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BROCHURE

IntrCooll

Cool industrial and commercial buildings at 90% lower energy costs

World leader in adiabatic cooling


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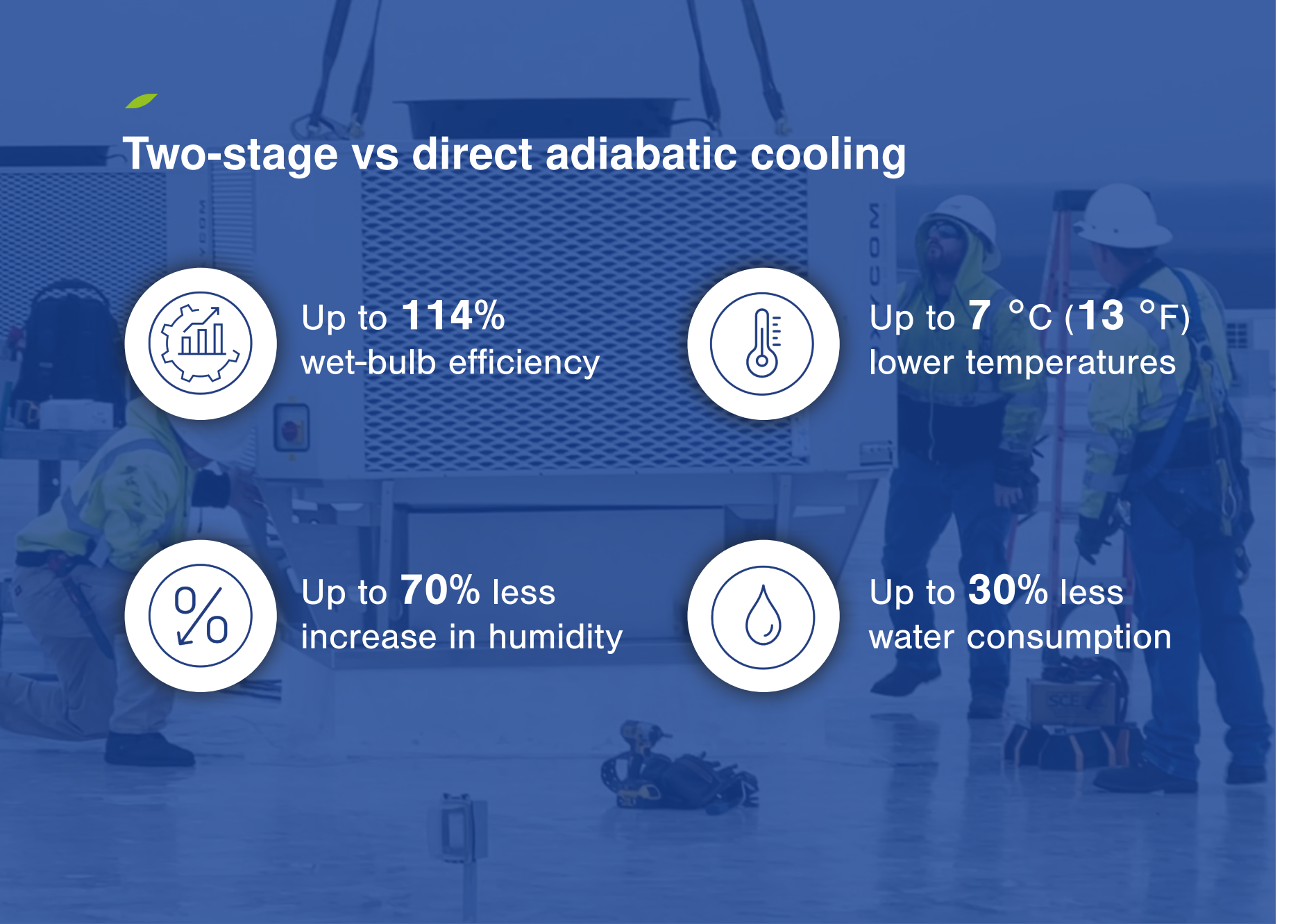
IntrCooll at a glance

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

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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 m^3 (264 gal) of water delivers a stunning 695 kWh of cooling power, while traditional AC uses 1 m^3 (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 CO_2 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.

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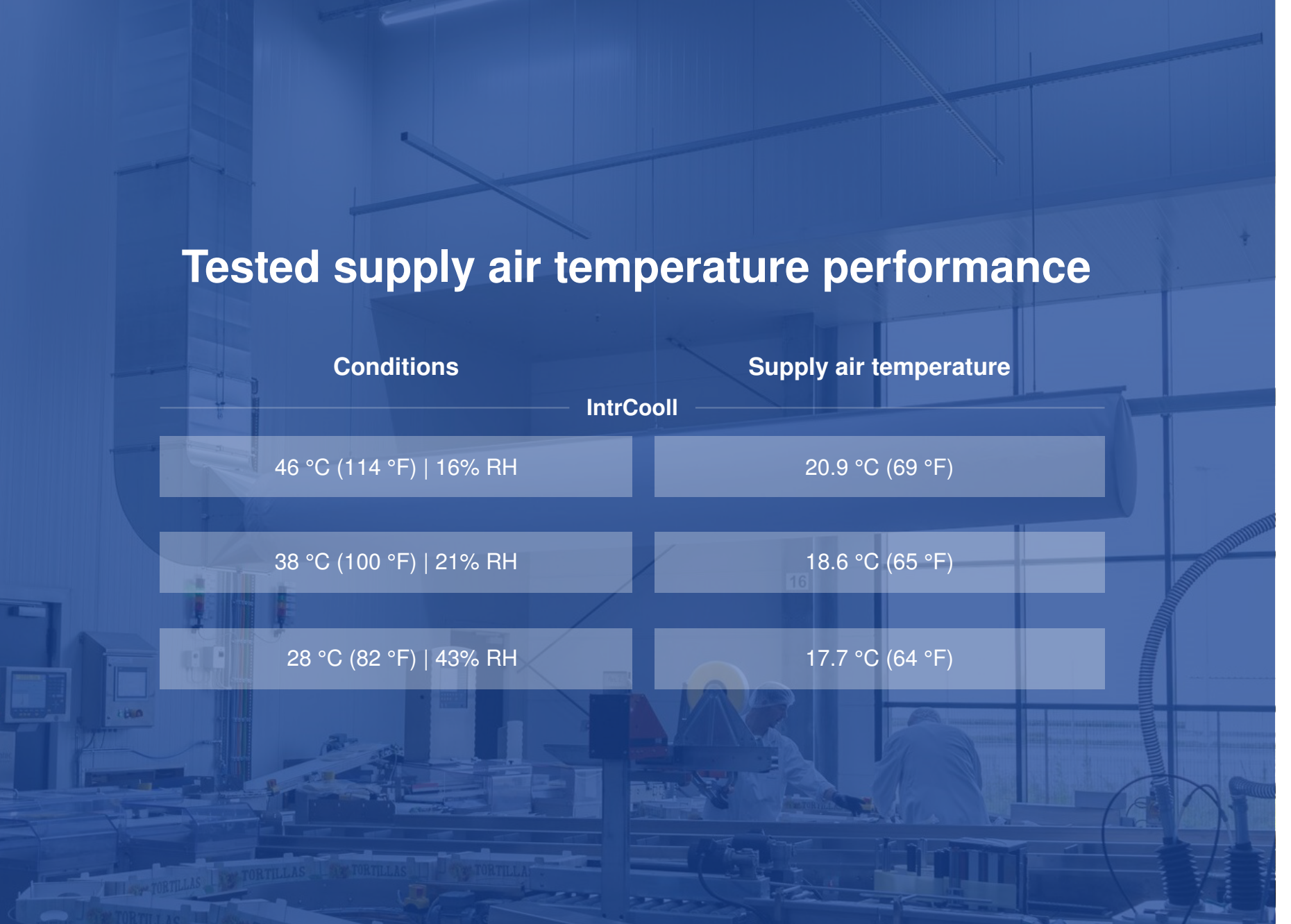
Let’s solve your cooling challenges

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)

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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.

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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 CO_2 emission
- Extremely low running costs
- Lower investment costs
- Natural indoor humidity regulation
- Up to 40% less heating costs

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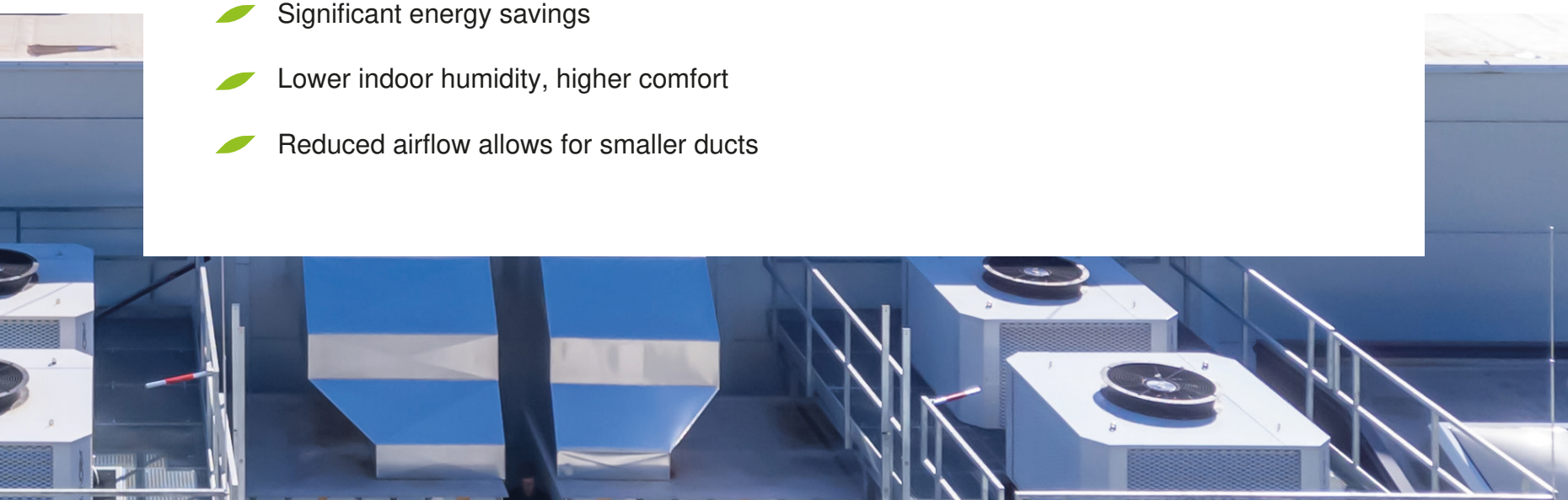
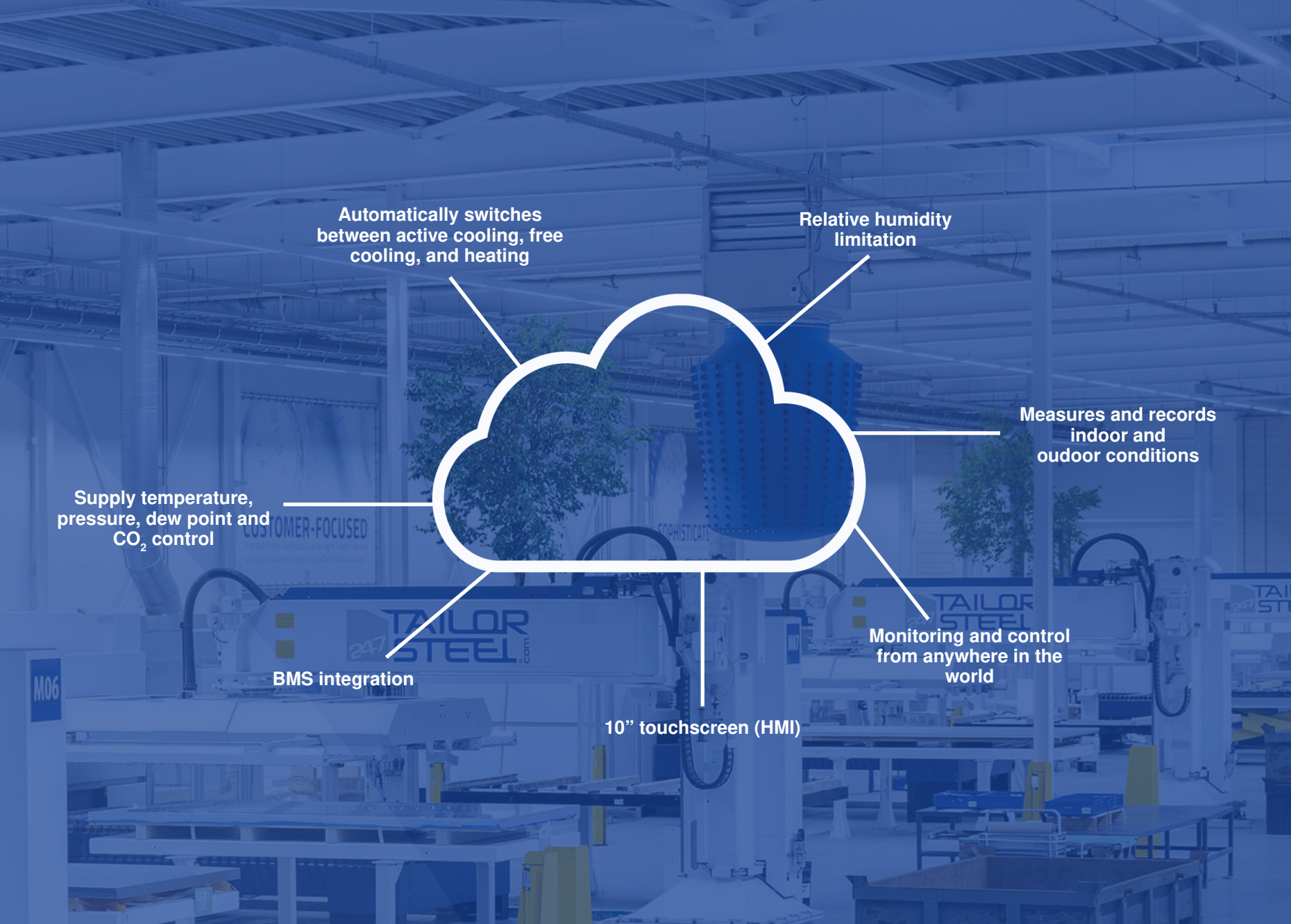
IntrCooll compared to direct evaporative cooling

- 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




Automatically switches between active cooling, free cooling, and heating
Relative humidity limitation
Measures and records indoor and oudoor conditions
Supply temperature, pressure, dew point and CO_2 control
BMS integration
10” touchscreen (HMI)
Monitoring and control from anywhere in the world

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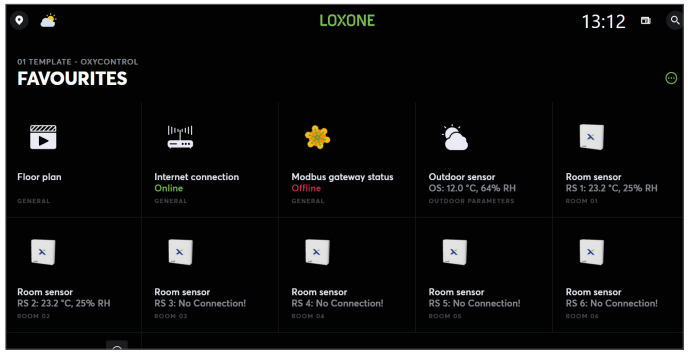
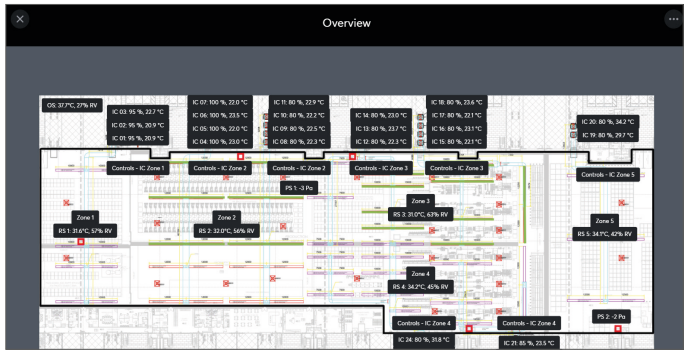
The most efficient and intelligent indoor climate control system available

OxyControl: Control system





CLEVER OPERATION MODES The OxyControl measures indoor and outdoor conditions in order to select the most comfortable and efficient cooling mode. If equipped with a Heat Reclaim module, ventilation in winter is possible, 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. All data is stored locally, meaning no internet connection is required for operation. This ensures excellent data security.

CONVENIENCE Seamless integration into common BMS systems is possible. The extensive interface allows you to monitor and operate IntrCooll and align it with your operations or devices.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READY
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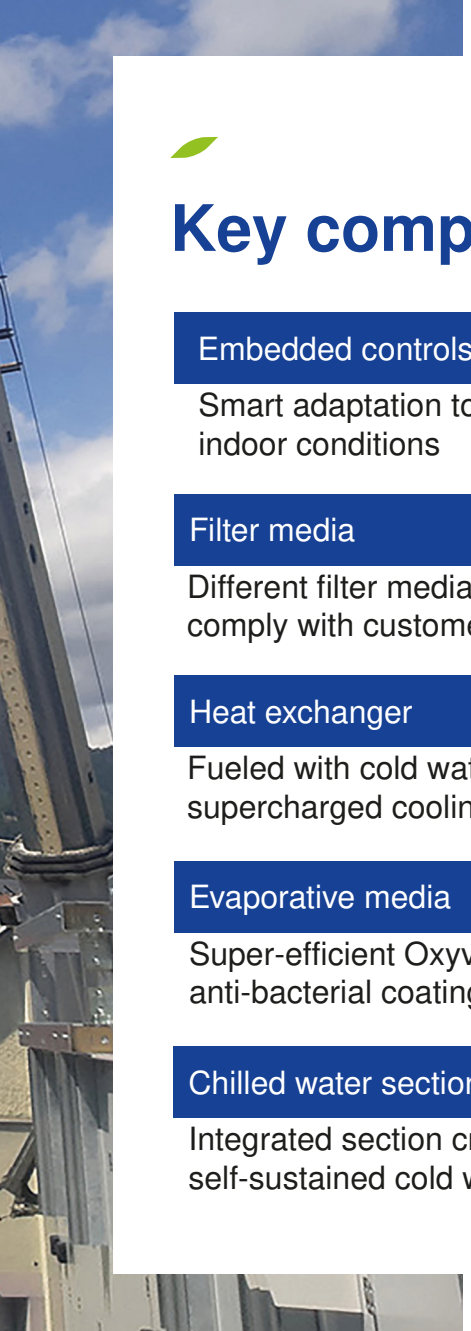
PROOF



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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

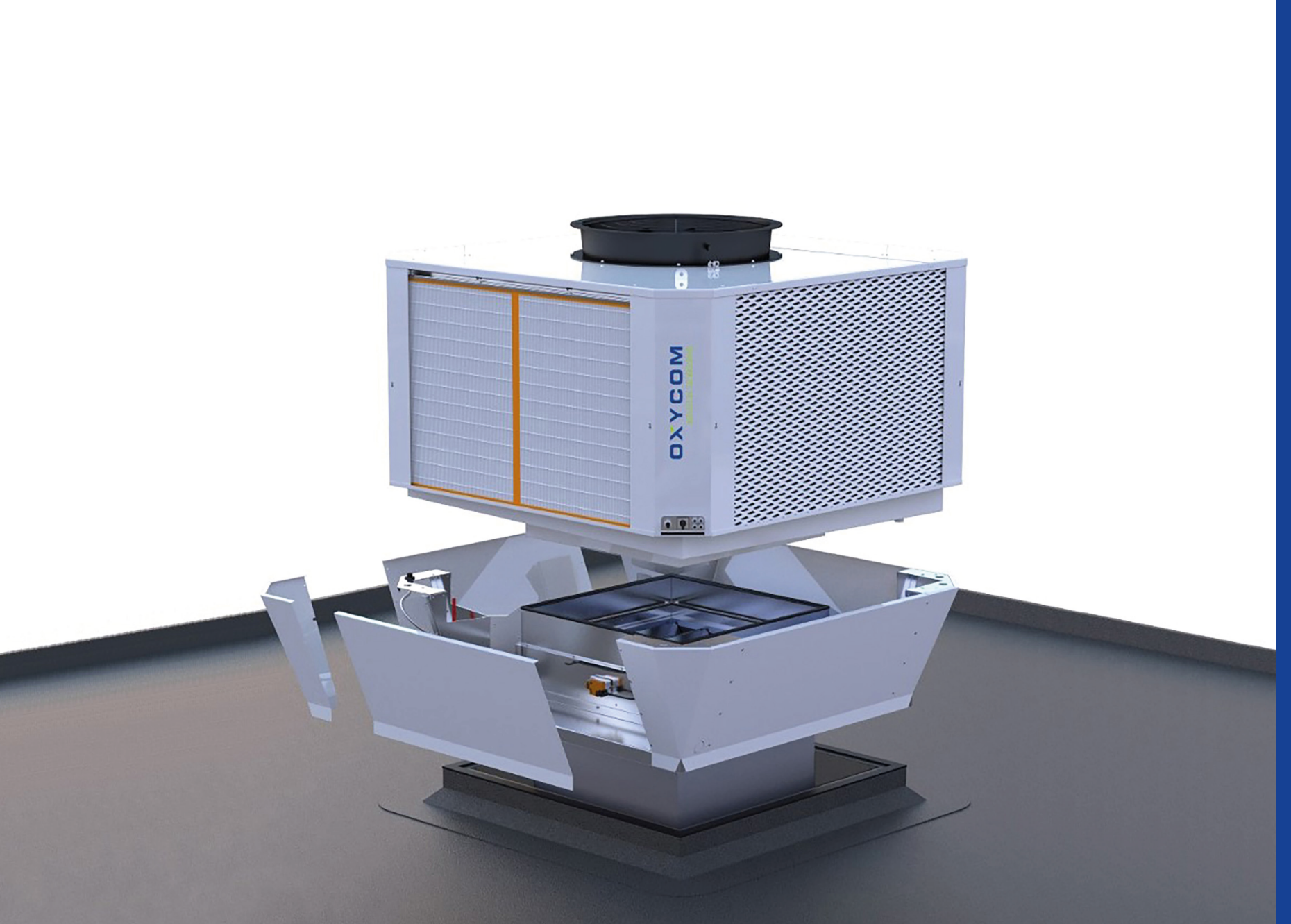
Water sterilizer (optional)
UV-C eliminates waterborne bacteria and viruses

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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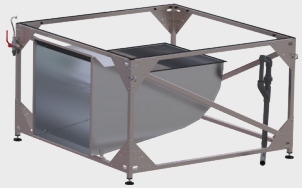
Key specifications

Nominal air flow - IntrCooll Std.	Nominal air flow - IntrCooll Plus
6000 m³/h (3531 CFM)	14000 m³/h (8240 CFM)
Nominal power - IntrCooll Std.	**Nominal power - IntrCooll Plus**
1.29 kW @ 80 Pa back pressure	3.35 kW @ 80 Pa back pressure
Wet-bulb efficiency - IntrCooll Std.	**Wet-bulb efficiency - IntrCooll Plus**
Up to 114%	Up to 114%
Cooling capacity - IntrCooll Std.	**Cooling capacity - IntrCooll Plus**
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	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 Std.	**Electrical supply - IntrCooll Plus**
3P+N+E 380 V-415 V; 50 Hz/60 Hz	3P+N+E 380V-400 V; 50 Hz/60 Hz
Sound pressure level - IntrCooll Std.	**Sound pressure level - IntrCooll Pus**
48 dB(A) @ 5 m (16 ft), free field	52 dB(A) @ 5 m (16 ft), free field
Dimensions - IntrCooll Std.	**Dimensions - IntrCooll Plus**
1394 mm x 1394 mm x 1074 mm (54.88 in x 54.88 in x 42.13 in)	1961 mm x 1961mm x 1460 mm (81.50 in x 81.50 in x 57.48 in)
Weight - IntrCooll Std.	**Weight - IntrCooll Plus**
174 kg (384 lbs) dry / 232 kg (511 lbs) in operation	393 kg (866 lbs) dry / 577 kg (1272 lbs) in operation

Accessories & options

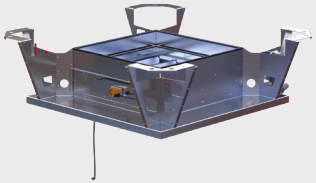


SUPPORT FRAME

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°

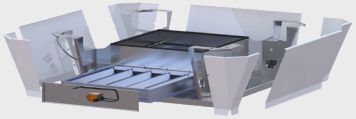


FLASHING KIT

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

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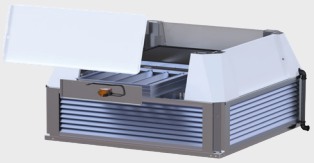


NATURAL VENTILATOR

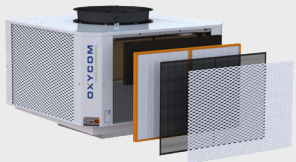
Integrated exhaust dampers. No need for seperate exhaust fans.

Features

- IntrCooll 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

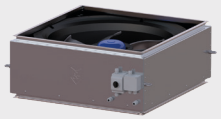
Unique highly efficient filter material.

Filter types

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

Pre-filter mesh

- Mandatory for F7 filters



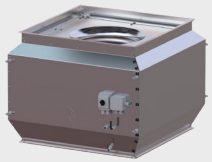
AXIAL FAN

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

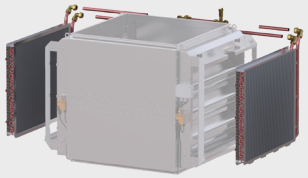
Comfortable ventilation during winter. Reduce heating costs.

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

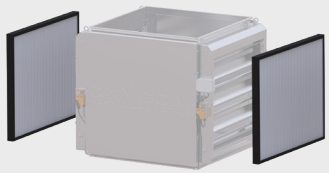
- 2 coils
- Plumbing materials

Functionality

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

Mandatory

- Recirculation filters

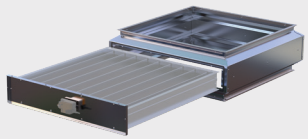


RECIRCULATION FILTERS

Filter internal air pollution.

Features

- 2 recirculation filters (F7 ISO ePM_1 70%)



OUTDOOR AIR DAMPER & DUCT DAMPER SECTION

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

Features

- Actuator
- Mounting flange
- Channel section

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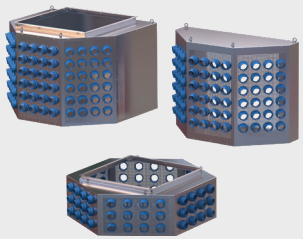
AIROPTIMIZER DIFFUSER

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

ROOM CLIMATE SENSOR

Effortless installation.
Reduce installation costs.

Features

- Measures temperature
- Measures humidity
- Measures CO_2

OXYCONTROL HUB

Advanced climate control system.

Features

- Supply temperature, pressure, dew point and CO2 control
- Remote control/access
- Measures and records indoor/oudoor conditions
- 10” Touchscreen (HMI)
- 4G router with WAN port
- LED status light
- Power socket (EU)

Options

- UPS
- BMS communication gateway

References

Canon - The Netherlands

MEVO - The Netherlands

Sinnack Backspezialitäten - Germany

Bridgestone - Italy

GMT - Austria

Jumbo - The Netherlands

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eXtra - Saudi Arabia

247TailorSteel - The Netherlands

Toyo Seat Group - Hungary

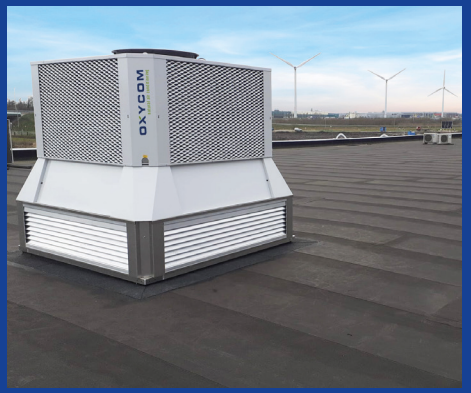
Senoplast - Austria

MilliporeSigma - USA

Bakkerij Holland - The Netherlands

References

Karamolegos - Greece



Heemskerk - The Netherlands

M&G Group - The Netherlands

247 TailorSteel - Germany

WIHO - Austria

Rembrandtin - Austria

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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

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