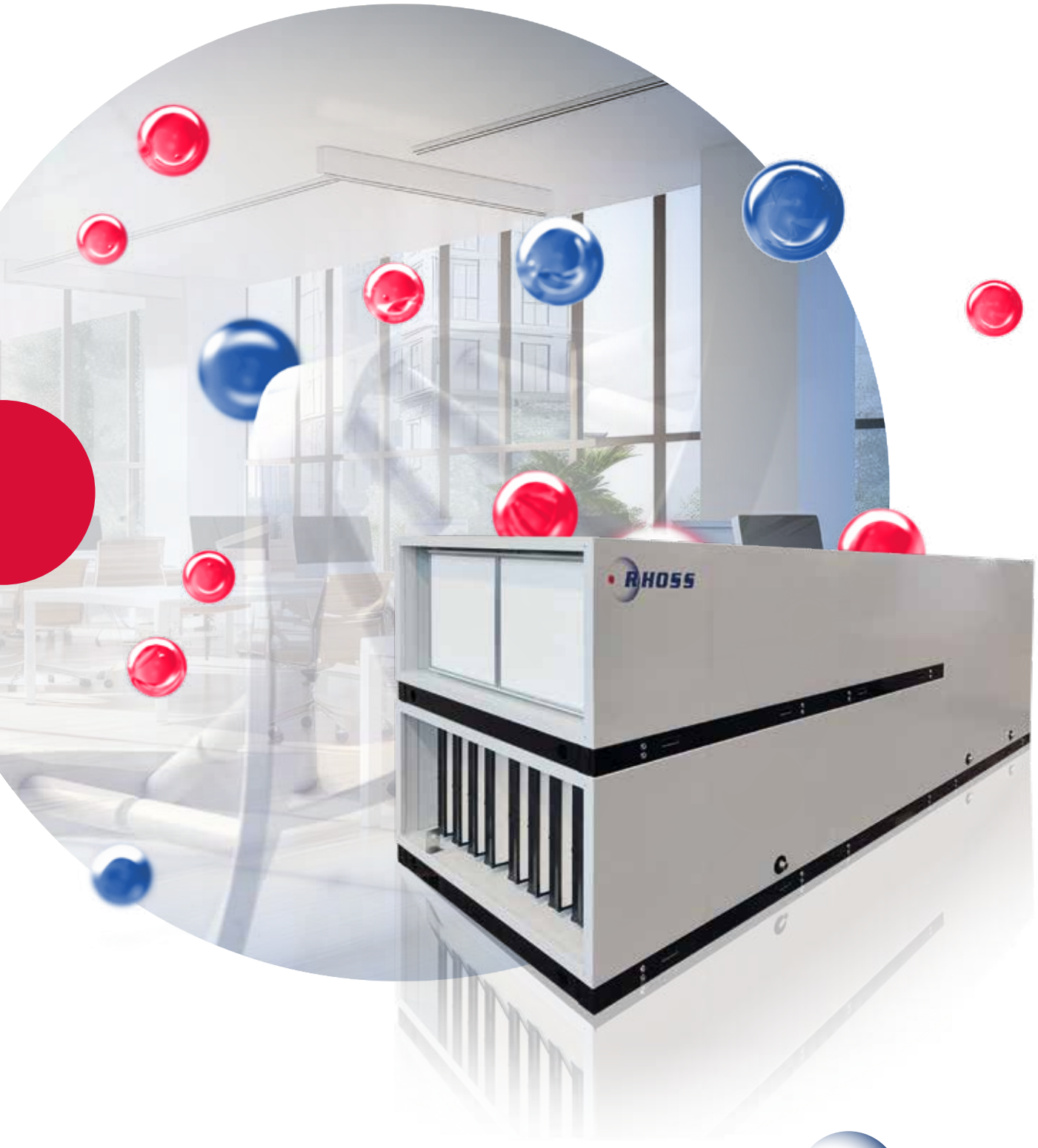
ADV-DNAIR

The flexibility of a unique design



Rhoss' innovative new line of air handling units that looks to the future of air conditioning

RHOSS

PART OF NIBE GROUP

Unique design for uncompromising performance

The new ADV-DNAIR range of air handling units is entirely designed to achieve **new quality standards and better performance** with wide versatility to meet any type of request (standard or custom), creating a healthy and comfortable environment and anticipating the new stringent European regulations still being drawn up.

ADV DNAIR

PATENT

Patented structure
(EP 4 575 338 A1)

Zero air leaks

Every cubic metre of air counts: no losses, maximum efficiency. The sealed structure certified (MB50P) according to EN 1886 eliminates air leakage and ensures optimal performance of the entire system.

Environmental conditions under control, with no risk of condensation.

The special structure without thermal bridges prevents condensation even under critical conditions, reducing the risk of microbial growth and damage to the structure.

Filter frame without bypass

All air is processed, no way out.
Thanks to the total seal system, air always goes through the filter: this improves filtration efficiency and the quality of the processed air.

Unique design

Carefully designed, built to last.
Perfect shapes, sealing gaskets and extreme dimensional flexibility: a structure that combines aesthetics, functionality and maximum system adaptability.

Designed around your needs

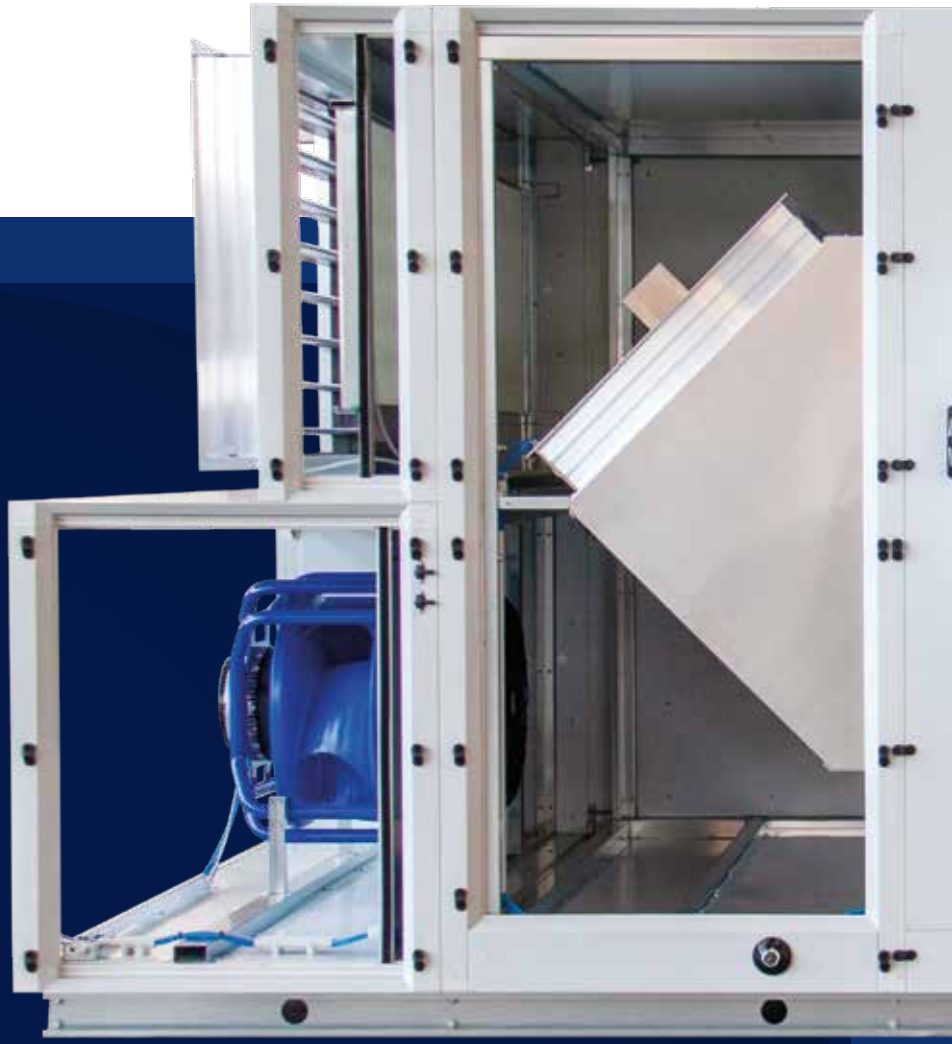
Each project is unique. From the structure to the internal components, to the selection software, everything is designed to perfectly match the specific plant requirements and allow the designer to set up the best solution, without compromise.

Heat recovery

Cross and counter-flow recovery: efficiency and sturdiness
Static recovery units with optimised seasonal efficiency thanks to built-in bypass systems with minimum pressure drops, compact recirculation and frost protection as standard. Ready for every season, without compromise.

Rotary recovery units: more energy, less space
Very high, even latent efficiency and small footprint. Sensitive or enthalpy exchangers to recover heat and moisture. Summer pre-humidification and winter pre-humidification: less energy consumption and better comfort.

Twin coil recovery units: zero contamination guaranteed
When flows cannot meet, this is the solution.
Fully separated dual coil system, ideal for hospitals, laboratories and critical environments. No possibility of cross-contamination between supply and return, in full compliance with the strictest health-safety requirements.



Fans and electric motors

Customised fans: optimised performance
3 technologies, one goal: maximum efficiency.
Brushless EC motors with high-tech impellers, plug or belt-driven centrifugal fans. Optimised acoustic and energy performance for any installation requirement.

High-efficiency motors and state-of-the-art control
Lower consumption, maximum noiselessness.
EC or AC motors and advanced inverters for precise control of the operating point. Accurate balancing = reduced vibration and long service life.

Heat exchange coils

Heat exchange coils: tailor-made efficiency

Our coils, available in hydronic, steam or direct expansion versions, are designed with an optimised front surface area to minimise air-side pressure drop, thereby improving the performance of the entire system. There is a wide choice of materials and protective treatments for the finned pack and frame, ensuring durability and resistance to corrosion even in heavy-duty conditions. Each set-up is designed to provide the highest degree of efficiency in the specific application.

Smart materials for every environment

The structure adapts to the environment, not the other way around.

Total flexibility in the materials: galvanised, painted, stainless steel or Magnelis®. The highest resistance to corrosion and long service life in any installation setting, from standard to the most aggressive environments. Panel insulation is also customisable: available in injected polyurethane or mineral wool, to meet various thermal, acoustic or fire resistance requirements.

Details that make a difference

The construction details are of paramount importance to ensure long-lasting high performance. Thanks to careful design, combined with constant research and development and decades of experience, we can offer state-of-the-art solutions.

Special total seal filter frame

Zero bypass, just clean air.
Reinforced metal structure with long-lasting perimeter seals. Filtered air remains filtered: no dirty air escapes. It allows filters up to ePM1 95% to be installed and reduces the length of the machine due to the side extraction.

Adjustable hinges: precision and durability

The three-dimension adjustable hinges allow fine adjustment to be carried out over time, ensuring precise closing even in the event of temperature or load variations. This mechanism ensures perfect alignment of the door is maintained over time, optimising insulation and preventing air leakage that may undermine the efficiency of the system.

Handles: opening under control

The handles, equipped with a safety release button system, are designed to safely control the opening of doors in overpressure conditions. The adoption of a security key locking system ensures additional protection, resulting in total control over door opening, even in operational situations requiring strict security standards.

Perfectly sealed panels

The tongue-and-groove joint system, together with the perimeter seals, ensures a perfect seal between the panels and at the points where the modules are joined. This approach is key to avoid air infiltration and ensure optimal energy efficiency, preventing heat loss and improving the overall performance of the ventilation system.

Electrical cable ducts: aesthetics and functionality

The electrical cable ducts, built into the structure and featuring the same aesthetic finish as the panels, offer not only secure wiring management with power cables always separated from signal cables, but also a visually consistent solution that contributes to a streamlined design. This detail preserves the optimal functionality of the system, without compromising on aesthetics.

IAQ at the centre: technology for well-being

Indoor Air Quality: more than a function, a responsibility.

Rhoss has always been a pioneer in indoor air quality solutions.
Long before IAQ became a key issue in plant engineering, Rhoss had already chosen to innovate in this direction.
Continuous research and the adoption of cutting-edge technologies prove a tangible commitment to well-being and healthy environments.
For us, filtration is a key function, not an accessory.

High-performance particle filtration

ISO 16890-compliant filtration systems, available from ISO Coarse up to ePM1 95%. Filter combinations are selectable according to the required ODA and SUP levels, ensuring compliance with health and performance requirements even in highly critical environments.

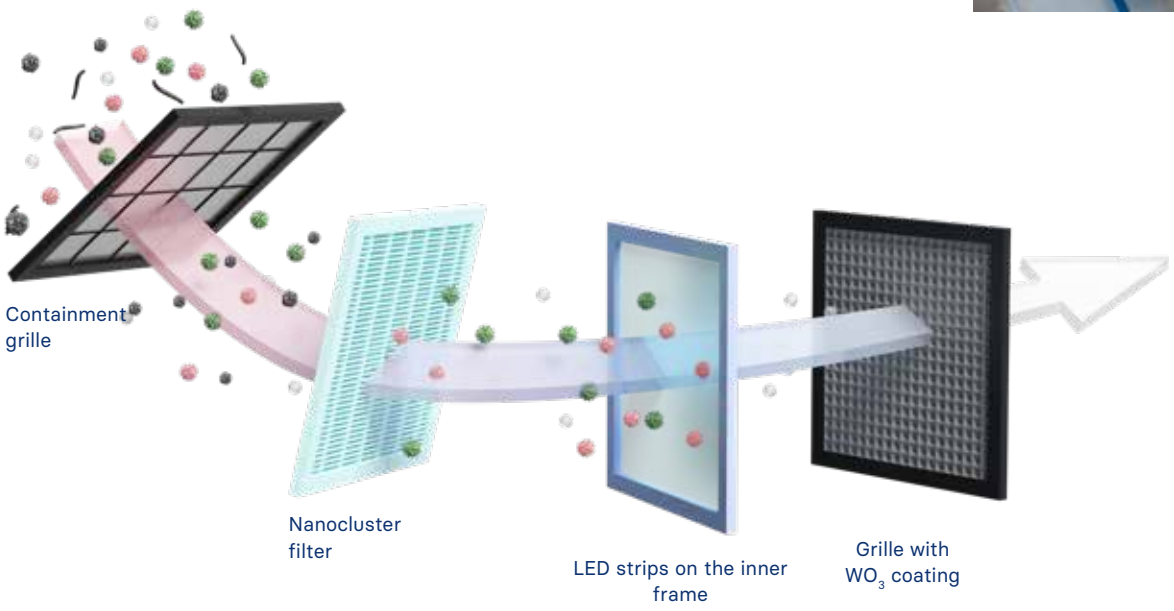
Gaseous pollutant filtration

Activated carbon filters and specific molecular solutions are available for the control of gaseous pollutants, such as VOCs and compounds emitted by vehicular traffic. Different types and set-ups ensure effective reduction of odours and contaminants, in line with the most stringent ODA requirements.

Biological pollutant filtration

The Air'Suite® technology integrated in the last stage of filtration eliminates algae, fungi, mould, mites and bacteria.

In exhaust, photocatalytic technology ensures that exhaust (and possibly recirculated) air is decontaminated from bacteria and viruses, rendering it harmless.



Smart adjustment carefree efficiency

The digital heart of our units is designed to simplify the system, streamline energy and facilitate installation.

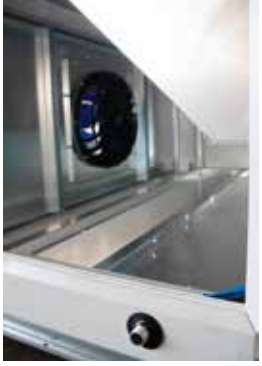
All ADV DNAIR Plug&Play versions feature factory built-in, advanced adjustments directly on the machine.
The unit is delivered ready for electrical connection and start-up: no external set-up, no surprises on site.

Total performance control

All settings under control, always.
Ventilation, heat recovery, handling coils, actuators, dampers and probes: everything is controlled by a single advanced, expandable and customisable logic.

Energy savings

Just the energy you need, when you need it.
Free-cooling logic, dynamic flow management and intelligent bypass activation, integrated PID control, time slot management. Concrete efficiency, season after season.

Utmost comfort

Environmental comfort is achieved through the precise and dynamic adjustment of all critical settings: temperature, relative humidity, CO, VOC, particulate matter (PM) concentration, air flow rate and sound levels.
Advanced control algorithms ensure stable and responsive control, guaranteeing consistent performance even when the external conditions or the internal load change.

Safety and maintenance

The ADV DNAIR units with on-board adjustment are CE certified in accordance with the Machinery Directive. This means that no additional action or declaration is required from the installer: the machine is already compliant, safe and ready to use.
Each unit is factory tested for all its functions, with special focus on electrical and functional safety aspects. Maintenance-oriented design and guaranteed availability of spare parts ensure that the system's management is simple, fast and efficient over time.

Connectivity and supervision

The control unit integrates with the building, a process as uncomplicated as with any other modern equipment.
Open protocols, BMS readiness, user-friendly interfaces and remote control possibilities.
The unit communicates with the existing system, or becomes the core of the new one.

THE ADVANTAGES

The advantages of a state-of-the-art AHU

Turnkey package

Every stage of the project, from design to commissioning, is handled with the utmost care and expertise, to offer complete, hassle-free solutions.

Thanks to our consolidated experience, we provide a complete service, integrating design, installation and testing, guaranteeing optimal results quickly and with the utmost reliability.

Electrical design and construction of the control panel.
Every detail, under control.
We take care of the electrical design, and construction of the control and power panel, and we supply all the necessary circuit diagrams. Our integrated approach ensures seamless integration of systems and control logic.

Control and programming logic development.
Intelligence working for you.
We develop and implement cutting-edge control logics, programming the controllers so that the units are always optimised for energy efficiency and environmental comfort. Each machine is set up to meet the specific requirements of the project.

Selection and installation of field elements.
Perfect integration, always.
We select and assemble all field elements (probes, actuators, valves, pressure switches) in harmony with the machine and control logic, ensuring seamless integration, maximum field performance and durability

Smart wiring: quick-connect wiring.
Technology that simplifies.
Thanks to the quick-connect wiring technology, the installation of units divided into modules is easier, faster and more efficient. Peripherals communicate with the controller via Modbus, ensuring complete and trouble-free control. Pre-wiring in the factory - even when the modules are separated for transport - improves process quality.

INTELLIGENT SYSTEM

Reliability ensured over time

Top quality in less time.
Speed without compromising on quality.
Installing the adjustment unit at the factory reduces delivery time and enables easy access to all components, avoiding the typical hindrances that occur on the installation site. All elements are pre-engineered to ensure accurate readings and quick installation.

100% reliability with Plug&Play solution.
No unknowns, only performance.
The Full Plug&Play solution eliminates installation and setting up problems on site.
The control unit is designed, tested and installed in the factory, reducing the risk of errors and increasing the overall reliability of the system.
Factory testing ensures all components operate properly, guaranteeing a trouble-free start-up.

All the quality, for all life.
The ADV DNAIR units with on-board adjustment are CE certified in accordance with the Machinery Directive: no additional operation required, the machine is ready for use and safe.

Each unit is factory tested for all its functions, including safety aspects.

The structure is designed for easy maintenance, with spare parts always available.

Rhoss guarantees operational continuity with routine and extraordinary maintenance services, through its own service network, for the entire service life of the product.

One range, endless solutions

ADV DNAIR offers a wide range of sizes and technical solutions to meet every installation requirement, with an eye on the future developments of energy regulations. **Versatility is at the heart of the project.**

Every project has its own size: we have the answer

120 models, flow rates from 800 to 100,000 m³/h

An extremely modular range with over 120 set-ups. Suitable for any system scale, from small installations to large industrial or hospital infrastructures.

Compliant today, ready tomorrow

Tailor-made recovery units for every standard

With a wide choice of static, rotary and coil recovery units, we guarantee full compliance with current and future standards. The unit evolves with regulations, without compromise.

Dynamic energy efficiency, when it is really needed

Intelligent by-pass for off-peak seasons

State-of-the-art bypass systems reduce pressure losses during off-peak seasons and maximise energy performance, improving the units' Eurovent summer label.

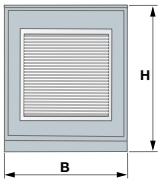
Features

ADV DNAIR

ADV-DNAIR		1	2	3	4	5	6	7	8
MODEL		1.1	1.2	2.1	2.2	2.3	2.4	2.5	2.6
Air flow rate at 2 m/s	m³/h	1915	2504	3505	2938	3067	3456	3529	4365
Front dimension B	mm	750	790	875	650	650	650	1340	1340
Front dimension H	mm	430	520	640	730	760	850	430	520
ADV-DNAIR		9	10	11	12	13	14	15	16
MODEL		2.7	3.1	3.2	3.3	4.1	4.2	4.3	4.4
Air flow rate at 2 m/s	m³/h	4032	4529	4536	4788	5144	6362	5018	5090
Front dimension B	mm	750	975	750	750	1930	1930	1075	750
Front dimension H	mm	850	730	950	1000	430	520	730	1060
ADV-DNAIR		17	18	19	20	21	22	23	24
MODEL		4.5	4.6	4.7	4.8	4.9	5.1	5.2	5.3
Air flow rate at 2 m/s	m³/h	5292	5480	5751	5544	5846	7056	6098	6401
Front dimension B	mm	750	1340	1175	750	750	1275	750	750
Front dimension H	mm	1100	640	760	1150	1210	850	1260	1320
ADV-DNAIR		25	26	27	28	29	30	31	32
MODEL		5.4	5.5	5.6	5.7	6.1	6.2	6.3	6.4
Air flow rate at 2 m/s	m³/h	7632	6602	6854	7207	7986	7834	8077	9101
Front dimension B	mm	1375	750	1450	750	1930	1650	1630	1630
Front dimension H	mm	850	1360	730	1480	640	730	760	850
ADV-DNAIR		33	34	35	36	37	38	39	40
MODEL		7.1	7.2	7.3	8.1	8.2	8.3	8.4	9.1
Air flow rate at 2 m/s	m³/h	9266	10431	10426	9381	9752	9526	10108	10217
Front dimension B	mm	1480	1575	1860	1340	1340	1060	1060	1340
Front dimension H	mm	950	1000	850	1060	1100	1360	1440	1150

ADV-DNAIR		41	42	43	44	45	46	47	48
MODEL		9.2	9.3	10.1	10.2	10.3	10.4	11.1	11.2
Air flow rate at 2 m/s	m³/h	10774	13041	11238	11796	12182	12859	12167	13282
Front dimension B	mm	1340	1775	1340	1340	1930	1930	1340	1340
Front dimension H	mm	1210	1100	1260	1320	950	1000	1360	1480
ADV-DNAIR		49	50	51	52	53	54	55	56
MODEL		11.3	12.1	12.2	13.1	13.2	13.3	14.1	15.1
Air flow rate at 2 m/s	m³/h	13839	13671	14213	14890	16119	16013	16068	16379
Front dimension B	mm	1340	1930	1930	1930	1980	1650	1340	1930
Front dimension H	mm	1540	1060	1100	1150	1210	1440	1780	1260
ADV-DNAIR		57	58	59	60	61	62	63	64
MODEL		15.2	16.1	17.1	17.2	18.1	18.2	19.1	20.1
Air flow rate at 2 m/s	m³/h	18608	17732	19356	20169	19562	20629	22268	21519
Front dimension B	mm	2085	1930	1930	1930	2520	2520	2275	2520
Front dimension H	mm	1320	1360	1480	1540	1150	1210	1440	1260
ADV-DNAIR		65	66	67	68	69	70	71	72
MODEL		20.2	20.3	22.1	22.2	22.3	23.1	23.2	23.3
Air flow rate at 2 m/s	m³/h	22586	22064	23417	23297	24870	24636	25431	26498
Front dimension B	mm	2520	1930	1930	2520	2535	1930	2520	2520
Front dimension H	mm	1320	1680	1780	1360	1440	1870	1480	1540
ADV-DNAIR		73	74	75	76	77	78	79	80
MODEL		24.1	24.2	25.1	25.2	27.1	27.2	27.3	27.4
Air flow rate at 2 m/s	m³/h	27922	26124	30725	27207	28832	30690	31609	32935
Front dimension B	mm	2840	1930	3120	1930	1930	2665	3120	3120
Front dimension H	mm	1440	1980	1440	2060	2180	1680	1480	1540

ADV-DNAIR		81	82	83	84	85	86	87	88
MODEL		29.1	29.2	31.1	33.1	34.1	34.2	35.1	36.1
Air flow rate at 2 m/s	m³/h	36030	30766	32367	34323	38240	35746	47961	37880
Front dimension B	mm	3120	2520	2520	2520	3120	2520	3710	2520
Front dimension H	mm	1680	1780	1870	1980	1780	2060	1870	2180
ADV-DNAIR		89	90	91	92	93	94	95	96
MODEL		36.2	38.1	39.1	39.2	40.1	40.2	41.1	42.1
Air flow rate at 2 m/s	m³/h	40229	40014	42661	44429	41792	42954	47082	43393
Front dimension B	mm	3120	2520	3120	3120	2520	3710	3120	2520
Front dimension H	mm	1870	2300	1980	2060	2400	1680	2180	2490
ADV-DNAIR		97	98	99	100	101	102	103	104
MODEL		44.1	45.1	47.1	47.2	48.1	49.1	50.1	53.1
Air flow rate at 2 m/s	m³/h	45171	49734	50859	52968	51944	56130	53934	56144
Front dimension B	mm	2520	3120	3710	3710	3120	3710	3120	3120
Front dimension H	mm	2590	2300	1980	2060	2400	2180	2490	2590
ADV-DNAIR		105	106	107	108	109	110	111	112
MODEL		53.2	54.1	55.1	58.1	58.2	60.1	63.1	64.1
Air flow rate at 2 m/s	m³/h	45589	61506	59292	61927	65178	64299	66934	68850
Front dimension B	mm	3710	4300	3710	3710	4300	3710	3710	4300
Front dimension H	mm	1780	2060	2300	2400	2180	2490	2590	2300
ADV-DNAIR		113	114	115	116	117	118	119	120
MODEL		67.1	71.1	73.1	74.1	77.1	81.1	85.1	95.1
Air flow rate at 2 m/s	m³/h	71910	74664	78408	77724	81893	85029	88514	99304
Front dimension B	mm	4300	4300	4890	4300	4890	4890	4890	5480
Front dimension H	mm	2400	2490	2300	2590	2400	2490	2590	2590



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New air for the future.

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