oceania
SOLUTIONS GROUP

ZHK NANO

Compact Air Handling Units

Packaged energy recovery solutions
with integrated controls

euroclima®

Your projects, challenges and requirements are our focus. We have a dedicated team that can engineer tailored solutions for your commercial HVAC application.

Oceania Solutions Group is an Australian owned business that focuses on providing engineered HVAC solutions. We value the importance of relationships with our clients and partners. Our team enjoy collaborating and solving complex 'design and construct' projects for your business with our product solutions.

Oceania Solutions Group are proud of our extensive portfolio and experience within HVAC industry. From industrial applications through to commercial air conditioning installations for tropical and high humidity environments.

Operating throughout Australia, New Zealand and the South Pacific Islands, we provide engineered technical data and commercial support for a wide range of HVAC solutions.

Our experienced team of HVAC professionals work hand-in-hand with market leading suppliers of HVAC solutions and equipment.

With international accreditation from Eurovent, CTI, AHRI, TÜV and AMCA, our products are rigorously tested and certified, meeting Australian and New Zealand standards and regulations.

Partnering with trusted international suppliers, we are available to provide an engineered solution for your next project.

Your best partner for air handling units

Since 1963, Euroclima has been a leader in customised air conditioning and ventilation systems. Our partners develop, manufacture and commercialise high quality air handling products for all applications, from basic comfort to healthcare, process air and installations with highly efficient heat recovery systems.

Euroclima is a company with extensive international operations and five manufacturing facilities in Italy, Austria, India and UAE, with more than 36,000m2 of production and offices. They are specialists in the manufacturing and worldwide distribution of air handling units and fan coil units.

Approximately 400 employees are presently employed with a well distributed network of sales and service all over Europe, Asia, Middle East and Northern Africa.

A fully certified system

Euroclima are a part of a number of international certification programs, related to quality, performance, hygiene or energy consumption.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

Euroclima participates in the ECP programme for Air Handling Units (AHU) and Fan Coil Units (FCU); Check ongoing validity of certificate: eurovent-certification.comz

qualityaustria SYSTEM CERTIFIED

ISO 9001:2015	No. 03578/0
ISO 14001:2204	No. 02301/0
BS OHSAS 18001:2007	No. 00559/0

ErP Compliant

TÜV SÜD

CE

It certifies that every unit leaving our production lines is built in accordance with the standards required by the European Union.

TÜV AUSTRIA CERTIFIED PRESSURE EQUIPMENT MANUFACTURER

TÜV AUSTRIA SERVICES GMBH

Ventilation and Air-Conditioning technology

- ✓ VDI 6022 (07/2011)
- ✓ DIN 1946-4 (12/2008)
- ✓ SWKI VA104-01 (04/2006)
- ✓ ONORM H 6021 (09/2003)
- ✓ ONORM H 6020 (02/2007

Validity Period: 2012 - 2017

Ex

Customised solutions

Customised Units Designer

AirCalc++, the Euroclima selection program is the result of years of experience in designing and optimising customised air handling units. The performances provided by this software are Eurovent certified.

It allows selection of all possible configurations, components or options to reach exact project requirements. Detailed data sheets, in ducts and radiated sound levels, Autocad format drawings, product specifications, psychometric charts, fan curves, SFPs and energy classes can be viewed and printed from the AirCalc++ software.

Eurovent certified software

Unmatched flexibility

Precise data sheets

DWG/DXF drawings edition

Fan curves, mollier chart and acoustic data

Casing constructions

The innovative casing construction of the ZHK makes the units extremely flexible to cover a wide range of applications from comfort to process applications.

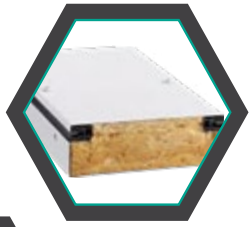
The standard range offers the highest flexibility available in the marketplace:

- Any possible unit configuration
- Any type of components available on the market
- Anti-corrosion protections, including galvanised steel, 130 mμ PVC coating, epoxy painting, peraluman, stainless steel 304 or 316L
- Large choice of options and accessories
- 100% hygiene and attenuation material
- Factory mounted controls and refrigeration

Casing characteristics

- 50mm thick double skin panels
- Standard casing: metal sheet 0,7/1,0 mm
- Industrial casing: metal sheet 1,0/1,5 mm
- Incombustible insulation, glass fibre or rock wool, from 20 to 150kg/m3
- Fire class: A1/A2 as per EN 13-501-1 A1 as per DIN 4102
- Upper profiles in epoxy painted aluminium
- Integrated base frame from 80 to 200mm
- Certified data of AHU casing as per EN 1886:
- D1/L1/F9/T2/TB2 (INOVA Standard)
- D1/L1/F9/T2/TB1 (INOVA Optional)
- D1/L1/F9/T2/TB1 (INOVA Industrial)
- D1/L1/F9/T1/TB1 (INOVA 100mm panel)
- D1/L1/F9/T2/TB2 (ZHK2000 Standard)

Thermal break in doors and panels



Unlimited flexibility

High built quality and reliability

Hygienic design

High efficiency

Certified performances

Indoor air treatment

The ZHK NANO has been designed to deliver fresh air into your building with a minimal footprint and in the most economical way. All chosen components have the best price/performance ratio and unit spaces are optimized respecting the current standards. The ZHK NANO includes energy efficient direct driven plug fans, fiber glass filters on return and fresh air streams, heat recovery device such as a counterflow plate heat exchanger or a heat wheel. The ZHK NANO is the best choice to provide high comfort to a wide variety of applications for buildings like offices, schools, hotels, airports, commercial centres, fitness centres, etc.. The ZHK NANO is a compact unit available in four sizes to cover air flow from 0,27 to 1,8 m^3/s (1000 to 8800 m^3/h). The unit performances and the mechanical casing characteristics have been tested by a third party laboratory according to EN 13053 and EN 1886 and are EUROVENT certified.

Main features

- Optimized foot print
- 50 mm casing thickness (T2/TB2)
- Galvanized steel inner skin
- Externally white PVC-coated panels for the best anti-corrosion-protection
- Environmentally friendly and fire-resistent insulation
- Smooth internal walls, easy to clean
- 80 mm base frame
- Plug & Play units
- Integrated controls (Modbus IP)

Main components

- High efficiency radial EC fans for stepless operation
- High efficiency motors (IE4)
- Thermal wheels with variable speed or counterflow plate heat exchangers with bypass damper
- Long glass fiber bag filters M5 (exhaust air) and F7 (supply air) with filter quickclamping system
- Advanced factory engineered controls
- Integrated heating coil
- Construction based on VDI 6022

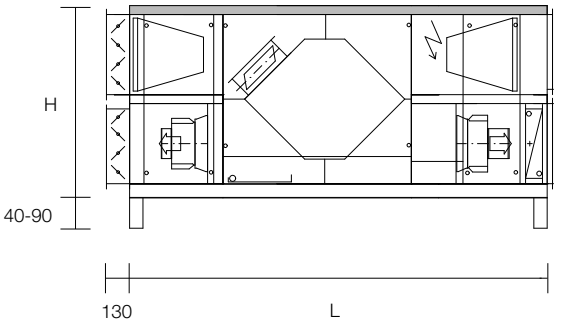
Optionals

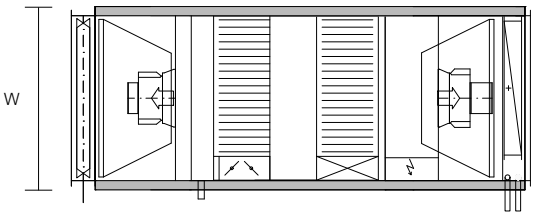
- Outdoor version
- Cooling coil
- 3-way valve + actuator for cooling coil
- Recirculation damper
- Electric heater
- Flexible or sound uncoupling connection
- Height-adjustable supporting feet (40 - 90 mm)
- Connection and access-side selectable
- Control dampers C2 included
- Digital display

All units are tested at the factory prior the shipment to job site.

Plate heat

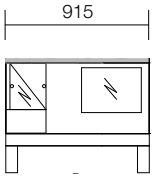
Type		45	55	65	80
Length	mm	2.288	2.44	3.05	3.05
Width	mm	1	1.2	1.4	1.7
Height	mm	1.08	1.28	1.48	1.78
Weight	kg	373		653	795
Max. airflow supply & exhaust ** Max.	m³/h	2.8	3.6	5.7	6.8
Temperature efficiency ***	%	91	90	90	87
Nominal power total	kW	2,1	3,6	5,0	6,9
Nominal voltage	V	3x400 V / 50 hz	3x400 V / 50 hz	3x400 V / 50 hz	3x400 V / 50 hz
Air entering temperature supply air	°C	-15°C / 90%	-15°C / 90%	-15°C / 90%	-15°C / 90%
Air entering temperature exhaust air	°C	22°C / 50%	22°C / 50%	22°C / 50%	22°C / 50%
Capacity heating coil	kW	6,8	10,1	15,3	20,7
Temperature medium	°C	70 / 50	70 / 50	70 / 50	70 / 50
Water pressure drop	kPa	9,0	8,8	15,8	35,6



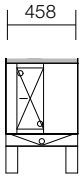


* roof dimensions not considered
** without cooling coil and electrical heater
*** based on the values in this table

Type			45	55	65	80
Direct expansion coil	Capacity	kW	19,9	29,7	44,6	61,04
	Evaporating temperature	°C	7	7	7	7
	Connection size	IN [mm]	22	28	35	35
		Out [mm]	28	35	42	54
Water cooling kit	Capacity	kW	12,4	18,3	28,0	50,2
	Evaporating temperature	°C	7/13	7/13	7/13	7/13
	Water pressure drop	kPa	13,1	16,4	24,0	42,3
Electric heating coil	Capacity	kW	9	14	22	28
	Nominal voltage	V	400 / 3ph / 50Hz	400 / 3ph /50Hz	400 / 3ph / 50Hz	400 / 3ph / 50Hz

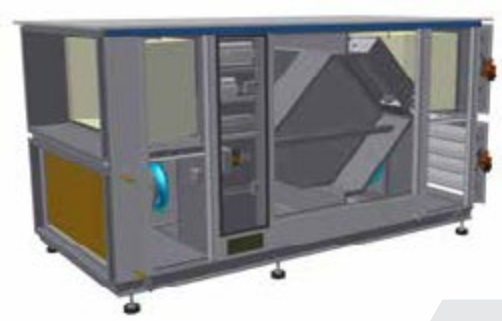


Electric heater

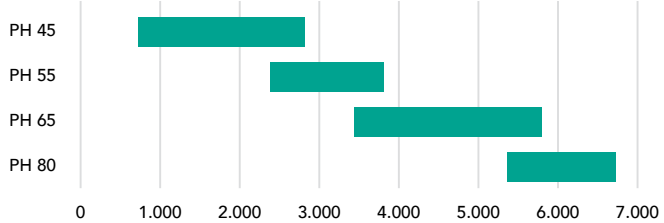


Cooling coil (DX or H_20)

Connection size: Heating coil = 3/4" (all sizes);
Cooling coil = 3/4" (45, 55), 1" (65), 1 1/2" (80)

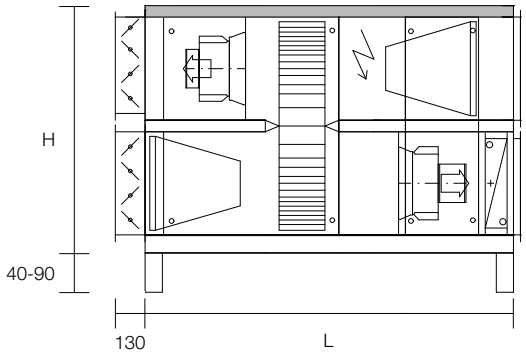


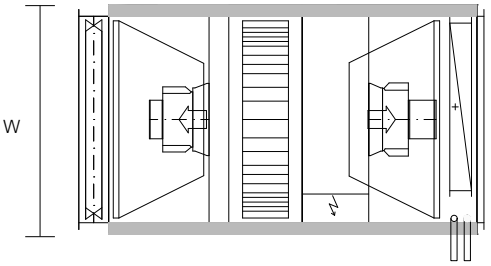
Air flow range



Heat wheel

Type		45	55	65	80
Length	mm	1.83	1.83	2.135	2.44
Width	mm	1	1.2	1.4	1.7
Height	mm	1.08	1.28	1.48	1.78
Weight	kg	349		645	760
Max. airflow supply & exhaust ** Max.	m³/h	2.9	4.1	6.5	8.8
Temperature efficiency ***	%	80	81	80	81
Nominal power total	kW	2,1	3,6	5,0	6,9
Nominal voltage	V	3x400 V / 50 hz	3x400 V / 50 hz	3x400 V / 50 hz	3x400 V / 50 hz
Air entering temperature supply air	°C	-15°C / 90%	-15°C / 90%	-15°C / 90%	-15°C / 90%
Air entering temperature exhaust air	°C	22°C / 50%	22°C / 50%	22°C / 50%	22°C / 50%
Capacity heating coil	kW	6,8	10,1	15,3	20,7
Temperature medium	°C	70 / 50	70 / 50	70 / 50	70 / 50
Water pressure drop	kPa	9,0	8,8	15,8	35,6





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	Connection size	IN [mm]	22	28	35	35
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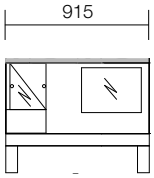
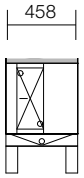
	Evaporating temperature	°C	7/13	7/13	7/13	7/13
	Water pressure drop	kPa	13,1	16,4	24,0	42,3
Electric heating coil	Capacity	kW	9	14	22	28
	Nominal voltage	V	400 / 3ph / 50Hz	400 / 3ph /50Hz	400 / 3ph / 50Hz	400 / 3ph / 50Hz



Electric heater



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Connection size: Heating coil = 3/4" (all sizes);
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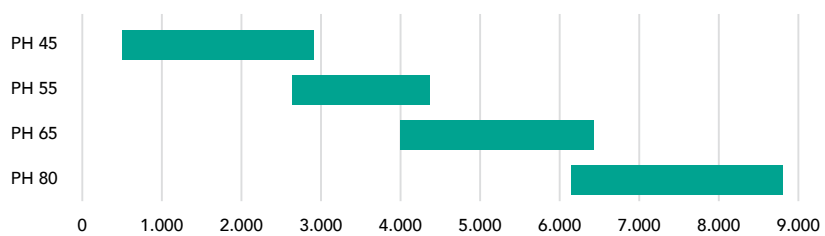
Air flow range



Technical specification

Self-supporting, frameless, modular panel construction with integrated base frame made of galvanized steel and continuous aluminium profiles on the upper edge. Double skin panels, 50 mm thick, made of inner lid and removable outer lid, thermally separated by PVC interlocking profiles. Insulation is made of non-combustible mineral wool (fire protection class 0 according to ISO II 82.2 and A1 according to DIN 4102) optimally for sound absorption and thermal insulation. Standard density 20 kg/m³. Units constructed based on VDI 6022. In the standard version, the inner panels sheets are made of 1 mm galvanized sheet steel and the outer panel sheets are made of 0,7 mm galvanized sheet steel with additional PVC coating.

Air handling units with large inspection and maintenance doors in panel thickness. The door skin inside and outside are thermally separated by plastic frame with post extruded PVC soft seal. The door frames are made of aluminium in combination with glass fibre reinforced polyamide (PA 25). For the door mounting, solid compact lock hinges made of PA 6 (polyamide) black are used. The materials used meet the requirements of VDI 6022.

Certified data (MB) conform to EN 1886:

- Casing strength: class D1
- Casing air leakage at –400 Pa: class L1
- Casing air leakage at +400 Pa: class L1
- Filter bypass leakage: class F9
- Thermal transmittance: class T2
- Thermal bridging factor: class TB2
- Sound attenuation Rw(DIN 52210-03): 36dB
- Sound attenuation of the panel certified in compliance with EN 1886 and EN ISO 3744:

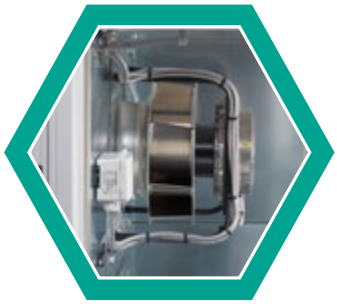
Frq. Hz	125	250	500	1000	2000	4000	8000
Okt. dB	18	28	30	31	32	34	34

- Performance data certified in compliance with DIN EN 13053

Optionals

- Weatherproof canopy
- Cooling coil
- Recirculation damper (unit size 45, 55, 65)
- Electric Heater
- VDI 6022

High quality standards for wiring



High quality standards for components

ETA matic controls

Freely programmable DDC controller for autonomous operation or within a Building Management System. Configuration occur with integrated 8 line display and the rotary knob button. Software gets loaded with a common SD-Card. All parameters and set points are set in factory. Customer can change the software at any time and all parameters are storable on a SD card for later reconfigurations. Thus, a simple adaptation of the software without a PC is possible.

- 3 password levels for users, service technicians and commissioning, display of values is possible without password
- All settings can be done on the display, out and inputs can be switched to manual operation (for testing)

Predefined modes:

- Off (Standby)
- Freecooling mode
- ECO mode (50% nominal speed)
- Comfort mode (100% nominal speed)

Timer for all days a week, up to 6 switching cycles per day. Mode for special days, On/Off according to integrated calendar, special mode for events. Main switch, power supply 230VAC / 24VDC with primary and secondary circuit breaker, circuit breaker for control components, actuators, sensors, necessary terminals. Alarm LED, fire protection contact.

Components

- Fresh air temp. sensor
- Supply and exhaust air temp. sensor
- Anti freeze sensor
- Communication Modules Modbus IP (included in basic selection)
- Digital display
- Smoke detector
- Climatix IC Cloud remote access
- Universal hardware contacts

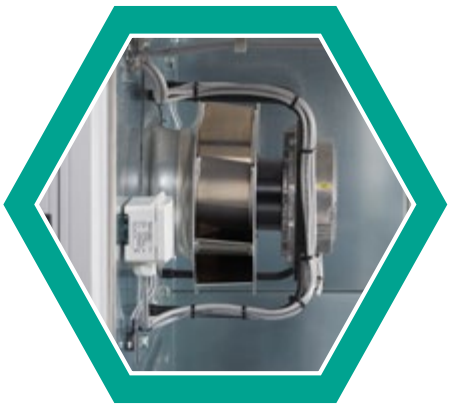
Options

- Room unit for remote control
- Air flow control VAV
- Pressure control CAV
- Humidity control
- Filter pressure switches
- Pressure sensor for airvolume
- Supply air humidity sensor
- Exhaust air humidity sensor
- Air quality sensor CO2
- Pressure sensor für pressure control
- Thyristor for electrical heating coil
- Safety thermostat for electrical heating coil
- Saturation temperature sensor
- Modbus RTU/RS485
- BACnet IP, BACnet MS/T

Technical specification

Filter quick-clamping system

Extremely smooth inside for highest hygiene standard



High efficiency fan

Thermal break panel construction

Euroclima SDF
- Sectional de-frosting for ZHK NANO

Energy saving solution at the plate heat exchanger in defrost operation

If the outside temperature is cold, the plate exchanger can freeze on the exhaust air side. De-icing then normally takes place by opening the bypass damper, which means that heat is no longer recovered and the desired supply air temperature is then only achieved with an increased heating power or by reducing the supply air volume flow.

The Euroclima SDF unit (Sectional De-Frosting) consists of 4 dampers and solves this problem. In addition, the SDF unit means that the devices have a significantly lower energy requirement and that in most cases there is no need for an energy-intensive preheater coil. Depending on the outside air conditions, the necessary defrosting of the plate heat exchanger can take place in 3 phases.

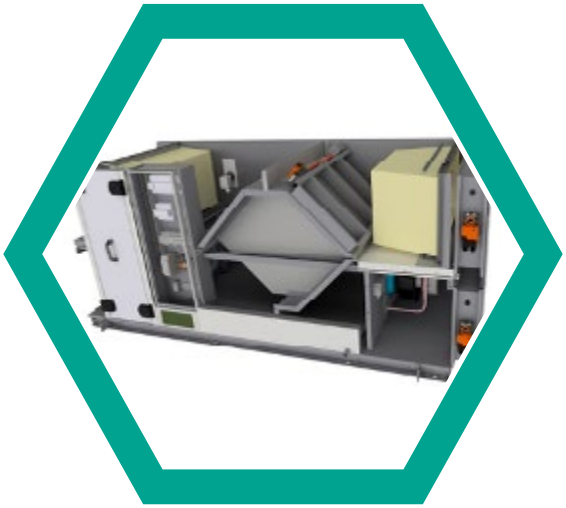


Abb1: ZHK Nano with mounted SDF-element

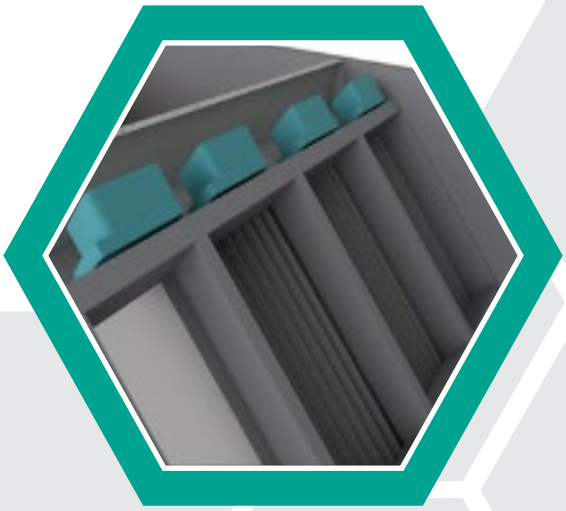


Abb2: 4 dampers of the SDF-element

Function

Mild winter climate

The air flow from the outside air is partially guided through the modulating opening bypass damper. This leads to a higher temperature on the exhaust air side and prevents freezing. Depending on the actual temperature and humidity of the air, the opening degree of the bypass damper can vary.

Cold winter climate

Frost formation is prevented by the flow in sections of the coil via 3 sectoral dampers and the bypass damper. During the defrosting period, one damper closes depending on the outside temperature - in extreme cases, two dampers can be closed. The bypass damper is closed during this process. Since only part of the coil is deactivated, the supply air volume flow decreases in the defrosting period. This depends on the fan output due to the additional pressure loss. If defrosting in sections is not sufficient, the bypass damper is also activated.

Extremely cold winter climate

At temperatures below - 20 ° C it is no longer possible to guarantee continuous defrosting. Therefore a heating coil for preheating the outside air is installed in the fresh air volume flow. This heating coil can be either an electric heating coil or a water heating coil.


Fijian Airways
Flight Simulator
Fiji


Ballina State
High School
New South Wales


CCEC
New Zealand


Nestle Factory
Victoria


Westside Place
Victoria


Integria Health Care
Queensland

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