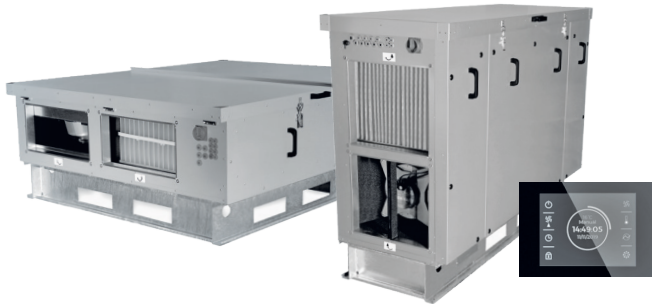




Counterflow plate heat recovery exchanger

**BASIC FEATURES****ALFA 95**

Highly efficient vertical and horizontal heat recovery unit range for indoor/outdoor installations designed for commercial application such as **offices, coffee bars, restaurants and sport facilities**.

- **4 series of horizontal version: 800 to 3500 m<sup>3</sup>/h**
- **6 series of vertical version: 800 to 5500 m<sup>3</sup>/h**
- Ecodesign directive 1253/2014 compliant
- Aluminium counterflow exchanger with heat recovery efficiency up to 93 % (EN308)
- Energy-efficient EC fans with low SFP and quiet operation
- Double skin mineral wool insulation 50 mm
- Heated compartment for condensate siphon
- Integrated electric pre-heater (optional)
- Integrated post-heater (option of electric, water, change/over or DX coil)
- Possible control of additional external post-heater and preheater
- **AirGENIO Superior** control system with an option of CAV, VAV or DCV mode, other supplementary modes, antifreeze protection, BMS control via ModBUS RTU, TCP or BACnet.

ALFA 95 heat recovery unit is designed to be operated at an indoor / outdoor environment and at an ambient temperature in the range from -20 °C up to +60 °C.

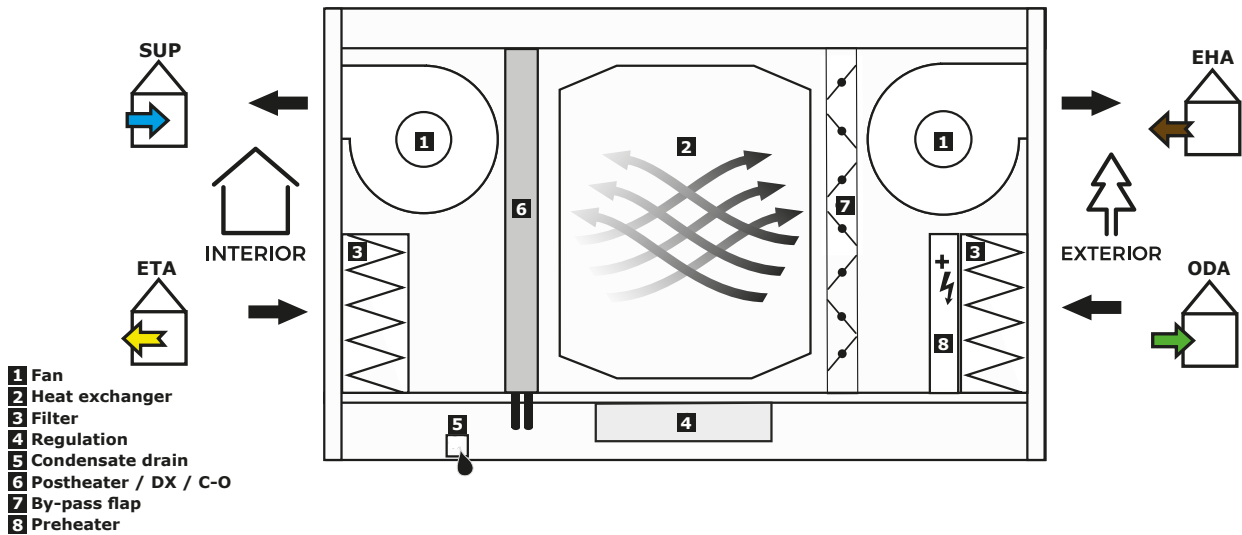
The unit is designed for transporting standard atmospheric air that is free of dust, grease, chemical emissions and other impurities. The transported air relative humidity must not exceed 90 %.

The unit casing is made from double skin mineral wool insulation panels of the thickness 50 mm. The unit, when installed in the ducting system has an IP rating of 54.

The design of the ventilation project must be **always designed by a qualified HVAC designer, engineer or architect**.

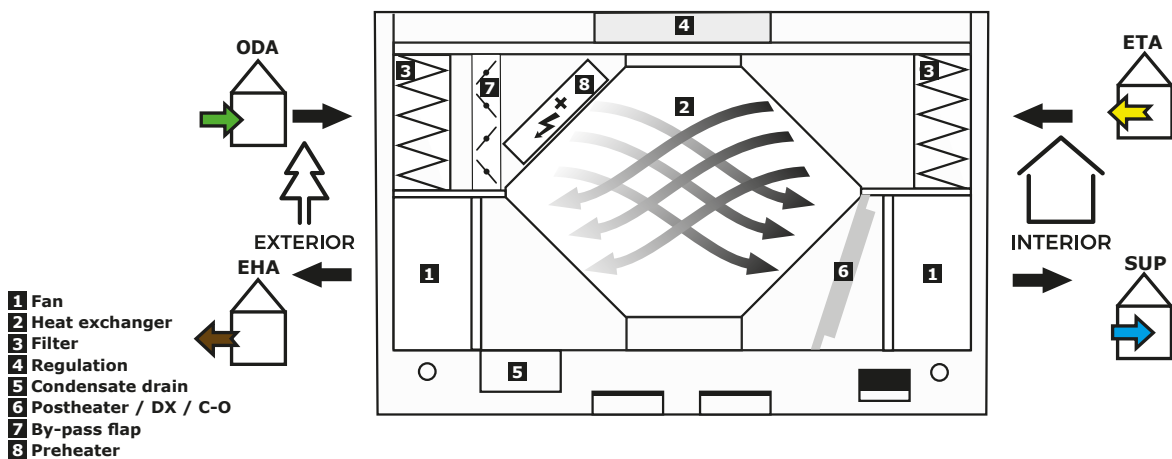
## HORIZONTAL

### Operational diagram



## VERTICAL

### Operational diagram



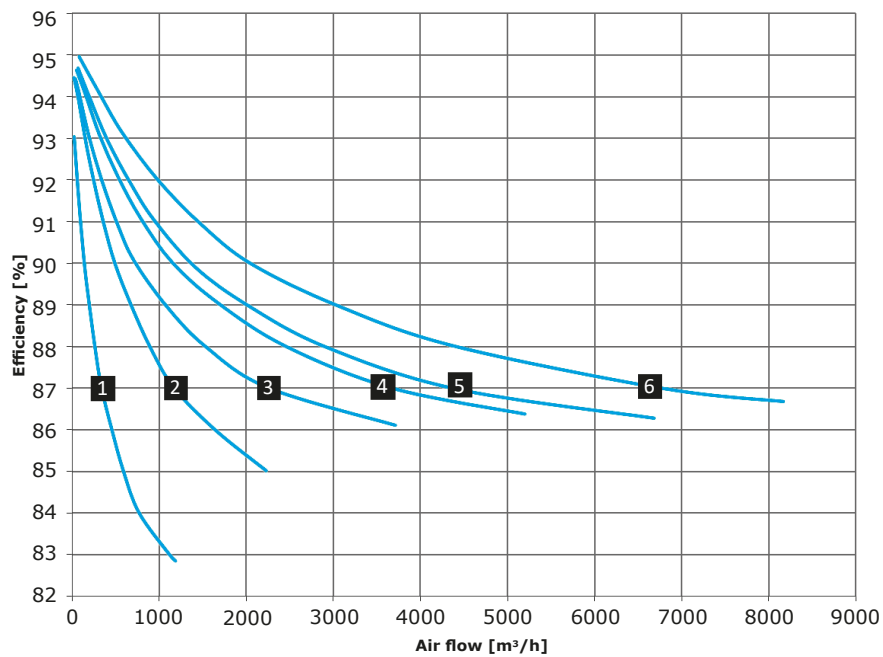
**PRIMARY PARAMETERS****Heat recovery efficiency:**

The data is measured under following conditions:

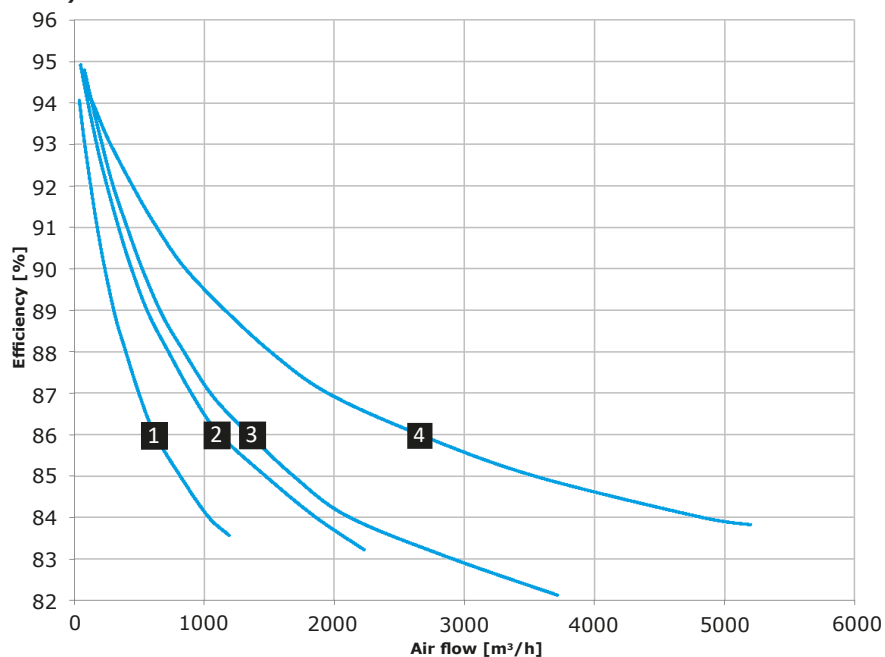
Outdoor air temperature is -5 °C, relative humidity 90 %

Indoor air temperature is 20 °C, relative humidity 65 %

The difference compared with the dry environment is approximately 5 %

**HR95 V (VERTICAL)**

1 HR95-080 2 HR95-150 3 HR95-250 4 HR95-350 5 HR95-450 6 HR95-550

**HR95 H (HORIZONTAL)**

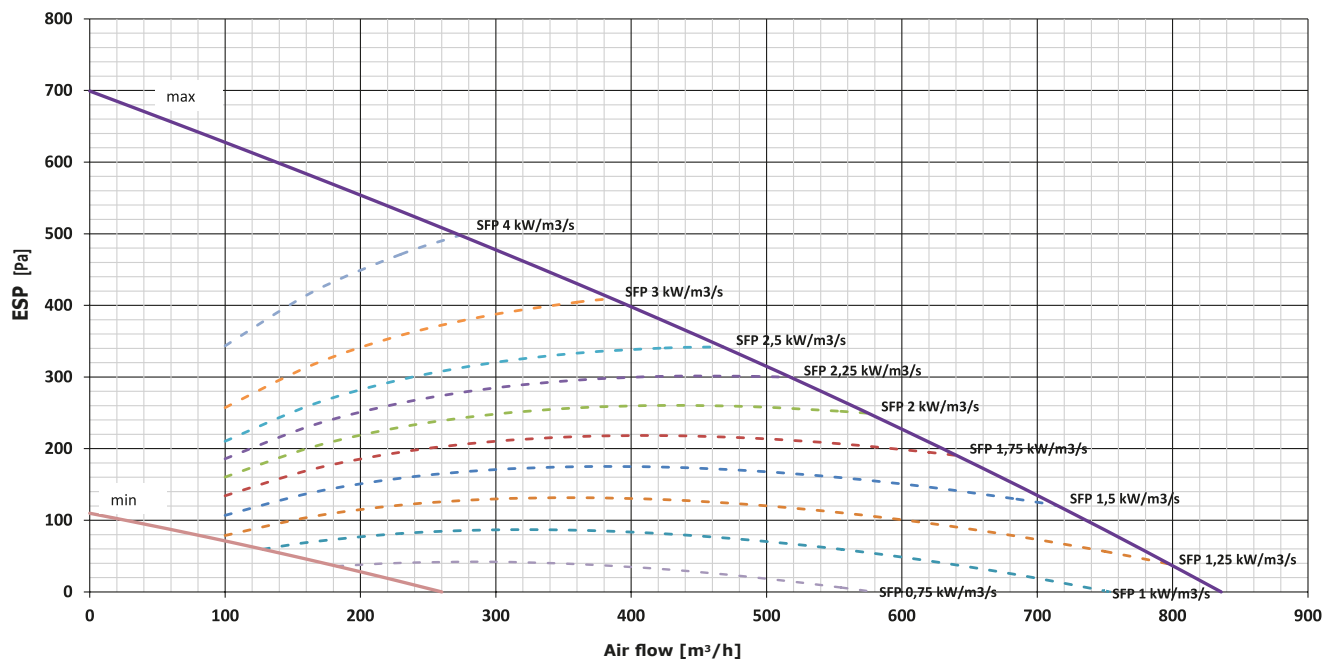
1 HR95-080 2 HR95-150 3 HR95-250 4 HR95-350



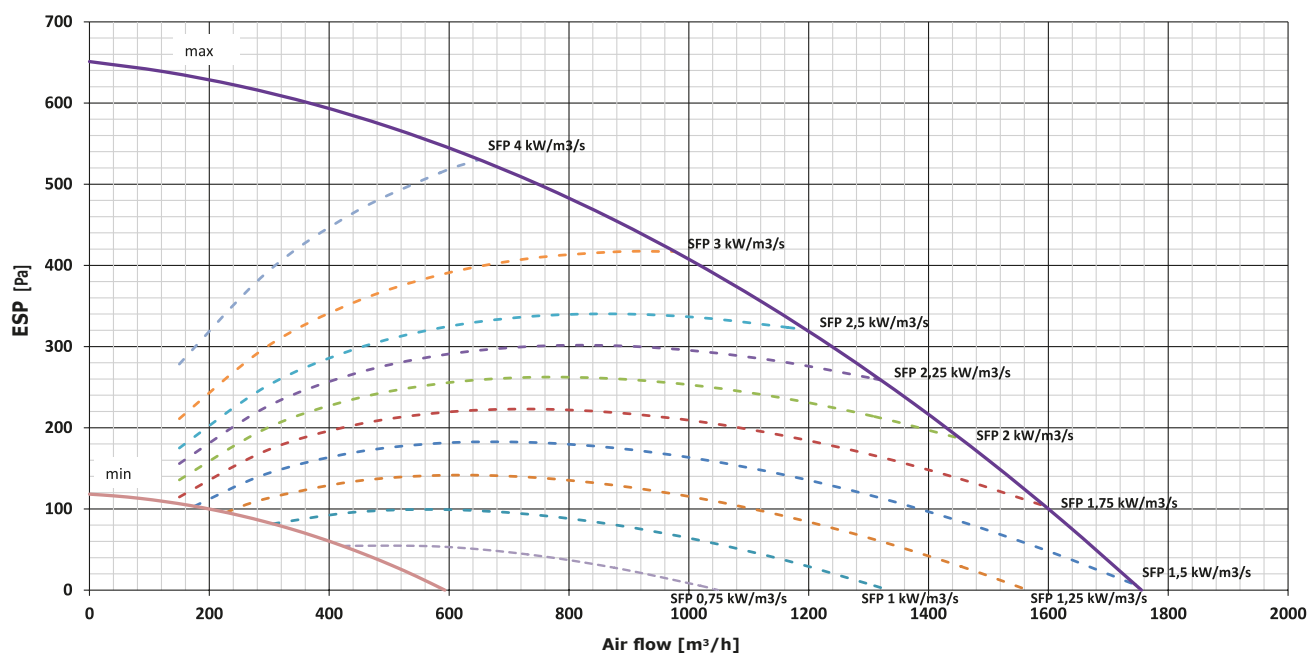
## PRIMARY PARAMETERS

SFP=Unit Power input/supply airflow (kW/m<sup>3</sup>/s)

### HR95-080 V



### HR95-150 V

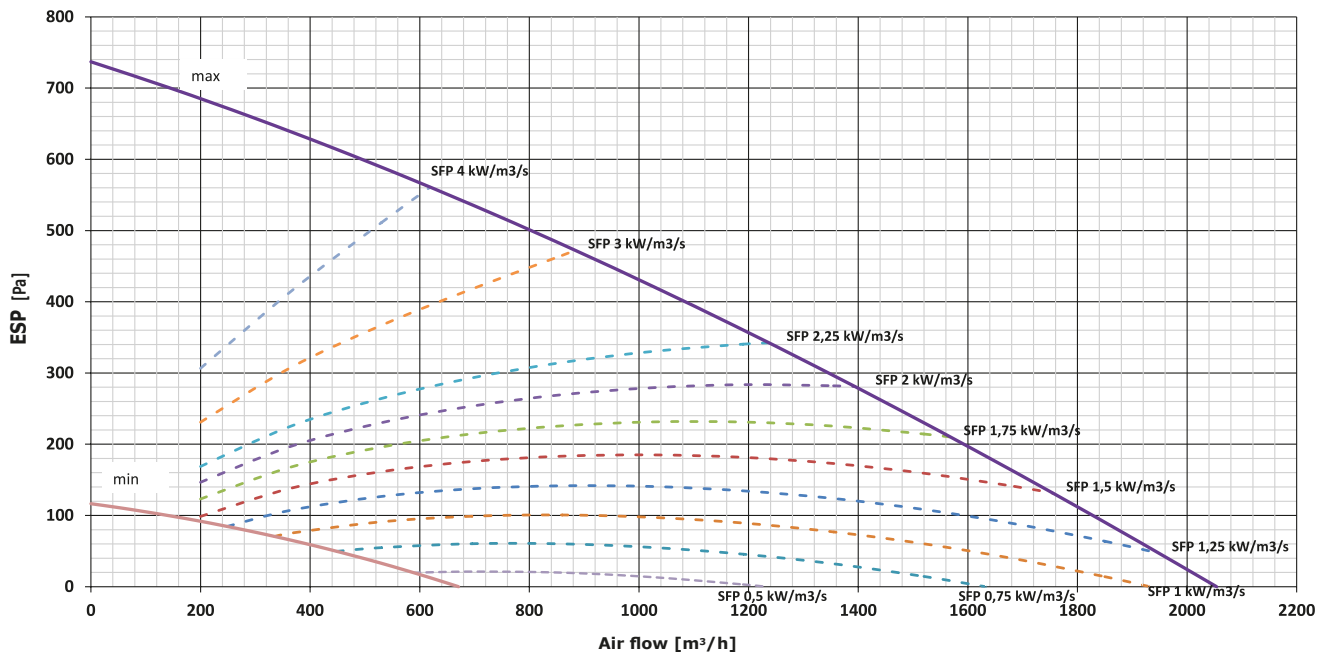




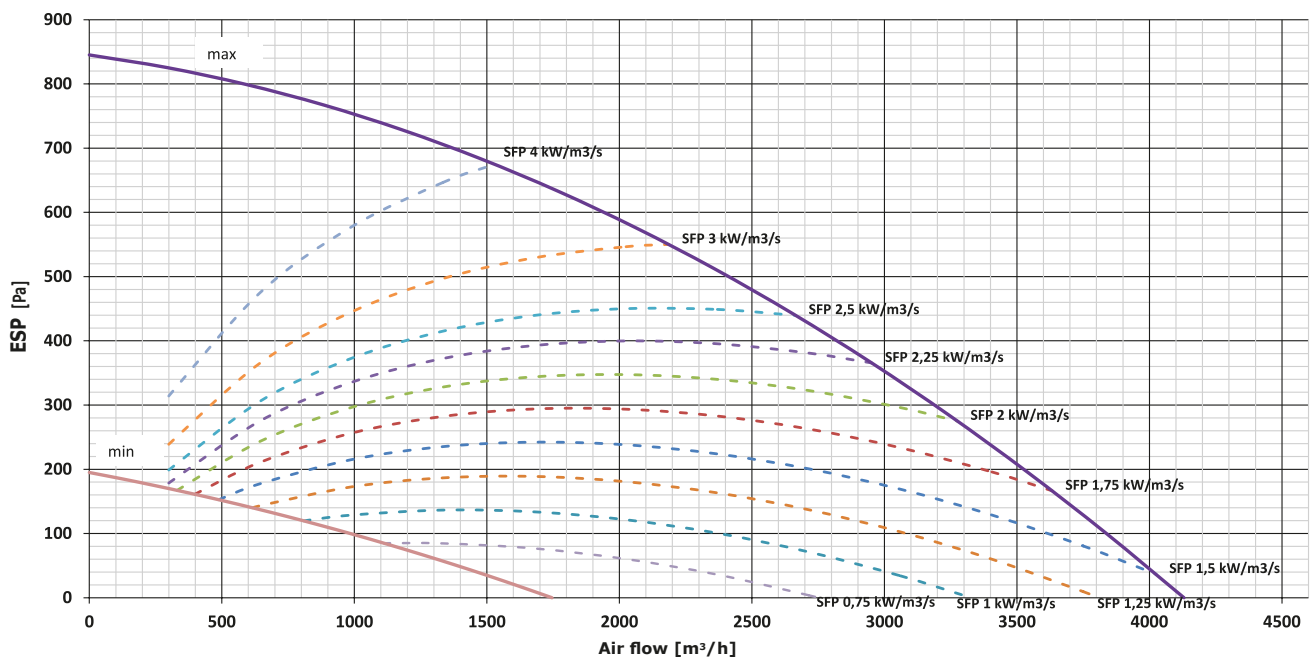
## PRIMARY PARAMETERS

SFP=Unit Power input/supply airflow (kW/m<sup>3</sup>/s)

## HR95-250 V



## HR95-350 V

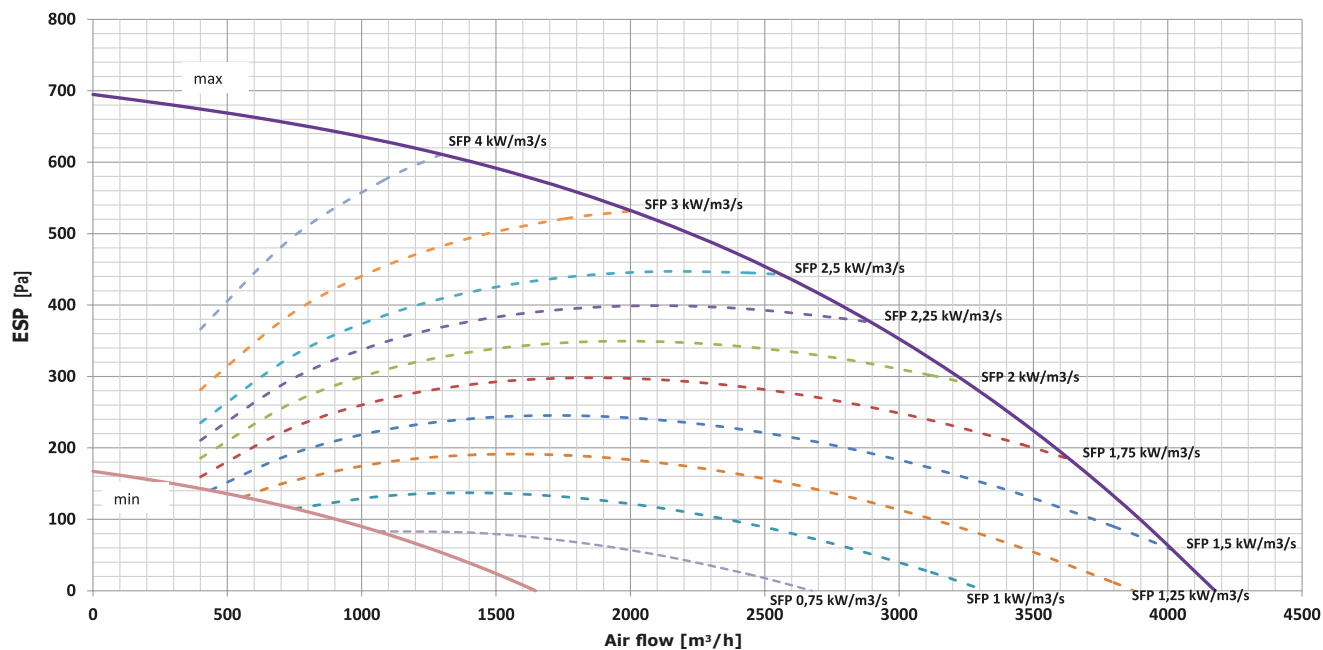




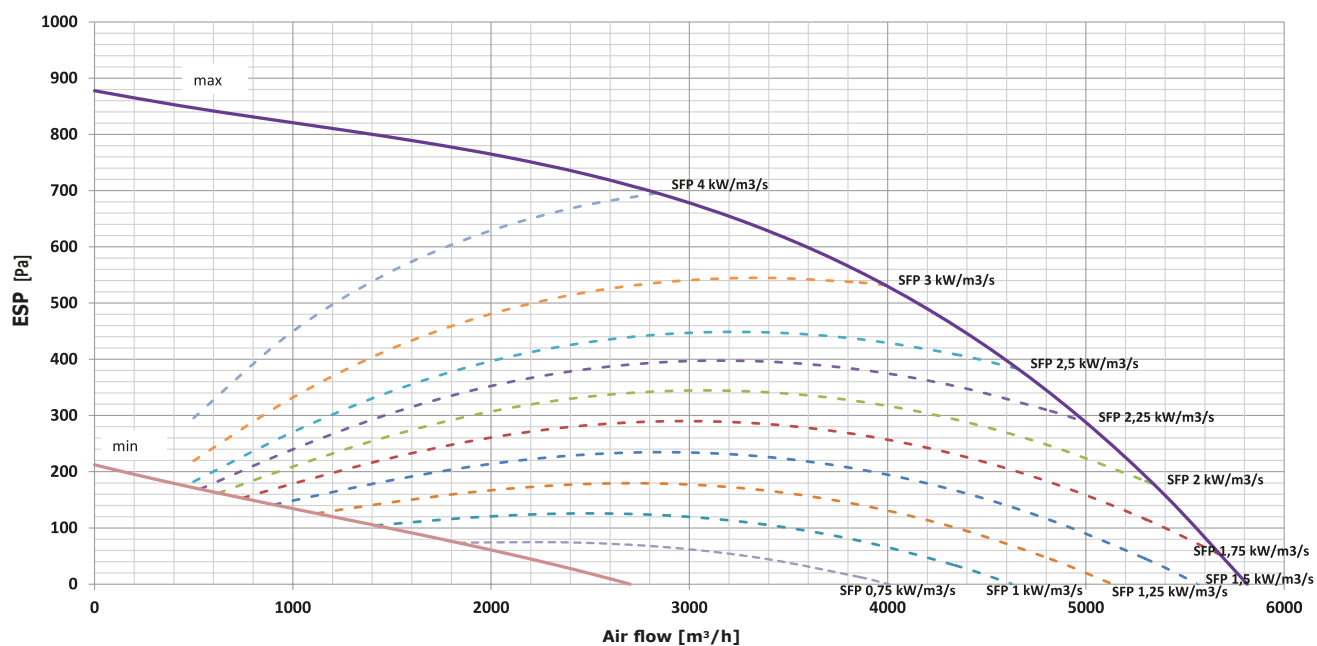
### PRIMARY PARAMETERS

SFP=Unit Power input/supply airflow (kW/m<sup>3</sup>/s)

#### HR95-450 V



#### HR95-550 V

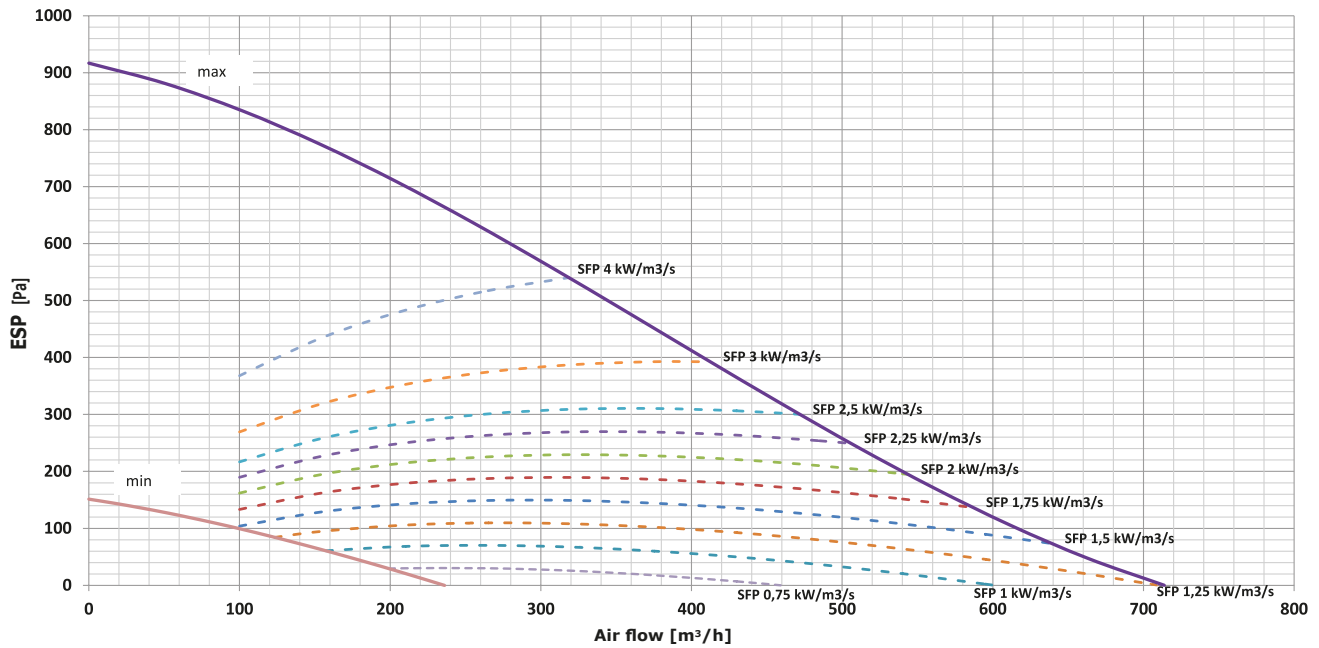




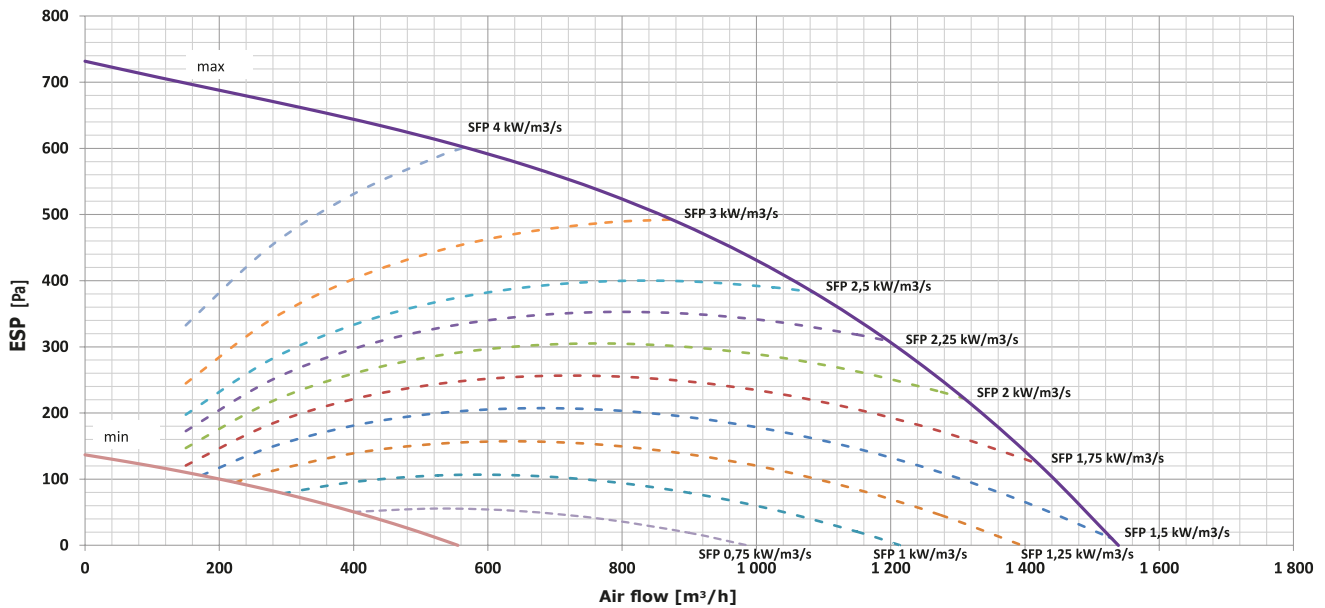
## PRIMARY PARAMETERS

SFP=Unit Power input/supply airflow (kW/m<sup>3</sup>/s)

## HR95-080 H



## HR95-150 H

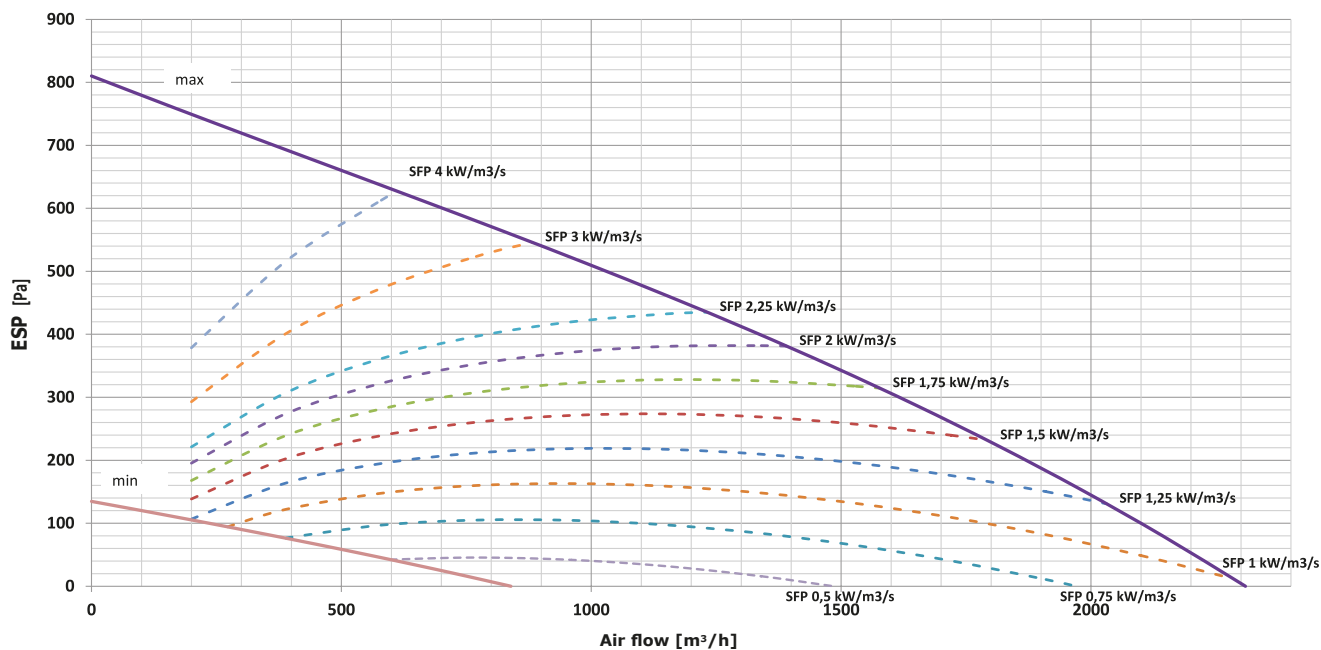




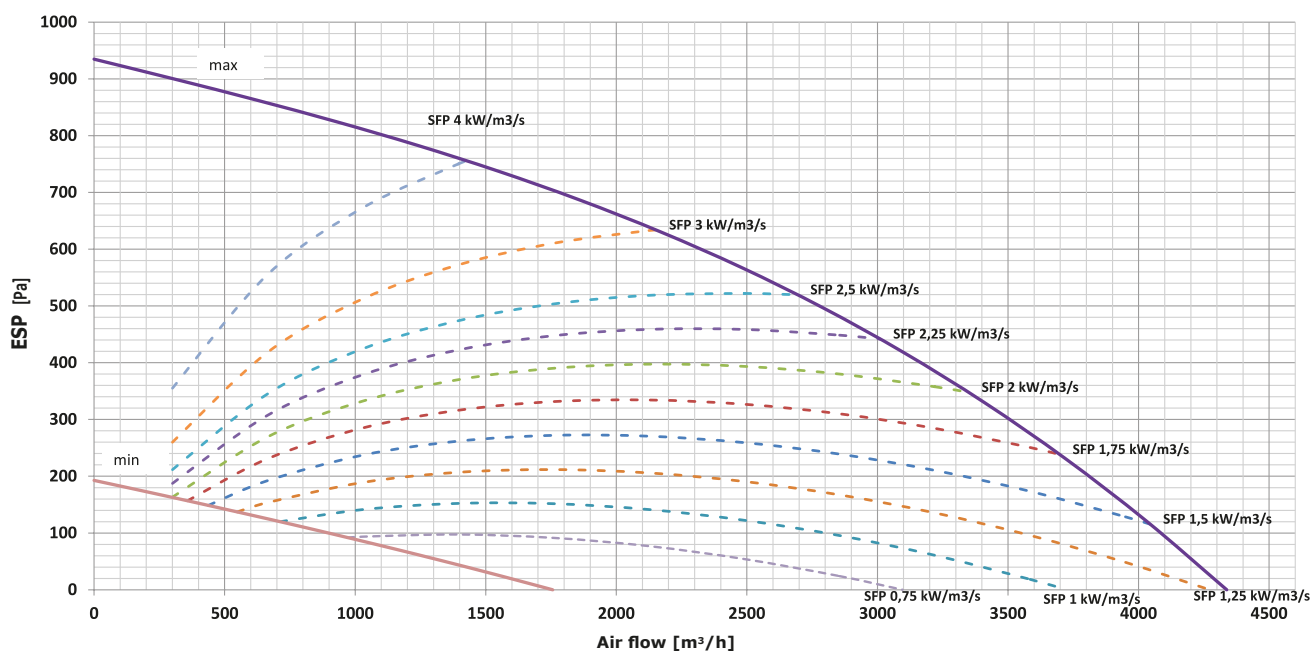
## PRIMARY PARAMETERS

SFP=Unit Power input/supply airflow (kW/m<sup>3</sup>/s)

### HR95-250 H



### HR95-350 H



**Noise specifications:**

HR95-080 V

| Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |                            |
|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|----------------------------|
|                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] | L <sub>PA</sub> [dB] at 3m |
| 700            | 100           | 33,4                                 | 42,7  | 47,6  | 52,1  | 51,0 | 46,5 | 39,3 | 28,7 | 56,2                 | <b>34</b>                  |
| 500            |               | 30,9                                 | 41,0  | 44,6  | 47,8  | 46,9 | 43,7 | 36,5 | 26,3 | 52,6                 | <b>30</b>                  |
| 400            |               | 29,0                                 | 39,1  | 42,2  | 45,1  | 44,2 | 41,0 | 33,1 | 22,4 | 50,0                 | <b>27</b>                  |
| 300            |               | 26,7                                 | 36,6  | 39,2  | 42,0  | 41,1 | 37,5 | 28,5 | 16,9 | 46,8                 | <b>24</b>                  |

| Branch | Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |
|--------|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|
|        |                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] |
| EHA    | 700            | 100           | 46,4                                 | 52,6  | 55,8  | 62,6  | 56,5 | 53,4 | 51,3 | 44,9 | <b>65</b>            |
| SUP    |                |               | 48,4                                 | 55,1  | 58,5  | 65,2  | 58,9 | 55,7 | 53,2 | 47,1 | <b>67</b>            |
| ETA    |                |               | 35,8                                 | 38,7  | 50,1  | 51,7  | 44,6 | 39,4 | 33,8 | 26,7 | <b>54</b>            |
| ODA    |                |               | 37,9                                 | 41,2  | 52,7  | 54,0  | 46,7 | 41,5 | 35,8 | 28,9 | <b>57</b>            |

HR95-150 V

| Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |                            |
|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|----------------------------|
|                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] | L <sub>PA</sub> [dB] at 3m |
| 1500           | 150           | 41,5                                 | 50,6  | 52,8  | 60,4  | 56,8 | 54,9 | 48,1 | 36,5 | <b>63</b>            | <b>41</b>                  |
| 1200           |               | 36,5                                 | 47,5  | 47,8  | 53,5  | 51,2 | 49,8 | 43,0 | 31,0 | <b>57</b>            | <b>35</b>                  |
| 900            |               | 34,8                                 | 46,6  | 46,7  | 51,6  | 49,5 | 47,5 | 39,9 | 26,2 | <b>56</b>            | <b>33</b>                  |
| 500            |               | 32,0                                 | 42,9  | 43,1  | 47,5  | 45,2 | 42,1 | 33,3 | 17,0 | <b>51</b>            | <b>29</b>                  |

| Branch | Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |
|--------|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|
|        |                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] |
| EHA    | 1500           | 150           | 47,3                                 | 54,1  | 56,2  | 62,7  | 56,9 | 54,2 | 51,6 | 46,0 | <b>65</b>            |
| SUP    |                |               | 50,8                                 | 57,7  | 60,8  | 67,4  | 61,1 | 58,1 | 55,5 | 49,7 | <b>69</b>            |
| ETA    |                |               | 37,1                                 | 40,2  | 49,9  | 51,6  | 44,8 | 40,1 | 34,5 | 27,8 | <b>54</b>            |
| ODA    |                |               | 40,4                                 | 43,5  | 54,2  | 55,7  | 48,7 | 43,7 | 38,2 | 31,4 | <b>58</b>            |

**Noise specifications:**

HR95-250 V

| Airflow<br>[m³/h] | Pressure<br>[Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |                            |
|-------------------|------------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|----------------------------|
|                   |                  | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] | L <sub>pA</sub> [dB] at 3m |
| 1700              | 150              | 37,9                                 | 49,4  | 54,8  | 55,4  | 57,5 | 53,2 | 46,3 | 33,2 | <b>61</b>            | <b>47</b>                  |
| 1300              |                  | 34,7                                 | 44,9  | 49,2  | 50,8  | 53,2 | 49,5 | 41,8 | 27,5 | <b>57</b>            | <b>34</b>                  |
| 900               |                  | 32,1                                 | 41,8  | 45,2  | 46,8  | 49,4 | 45,5 | 37,0 | 21,7 | <b>53</b>            | <b>30</b>                  |
| 500               |                  | 30,2                                 | 39,4  | 41,3  | 42,4  | 45,0 | 40,4 | 30,9 | 14,3 | <b>49</b>            | <b>26</b>                  |

| Branch | Airflow [m³/h] | Pressure<br>[Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |
|--------|----------------|------------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|
|        |                |                  | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] |
| EHA    | 1700           | 150              | 47,4                                 | 53,6  | 57,3  | 63,9  | 57,4 | 54,2 | 51,4 | 44,4 | <b>66</b>            |
| SUP    |                |                  | 49,0                                 | 55,6  | 59,2  | 65,8  | 59,3 | 56,1 | 53,4 | 47,0 | <b>68</b>            |
| ETA    |                |                  | 36,7                                 | 39,2  | 50,8  | 52,0  | 44,6 | 39,3 | 33,4 | 25,6 | <b>55</b>            |
| ODA    |                |                  | 38,3                                 | 41,0  | 52,6  | 53,7  | 46,3 | 41,1 | 35,3 | 27,8 | <b>56</b>            |

HR95-350 V

| Airflow [m³/h] | Pressure<br>[Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |                            |
|----------------|------------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|----------------------------|
|                |                  | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] | L <sub>pA</sub> [dB] at 3m |
| 3500           | 200              | 37,3                                 | 47,1  | 60,0  | 60,2  | 60,8 | 56,7 | 50,2 | 37,8 | <b>65</b>            | <b>42</b>                  |
| 2800           |                  | 34,0                                 | 46,1  | 52,7  | 56,1  | 56,8 | 52,3 | 46,0 | 33,6 | <b>61</b>            | <b>38</b>                  |
| 2100           |                  | 33,1                                 | 46,7  | 49,0  | 54,1  | 55,4 | 50,5 | 42,8 | 30,2 | <b>59</b>            | <b>36</b>                  |
| 1400           |                  | 32,7                                 | 46,1  | 46,1  | 51,8  | 53,5 | 47,7 | 38,4 | 26,1 | <b>57</b>            | <b>34</b>                  |

| Branch | Airflow [m³/h] | Pressure<br>[Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |
|--------|----------------|------------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|
|        |                |                  | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] |
| EHA    | 3500           | 200              | 52,0                                 | 61,8  | 65,9  | 66,8  | 68,1 | 64,2 | 57,5 | 52,2 | <b>73</b>            |
| SUP    |                |                  | 53,2                                 | 62,4  | 67,9  | 68,0  | 69,5 | 65,6 | 58,8 | 53,1 | <b>74</b>            |
| ETA    |                |                  | 34,7                                 | 43,6  | 41,1  | 41,5  | 40,4 | 33,4 | 30,3 | 23,0 | <b>48</b>            |
| ODA    |                |                  | 35,1                                 | 43,7  | 41,8  | 41,9  | 40,8 | 34,0 | 30,6 | 22,9 | <b>48</b>            |

**Noise specifications:**

HR95-450 V

| Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |                            |
|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|----------------------------|
|                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] | L <sub>PA</sub> [dB] at 3m |
| 3600           | 200           | 51,0                                 | 57,8  | 63,5  | 63,9  | 63,3 | 58,8 | 54,0 | 44,0 | <b>69</b>            | <b>46</b>                  |
| 2900           |               | 45,7                                 | 54,2  | 54,3  | 57,6  | 56,5 | 51,7 | 47,4 | 37,5 | <b>62</b>            | <b>39</b>                  |
| 2200           |               | 44,7                                 | 55,2  | 51,0  | 55,3  | 54,7 | 49,8 | 44,3 | 34,1 | <b>61</b>            | <b>38</b>                  |
| 1500           |               | 45,2                                 | 56,5  | 49,5  | 53,8  | 53,8 | 48,5 | 41,5 | 31,1 | <b>60</b>            | <b>37</b>                  |

| Branch | Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |
|--------|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|
|        |                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] |
| EHA    | 3600           | 200           | 58,1                                 | 66,7  | 69,1  | 73,3  | 74,1 | 69,5 | 64,7 | 59,1 | <b>78</b>            |
| SUP    |                |               | 60,8                                 | 68,4  | 73,5  | 76,4  | 77,4 | 73,2 | 68,0 | 61,9 | <b>82</b>            |
| ETA    |                |               | 38,3                                 | 50,6  | 49,6  | 49,8  | 47,5 | 42,5 | 38,5 | 27,5 | <b>55</b>            |
| ODA    |                |               | 39,0                                 | 50,5  | 51,0  | 50,8  | 48,6 | 44,3 | 39,6 | 27,7 | <b>56</b>            |

HR95-550 V

| Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |                            |
|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|----------------------------|
|                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] | L <sub>PA</sub> [dB] at 3m |
| 5000           | 300           | 50,8                                 | 57,7  | 63,0  | 63,5  | 62,7 | 57,9 | 53,0 | 43,6 | <b>68</b>            | <b>45</b>                  |
| 4000           |               | 41,0                                 | 51,6  | 52,8  | 54,5  | 56,1 | 49,3 | 45,4 | 37,0 | <b>60</b>            | <b>37</b>                  |
| 3000           |               | 39,5                                 | 48,8  | 48,5  | 51,8  | 52,7 | 46,0 | 41,2 | 32,5 | <b>57</b>            | <b>34</b>                  |
| 2000           |               | 41,8                                 | 47,5  | 47,0  | 51,3  | 50,4 | 44,1 | 37,9 | 28,8 | <b>56</b>            | <b>32</b>                  |

| Branch | Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |
|--------|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|
|        |                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] |
| EHA    | 5000           | 300           | 55,1                                 | 65,0  | 67,4  | 70,5  | 72,6 | 66,9 | 62,1 | 56,9 | <b>76</b>            |
| SUP    |                |               | 59,5                                 | 67,2  | 72,0  | 74,2  | 74,9 | 70,7 | 65,1 | 59,0 | <b>79</b>            |
| ETA    |                |               | 34,5                                 | 48,9  | 49,3  | 48,1  | 46,2 | 40,8 | 35,5 | 26,3 | <b>54</b>            |
| ODA    |                |               | 37,5                                 | 49,8  | 51,2  | 49,4  | 47,4 | 42,8 | 36,8 | 26,7 | <b>56</b>            |

**Noise specifications:**

HR95-080 H

| Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |                            |
|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|----------------------------|
|                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] | L <sub>PA</sub> [dB] at 3m |
| 600            | 100           | 34,0                                 | 46,0  | 53,9  | 58,4  | 58,0 | 55,3 | 47,2 | 35,4 | <b>63</b>            | <b>41</b>                  |
| 450            |               | 30,4                                 | 43,0  | 49,2  | 52,4  | 52,3 | 49,9 | 41,6 | 29,5 | <b>57</b>            | <b>35</b>                  |
| 300            |               | 25,2                                 | 36,8  | 42,4  | 45,3  | 45,5 | 42,5 | 32,2 | 19,0 | <b>50</b>            | <b>28</b>                  |
| 200            |               | 21,4                                 | 32,0  | 37,4  | 40,3  | 40,6 | 37,2 | 24,7 | 10,6 | <b>45</b>            | <b>23</b>                  |

| Branch | Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |
|--------|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|
|        |                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] |
| EHA    | 600            | 100           | 51,6                                 | 58,9  | 64,0  | 67,2  | 63,3 | 59,5 | 56,7 | 51,0 | <b>70</b>            |
| SUP    |                |               | 53,3                                 | 61,4  | 66,5  | 69,6  | 65,5 | 61,7 | 58,6 | 53,3 | <b>73</b>            |
| ETA    |                |               | 43,1                                 | 52,8  | 50,2  | 50,5  | 46,0 | 38,6 | 34,6 | 27,9 | <b>56</b>            |
| ODA    |                |               | 44,8                                 | 55,3  | 52,7  | 52,5  | 47,8 | 40,5 | 36,5 | 30,0 | <b>59</b>            |

HR95-150 H

| Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |                            |
|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|----------------------------|
|                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] | L <sub>PA</sub> [dB] at 3m |
| 1300           | 200           | 42,9                                 | 51,6  | 58,2  | 66,4  | 61,5 | 59,7 | 52,9 | 41,3 | <b>68</b>            | <b>46</b>                  |
| 1000           |               | 35,2                                 | 43,9  | 48,9  | 56,7  | 52,5 | 51,2 | 44,2 | 32,8 | <b>59</b>            | <b>37</b>                  |
| 700            |               | 33,5                                 | 41,5  | 46,6  | 54,4  | 50,2 | 48,0 | 40,0 | 26,7 | <b>57</b>            | <b>35</b>                  |
| 400            |               | 33,1                                 | 39,4  | 45,0  | 52,6  | 48,4 | 44,9 | 35,8 | 20,0 | <b>55</b>            | <b>33</b>                  |

| Branch | Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |
|--------|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|
|        |                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] |
| EHA    | 1300           | 200           | 57,7                                 | 65,2  | 69,6  | 74,6  | 72,1 | 69,6 | 64,0 | 58,2 | <b>78</b>            |
| SUP    |                |               | 60,0                                 | 67,7  | 72,8  | 77,9  | 75,1 | 72,3 | 66,7 | 60,8 | <b>81</b>            |
| ETA    |                |               | 49,9                                 | 54,5  | 51,6  | 53,7  | 55,0 | 46,3 | 43,2 | 3,3  | <b>60</b>            |
| ODA    |                |               | 52,2                                 | 56,8  | 54,7  | 56,6  | 57,6 | 48,7 | 45,7 | 5,9  | <b>63</b>            |

**Noise specifications:**

HR95-250 H

| Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |                            |
|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|----------------------------|
|                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] | L <sub>PA</sub> [dB] at 3m |
| 1850           | 200           | 40,3                                 | 52,3  | 55,8  | 58,0  | 59,9 | 57,2 | 50,9 | 39,6 | <b>64</b>            | <b>42</b>                  |
| 1500           |               | 36,2                                 | 47,5  | 50,4  | 53,4  | 55,8 | 53,7 | 46,7 | 34,2 | <b>60</b>            | <b>37</b>                  |
| 1000           |               | 34,1                                 | 44,6  | 46,6  | 49,7  | 52,1 | 49,9 | 42,1 | 28,6 | <b>56</b>            | <b>34</b>                  |
| 500            |               | 34,9                                 | 44,4  | 44,9  | 47,2  | 49,3 | 46,2 | 37,5 | 22,9 | <b>53</b>            | <b>31</b>                  |

| Branch | Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |
|--------|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|
|        |                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] |
| EHA    | 1850           | 200           | 52,0                                 | 65,0  | 73,3  | 67,3  | 69,9 | 63,1 | 57,6 | 50,8 | <b>76</b>            |
| SUP    |                |               | 53,3                                 | 66,6  | 74,8  | 68,8  | 71,4 | 64,7 | 59,3 | 53,0 | <b>77</b>            |
| ETA    |                |               | 43,9                                 | 50,6  | 53,9  | 48,2  | 50,9 | 41,8 | 36,2 | 2,4  | <b>57</b>            |
| ODA    |                |               | 44,8                                 | 51,8  | 55,1  | 49,4  | 52,1 | 43,0 | 37,5 | 4,0  | <b>58</b>            |

HR95-350 H

| Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |                            |
|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|----------------------------|
|                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] | L <sub>PA</sub> [dB] at 3m |
| 3500           | 300           | 39,2                                 | 47,5  | 62,0  | 59,1  | 59,5 | 56,9 | 52,2 | 39,6 | <b>66</b>            | <b>43</b>                  |
| 2500           |               | 35,9                                 | 47,0  | 52,9  | 53,1  | 53,5 | 51,2 | 46,5 | 34,0 | <b>59</b>            | <b>36</b>                  |
| 1500           |               | 38,1                                 | 50,3  | 51,3  | 52,1  | 52,9 | 49,6 | 42,8 | 29,9 | <b>58</b>            | <b>35</b>                  |
| 500            |               | 41,8                                 | 51,6  | 51,1  | 51,4  | 51,5 | 46,5 | 38,9 | 26,4 | <b>57</b>            | <b>35</b>                  |

| Branch | Airflow [m³/h] | Pressure [Pa] | Sound power level per frequency band |       |       |       |      |      |      |      | Overall              |
|--------|----------------|---------------|--------------------------------------|-------|-------|-------|------|------|------|------|----------------------|
|        |                |               | 63Hz                                 | 125Hz | 250Hz | 500Hz | 1kHz | 2kHz | 4kHz | 8kHz | L <sub>WA</sub> [dB] |
| EHA    | 3500           | 300           | 49,9                                 | 64,6  | 69,4  | 64,8  | 65,9 | 61,0 | 54,4 | 49,1 | <b>73</b>            |
| SUP    |                |               | 50,0                                 | 64,7  | 69,6  | 65,0  | 66,1 | 61,2 | 54,6 | 49,2 | <b>73</b>            |
| ETA    |                |               | 37,4                                 | 49,8  | 49,0  | 43,8  | 43,2 | 39,2 | 31,3 | 18,2 | <b>53</b>            |
| ODA    |                |               | 37,5                                 | 49,9  | 49,2  | 43,9  | 43,3 | 39,4 | 31,4 | 18,3 | <b>53</b>            |

### Basic technical parameters of the heat recovery units:

Model without electric preheater or postheater / with water post heater

| Vertical/horizontal | Phase [pcs] | Voltage [V] | Frequency [Hz] | Rated input [kW] | Total current [A] |
|---------------------|-------------|-------------|----------------|------------------|-------------------|
| HR95-080            | 1           | 230         | 50             | 0,4              | 2,8               |
| HR95-150            | 1           | 230         | 50             | 1,0              | 6,5               |
| HR95-250            | 1           | 230         | 50             | 1,0              | 6,5               |
| HR95-350            | 3           | 400         | 50             | 1,9              | 3,7               |
| HR95-450            | 3           | 400         | 50             | 1,9              | 3,7               |
| HR95-550            | 3           | 400         | 50             | 3,6              | 5,5               |

Model with electric preheater (without electric postheater)

| Model             | Phase [pcs] | Voltage [V] | Frequency [Hz] | Rated input [kW] | Total current [A] |
|-------------------|-------------|-------------|----------------|------------------|-------------------|
| HR95-080 <b>V</b> | 1           | 230         | 50             | 3,10             | 14,5              |
| HR95-150 <b>V</b> | 3           | 400         | 50             | 6,30             | 13,3              |
| HR95-250 <b>V</b> | 3           | 400         | 50             | 9,40             | 18,6              |
| HR95-350 <b>V</b> | 3           | 400         | 50             | 13,55            | 20,6              |
| HR95-450 <b>V</b> | 3           | 400         | 50             | 16,85            | 25,4              |
| HR95-550 <b>V</b> | 3           | 400         | 50             | 21,90            | 32,0              |
| HR95-080 <b>H</b> | 1           | 230         | 50             | 3,10             | 14,5              |
| HR95-150 <b>H</b> | 3           | 400         | 50             | 6,30             | 13,3              |
| HR95-250 <b>H</b> | 3           | 400         | 50             | 9,40             | 18,6              |
| HR95-350 <b>H</b> | 3           | 400         | 50             | 13,55            | 20,6              |

Model with electric postheater only

| Model             | Phase [pcs] | Voltage [V] | Frequency [Hz] | Rated input [kW] | Total current [A] |
|-------------------|-------------|-------------|----------------|------------------|-------------------|
| HR95-080 <b>V</b> | 1           | 230         | 50             | 1,8              | 8,8               |
| HR95-150 <b>V</b> | 1           | 230         | 50             | 3,7              | 18,0              |
| HR95-250 <b>V</b> | 3           | 400         | 50             | 5,8              | 13,5              |
| HR95-350 <b>V</b> | 3           | 400         | 50             | 8,3              | 13,0              |
| HR95-450 <b>V</b> | 3           | 400         | 50             | 10,0             | 15,0              |
| HR95-550 <b>V</b> | 3           | 400         | 50             | 14,5             | 21,0              |
| HR95-080 <b>H</b> | 1           | 230         | 50             | 1,8              | 8,8               |
| HR95-150 <b>H</b> | 1           | 230         | 50             | 3,7              | 18,0              |
| HR95-250 <b>H</b> | 3           | 400         | 50             | 5,8              | 13,5              |
| HR95-350 <b>H</b> | 3           | 400         | 50             | 8,3              | 13,0              |

Model with electric preheater and postheater

| Model             | Phase [pcs] | Voltage [V] | Frequency [Hz] | Rated input [kW] | Total current [A] |
|-------------------|-------------|-------------|----------------|------------------|-------------------|
| HR95-080 <b>V</b> | 3           | 400         | 50             | 4,5              | 11,9              |
| HR95-150 <b>V</b> | 3           | 400         | 50             | 9,0              | 18,0              |
| HR95-250 <b>V</b> | 3           | 400         | 50             | 14,2             | 25,3              |
| HR95-350 <b>V</b> | 3           | 400         | 50             | 20,0             | 29,4              |
| HR95-450 <b>V</b> | 3           | 400         | 50             | 24,5             | 36,7              |
| HR95-550 <b>V</b> | 3           | 400         | 50             | 32,8             | 47,3              |
| HR95-080 <b>H</b> | 3           | 400         | 50             | 4,5              | 11,9              |
| HR95-150 <b>H</b> | 3           | 400         | 50             | 9,0              | 18,0              |
| HR95-250 <b>H</b> | 3           | 400         | 50             | 14,2             | 25,3              |
| HR95-350 <b>H</b> | 3           | 400         | 50             | 20,0             | 29,4              |

**Basic technical parameters of the heat recovery units:**

## Characteristics of electric motors (1 fan only)

| Vertical/<br>Horizontal | Phase<br>[pcs] | Voltage<br>[V] | Frequency<br>[Hz] | Rated input<br>[W] | Total current<br>[A] | Speed<br>[r/min] | Maximum tempe-<br>rature [°C] | Protection<br>IP | Insulation<br>class | Weight<br>[kg] |
|-------------------------|----------------|----------------|-------------------|--------------------|----------------------|------------------|-------------------------------|------------------|---------------------|----------------|
| HR95-080                | 1              | 230            | 50                | 175                | 1,3                  | 2800             | 60                            | 44               | B                   | 2,9            |
| HR95-150                | 1              | 230            | 50                | 455                | 3,1                  | 2600             | 60                            | 54               | B                   | 5,0            |
| HR95-250                | 1              | 230            | 50                | 500                | 3,15                 | 1970             | 60                            | 54               | B                   | 5,7            |
| HR95-350                | 3              | 400            | 50                | 1000               | 1,75                 | 2140             | 60                            | 54               | F                   | 9,8            |
| HR95-450                | 3              | 400            | 50                | 1000               | 1,75                 | 2140             | 60                            | 54               | F                   | 9,8            |
| HR95-550                | 3              | 400            | 50                | 1615               | 2,5                  | 1750             | 60                            | 54               | B                   | 16,1           |

## Characteristics of electric postheater

| Model             | Phase [pcs] | Voltage [V] | Frequency [Hz] | Rated input [kW] | Total current [A] | Δ T [°C] |
|-------------------|-------------|-------------|----------------|------------------|-------------------|----------|
| HR95-080 <b>V</b> | 1           | 230         | 50             | 1,4              | 6,1               | 5,2      |
| HR95-150 <b>V</b> | 1           | 230         | 50             | 2,7              | 11,7              | 5,3      |
| HR95-250 <b>V</b> | 3           | 400         | 50             | 4,8              | 7,0               | 5,7      |
| HR95-350 <b>V</b> | 3           | 400         | 50             | 6,4              | 9,3               | 5,5      |
| HR95-450 <b>V</b> | 3           | 400         | 50             | 7,6              | 11,1              | 5,0      |
| HR95-550 <b>V</b> | 3           | 400         | 50             | 10,6             | 15,4              | 5,7      |
| HR95-080 <b>H</b> | 1           | 230         | 50             | 1,4              | 6,1               | 6,7      |
| HR95-150 <b>H</b> | 1           | 230         | 50             | 2,7              | 11,7              | 7,4      |
| HR95-250 <b>H</b> | 3           | 400         | 50             | 4,8              | 7,0               | 6,9      |
| HR95-350 <b>H</b> | 3           | 400         | 50             | 6,4              | 9,3               | 7,1      |

## Characteristics of water postheater

| Vertical | Rated input<br>[kW] | Outlet air tempe-<br>rature [°C] | Water pressure<br>loss [kPa] | Water flow<br>[m³/h] | Air pressure loss<br>[Pa] | Air flow<br>[m³/h] | Connection<br>diameter |
|----------|---------------------|----------------------------------|------------------------------|----------------------|---------------------------|--------------------|------------------------|
| HR95-080 | 6,4                 | 40,3                             | 10,0                         | 0,28                 | 20                        | 800                | 1/2                    |
| HR95-150 | 11,4                | 39,1                             | 8,5                          | 0,50                 | 25                        | 1500               | 1/2                    |
| HR95-250 | 20,0                | 40,3                             | 24,0                         | 0,86                 | 27                        | 2250               | 1/2                    |
| HR95-350 | 30,1                | 42,3                             | 19,0                         | 1,29                 | 22                        | 3500               | 1/2                    |
| HR95-450 | 32,0                | 37,6                             | 6,9                          | 1,37                 | 23                        | 4500               | 1/2                    |
| HR95-550 | 48,0                | 42,6                             | 2,6                          | 1,71                 | 19                        | 5500               | 3/4                    |

\* For water temperature gradient 90/70 and inlet air temperature 15°C

| Horizontal | Rated input<br>[kW] | Outlet air<br>temperature [°C] | Water pressure<br>loss [kPa] | Water flow<br>[m³/h] | Air pressure loss<br>[Pa] | Air flow<br>[m³/h] | Connection<br>diameter |
|------------|---------------------|--------------------------------|------------------------------|----------------------|---------------------------|--------------------|------------------------|
| HR95-080   | 6,4                 | 40,3                           | 10                           | 0,29                 | 20                        | 800                | 1/2                    |
| HR95-150   | 12,2                | 40,7                           | 36                           | 1,04                 | 28                        | 1500               | 1/2                    |
| HR95-250   | 20,5                | 40,9                           | 23                           | 0,86                 | 27                        | 2250               | 1/2                    |
| HR95-350   | 30,1                | 42,2                           | 20                           | 1,30                 | 18                        | 3500               | 1/2                    |

\* For water temperature gradient 90/70 and inlet air temperature 15°C

### Basic technical parameters of the heat recovery units:

| Correction coefficients of the powers of the hot water coil* |                            |       |       |       |       |       |
|--------------------------------------------------------------|----------------------------|-------|-------|-------|-------|-------|
| Air inlet temperature [°C]                                   | Water temperature gradient |       |       |       |       |       |
|                                                              | 90/70                      | 85/65 | 80/60 | 75/55 | 70/50 | 65/45 |
| 0                                                            | 1,3                        | 1,22  | 1,13  | 1,04  | 0,95  | 0,86  |
| 5                                                            | 1,2                        | 1,11  | 1,02  | 0,94  | 0,85  | 0,76  |
| 10                                                           | 1,1                        | 1,01  | 0,92  | 0,84  | 0,76  | 0,67  |
| 15                                                           | 1                          | 0,91  | 0,83  | 0,74  | 0,66  | 0,58  |
| 20                                                           | 0,9                        | 0,82  | 0,74  | 0,66  | 0,58  | 0,50  |

\* To apply to the rated power in the characteristics of the hot water coil.

### Recommended K<sub>vs</sub> for different temperature gradients

| Model      | K <sub>vs</sub> [flow / kPa] |            |            |            |            |            | Recommended pump pressure [kPa] |
|------------|------------------------------|------------|------------|------------|------------|------------|---------------------------------|
|            | 90/70 [°C]                   | 85/65 [°C] | 80/60 [°C] | 75/55 [°C] | 70/50 [°C] | 65/45 [°C] |                                 |
| HR95-080 V | 1,6                          | 1,6        | 1,6        | 0,6        | 0,6        | 0,6        | 60                              |
| HR95-150 V | 2,5                          | 2,5        | 1,6        | 1,6        | 1,6        | 1,6        | 60                              |
| HR95-250 V | 4,0                          | 4,0        | 4,0        | 2,5        | 2,5        | 2,5        | 60                              |
| HR95-350 V | 6,3                          | 6,3        | 4,0        | 4,0        | 4,0        | 4,0        | 60                              |
| HR95-450 V | 6,3                          | 6,3        | 6,3        | 6,3        | 4,0        | 4,0        | 60                              |
| HR95-550 V | 12                           | 6,3        | 6,3        | 6,3        | 6,3        | 6,3        | 70                              |
| HR95-080 H | 1,6                          | 1,6        | 0,6        | 0,6        | 0,6        | 0,6        | 60                              |
| HR95-150 H | 2,5                          | 2,5        | 1,6        | 1,6        | 1,6        | 1,6        | 60                              |
| HR95-250 H | 4,0                          | 4,0        | 2,5        | 2,5        | 2,5        | 2,5        | 60                              |
| HR95-350 H | 6,3                          | 6,3        | 4,0        | 4,0        | 4,0        | 4,0        | 60                              |

### Characteristics of heating coil (C/O) / water cooling

| Type       | Rated input [kW]* | Outlet air temperature [°C] | Water pressure loss [kPa] | Water flow [m³/h] | Air pressure loss [Pa] | Air flow [m³/h] | Connection diameter |
|------------|-------------------|-----------------------------|---------------------------|-------------------|------------------------|-----------------|---------------------|
| HR95-080 H | 6,60              | 39,2                        | 2,0                       | 0,29              | 75                     | 800             | 3/4"                |
| HR95-150 H | 10,24             | 35,0                        | 0,8                       | 0,45              | 76                     | 1500            | 3/4"                |
| HR95-250 H | 19,77             | 38,2                        | 1,5                       | 0,86              | 83                     | 2250            | 1"                  |
| HR95-350 H | 29,40             | 39,7                        | 1,3                       | 1,28              | 62                     | 3500            | 1 1/2"              |
| HR95-080 V | 6,17              | 37,6                        | 2,3                       | 0,27              | 59                     | 800             | 3/4"                |
| HR95-150 V | 10,74             | 36,0                        | 1,6                       | 0,47              | 73                     | 1500            | 3/4"                |
| HR95-250 V | 17,56             | 35,6                        | 2,2                       | 0,77              | 91                     | 2250            | 1"                  |
| HR95-350 V | 27,02             | 37,7                        | 2,3                       | 1,18              | 62                     | 3500            | 1 1/2"              |
| HR95-450 V | 31,98             | 35,9                        | 1,4                       | 1,39              | 75                     | 4500            | 1 1/2"              |
| HR95-550 V | 43,78             | 38,4                        | 2,6                       | 1,91              | 57                     | 5500            | 1 1/2"              |

\* For water temperature gradient 60/40 and inlet air temperature 15°C.

| Correction coefficients of the powers of the hot water coil (C/O)* |              |       |       |       |
|--------------------------------------------------------------------|--------------|-------|-------|-------|
| Air inlet temperature [°C]                                         | Water regime |       |       |       |
|                                                                    | 60/40        | 55/50 | 45/40 | 35/30 |
| 0                                                                  | 1,55         | 1,73  | 1,39  | 1,05  |
| 5                                                                  | 1,36         | 1,54  | 1,21  | 0,87  |
| 10                                                                 | 1,18         | 1,35  | 1,03  | 0,69  |
| 15                                                                 | <b>1</b>     | 1,18  | 0,85  | 0,52  |
| 20                                                                 | 0,82         | 1,00  | 0,68  | 0,36  |

\* To apply to the rated power in the characteristics of the water coil.

Characteristics of water cooling / heating coil (C/O)

| Type              | Rated input [kW] | Outlet air temperature [°C] | Water pressure loss [kPa] | Water flow [m³/h] | Air pressure loss [Pa] | Air flow [m³/h] | Connection diameter |
|-------------------|------------------|-----------------------------|---------------------------|-------------------|------------------------|-----------------|---------------------|
| HR95-080 <b>H</b> | 5,90             | 15,8                        | 11,3                      | 1,04              | 143                    | 800             | 3/4"                |
| HR95-150 <b>H</b> | 8,70             | 17,8                        | 4,2                       | 1,55              | 167                    | 1500            | 3/4"                |
| HR95-250 <b>H</b> | 16,10            | 17,2                        | 7,2                       | 2,81              | 164                    | 2250            | 1"                  |
| HR95-350 <b>H</b> | 23,12            | 14,8                        | 12,0                      | 3,97              | 69                     | 3500            | 1 1/2"              |
| HR95-080 <b>V</b> | 5,90             | 15,8                        | 11,3                      | 1,04              | 143                    | 800             | 3/4"                |
| HR95-150 <b>V</b> | 8,70             | 17,8                        | 4,2                       | 1,58              | 171                    | 1500            | 3/4"                |
| HR95-250 <b>V</b> | 16,10            | 17,2                        | 7,2                       | 2,84              | 167                    | 2250            | 1"                  |
| HR95-350 <b>V</b> | 21,61            | 15,6                        | 21,2                      | 3,71              | 70                     | 3500            | 1 1/2"              |
| HR95-450 <b>V</b> | 25,10            | 16,3                        | 12,5                      | 4,3               | 84                     | 4500            | 1 1/2"              |
| HR95-550 <b>V</b> | 35,24            | 15,3                        | 24,4                      | 6,04              | 64                     | 5500            | 1 1/2"              |

\* For water temperature gradient 7/12 and inlet air temperature 25°C with 70% of relative humidity.

| Correction coefficients of the powers of the cool water coil (C/O)* |              |      |      |
|---------------------------------------------------------------------|--------------|------|------|
| Air inlet temperature [°C]                                          | Water regime |      |      |
|                                                                     | 7/12         | 6/11 | 5/10 |
| 20                                                                  | 0,43         | 0,53 | 0,62 |
| 25                                                                  | <b>1</b>     | 1,09 | 1,18 |
| 30                                                                  | 1,66         | 1,75 | 1,84 |

\* To apply to the rated power in the characteristics of the water coil.

### Characteristics of direct evaporator (DX)

Refrigerant R32

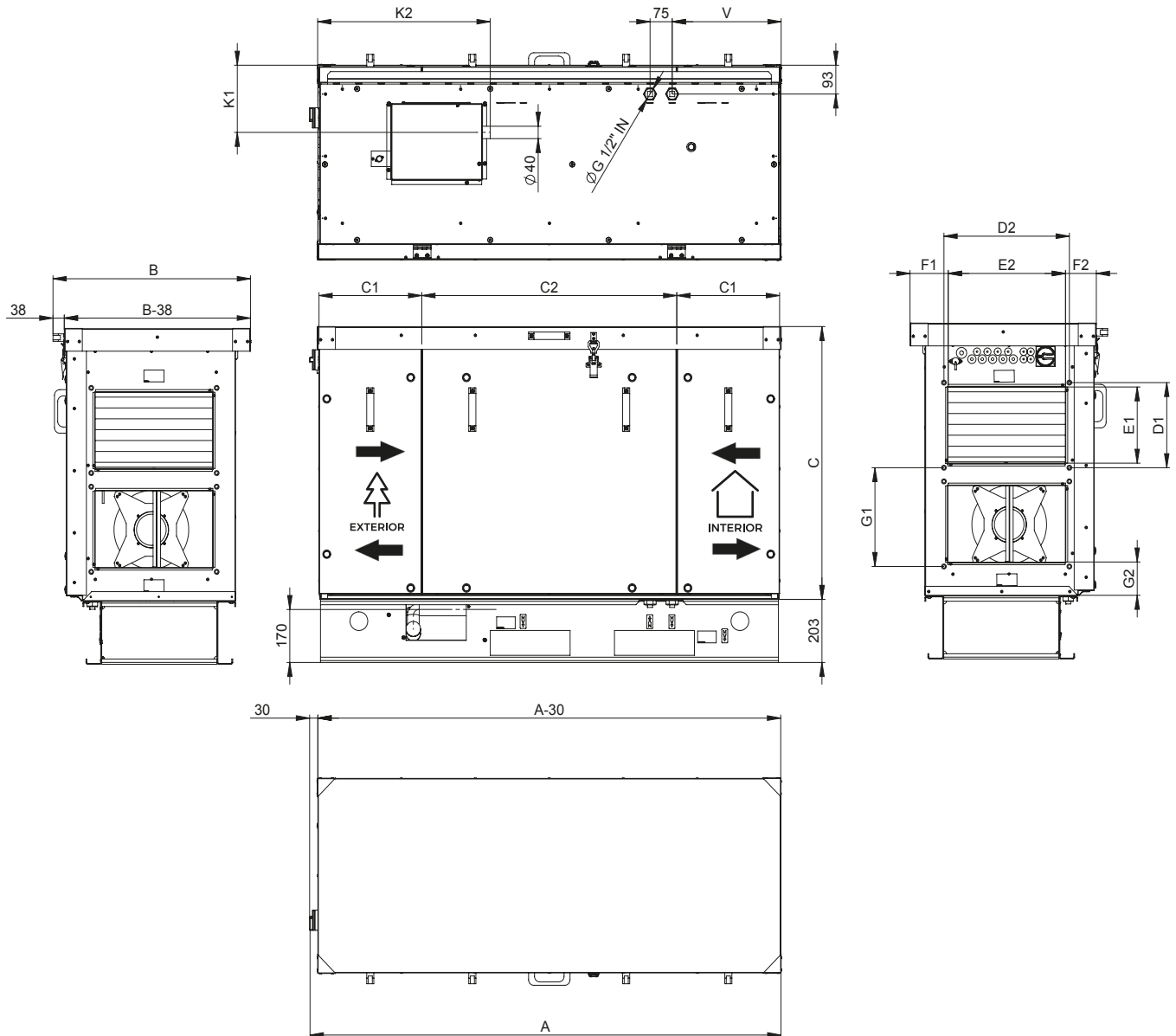
| Type       | Air flow<br>[m³/h] | Rated input<br>[kW]* | Outlet air temperature<br>[°C] | RH after coil<br>[%] | Refrigerant pressure loss<br>[kPa] | Air pressure loss<br>[Pa] | Connection diameter of gas coil | Connection diameter of liquid coil |
|------------|--------------------|----------------------|--------------------------------|----------------------|------------------------------------|---------------------------|---------------------------------|------------------------------------|
| HR95-080 H | 800                | 3.6                  | 14.3                           | 81                   | 39.7                               | 63                        | 5/8"                            | 1/2"                               |
| HR95-150 H | 1500               | 6.6                  | 14.5                           | 80                   | 25.7                               | 73                        | 7/8"                            | 5/8"                               |
| HR95-250 H | 2500               | 11.1                 | 14.4                           | 81                   | 33.8                               | 68                        | 1 1/8"                          | 5/8"                               |
| HR95-350 H | 3500               | 15.7                 | 14.4                           | 81                   | 40.3                               | 60                        | 1 3/8"                          | 1 1/8"                             |
| HR95-080 V | 800                | 3.5                  | 15                             | 76                   | 33.1                               | 40                        | 5/8"                            | 5/8"                               |
| HR95-150 V | 1500               | 6.5                  | 14.6                           | 80                   | 34.6                               | 72                        | 7/8"                            | 7/8"                               |
| HR95-250 V | 2500               | 10.3                 | 15                             | 79                   | 35.9                               | 86                        | 1 1/8"                          | 7/8"                               |
| HR95-350 V | 3500               | 15.9                 | 14.3                           | 81                   | 27.1                               | 61                        | 1 3/8"                          | 1 1/8"                             |
| HR95-450 V | 4500               | 19.8                 | 14.5                           | 80                   | 27.7                               | 72                        | 1 5/8"                          | 1 1/8"                             |
| HR95-550 V | 5500               | 26.4                 | 13.9                           | 82                   | 19.6                               | 56                        | 1 5/8"                          | 1 1/8"                             |

\* For inlet air temperature 25°C with 47% of relative humidity and evaporation temperature 5°C, refrigerant R32.

Refrigerant R410a

| Type       | Air flow<br>[m³/h] | Rated input<br>[kW]* | Outlet air temperature<br>[°C] | RH after coil<br>[%] | Refrigerant pressure loss<br>[kPa] | Air pressure loss<br>[Pa] | Connection diameter of gas coil | Connection diameter of liquid coil |
|------------|--------------------|----------------------|--------------------------------|----------------------|------------------------------------|---------------------------|---------------------------------|------------------------------------|
| HR95-080 H | 800                | 3,4                  | 14,6                           | 81                   | 61,7                               | 62                        | 5/8"                            | 1/2"                               |
| HR95-150 H | 1500               | 6,3                  | 14,8                           | 80                   | 40,7                               | 72                        | 7/8"                            | 5/8"                               |
| HR95-250 H | 2500               | 10,6                 | 14,7                           | 81                   | 53,3                               | 67                        | 1 1/8"                          | 5/8"                               |
| HR95-350 H | 3500               | 14,9                 | 14,7                           | 81                   | 62,6                               | 59                        | 1 3/8"                          | 1 1/8"                             |
| HR95-080 V | 800                | 3,4                  | 15,3                           | 76                   | 52,8                               | 40                        | 5/8"                            | 5/8"                               |
| HR95-150 V | 1500               | 6,2                  | 14,9                           | 80                   | 53,9                               | 71                        | 7/8"                            | 7/8"                               |
| HR95-250 V | 2500               | 9,8                  | 15,3                           | 79                   | 56,6                               | 85                        | 1 1/8"                          | 7/8"                               |
| HR95-350 V | 3500               | 15,2                 | 14,6                           | 81                   | 42,6                               | 61                        | 1 3/8"                          | 1 1/8"                             |
| HR95-450 V | 4500               | 19,0                 | 14,8                           | 80                   | 43,8                               | 71                        | 1 5/8"                          | 1 1/8"                             |
| HR95-550 V | 5500               | 25,5                 | 14,1                           | 82                   | 31,0                               | 56                        | 1 5/8"                          | 1 1/8"                             |

\* For inlet air temperature 25°C with 47% of relative humidity and evaporation temperature 5°C, refrigerant R410a.

**DIMENSIONS****Vertical version****HR95-080, HR95-150**

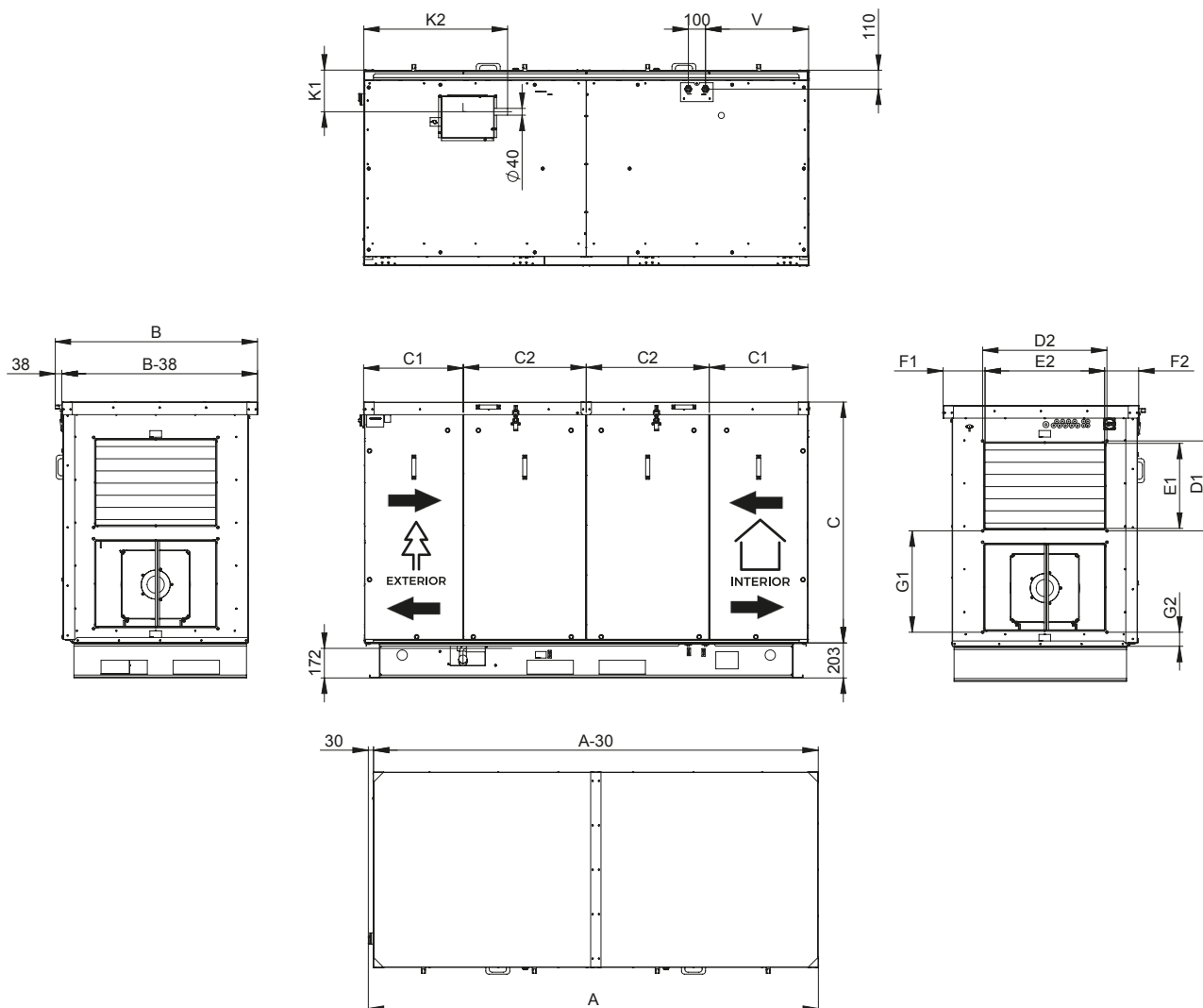
| Type     | A    | B   | C    | C1  | C2   | D1  | D2  | E1  | E2  | F1  | F2  | G1  | G2  | K1  | K2  | V   |
|----------|------|-----|------|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| HR95-080 | 1594 | 668 | 878  | 348 | 862  | 274 | 424 | 246 | 397 | 129 | 104 | 318 | 108 | 217 | 584 | 369 |
| HR95-150 | 1894 | 749 | 1128 | 386 | 1095 | 424 | 474 | 398 | 447 | 153 | 111 | 454 | 60  | 220 | 655 | 398 |

| Type                              | Weight [kg]  |                 |                           |
|-----------------------------------|--------------|-----------------|---------------------------|
|                                   | without coil | electric heater | hot water coil / DX / C-O |
| <b>Without electric preheater</b> |              |                 |                           |
| HR95-080                          | 250          | 253             | 255                       |
| HR95-150                          | 290          | 293             | 295                       |
| <b>With electric preheater</b>    |              |                 |                           |
| HR95-080                          | 252          | 255             | 257                       |
| HR95-150                          | 293          | 296             | 298                       |



### Vertical version

HR95-250, HR95-350, HR95-450, HR95-550



| Type     | A    | B    | C    | C1  | C2  | D1  | D2   | E1  | E2  | F1  | F2  | G1  | G2 | K1  | K2  | V   |
|----------|------|------|------|-----|-----|-----|------|-----|-----|-----|-----|-----|----|-----|-----|-----|
| HR95-250 | 2164 | 789  | 1427 | 367 | 700 | 524 | 524  | 496 | 496 | 149 | 106 | 605 | 84 | 222 | 675 | 413 |
| HR95-350 | 2622 | 1058 | 1402 | 580 | 716 | 524 | 724  | 496 | 697 | 186 | 137 | 590 | 82 | 242 | 839 | 602 |
| HR95-450 | 2622 | 1178 | 1402 | 580 | 716 | 524 | 724  | 496 | 697 | 246 | 198 | 590 | 82 | 242 | 839 | 602 |
| HR95-550 | 2622 | 1542 | 1402 | 580 | 716 | 524 | 1024 | 496 | 997 | 277 | 230 | 590 | 82 | 242 | 839 | 602 |

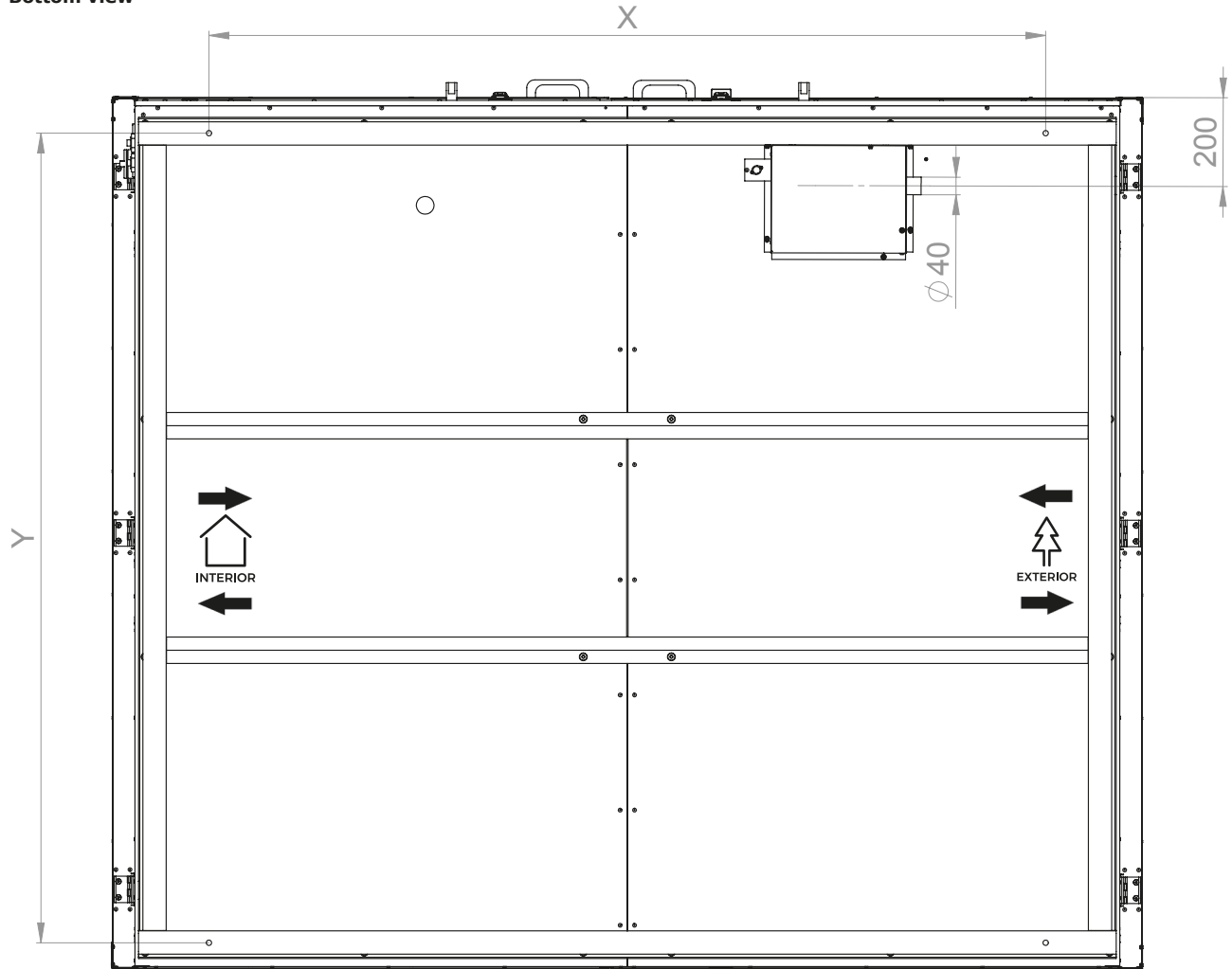
| Type                              | Weight [kg]  |                 |                           |
|-----------------------------------|--------------|-----------------|---------------------------|
|                                   | without coil | electric heater | hot water coil / DX / C-O |
| <b>Without electric preheater</b> |              |                 |                           |
| HR95-250                          | 385          | 390             | 395                       |
| HR95-350                          | 555          | 560             | 565                       |
| HR95-450                          | 605          | 610             | 615                       |
| HR95-550                          | 700          | 705             | 710                       |
| <b>With electric preheater</b>    |              |                 |                           |
| HR95-250                          | 388          | 393             | 398                       |
| HR95-350                          | 559          | 564             | 569                       |
| HR95-450                          | 609          | 614             | 619                       |
| HR95-550                          | 705          | 710             | 715                       |



Horizontal version

HR95-080, HR95-150, HR95-250, HR95-350

Bottom view

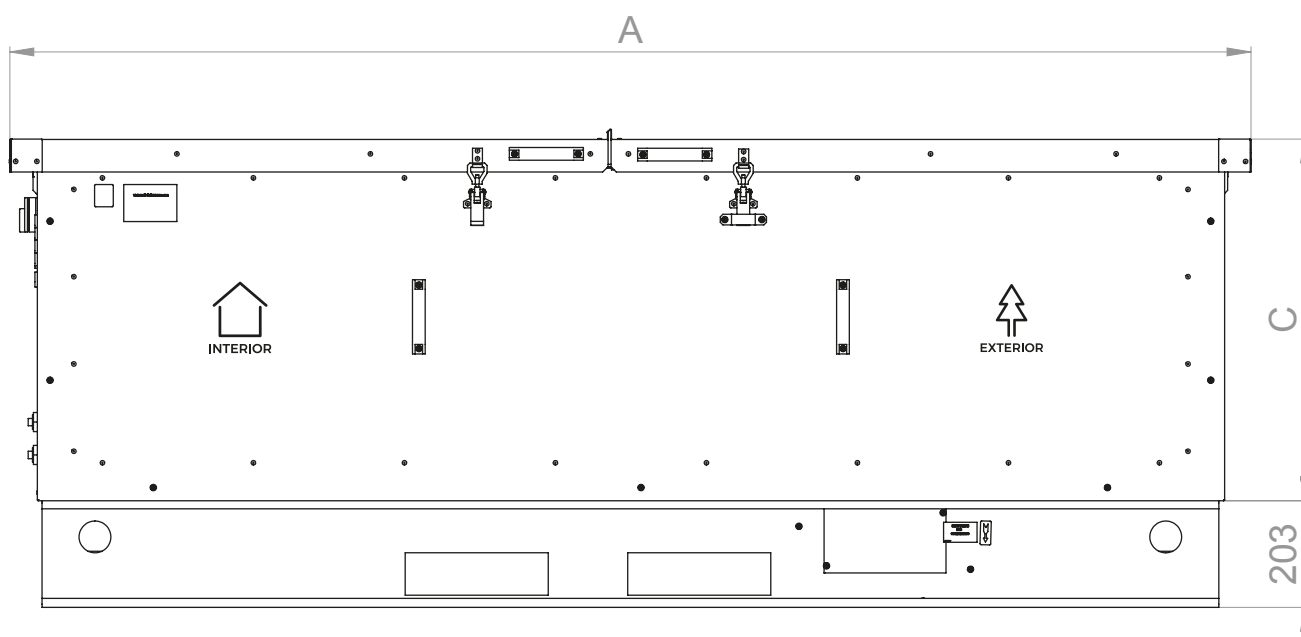


| Type     | A    | B    | B1   | C   | D1  | D2  | E1  | E2  | F1  | F2 | G1  | G2 | X    | Y    |
|----------|------|------|------|-----|-----|-----|-----|-----|-----|----|-----|----|------|------|
| HR95-080 | 1540 | 1100 | 1060 | 410 | 224 | 324 | 200 | 300 | 275 | 85 | 405 | 72 | 1300 | 890  |
| HR95-150 | 1830 | 1540 | 1500 | 450 | 274 | 524 | 250 | 500 | 319 | 86 | 601 | 62 | 1600 | 1330 |
| HR95-250 | 2140 | 1855 | 1815 | 540 | 324 | 624 | 300 | 600 | 368 | 82 | 770 | 62 | 1900 | 1650 |
| HR95-350 | 2340 | 2020 | 1980 | 700 | 424 | 724 | 400 | 700 | 351 | 82 | 852 | 87 | 1900 | 1850 |

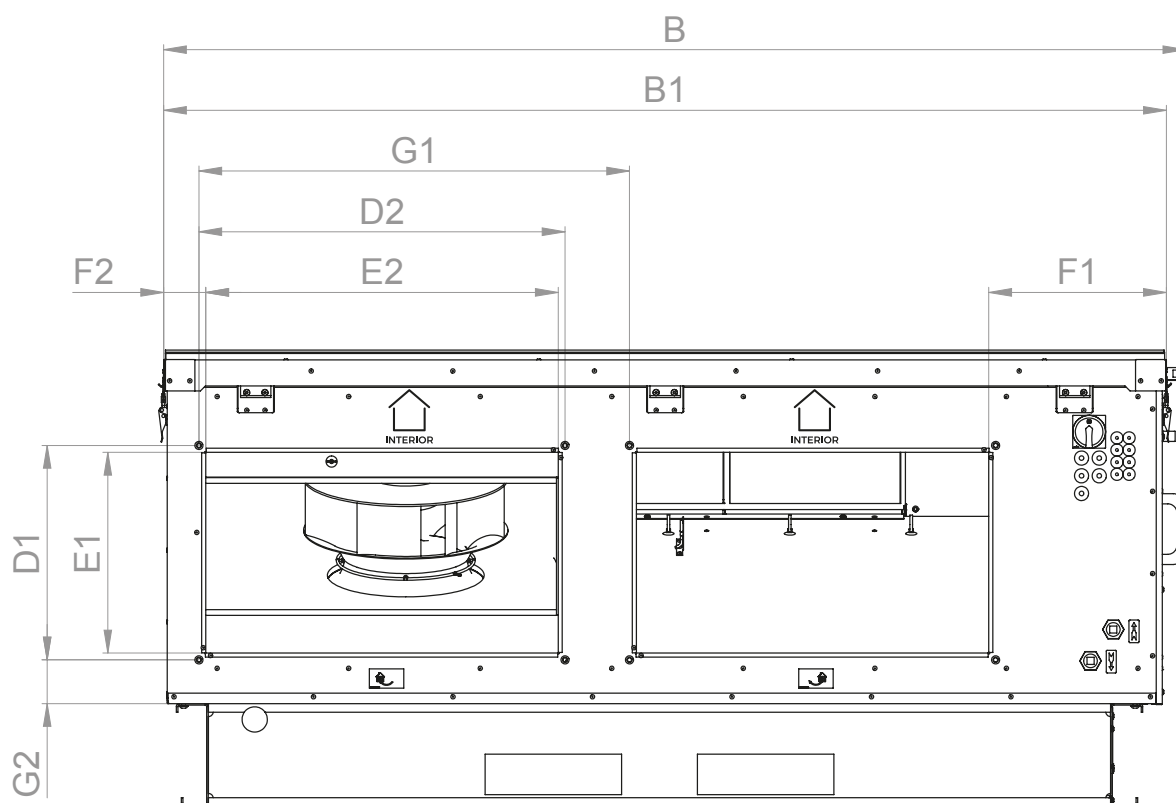
| Type                              | Weight [kg]  |                 |                           |
|-----------------------------------|--------------|-----------------|---------------------------|
|                                   | without coil | electric heater | hot water coil / DX / C-O |
| <b>Without electric preheater</b> |              |                 |                           |
| HR95-080                          | 185          | 187             | 190                       |
| HR95-150                          | 290          | 293             | 295                       |
| HR95-250                          | 385          | 390             | 395                       |
| HR95-350                          | 505          | 510             | 515                       |
| <b>With electric preheater</b>    |              |                 |                           |
| HR95-080                          | 187          | 189             | 192                       |
| HR95-150                          | 293          | 296             | 298                       |
| HR95-250                          | 389          | 394             | 399                       |
| HR95-350                          | 510          | 515             | 520                       |



Side view (regulation)



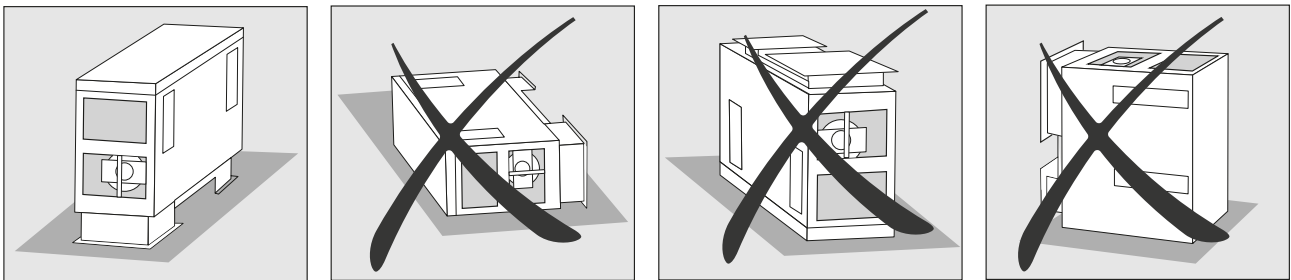
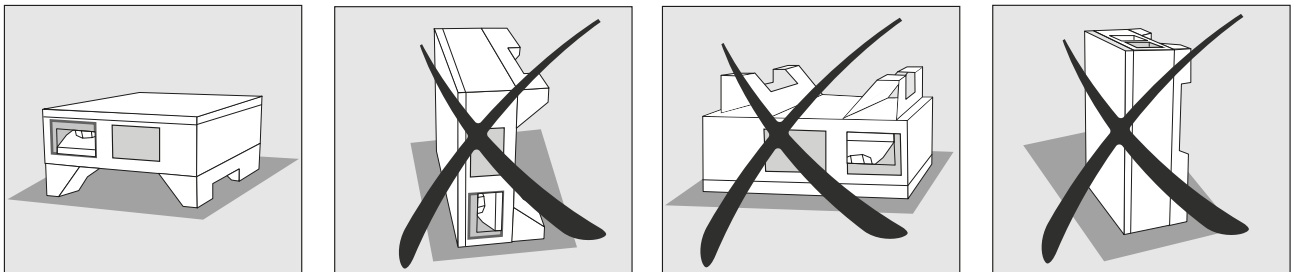
Side view (duct)



**INSTALLATION AND ASSEMBLY**

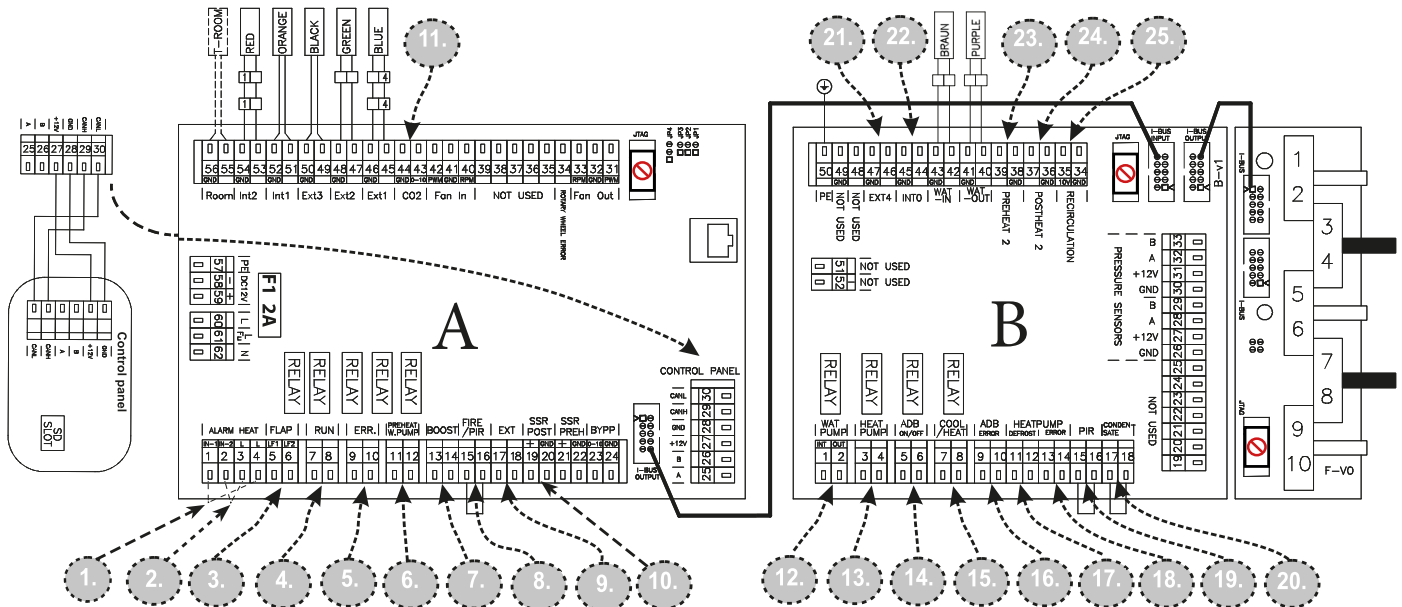
All types of ventilation units must be installed according to the pictures (see below).

The unit must be installed in such a way that the direction of the air blown corresponds to the direction of air circulation in the distribution system. The unit must be installed so as to give free access for maintenance, service or dismantling. This is to allow access to service flaps and possibility to open them, access to the lid of the control panel, access to the lateral connections and access to the filter cover.

**ALFA95 Vertical****ALFA95 Horizontal**



## WIRING DIAGRAMS



|     |           |                                                                          |
|-----|-----------|--------------------------------------------------------------------------|
| 1.  | A (1,4)   | Safety thermostat postheating                                            |
| 2.  | A (2,3)   | Safety preheating thermostat                                             |
| 3.  | A (5-6)   | LF1 - FLAP INLET (output L-open), LF2 - FLAP OUTLET ( output L-open)     |
| 4.  | A (7-8)   | RUN CONTACT (output - NO/NC settable)                                    |
| 5.  | A (9-10)  | ERROR CONTACT (output NO)                                                |
| 6.  | A (11-12) | PREHEATER WATER PUMP (11 - Lint, 12 - Lout)                              |
| 7.  | A (13-14) | BOOST (input NO)                                                         |
| 8.  | A (15-16) | FIRE (input NC)                                                          |
| 9.  | A (17-18) | EXTERNAL CONTROL ON/OFF (input NC)                                       |
| 10. | A (19,20) | OUTPUT PERFORMANCE OF POSTHEATING (0-10V OR PWM)                         |
| 11. | A (43-44) | AQS SENSOR 0-10V (input)                                                 |
| 12. | B (1-2)   | WATER PUMP (1 - Lint, 2 - Lout)                                          |
| 13. | B (3-4)   | HEAT PUMP CONTROL settable (output - ON/OFF)                             |
| 14. | B (5-6)   | ADIABATIC MODULE (output - ON/OFF)                                       |
| 15. | B (7-8)   | COOL / HEAT settable (CO = NC/NO - DX = output settable)                 |
| 16. | B (9-10)  | ADIABATIC MODULE ERROR (input NO)                                        |
| 17. | B (11-12) | HEAT PUMP DEFROST settable (input NC/NO)                                 |
| 18. | B (13-14) | HEAT PUMP ERROR settable (input NC/NO)                                   |
| 19. | B (15-16) | PIR (input NC)                                                           |
| 20. | B (17-18) | CONDENSATE OVERFLOW (input NC)                                           |
| 21. | B (46-47) | EXTERNAL TEMPERATURE SENSOR (external postheater - input)                |
| 22. | B (44-45) | EXTERNAL TEMPERATURE SENSOR (adiabatic module / recirc. chamber - input) |
| 23. | B (38-39) | EXTERNAL PREHEATER (output 0-10V)                                        |
| 24. | B (36-37) | EXTERNAL POSTHEATER (output 0-10V)                                       |
| 25. | B (34-35) | RECIRCULATION CHAMBER (output 0-10V)                                     |

**CONTROL****AirGENIO SUPERIOR - Main control functions**

- Touch-screen control panel for easy control and complete overview of device operational status (recommended connecting data cable to control panel is UTP cable and it should not exceed 50m length).
- Manual stepless fans control (PWM)
- CAV, VAV or DCV ventilation in automatic mode
- BOOST mode - intensive airflow for a pre-set time period
- Freecooling mode - night ventilation (cooling)
- Occupancy mode - reducing ventilation intensity according to the PIR sensor
- FIRE protection mode with settable logic
- Stepless by-pass control (temperature control: freecooling, antifreeze protection)
- Integrated timer (day, week, year)
- Optional connection of sensors: CO2, RH, VOC (0-10)
- Clogged filter indication by pressure sensors
- Stepless pre-heating control and post-heating control
- Electric coil control (PWM) and LPHW coil control (0-10V)
- Change-over control with automatic detection of the heating / cooling (0-10V)
- Wide choice of different ways for DX coil control\*
- Possible control of external pre-heater and post-heater
- Offset fan adjustment (over-pressure / underpressure)
- BMS control via Modbus RTU / TCP or BACnet
- Remote control via smart device



**\*AirGENIO SUPERIOR control system allows a different ways of DX coil control**

- ON-OFF
- 0-10 V
- 0-10 V - 0-10 V signal control
- On/Off - On/Off switching
- Off/On - Off/On switching
- 0-10 V + On/Off - On/Off switching + 0-10 V signal control
- 0-10 V + Off/On - Off/On switching + 0-10 V signal control

With reverse control cycle (heating - cooling mode)

- 10-0 V + On/Off - On/Off switching + 0-10 V signal control cooling, heating 10-0 V
- 10-0 V Off/On - Off/On switching + 0-10 V signal control cooling, heating 10-0 V

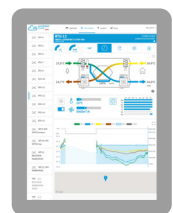
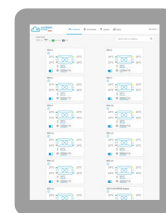
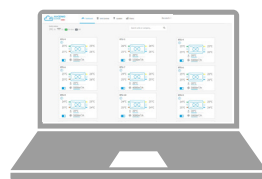
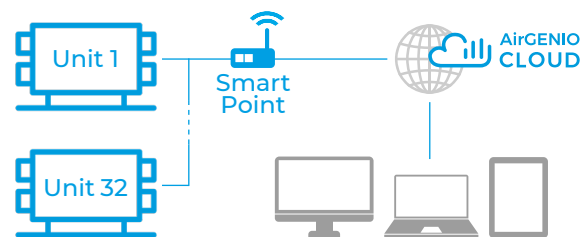
**2V Service software:**

- Easy and quick commissioning from your computer
- Error log – error display and identification
- Easy service (device status loading/reset to backup setting)
- Fast FW update
- OFFLINE version

**AirGENIO CLOUD - Connections you can trust**

2V cloud service operated on secure cloud server.

- Control, monitoring and servicing
- Web communication interface with clear and structured layout
- Easy customization of settings
- History logs providing accurate and timely info
- Smart notifications and warning/error messages clearly displayed in overview dashboard
- Backup and restore settings



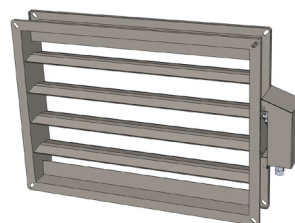


## ACCESSORIES

More details can be found on the relevant page in this catalog

### Four-sided closing flap with servo drive

The **MLKR** rectangular control flap is designed for controlling and closing the HVAC systems. The flap is designed for operation in the basic environment for conveying air free of rough dust, grease, chemical fumes, and other contaminants. The flanged damper frame and blades are made of galvanized plate.



| Unit type | Four-sided closing flap with servo drive |
|-----------|------------------------------------------|
| Vertical  |                                          |
| HR95-080  | MLKR-0400-0250-SR*                       |
| HR95-150  | MLKR-0450-0400-SR*                       |
| HR95-250  | MLKR-0500-0500-SR*                       |
| HR95-350  | MLKR-0700-0500-SR*                       |
| HR95-450  | MLKR-0700-0500-SR*                       |
| HR95-550  | MLKR-1000-0500-SR*                       |

| Unit type  | Four-sided closing flap with servo drive |
|------------|------------------------------------------|
| Horizontal |                                          |
| HR95-080   | MLKR-0300-0200-SR*                       |
| HR95-150   | MLKR-0500-0250-SR*                       |
| HR95-250   | MLKR-0600-0300-SR*                       |
| HR95-350   | MLKR-0700-0400-SR*                       |

\* **SR** - servodrive with spring, **SX** - servodrive without spring

### Electric heater

**EOKO** – The heater output is controlled by the ALFA95 unit control system via 0-10V

Recommended combinations:

| Unit type         | Type of el. Pre-heater |
|-------------------|------------------------|
| HR95-080 <b>V</b> | EOKO2-250-3,0-1-D      |
| HR95-150 <b>V</b> | EOKO2-355-9,0-3-D      |
| HR95-250 <b>V</b> | EOKO2-400-9,0-3-D      |
| HR95-350 <b>V</b> | EOKO2-560-12,0-3-D     |
| HR95-450 <b>V</b> | EOKO2-560-18,0-3-D     |
| HR95-550 <b>V</b> | EOKO2-630-18,0-3-D     |
| HR95-080 <b>H</b> | EOKO2-250-3,0-1-D      |
| HR95-150 <b>H</b> | EOKO2-315-9,0-3-D      |
| HR95-250 <b>H</b> | EOKO2-400-9,0-3-D      |
| HR95-350 <b>H</b> | EOKO2-500-18,0-3-D     |



**Adapter four-sided to circular**

**PR-O** – adapter from four-sided to circular pipes made from a galvanised metal sheet

| Unit type | Circular adapter        |
|-----------|-------------------------|
| Vertical  |                         |
| HR95-080  | PR-O-0400X250-D250-L100 |
| HR95-150  | PR-O-0450X400-D350-L150 |
| HR95-250  | PR-O-0500X500-D400-L400 |
| HR95-350  | PR-O-0700X500-D560-L250 |
| HR95-450  | PR-O-0700X500-D560-L250 |
| HR95-550  | PR-O-1000X500-D630-L600 |

| Unit type  | Circular adapter        |
|------------|-------------------------|
| Horizontal |                         |
| HR95-080   | PR-O-0300X200-D250-L150 |
| HR95-150   | PR-O-0500X250-D315-L250 |
| HR95-250   | PR-O-0600X300-D400-L300 |
| HR95-350   | PR-O-0700X400-D500-L400 |

**Filtration inserts**

**FILTR-HR95** – replacement filtration inserts of various filtration classes and configurations.



| Unit type  | PreFilter Coarse 60%      | Filter Coarse 60%     | Filter ePM 10 50%         |
|------------|---------------------------|-----------------------|---------------------------|
| Horizontal |                           |                       |                           |
| HR95-080   | FILTR-HR95-2-H0800-G4-PRE | FILTR-HR95-2-H0800-G4 | FILTR-HR95-2-H0800-F7-MPP |
| HR95-150   | FILTR-HR95-2-H1500-G4-PRE | FILTR-HR95-2-H1500-G4 | FILTR-HR95-2-H1500-F7-MPP |
| HR95-250   | FILTR-HR95-2-H2500-G4-PRE | FILTR-HR95-2-H2500-G4 | FILTR-HR95-2-H2500-F7-MPP |
| HR95-350   | FILTR-HR95-2-H3500-G4-PRE | FILTR-HR95-2-H3500-G4 | FILTR-HR95-2-H3500-F7-MPP |

| Unit type | PreFilter Coarse 60%      | Filter Coarse 60%     | Filter ePM 10 50%         |
|-----------|---------------------------|-----------------------|---------------------------|
| Vertical  |                           |                       |                           |
| HR95-080  | FILTR-HR95-2-V0800-G4-PRE | FILTR-HR95-2-V0800-G4 | FILTR-HR95-2-V0800-F7-MPP |
| HR95-150  | FILTR-HR95-2-V1500-G4-PRE | FILTR-HR95-2-V1500-G4 | FILTR-HR95-2-V1500-F7-MPP |
| HR95-250  | FILTR-HR95-2-V2500-G4-PRE | FILTR-HR95-2-V2500-G4 | FILTR-HR95-2-V2500-F7-MPP |
| HR95-350  | FILTR-HR95-2-V3500-G4-PRE | FILTR-HR95-2-V3500-G4 | FILTR-HR95-2-V3500-F7-MPP |
| HR95-450  | FILTR-HR95-2-V4500-G4-PRE | FILTR-HR95-2-V4500-G4 | FILTR-HR95-2-V4500-F7-MPP |
| HR95-550  | FILTR-HR95-2-V5500-G4-PRE | FILTR-HR95-2-V5500-G4 | FILTR-HR95-2-V5500-F7-MPP |



### Mixing valve

The **SMU** mixing unit is designed for controlling the heat-output of water-type heat exchangers. It is used especially for controlling standalone water-type air heaters, heaters inbuilt into the ventilation units

Recommended values for individual types of the **ALFA 95** units:

#### SMU2-024-06,3-SC

- SC** – with short circuit
- WO** – without short circuit
- 00,6** – mixing valve –  $k_{VS}$  0,6
- 01,6** – mixing valve –  $k_{VS}$  1,6
- 02,5** – mixing valve –  $k_{VS}$  2,5
- 04,0** – mixing valve –  $k_{VS}$  4,0
- 06,3** – mixing valve –  $k_{VS}$  6,3
- 12,0** – mixing valve –  $k_{VS}$  12,0
- 24,0** – mixing valve –  $k_{VS}$  24,0

**024** – 24V stepless control

**SMU2** – mixing unit





**Channel sensor CO<sub>2</sub>**  
**CI-CO2-22DC-11**

The transmitter is ideally suited for duct mounting in the fields of building management and demand controlled ventilation. The elegant, compact housing enables easy installation directly at the ventilation duct using a mounting flange.



**Duct sensor of relative humidity**  
**CI-RH-22DTH-11M**

Duct sensor for measuring relative humidity in air-conditioning systems.



**Spatial sensor CO<sub>2</sub>**  
**CI-CO2-R**

Sensor combines CO<sub>2</sub>. The snap-in mounting concept stands for easy installation.



**Spatial sensor RH**  
**CI-RH-R**

Capacitive relative humidity sensor with 0-10V analog and relay output.



**Signal combiner**  
**CI-AQS-COMBI**

The signal combiner for AQS sensors uses 0-10V logic which you can connect up to 10 different sensors. The input signal with the highest voltage will be the signal that is on the output terminal.



**PIR sensor**  
**CI-PS 1003**

Spatial infrared sensor for automatic ventilation based on presence of people in the ventilated area.

**Power supply of this sensor must be outsourced. Unit doesn't support this kind of power supply (15-24V DC).**



**AirGENIO CLOUD smart point**  
**AirGENIO-SMART-POINT**

2VW cloud service operated on secure cloud server





### KEY TO CODING

HR95-080 EC-CF-H B X X-74 R P 1

- 1** **Reserve code**  
1 Reserve
- P** **Version of access**  
P Right side version
- R** **Control**  
R AirGENIO Superior control
- 74** **Filtration (inlet / outlet)**  
74 inlet Coarse 60%+ ePM 10 50%; outlet Coarse 60%
- X** **Postheater**  
X Without postheater  
E Electric postheater  
W Water postheater  
C Heater/cooler  
D Direct evaporator
- X** **Preheater**  
X Without preheater  
E Electric preheater
- B** **By-pass**  
B With by-pass
- H** **Installation**  
H Horizontal installation  
V Vertical installation
- CF** **Heat exchanger**  
CF Counterflow plate heat exchanger
- EC** **Type of fan**  
EC EC motors
- 080** **Nominal airflow**  
080 Nominal flow rate 800 m³/h  
150 Nominal flow rate 1500 m³/h  
250 Nominal flow rate 2500 m³/h  
350 Nominal flow rate 3500 m³/h  
450 Nominal flow rate 4500 m³/h  
550 Nominal flow rate 5500 m³/h
- HR95** **Unit Type**  
HR95 Commercial recovery unit **ALFA95**