moisture increase, IntrCooll leaves competition behind in the heat.

THE POWER OF WATER Evaporating 1 m³ (264 gal) of water delivers a stunning 695 kWh of cooling power, while traditional AC uses 1 m³ (264 gal) of water and large amounts of fossil fuel to produce only 212 kWh of cooling power. Any life-cycle analysis will show IntrCooll uses less water than conventional air conditioning, while reducing the CO₂ emission with up to 90%.

SURPRISED? The laws of nature never fail to inspire. And yet, the world is still full of AC systems that contain harmful refrigerants, recirculate the indoor air over and over again, contribute to global warming, and take a heavy toll on power grids.



Let's solve your cooling challenges

Applications

AHU Precooling

Automotive industry

Cannabis greenhouses

Data centers

Distribution centers

Food industry

General

Graphic industry

Industrial bakeries

Laundry

Metal industry

Offices

Outdoor cooling

Packaging industry

Plastic industry

Textile industry

Tested supply air temperature performance

Conditions

Supply air temperature

IntrCooll

46 °C (114 °F) | 16% RH

20.9 °C (69 °F)

38 °C (100 °F) | 21% RH

18.6 °C (65 °F)

28 °C (82 °F) | 43% RH

17.7 °C (64 °F)

IntrCooll creates an energy-efficient, productive and healthy space

NO COMPROMISES Until recently, there was no affordable way to comfortably cool and ventilate large spaces and commercial buildings. Warm days would easily lead to general discomfort, low productivity, and failure to comply with labor regulations. Now IntrCooll changes everything.

BOOST INDOOR AIR QUALITY IntrCooll delivers the indoor environment that boosts engagement and productivity. Cool and fresh air is vital to our well-being. Ensuring a steady supply is an ethical and legal duty for building owners and operators. Now IntrCooll also makes it highly economical.

AFFORDABLE AND PROFITABLE Smaller investments and 80% lower operational costs compared to conventional AC result in significant savings. Moreover, IntrCooll is the first and only environmentally responsible way to create and maintain a healthy and comfortable climate inside large buildings.

COOL AIR. EVERY DAY. EVERY CLIMATE. In warm climates, other technologies often struggle to deliver tangible cooling in an efficient manner. IntrCooll breaks through the barriers and provides cool air streams effortlessly, with as little as 10% of the energy usage of conventional AC.



Two-stage adiabatic cooling

The first and indirect stage uses cold recirculation water to pre-cool the ambient air. As no humidity is added, the air leaving the heat exchanger has a lower dry bulb and wet bulb temperature than the outside air. In the second and direct cooling stage, the air can be cooled down further by the evaporative cooling media.

Free cooling mode


Free cooling uses low external air temperatures to cool the building. Especially in autumn and spring, sun radiation can be significant while ambient temperatures are still low. Whereas recirculating air conditioners need mechanical systems to cool the building, IntrCooll introduces free, cool and fresh outdoor air.

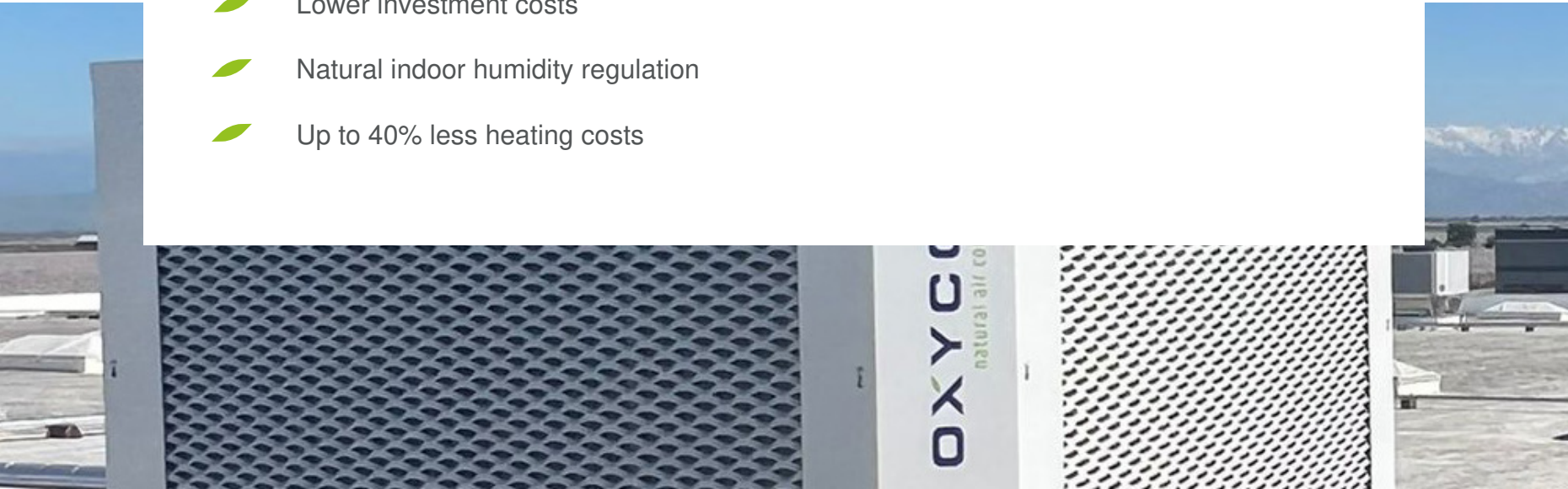
Fresh air, filtering and heating

Internal heat generated from machines, processes and people rises up towards the ceiling by convection. IntrCooll's optional Heat Reclaim module reuses this residual heat to supply filtered and preheated ventilation air. The Heat Reclaim can be equipped with heating coils that heat the recirculation air gathered at the ceiling.



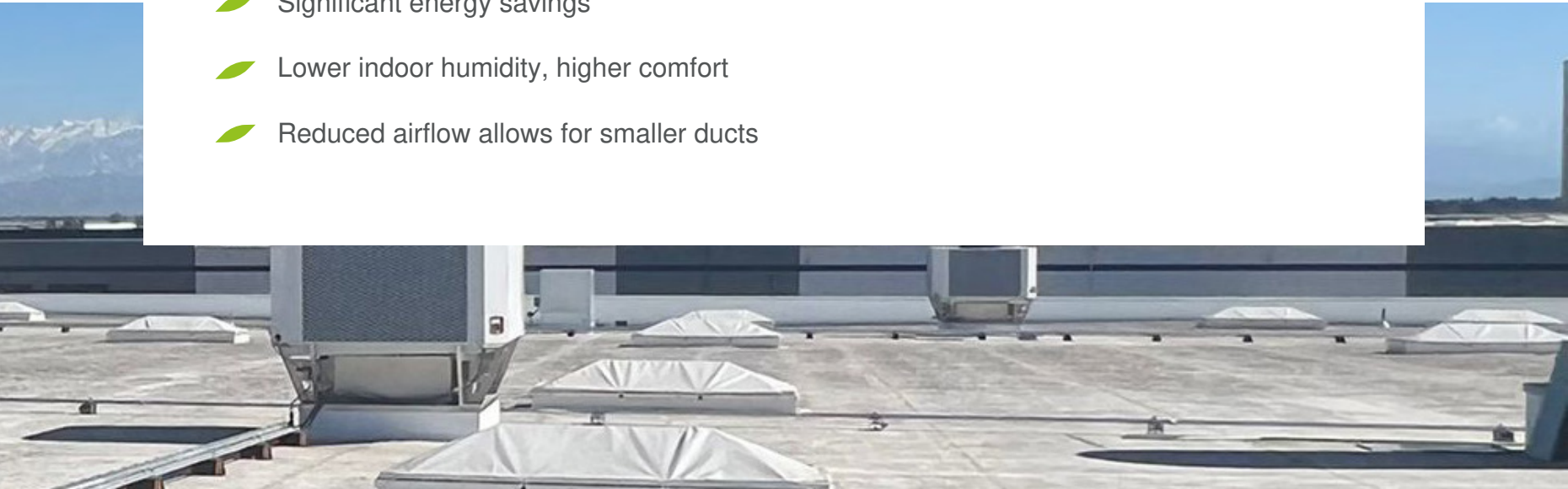
IntrCooll compared to conventional AC

-  Energy savings of up to 90%
-  100% fresh air
-  90% less CO₂ emission
-  Extremely low running costs
-  Lower investment costs
-  Natural indoor humidity regulation
-  Up to 40% less heating costs



IntrCool compared to direct evaporative cooling

- Up to 7 °C (13 °F) lower supply temperatures
- Up to 70% less moisture increase in supply air
- Keeps indoor climate well within ASHRAE standards
- Lower water consumption
- Significant energy savings
- Lower indoor humidity, higher comfort
- Reduced airflow allows for smaller ducts





Switch automatically between active or free cooling, and heating

Control the maximum permissible relative humidity

Measures and records indoor and outdoor conditions

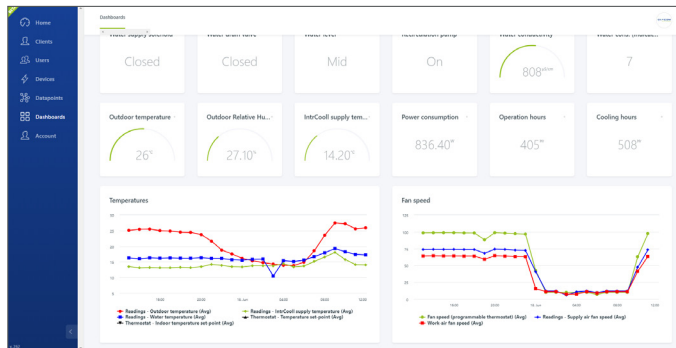
Remote monitoring possible in combination with OxyConnect

Functions as a gateway for multiple IntrCoolls and thermostats

Cloud monitoring and control from anywhere in the world

The most efficient and intelligent indoor climate control system available

OxyConnect: Control system



CLEVER OPERATION MODES The OxyLogic controller measures indoor and outdoor conditions in order to select the most comfortable and efficient cooling mode. If equipped with a Heat Reclaim module, ventilation is constantly maximized, using internal waste heat to ensure pleasant supply temperatures.

CONNECTED Intuitive control from behind your desk or anywhere in the world. The OxyConnect makes a breeze of installation, operation and real-time performance monitoring. It allows for substantial cost reductions through remote assistance, timely service and predictive maintenance.

CONVENIENCE Seamless integration into common BMS systems is possible. IntrCool is standard equipped with Modbus RTU and TCP/IP ports. The extensive interface allows you to monitor and operate IntrCool and align it with your operations or devices.



Key components

Embedded controls

Smart adaptation to ambient and indoor conditions

Filter media

Different filter media classes to comply with customer demand

Heat exchanger

Fueled with cold water for supercharged cooling

Evaporative media

Super-efficient Oxyvap® with anti-bacterial coating

Chilled water section

Integrated section creates a self-sustained cold water supply

Water sterilizer (optional)

UV-C eliminates waterborne bacteria and viruses

Pump

Selected to withstand even the harshest of climates

Fans

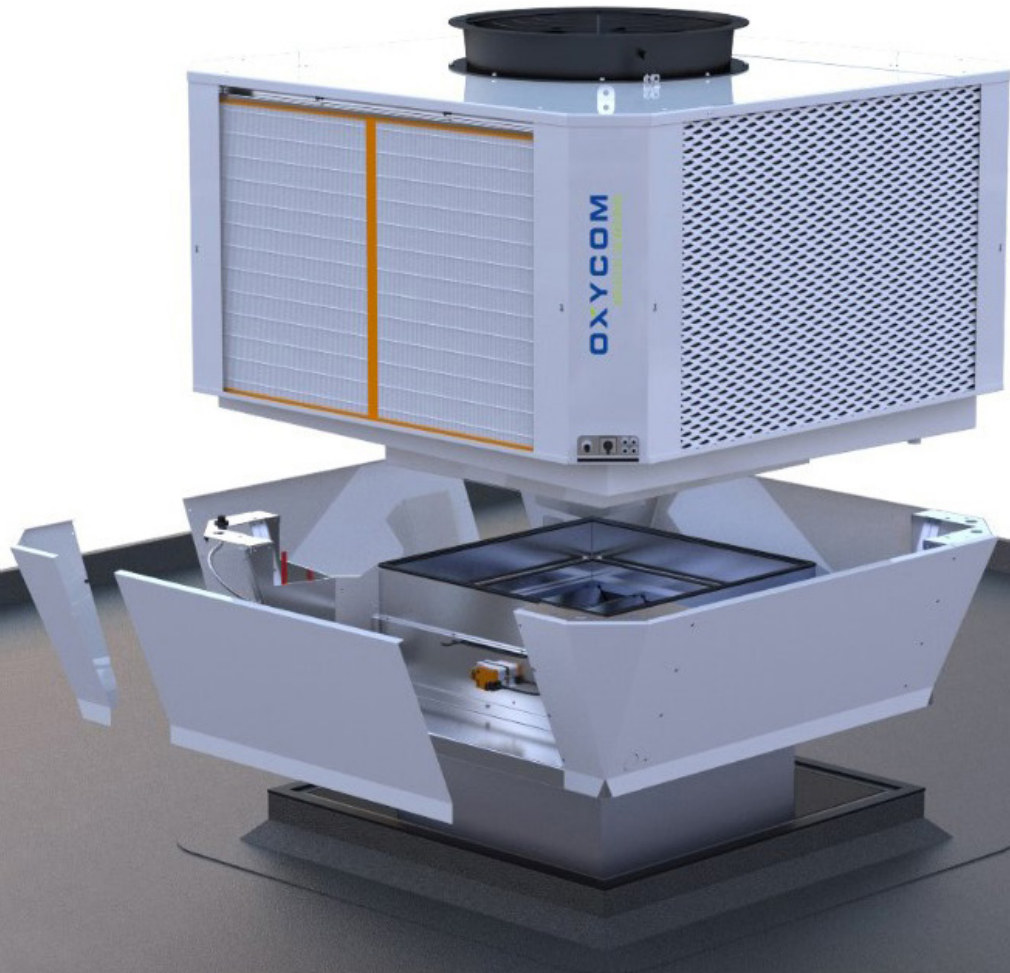
Electronically Commutated (EC) and 100% variable speed

Water quality sensor

Monitors water quality and ensures not a drop is wasted

Housing

Marine-grade aluminum with UV- and weather-resistant coating



Key specifications

Nominal air flow - IntrCooll Std.

6000 m³/h (3531 CFM)

Nominal power - IntrCooll Std.

1.29 kW @ 80 Pa back pressure

Wet-bulb efficiency - IntrCooll Std.

Up to 114%

Cooling capacity - IntrCooll Std.

50 kW (EER: 39) @ 46 °C (114 °F) | 16% RH
39 kW (EER: 30) @ 38 °C (100 °F) | 21% RH
21 kW (EER: 16) @ 28 °C (82 °F) | 43% RH

Electrical supply - IntrCooll Std.

3P+N+E 380 V-415 V; 50 Hz/60 Hz

Sound pressure level - IntrCooll Std.

48 dB(A) @ 5 m (16 ft), free field

Dimensions - IntrCooll Std.

1394 mm x 1394 mm x 1074 mm
(54.88 in x 54.88 in x 42.13 in)

Weight - IntrCooll Std.

174 kg (384 lbs) dry / 232 kg (511 lbs) in operation

Nominal air flow - IntrCooll Plus

14000 m³/h (8240 CFM)

Nominal power - IntrCooll Plus

3.35 kW @ 80 Pa back pressure

Wet-bulb efficiency - IntrCooll Plus

Up to 114%

Cooling capacity - IntrCooll Plus

118 kW (EER: 35) @ 46 °C (114 °F) | 16% RH
91 kW (EER: 27) @ 38 °C (100 °F) | 21% RH
48 kW (EER: 14) @ 28 °C (82 °F) | 43% RH

Electrical supply - IntrCooll Plus

3P+N+E 380V-400 V; 50 Hz/60 Hz

Sound pressure level - IntrCooll Plus

52 dB(A) @ 5 m (16 ft), free field

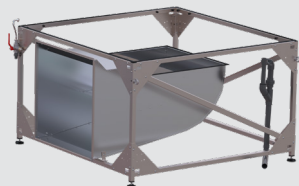
Dimensions - IntrCooll Plus

1961 mm x 1961 mm x 1460 mm
(81.50 in x 81.50 in x 57.48 in)

Weight - IntrCooll Plus

393 kg (866 lbs) dry / 577 kg (1272 lbs) in operation

Accessories & options



SUPPORT FRAME

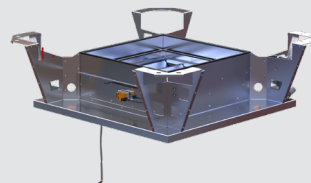
Supply the air through the facade or connect to AHU.

Features

- IntrCooll support
- Shut-off water valve
- Water connection for maintenance purposes
- Flexible water supply hose

Optional

- Duct elbow 90°



FLASHING KIT

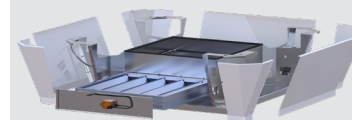
Effortless installation.
Reduce installation costs.

Features

- IntrCooll support
- Lead-through for cables and water supply
- Shut-off water valve
- Maintenance water tap
- Flashing flange
- Flexible water supply hoses
- Sealing material
- Slot for outdoor air damper

Optional

- Outdoor air damper with actuator
- Flashing Kit - XE Panels



FLASHING KIT - XE PANELS

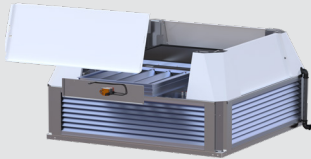
Add-on for the Flashing Kit.

Features

- Panels

Functionality

- Eliminates external heat load on duct
- Eliminates external heat load on water tank
- Protects valve, actuator, cables and hoses from weather influences



NATURAL VENTILATOR

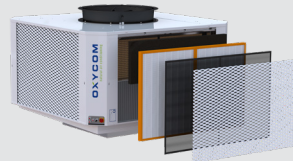
Integrated exhaust dampers. No need for separate exhaust fans.

Features

- IntrCool support
- Duct with slot for outdoor air damper
- Lead-through for cables and water supply
- Shut-off water valve
- Maintenance water tap
- Flashing
- Flexible water supply hoses
- Natural ventilation

Optional

- Outdoor air damper with actuator



FILTER SET

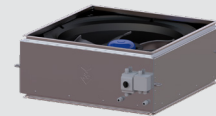
Unique highly efficient filter material.

Filter types

- G4 filter set: 63 Pa (ISO Coarse >60%)
- M5 filter set: 90 Pa (ISO ePM10 >50%)
- F7 filter set: 90 Pa (ISO ePM1 70%)

Pre-filter mesh

- Mandatory for M5 and F7 filters



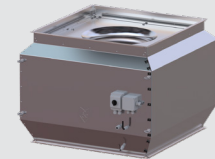
AXIAL FAN

Air transportation.

Features

- ESP* 150/250 Pa
- Suspension cables and turnbuckles

*External Static Pressure (ESP)



HIGH PRESSURE FAN

Air transportation.

Features

- ESP* 300/600 Pa
- Suspension cables and turnbuckles

*External Static Pressure (ESP)



HEAT RECLAIM

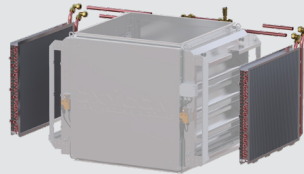
Comfortable ventilation during winter. Reduce heating costs.

Features

- 2 recirculation dampers
- 1 outdoor air damper
- 3 modulating damper actuators
- Suspension cables and turnbuckles

Optional

- Recirculation filters (F7 ISO ePM1 70%)
- Heating coils



HEATING COILS

Heating coils for the Heat Reclaim.

Features

- 2 coils
- Plumbing materials

Functionality

- Water supply of 35 °C till 90 °C by (thermodynamic) heat pump or central heating

Mandatory

- Recirculation filters

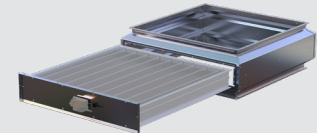


RECIRCULATION FILTERS

Filter internal air pollution.

Features

- 2 recirculation filters (F7 ISO ePM1 70%)

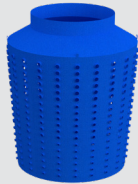


OUTDOOR AIR DAMPER & DUCT DAMPER SECTION

Damper to prevent cold draft in winter with a duct section.

Features

- Actuator
- Mounting flange
- Channel section

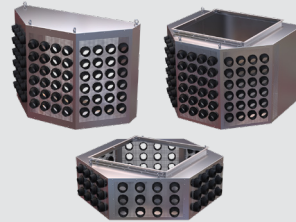


AIROPTIMIZER DIFFUSER

Perfect air distribution.
Maximum comfort.

Features

- 360° air distribution
- Create slight velocity for optimal comfort
- Sleek design
- Washable
- Easy zip installation



NOZZLE DIFFUSERS

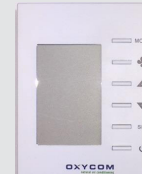
Optimize air supply.

Nozzle types

- Nozzle diffuser 160° top connection
- Nozzle diffuser 160° rear connection
- Nozzle diffuser 360° top connection

Features

- Adjustable rubber nozzles for optimal air supply
- Air throw 10 m to 20 m



THERMOSTAT

Effortless installation.
Reduce installation costs.

Features

- Remote monitoring possible in combination with OxyConnect
- Adjustable 7-day schedule
- Displays indoor temperature, relative humidity, and outdoor air temperature
- Switch automatically between active or free cooling, and heating
- Control the maximum permissible relative humidity



OXYCONNECT GATEWAY

Cloud monitoring & control of multiple units and thermostats.

Features

- Remote monitoring
- Network configuration
- 24V DC power supply
- Remote control
- Auto device detecting
- Maximum 50 devices
- Data logging

Mandatory

- LAN connection or modem + 4G/5G SIM card



References



Canon - The Netherlands



MEVO - The Netherlands



Sinnack Backspezialitäten - Germany



Plastic Legno - Italy



GMT - Austria



Hollarts Plastic - The Netherlands



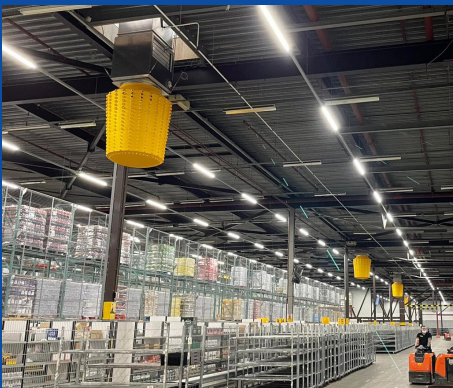
eXtra - Saudi Arabia



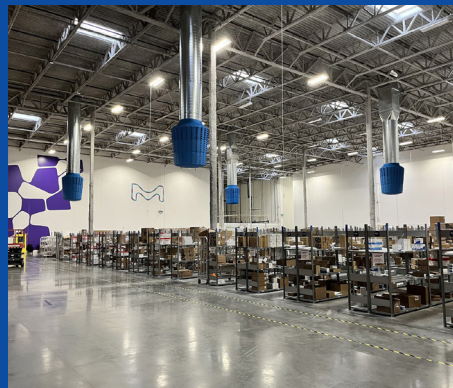
247 TailorSteel - The Netherlands



Aerospace company - Austria



JUMBO - The Netherlands



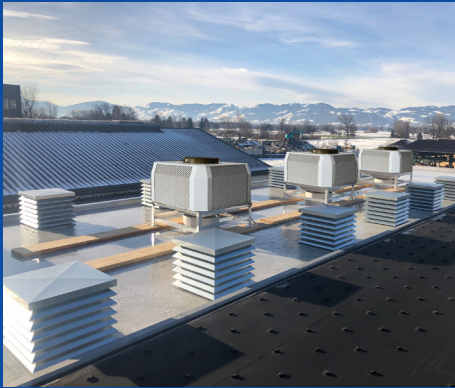
MilliporeSigma - USA



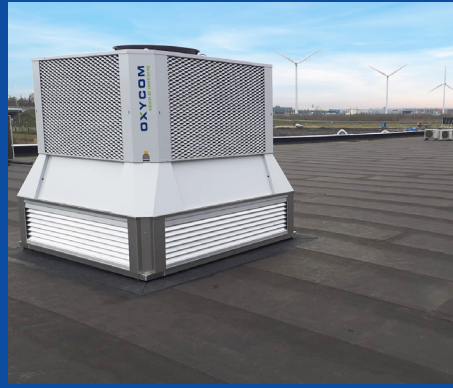
Bakkerij Holland - The Netherlands



References



AEROMAX GmbH - Germany



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Lijnco - The Netherlands



247 TailorSteel - Germany



WIHO - Austria



Rembrandtin - Austria



Capri Sun Group - Germany



Eobuwie - Poland



MKW - Austria



Tera Mall - Saudi Arabia



Leeb Biomilch - Austria



VCN - Netherlands



About Oxycom

We are pioneers. We design our highly innovative natural cooling systems with one goal: reduce the global ecological footprint required for cooling, ventilating and heating buildings. Founded in the Netherlands, we have been developing innovative adiabatic climate solutions since 2002.

Oxycom

Kaagstraat 31 - 8102 GZ Raalte - Netherlands

T +31 (0)572 349 400

E info@oxy-com.com

I www.oxy-com.com