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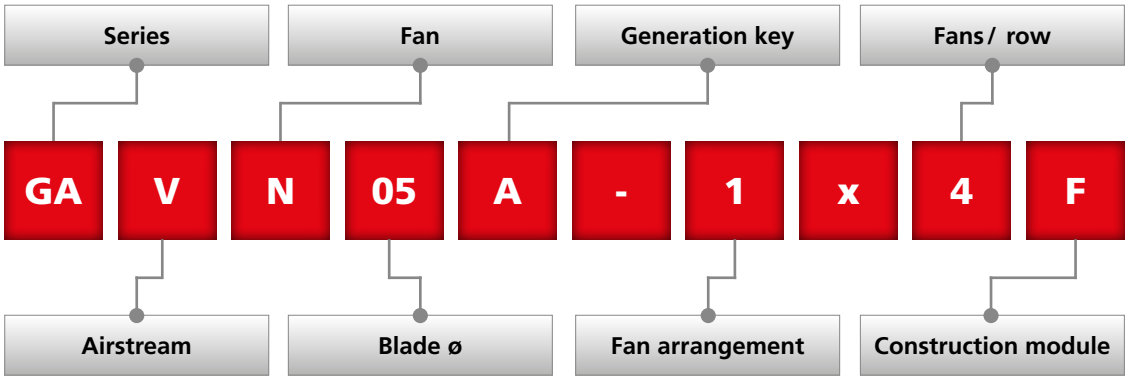
# GAV/H

# Construction

## Nomenclature:




**Series:**
CA = Frigen
GA = Glykol
NA = $NH_3$

**Airflow:**
V = vertical
H = horizontal

**Fan:**
N = normal
L = quiet
S = very quiet

**Blade ø:**
05 = 500 mm
06 = 650 mm
08 = 800 mm
09 = 910 mm
10 = 1,000 mm

**Generation key:**
A, B, C, ...

**Fan arrangement:**
1 = 1-range
2 = 2-range

**Fans/row:**
1 = 1 Fan/row
2 = 2 Fans/row
3 = 3 Fans/row
4 = 4 Fans/row
5 = 5 Fans/row
6 = 6 Fans/row
7 = 7 Fans/row

**Construction module:**
F, G = 1,100 mm
H, I = 1,450 mm
A = 1,400 mm
B = 1,700 mm
C = 2,000 mm
D = 2,300 mm

## Application

- **Nominal capacity:**
  Nominal capacity GA. from 15 to 785 kW at $t_{L1}$=32°C and $t_{glycol}$=45/40°C, 34 Vol% Monoethlyenglycol (Antifrogen N)
- **Suitable refrigerants:**
  The type series is suitable for all conventional brines and water. EDP calculation in acc. with GEA Küba selection software.
- All 828 models designed for **external installation**.
- **Possible areas of application:**
  - Industrial plants
  - Supermarkets
  - Cold rooms

  The low noise level of the S models allows installation in **noise-sensitive areas** such as:
  - Office complexes
  - Hospitals
  - Residential areas

## Sound Pressure Levels

The Sound Pressure Level $L_{PA}$ indicated is the mean measurement area Sound Pressure Level computed from Sound Power Level $L_{WA}$ upon the parallelpiped measuring surface squared around the dry cooler (reference square) at a distance of 10 m and finishing off upon the reflecting level.
The Sound Pressure Levels $L_{PA}$ indicated are for external installations above a reflecting level. The Sound Pressure Level will increase if reflecting bordering surfaces other than reflecting installation surface exist. Acoustic power is measured using the enveloping surface method in accordance with EN 13487 and/or DIN EN ISO 3741 or DIN EN ISO 3744.
The total acoustic power level is calculated by adding up the total acoustic pressure levels on the sectional measuring surfaces (DIN EN 13487).

Start-up, switching and control noise is ignored. In the case of multi-fan dry cooler deviations of up to 3 dB(A) may occur.

# Construction

## Casing

**Self-supporting construction, fan sections individually partitioned.**

- Casing and legs from galvanized sheet steel
- Temperature- and UV-radiation resistant powder coating RAL 7032 pebble gray
- Lifting lugs standard

## Heat exchanger

**Standard tube arrangement lengthwise, staggered, in special copper.**

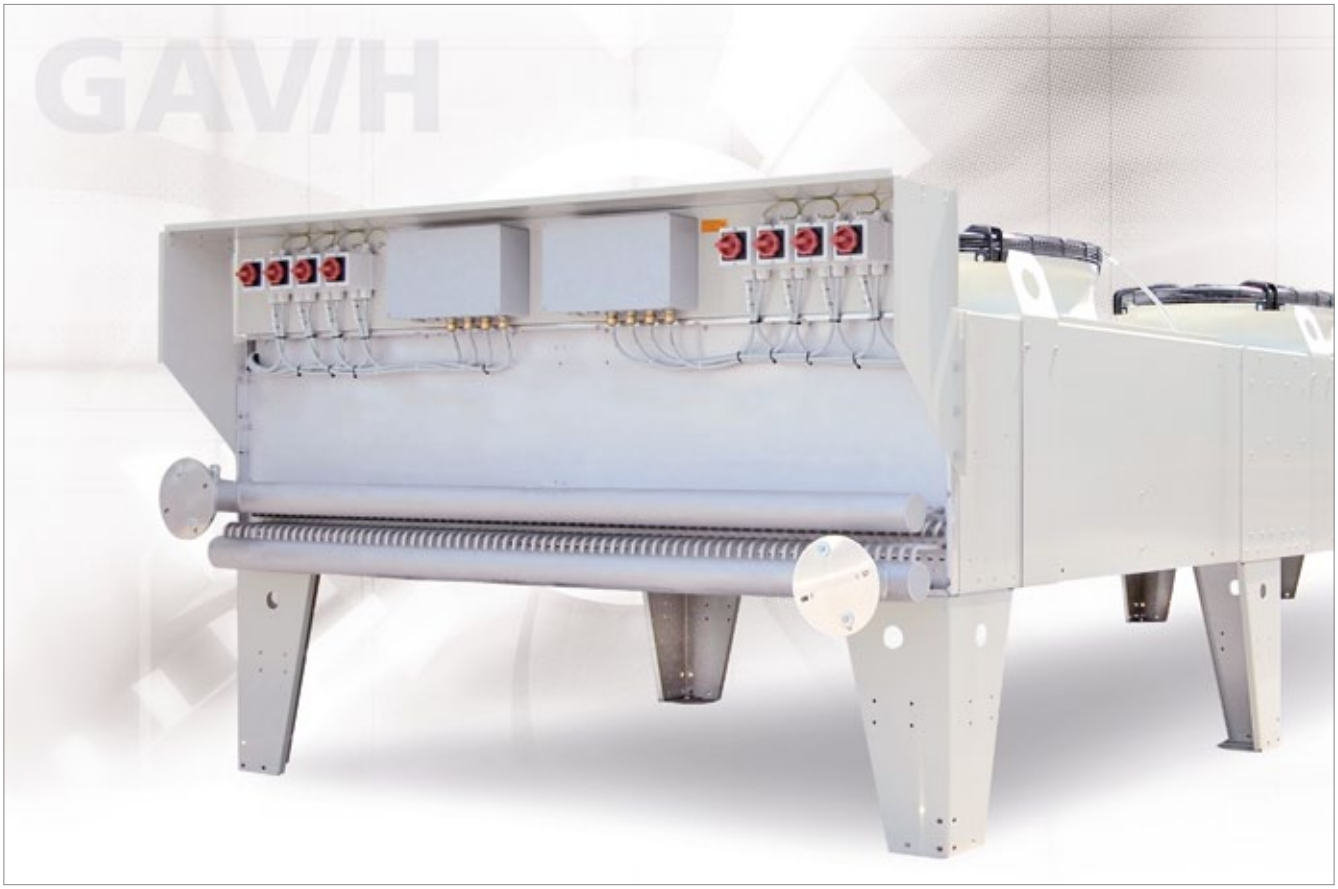
- Material:
  Tubes: SF-Cu
  Fins: AL with closed dimpled fins
  Fin spacing: 2.2 mm
- Multi-circuiting possible
- Connections
  Male thread connection of steel, vertical type (use for vertical and horizontal airflow)
- Maximum permissible pressure: 16 bar

## Axial fans

**Compact unit without external pressure, weather resistent: Motor with fans, Fan guard in accordance with DIN EN ISO 13857 and assembly brackets.**

- Fan blade ø 500, 650, 800, 910, 1000 mm, balanced in two levels according to a DIN EN ISO 1940 standard
- Motors, threephase current 400±10%V, 50 Hz, 2 speeds, Δ-Y-connections, Protection: IP 54
- Variable speed control by reduction of voltage.
- Proof to frequency changes (maximum fan pitch dU/dt=500V/µs; $U_{peak}$<1000V, $f_{max}$<60Hz).
- Standard protection of motor by thermocouples.
- For outdoor installation and ambient motor temperatures of -30°C up to +60°C.
- Please contact Küba for special voltages.
- GA. 05 and 06: Fans 230V 1, (no surcharge)
- All fans ErP 2015 compliant

**Container type (CGAV/H) and other designs available in our Küba Select selection program!**



# Power, Fluid connections

## Power

To determine the specifications of the dry coolers for use with other fluids or other conditions, please use our GEA Küba Selection Software.

## Connections

Standard models include air vents and drain plug.



| **Cooling agent flow $V_{GLY}$**<br>$m^3/h$ | **Male screw connection according to DIN 2440**<br>NW [Inches] |
|---|---|
| < 1.09 | 1/2 |
| < 1.98 | 3/4 |
| < 3.14 | 1 |
| < 4.75 | 1 1/4 |
| < 6.45 | 1 1/2 |
| < 10.60 | 2 |
| < 20.08 | 2 1/2 |
| < 24.50 | 3 |
| < 42.41 | 4 |
| < 49.00 | 2 x 3 |
| < 84.82 | 2 x 4 |

# Fans

## Speed actuator and control operation

**Speed control by decrease of the effective voltage**

Single-phase and three-phase motors can be speed controlled via voltage reduction. During partial speed, substantial losses occur in the rotor, since slip power is transformed into heat. The voltage decrease can be accomplished by a transformer or by phase control.

When using phase control, the voltage has a greater harmonic content, resulting in additional losses and causing additional heat in the motor.

Depending on installation conditions, the noise level may increase with electronic speed control by voltage reduction through phase angle control. The current may furthermore be higher than given on the nameplate.

**Speed control by frequency converters**

The standard AC fans are suitable for operation with frequency converters between 30% and 100% of rated motor frequency.
For reduction of peak voltages and voltage increase speed and motor noise (at reduced speed) frequency converter manufacturers recommend the use of all pole sinus filters

Axial fans are suited for operation by frequency converters provided the following points are observed:

Sinus filters to ensure sinusoidal supply voltage between phases and between phase and protective earth, as offered by some converter manufacturers, must be fitted between frequency converter and motor.

du/dt filters (also called motor or damping filters) must not be used instead of sinus filters.

When using sinus filters it may be unnecessary to use screened motor supply cables, metal terminal boxes and a second earth wire connection on the motor.

If the operational leakage current of 3.5 mA is exceeded, the earthing requirements as set out in DIN VDE 0160/5.88, Section 6.5.2.1, must be complied with.

**Manufacurers instructions must be observed!**

## Motor Protection:

A current-dependent motor protection facility (motor circuitbreaker or bimetal tripping device) is not provided and it must be noted that protection by thermo-couples TK should be wired.

Thermocouples are temperature-dependent elements which are insulated such that they are embedded in the windings of the motors. They open an electrical contact as soon as the maximum permissible permanent temperature is exceeded. They should be integrated in the control circuit of contactors in such a way, that in case of failure no automatic reactivation occurs.

Thermocouples fulfill the conditions for protecting devices with electric motor drive (IEC VDE 0730) against overloading.

# Sound Data

## Sound Power Levels

The A-grade total sound power level $L_{WA}$ has been determined by way of sound measurements in accordance with DIN EN ISO 3744 for one fan.

DIN EN ISO 3744 describes the measuring method with precision class 2 with a standard deviation (acoustic power) of ≤ 2dB.

## Sound Pressure Level for several fans at nominal speed rating

| **Fans per dry cooler** | **2** | **3** | **4** | **5** | **6** | **8** | **10** | **12** | **14** |
|---|---|---|---|---|---|---|---|---|---|
| **Increase $L_{PA}$ [dB(A)]** | +3 | +5 | +6 | +7 | +8 | +9 | +10 | +11 | +11 |

## Sound Power Level for one fan at nominal speed rating

| Module | Fan | Blade Ø | Sound Power Level $L_{WA}$ Δ | $L_{WA}$ Y | Sound Power Level $L_{WA}$ [dB(A)] at Octave band centre frequnecy f [Hz], A-rated | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 63 Hz | | 125 Hz | | 250 Hz | | 500 Hz | | 1 kHz | | 2 kHz | | 4 kHz | | 8 kHz | | 16 kHz | |
| | | | Δ | Y | Δ | Y | Δ | Y | Δ | Y | Δ | Y | Δ | Y | Δ | Y | Δ | Y | Δ | Y | Δ | Y |
| 05- | N | 500 | 83 | 77 | 49 | 45 | 71 | 64 | 72 | 66 | 76 | 70 | 79 | 72 | 77 | 72 | 72 | 64 | 62 | 53 | 50 | 39 |
| | L | | 82 | 76 | 49 | 44 | 70 | 63 | 71 | 66 | 75 | 69 | 78 | 72 | 76 | 69 | 71 | 64 | 61 | 53 | 48 | 39 |
| | S | | 72 | 63 | 43 | 48 | 59 | 50 | 63 | 56 | 65 | 58 | 68 | 57 | 65 | 54 | 59 | 46 | 49 | 35 | 36 | 27 |
| 06- | N | 650 | 94 | 90 | 54 | 52 | 74 | 69 | 85 | 81 | 86 | 82 | 89 | 85 | 89 | 85 | 86 | 81 | 75 | 69 | 63 | 58 |
| | L | | 84 | 82 | 50 | 48 | 63 | 61 | 75 | 73 | 76 | 74 | 80 | 77 | 79 | 77 | 73 | 70 | 62 | 59 | 52 | 49 |
| | S | | 77 | 74 | 48 | 46 | 64 | 62 | 67 | 64 | 69 | 66 | 72 | 70 | 71 | 68 | 63 | 59 | 53 | 50 | 43 | 40 |
| 08- | N | 800 | 85 | 78 | 56 | 60 | 71 | 64 | 75 | 69 | 78 | 72 | 81 | 74 | 77 | 71 | 72 | 65 | 64 | 57 | 53 | 46 |
| | L | | 86 | 78 | 56 | 56 | 70 | 64 | 75 | 65 | 78 | 71 | 81 | 73 | 80 | 73 | 77 | 68 | 68 | 58 | 57 | 47 |
| | S | | 65 | 60 | 44 | 41 | 53 | 48 | 56 | 54 | 60 | 53 | 60 | 54 | 57 | 50 | 49 | 42 | 41 | 35 | 31 | 27 |
| 09- | N | 900 | 92 | 85 | 64 | 59 | 74 | 71 | 81 | 74 | 84 | 77 | 87 | 81 | 87 | 80 | 83 | 75 | 75 | 65 | 62 | 53 |
| | L | | 85 | 78 | 56 | 56 | 71 | 65 | 78 | 69 | 79 | 72 | 81 | 73 | 77 | 69 | 72 | 65 | 66 | 58 | 55 | 45 |
| | S | | 79 | 72 | 59 | 50 | 66 | 60 | 71 | 65 | 71 | 65 | 74 | 66 | 70 | 63 | 66 | 59 | 59 | 50 | 46 | 36 |
| 10- | N | 1000 | 87 | 80 | 62 | 54 | 75 | 72 | 80 | 72 | 82 | 74 | 82 | 74 | 79 | 70 | 74 | 65 | 67 | 59 | 55 | 45 |
| | L | | 82 | 77 | 58 | 53 | 73 | 70 | 75 | 72 | 76 | 71 | 76 | 71 | 71 | 66 | 66 | 61 | 60 | 54 | 46 | 40 |
| | S | | 76 | 72 | 55 | 60 | 68 | 64 | 68 | 64 | 70 | 66 | 70 | 66 | 66 | 62 | 60 | 56 | 54 | 48 | 39 | 34 |

## Sound Pressure Correction values $L_{PA}$ for other distances

For other distances, the change in Sound Pressure measured with the enveloping surface method depends on the dimensions of the equipment.

The Sound Pressure Level $L_{PA}$ can be calculated exactly using the GEA Küba Selection Software.

| Ø | Number | Distance [in m] | 1 | 2 | 3 | 4 | 5 | 7 | 10 | 15 | 20 | 30 | 50 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **500** | 1 to 2 motors | **$\Delta L_{PA}$ [in dB (A)]** | +16 | +12 | +9 | +7 | +5 | +3 | 0 | -3 | -6 | -9 | -14 |
| **500** | 3 to 6 motors | **$\Delta L_{PA}$ [in dB (A)]** | +15 | +11 | +9 | +7 | +5 | +3 | 0 | -3 | -6 | -9 | -13 |
| **650** | 1 to 2 motors | **$\Delta L_{PA}$ [in dB (A)]** | +16 | +12 | +9 | +7 | +5 | +3 | 0 | -3 | -6 | -9 | -13 |
| **650** | 3 to 6 motors | **$\Delta L_{PA}$ [in dB (A)]** | +14 | +11 | +9 | +7 | +5 | +3 | 0 | -3 | -6 | -9 | -13 |
| **800** | 1 to 2 motors | **$\Delta L_{PA}$ [in dB (A)]** | +15 | +11 | +9 | +7 | +5 | +3 | 0 | -3 | -6 | -9 | -13 |
| **800** | 3 to 10 motors | **$\Delta L_{PA}$ [in dB (A)]** | +13 | +10 | +8 | +6 | +5 | +3 | 0 | -3 | -5 | -9 | -13 |
| **910** | 1 to 2 motors | **$\Delta L_{PA}$ [in dB (A)]** | +15 | +11 | +9 | +7 | +5 | +3 | 0 | -3 | -6 | -9 | -13 |
| **910** | 3 to 10 motors | **$\Delta L_{PA}$ [in dB (A)]** | +13 | +10 | +8 | +6 | +5 | +3 | 0 | -3 | -5 | -9 | -13 |
| **1,000** | 1 to 2 motors | **$\Delta L_{PA}$ [in dB (A)]** | +14 | +11 | +8 | +7 | +5 | +3 | 0 | -3 | -6 | -9 | -13 |
| **1,000** | 3 to 10 motors | **$\Delta L_{PA}$ [in dB (A)]** | +13 | +10 | +8 | +6 | +5 | +3 | 0 | -3 | -5 | -9 | -13 |

**The stated correction values $\Delta L_{PA}$ are approximate values.**

# Selection table 2-range (N + L)

## GAV / H N ..-2x ..

| Type | Nominal capacity $Q_{GLY}$ | | Airflow | | Sound pressure $L_{PA}$=10 m | |
|---|---|---|---|---|---|---|
| | [kW] | | [m³/h] | | [dB(A)] | |
| GA. | Δ | Y | Δ | Y | Δ | Y |
| N09A-2x1A | 105.0 | 84.3 | 40,290 | 29,930 | 62 | 55 |
| N09A-2x1B | 122.3 | 99.6 | 44,330 | 33,810 | 62 | 55 |
| N09A-2x1C | 136.7 | 111.5 | 47,650 | 36,400 | 62 | 55 |
| N09A-2x1D | 149.9 | 122.3 | 50,260 | 38,930 | 62 | 55 |
| N09A-2x2A | 210.1 | 168.6 | 80,580 | 59,860 | 66 | 59 |
| N09A-2x2B | 243.7 | 199.3 | 88,660 | 67,620 | 66 | 59 |
| N09A-2x2C | 273.5 | 223.3 | 95,290 | 72,800 | 66 | 59 |
| N09A-2x2D | 300.1 | 244.4 | 100,520 | 77,860 | 66 | 59 |
| N09A-2x3A | 296.7 | 239.0 | 120,860 | 89,800 | 68 | 61 |
| N09A-2x3B | 349.8 | 286.6 | 133,000 | 101,440 | 68 | 61 |
| N09A-2x3C | 395.8 | 323.7 | 142,940 | 109,190 | 68 | 61 |
| N09A-2x3D | 435.7 | 357.2 | 150,780 | 116,780 | 67 | 60 |
| N09A-2x4A | 420.5 | 337.3 | 161,150 | 119,730 | 69 | 62 |
| N09A-2x4B | 487.4 | 398.7 | 177,330 | 135,250 | 68 | 61 |
| N09A-2x4C | 547.2 | 447.0 | 190,580 | 145,590 | 68 | 61 |
| N09A-2x4D | 600.6 | 488.7 | 201,040 | 155,710 | 68 | 61 |
| N09A-2x5A | 540.9 | 435.3 | 201,440 | 149,660 | 69 | 62 |
| N09A-2x5B | 625.6 | 512.3 | 221,660 | 169,060 | 69 | 62 |
| N09A-2x5C | 701.9 | 566.4 | 238,230 | 181,990 | 69 | 62 |
| N09A-2x6A | 664.3 | 531.7 | 241,730 | 179,590 | 70 | 63 |
| N09A-2x6B | 762.0 | 620.8 | 265,990 | 202,870 | 70 | 63 |
| N09A-2x7A | 784.9 | 630.5 | 282,020 | 209,520 | 71 | 64 |
| N10A-2x1B | 128.7 | 104.6 | 47,820 | 36,050 | 58 | 50 |
| N10A-2x1C | 144.7 | 121.1 | 51,390 | 40,270 | 58 | 50 |
| N10A-2x1D | 159.0 | 135.5 | 54,700 | 44,310 | 58 | 50 |
| N10A-2x2B | 257.5 | 209.4 | 95,630 | 72,100 | 61 | 53 |
| N10A-2x2C | 289.5 | 240.7 | 102,780 | 80,540 | 61 | 53 |
| N10A-2x2D | 318.1 | 271.2 | 109,400 | 88,620 | 61 | 53 |
| N10A-2x3B | 369.6 | 301.0 | 143,450 | 108,150 | 63 | 55 |
| N10A-2x3C | 418.6 | 350.5 | 154,170 | 120,810 | 63 | 55 |
| N10A-2x3D | 464.8 | 395.3 | 164,100 | 132,930 | 62 | 54 |
| N10A-2x4B | 515.1 | 418.9 | 191,260 | 144,200 | 63 | 55 |
| N10A-2x4C | 579.2 | 481.5 | 205,560 | 161,080 | 63 | 55 |
| N10A-2x4D | 636.3 | 542.5 | 218,800 | 177,240 | 63 | 55 |
| N10A-2x5B | 661.7 | 535.3 | 239,080 | 180,250 | 64 | 56 |
| N10A-2x5C | 737.7 | 613.9 | 256,950 | 201,350 | 64 | 56 |
| N10A-2x6B | 805.8 | 653.3 | 286,890 | 216,300 | 65 | 57 |

## GAV / H L ..-2x ..

| Type | Nominal capacity $Q_{GLY}$ | | Airflow | | Sound pressure $L_{PA}$=10 m | |
|---|---|---|---|---|---|---|
| | [kW] | | [m³/h] | | [dB(A)] | |
| GA. | Δ | Y | Δ | Y | Δ | Y |
| L09A-2x1A | 98.7 | 78.5 | 34,550 | 25,560 | 55 | 47 |
| L09A-2x1B | 112.3 | 88.4 | 39,540 | 28,750 | 55 | 47 |
| L09A-2x1C | 126.5 | 98.1 | 42,990 | 31,060 | 55 | 47 |
| L09A-2x1D | 137.7 | 107.9 | 45,220 | 33,020 | 55 | 47 |
| L09A-2x2A | 187.7 | 150.1 | 69,100 | 51,120 | 59 | 51 |
| L09A-2x2B | 224.7 | 175.6 | 79,080 | 57,500 | 59 | 51 |
| L09A-2x2C | 253.1 | 196.0 | 85,990 | 62,120 | 59 | 51 |
| L09A-2x2D | 275.6 | 214.8 | 90,430 | 66,040 | 59 | 51 |
| L09A-2x3A | 266.1 | 211.6 | 103,640 | 76,670 | 61 | 53 |
| L09A-2x3B | 322.8 | 252.6 | 118,610 | 86,260 | 61 | 53 |
| L09A-2x3C | 366.4 | 285.3 | 128,980 | 93,180 | 61 | 53 |
| L09A-2x3D | 401.5 | 313.6 | 135,650 | 99,070 | 60 | 52 |
| L09A-2x4A | 375.6 | 298.8 | 138,190 | 102,230 | 62 | 54 |
| L09A-2x4B | 449.7 | 351.3 | 158,150 | 115,010 | 61 | 53 |
| L09A-2x4C | 506.2 | 391.9 | 171,980 | 124,240 | 61 | 53 |
| L09A-2x4D | 551.5 | 429.2 | 180,860 | 132,090 | 61 | 53 |
| L09A-2x5A | 485.6 | 385.2 | 172,740 | 127,790 | 62 | 54 |
| L09A-2x5B | 574.1 | 448.6 | 197,690 | 143,760 | 62 | 54 |
| L09A-2x5C | 646.9 | 500.2 | 214,970 | 155,300 | 62 | 54 |
| L09A-2x6A | 592.6 | 471.7 | 207,290 | 153,350 | 63 | 55 |
| L09A-2x6B | 703.1 | 546.2 | 237,230 | 172,510 | 63 | 55 |
| L09A-2x7A | 700.4 | 555.7 | 241,840 | 178,910 | 64 | 56 |
| L10A-2x1B | 110.3 | 96.4 | 38,630 | 32,420 | 52 | 48 |
| L10A-2x1C | 123.2 | 107.1 | 41,510 | 34,620 | 52 | 48 |
| L10A-2x1D | 135.6 | 118.6 | 44,320 | 37,460 | 52 | 48 |
| L10A-2x2B | 220.8 | 192.9 | 77,260 | 64,840 | 55 | 51 |
| L10A-2x2C | 246.4 | 214.3 | 83,020 | 69,240 | 55 | 51 |
| L10A-2x2D | 271.2 | 237.1 | 88,640 | 74,920 | 55 | 51 |
| L10A-2x3B | 317.2 | 277.4 | 115,890 | 97,260 | 57 | 53 |
| L10A-2x3C | 356.8 | 311.1 | 124,530 | 103,860 | 57 | 53 |
| L10A-2x3D | 395.3 | 346.6 | 132,960 | 112,380 | 56 | 52 |
| L10A-2x4B | 441.8 | 385.9 | 154,520 | 129,680 | 57 | 53 |
| L10A-2x4C | 492.8 | 428.8 | 166,040 | 138,480 | 57 | 53 |
| L10A-2x4D | 542.6 | 474.0 | 177,280 | 149,840 | 57 | 53 |
| L10A-2x5B | 564.1 | 495.0 | 193,150 | 162,100 | 58 | 54 |
| L10A-2x5C | 629.0 | 544.5 | 207,550 | 173,100 | 58 | 54 |
| L10A-2x6B | 690.3 | 600.4 | 231,780 | 194,520 | 59 | 55 |

## GA. N + L

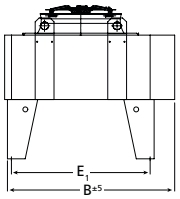
| Surface | Tube volume | Weight |
|---|---|---|
| [m²] | [dm³] | [kg] |
| 311 | 70.6 | 480 |
| 378 | 81.1 | 530 |
| 445 | 71.4 | 580 |
| 511 | 81.9 | 630 |
| 622 | 99.3 | 860 |
| 756 | 140.7 | 960 |
| 889 | 141.2 | 1,060 |
| 1.022 | 162.2 | 1,160 |
| 933 | 148.0 | 1,240 |
| 1.134 | 179.4 | 1,400 |
| 1.334 | 210.9 | 1,590 |
| 1.534 | 242.3 | 1,680 |
| 1.245 | 196.9 | 1,680 |
| 1.511 | 238.8 | 1,800 |
| 1.778 | 280.8 | 2,100 |
| 2.045 | 322.7 | 2,300 |
| 1.556 | 245.8 | 2,050 |
| 1.889 | 298.3 | 2,300 |
| 2.223 | 350.7 | 2,490 |
| 1.867 | 294.8 | 2,460 |
| 2.267 | 357.7 | 2,760 |
| 2.178 | 343.7 | 2,870 |
| 378 | 81.1 | 530 |
| 445 | 71.4 | 580 |
| 511 | 81.9 | 630 |
| 756 | 140.7 | 960 |
| 889 | 141.2 | 1,060 |
| 1.022 | 162.2 | 1,160 |
| 1.134 | 179.4 | 1,510 |
| 1.334 | 210.9 | 1,550 |
| 1.534 | 242.3 | 1,680 |
| 1.511 | 238.8 | 1,850 |
| 1.778 | 280.8 | 2,060 |
| 2.045 | 322.7 | 2,300 |
| 1.889 | 298.3 | 2,310 |
| 2.223 | 350.7 | 2,550 |
| 2.267 | 357.7 | 2,772 |

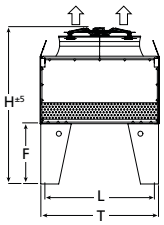
**Nominal capacity $Q_{GLY}$:** 34% by vol. monoethylene glycol (Antifrogen N); t (in/out) = 45/40°C, $t_{L1}$ = 32°C
**Sound pressure:** Enveloping surface method, in acc. with DIN EN ISO 13487
Δ: Valid at high rpm
Y: Valid at low rpm

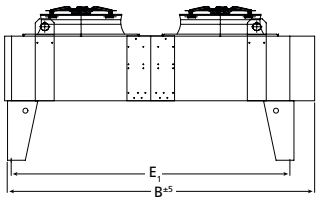
Container type (CGAV/H) and other designs available in our GEA Küba Select selection program!

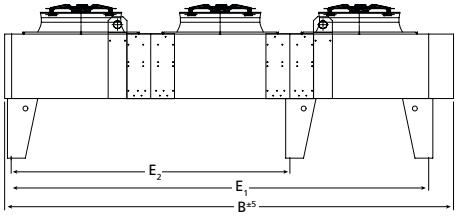
# Dimensions 2-range (GAV)

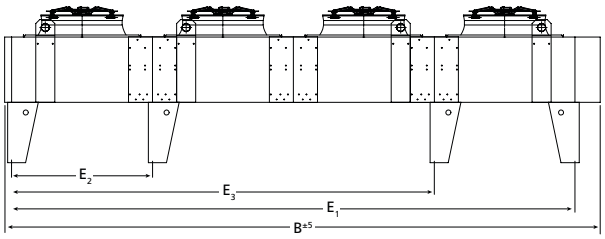
| Type | GAV..-2x..: Dimensions [mm] | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| GA. | H | B | $E_1$ | $E_2$ | $E_3$ | $E_4$ | F | T | L |
| **05A-2x1F** | 1,000 | 1,410 | 960 | - | - | - | 500 | 1,702 | 1,652 |
| **05A-2x1G** | 1,000 | 1,410 | 960 | - | - | - | 500 | 1,702 | 1,652 |
| **05A-2x2F** | 1,000 | 2,512 | 2,062 | - | - | - | 500 | 1,702 | 1,652 |
| **05A-2x2G** | 1,000 | 2,512 | 2,062 | - | - | - | 500 | 1,702 | 1,652 |
| **05A-2x3F** | 1,000 | 3,613 | 3,163 | 1,102 | - | - | 500 | 1,702 | 1,652 |
| **05A-2x3G** | 1,000 | 3,613 | 3,163 | 1,102 | - | - | 500 | 1,702 | 1,652 |
| **06A-2x1F** | 1,030 | 1,410 | 960 | - | - | - | 500 | 2,210 | 2,160 |
| **06A-2x1H** | 1,030 | 1,760 | 1,310 | - | - | - | 500 | 2,210 | 2,160 |
| **06A-2x1G** | 1,030 | 1,410 | 960 | - | - | - | 500 | 2,210 | 2,160 |
| **06A-2x1I** | 1,030 | 1,760 | 1,310 | - | - | - | 500 | 2,210 | 2,160 |
| **06A-2x2F** | 1,030 | 2,512 | 2,062 | - | - | - | 500 | 2,210 | 2,160 |
| **06A-2x2H** | 1,030 | 3,212 | 2,762 | - | - | - | 500 | 2,210 | 2,160 |
| **06A-2x2G** | 1,030 | 2,512 | 2,062 | - | - | - | 500 | 2,210 | 2,160 |
| **06A-2x2I** | 1,030 | 3,212 | 2,762 | - | - | - | 500 | 2,210 | 2,160 |
| **06A-2x3F** | 1,030 | 3,613 | 3,163 | 1,102 | - | - | 500 | 2,210 | 2,160 |
| **06A-2x3H** | 1,030 | 4,663 | 4,213 | 1,452 | - | - | 500 | 2,210 | 2,160 |
| **06A-2x3G** | 1,030 | 3,613 | 3,163 | 1,102 | - | - | 500 | 2,210 | 2,160 |
| **06A-2x3I** | 1,030 | 4,663 | 4,213 | 1,452 | - | - | 500 | 2,210 | 2,160 |
| **08A-2x1A** | 1,805 | 1,730 | 1,403 | - | - | - | 850 | 2,365 | 2,273 |
| **08A-2x1B** | 1,805 | 2,030 | 1,703 | - | - | - | 850 | 2,365 | 2,273 |
| **08A-2x1C** | 1,805 | 2,330 | 2,003 | - | - | - | 850 | 2,365 | 2,273 |
| **08A-2x2A** | 1,805 | 3,130 | 2,805 | - | - | - | 850 | 2,365 | 2,273 |
| **08A-2x2B** | 1,805 | 3,730 | 3,405 | - | - | - | 850 | 2,365 | 2,273 |
| **08A-2x2C** | 1,805 | 4,335 | 4,005 | - | - | - | 850 | 2,365 | 2,273 |
| **08A-2x3A** | 1,805 | 4,535 | 4,206 | 2,803 | - | - | 850 | 2,365 | 2,273 |
| **08A-2x3B** | 1,805 | 5,435 | 5,106 | 3,403 | - | - | 850 | 2,365 | 2,273 |
| **08A-2x3C** | 1,805 | 6,335 | 6,006 | 4,002 | - | - | 850 | 2,365 | 2,273 |
| **08A-2x4A** | 1,955 | 5,935 | 5,608 | 1,402 | 4,205 | - | 1,000 | 2,365 | 2,273 |
| **08A-2x4B** | 1,955 | 7,135 | 6,808 | 1,702 | 5,105 | - | 1,000 | 2,365 | 2,273 |
| **08A-2x4C** | 1,955 | 8,335 | 8,008 | 2,002 | 6,005 | - | 1,000 | 2,365 | 2,273 |
| **08A-2x5A** | 1,955 | 7,335 | 7,009 | 2,805 | 4,205 | - | 1,000 | 2,365 | 2,273 |
| **08A-2x5B** | 1,955 | 8,835 | 8,509 | 3,403 | 5,105 | - | 1,000 | 2,365 | 2,273 |
| **08A-2x5C** | 1,955 | 10,335 | 10,004 | 4,003 | 6,005 | - | 1,000 | 2,365 | 2,273 |
| **08A-2x6A** | 1,955 | 8,738 | 8,411 | 2,803 | 5,606 | - | 1,000 | 2,365 | 2,273 |
| **08A-2x6B** | 1,955 | 10,536 | 10,209 | 3,403 | 6,805 | - | 1,000 | 2,365 | 2,273 |
| **08A-2x7A** | 1,955 | 10,139 | 9,812 | 2,803 | 4,205 | 7,008 | 1,000 | 2,365 | 2,273 |
| **09A-2x1A** | 1,820 | 1,730 | 1,403 | - | - | - | 850 | 2,365 | 2,273 |
| **09A-2x1B** | 1,820 | 2,030 | 1,703 | - | - | - | 850 | 2,365 | 2,273 |
| **09A-2x1C** | 1,820 | 2,330 | 2,003 | - | - | - | 850 | 2,365 | 2,273 |
| **09A-2x1D** | 1,820 | 2,630 | 2,303 | - | - | - | 850 | 2,365 | 2,273 |
| **09A-2x2A** | 1,820 | 3,130 | 2,805 | - | - | - | 850 | 2,365 | 2,273 |
| **09A-2x2B** | 1,820 | 3,730 | 3,405 | - | - | - | 850 | 2,365 | 2,273 |
| **09A-2x2C** | 1,820 | 4,335 | 4,005 | - | - | - | 850 | 2,365 | 2,273 |
| **09A-2x2D** | 1,820 | 4,930 | 4,605 | - | - | - | 850 | 2,365 | 2,273 |
| **09A-2x3A** | 1,820 | 4,535 | 4,206 | 2,803 | - | - | 850 | 2,365 | 2,273 |
| **09A-2x3B** | 1,820 | 5,435 | 5,106 | 3,403 | - | - | 850 | 2,365 | 2,273 |
| **09A-2x3C** | 1,820 | 6,335 | 6,006 | 4,002 | - | - | 850 | 2,365 | 2,273 |
| **09A-2x3D** | 1,820 | 7,235 | 6,906 | 4,603 | - | - | 850 | 2,365 | 2,273 |
| **09A-2x4A** | 1,970 | 5,935 | 5,608 | 1,402 | 4,205 | - | 1,000 | 2,365 | 2,273 |
| **09A-2x4B** | 1,970 | 7,135 | 6,808 | 1,702 | 5,105 | - | 1,000 | 2,365 | 2,273 |
| **09A-2x4C** | 1,970 | 8,335 | 8,008 | 2,002 | 6,005 | - | 1,000 | 2,365 | 2,273 |
| **09A-2x4D** | 1,970 | 9,535 | 9,208 | 2,302 | 6,905 | - | 1,000 | 2,365 | 2,273 |
| **09A-2x5A** | 1,970 | 7,335 | 7,009 | 2,805 | 4,205 | - | 1,000 | 2,365 | 2,273 |
| **09A-2x5B** | 1,970 | 8,835 | 8,509 | 3,403 | 5,105 | - | 1,000 | 2,365 | 2,273 |
| **09A-2x5C** | 1,970 | 10,335 | 10,004 | 4,003 | 6,005 | - | 1,000 | 2,365 | 2,273 |
| **09A-2x6A** | 1,970 | 8,738 | 8,411 | 2,803 | 5,606 | - | 1,000 | 2,365 | 2,273 |
| **09A-2x6B** | 1,970 | 10,536 | 10,209 | 3,403 | 6,805 | - | 1,000 | 2,365 | 2,273 |
| **09A-2x7A** | 1,970 | 10,139 | 9,812 | 2,803 | 4,205 | 7,008 | 1,000 | 2,365 | 2,273 |
| **10A-2x1B** | 1,830 | 2,030 | 1,703 | - | - | - | 850 | 2,365 | 2,273 |
| **10A-2x1C** | 1,830 | 2,330 | 2,003 | - | - | - | 850 | 2,365 | 2,273 |
| **10A-2x1D** | 1,830 | 2,630 | 2,303 | - | - | - | 850 | 2,365 | 2,273 |
| **10A-2x2B** | 1,830 | 3,730 | 3,405 | - | - | - | 850 | 2,365 | 2,273 |
| **10A-2x2C** | 1,830 | 4,330 | 4,005 | - | - | - | 850 | 2,365 | 2,273 |
| **10A-2x2D** | 1,830 | 4,930 | 4,605 | - | - | - | 850 | 2,365 | 2,273 |
| **10A-2x3B** | 1,830 | 5,435 | 5,106 | 3,403 | - | - | 850 | 2,365 | 2,273 |
| **10A-2x3C** | 1,830 | 6,335 | 6,006 | 4,003 | - | - | 850 | 2,365 | 2,273 |
| **10A-2x3D** | 1,830 | 7,235 | 6,906 | 4,603 | - | - | 850 | 2,365 | 2,273 |
| **10A-2x4B** | 1,980 | 7,135 | 6,805 | 1,702 | 5,105 | - | 1,000 | 2,365 | 2,273 |
| **10A-2x4C** | 1,980 | 8,335 | 8,008 | 2,002 | 6,005 | - | 1,000 | 2,365 | 2,273 |
| **10A-2x4D** | 1,980 | 9,535 | 9,109 | 2,302 | 6,905 | - | 1,000 | 2,365 | 2,273 |
| **10A-2x5B** | 1,980 | 8,835 | 9,509 | 3,402 | 5,105 | - | 1,000 | 2,365 | 2,273 |
| **10A-2x5C** | 1,980 | 10,335 | 10,004 | 4,003 | 6,005 | - | 1,000 | 2,365 | 2,273 |
| **10A-2x6B** | 1,980 | 10,536 | 10,209 | 3,403 | 6,805 | - | 1,000 | 2,365 | 2,273 |



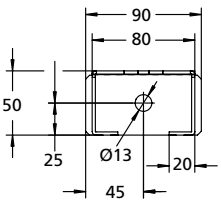




**Feet GAV 05/06**




**Feet GAV 08/09/10**