Air handling unit
Optima2
General

- **Advantages of air handling unit Optima2**

Outstanding flexibility due to adjustable modular construction and a wide selection of air handling unit sizes.
A range of 8 sizes allows a combination of various air handling unit cross section widths and heights.

Application range from 1000 m³/h to 19,800 m³/h.
The following air handling functions are provided: ventilation, heating, cooling, heat recovery, mixing, air filtration, sound attenuation.

Easy installation due to housing solidity and adaptability to the building entrance conditions, as well as simplicity of interconnection into a set within or outside the housing.
Air handling units can be dismantled into any number of particular compact sets, depending on the number of functional sections, unit size, transport options, and building requirements.

Low energy consumption and quality thermal insulation and air-tightness of housing.
Acoustic and thermal insulation is made of 35 mm thick rock wool. It is non-flammable and it remains stable over time and thus assures the solid housing.

Easy maintenance and access to all components
Internal surfaces of a high quality housing are flat and smooth. Holding components of functional elements have their sharp edges rounded to the extent practicable.

Additional anticorrosion powder-coating or use of stainless materials ensure extended service life.
Any combination of steel sheet materials is available.

Option to select optimal exhaust air heat or cold recovery system.
- Plate recuperator (16 sizes)
  - with heat recovery level 50% - 65%.
- Rotary regenerative heat exchanger
  - (22 sizes)
  - with heat recovery level 50% - 75%.
Quality

Quality of air handling units is very important, thus we pay a lot of attention to constant improvement of all business processes and products.

- Air handling units comply with the ISO 9001, which is how we guarantee quality in development, construction, manufacturing and sales.
- Air handling units conform with the requirements of the European directives for machinery, low voltage and electromagnetic compatibility.
- We have acquired GOST certificate for all types of air handling units intended for the Russian market.
- Tests for mechanical characteristics were made in our laboratory according to the norms EN 1886 and EN 13053.
Types of air handling units

We have developed a family of interior air handling units, distinguished by their reliability and flexibility. Optima2 air handling units ensure a recuperation level of 50-75%, while the air filtration level is from class G4 up to class F7. As standard, plug fans are built in. The cooling coils can be selected in 3- or 5, heating coils can be selected in a 1-, 2- or 3-row version. The sound attenuation section is optional. Electrical heaters are available on customer's request.

Concerning assembly of the functional units and characteristics of a building, there are available:

- horizontal air handling units [L]
- two-stage air handling units [D]
- parallel air handling units [V]

Panels and doors

Top, bottom and side cover panels as well as doors are made of 35 mm double-wall construction, with inner and outer walls of steel sheet and mineral wool thermal insulation filler.

Flammability class

Side, bottom and top wall as well as door is class A1 according to DIN 4102, which stands for non-combustible materials.

Filter leakage

Filter leakage complies with class F9 according to EN 1886

Thermal stability

The air handling unit thermal stability range is up to +80 °C – on account of the components sensitive to high temperatures, such as fan bearings, drive belts, filter medium, gaskets, etc. For the temperatures exceeding 40 °C, enhanced insulation electric motors shall be installed.

Mechanical and sound characteristics according to EN1886

Casing strength class: D2
max. pannel deflection: 10 mm/m

Thermal transmittance class: T3
1< U <1,4 (W/m2K)
Thermal Bridging factor: TB3
0,45< kb<0,60 (W/m2K)

Casing air leakage:
- at -400 Pa underpressure:
  L3 ... 1,32 [/(s m2)] - L2 on a request
- at +700 Pa overpressure:
  L3 ... 1,9 [//(s m2)] - L2 on a request

Optima2 Sound characteristics

Casing acoustical insulation (dB)

<table>
<thead>
<tr>
<th>Frequency (Hz)</th>
<th>125</th>
<th>250</th>
<th>500</th>
<th>1000</th>
<th>2000</th>
<th>4000</th>
<th>8000</th>
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<td>17</td>
<td>19</td>
<td>26</td>
<td>24</td>
<td>21</td>
<td>23</td>
<td>26</td>
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</tbody>
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Optima2 Functional units

- Radial Fan Section
- Water Heater Section
- Steam Heater Section
- Anti-Freezing Protection Section
- Electric Heater Section
- Water Cooler Section
- Direct Evaporator Section
- Droplet Eliminator
- Section with Two Control Dampers
- Control Damper
- Filtration Class G3 Filter Section
- Sound Attenuation Section
- Plate Recuperator Section
- Rotary Regenerator Section
- Empty Section
Selection programme Aircalc++

Selection programme Aircalc++ is an efficient tool for project engineers.

**Software**

- A precise definition of an air handling unit.
- Wide range of records and drawings.
- Archiving of the calculations and projects.
- Excellent internet transmission of calculations and plans.
- Direct transmission of calculations into the production.
- Process outline in h-x diagram.
- Fan noise curve plotting.
- Export of drawings to dwg format.