

# HFL

## Closed circuit cooling towers



### Key benefits

- Unrivalled water savings
- Compact
- Superb hygiene control

#### HFL characteristics

Counter flow, centrifugal fan, forced draft  
Hybrid wet-dry cooling

#### Capacity range

up to 1275 kW

#### Maximum entering fluid temperature

82°C

#### Typical applications

- Medium to large HVAC and industrial applications
- Low height requirements
- Water saving requirements
- Plume reduction requirements
- Tight enclosures and installations requiring a single air inlet
- Indoor installations
- Sound critical installations



## Unrivalled water-saving

- Patented intelligent **flow control system!**  
With a [3-way valve](#) for precise setting of outlet fluid temperature and unrivalled annual water-saving.
- Load profile-adaptable to **dry**, **adiabatic** or combined **wet-dry** operation.

## Compact

- **Side by side** installation for double cell towers. Water basin access is at tower connection end.
- **Very low height.** Fits perfectly on **roof tops** or tight enclosures.
- **Low operating weight.** Water basin contains only 1/4 of the water of conventional evaporative fluid coolers.

## Superb hygiene control

- **Dry-running** for 10 months per year possible depending on application and weather conditions.
- Self-cleaning auto-drain **sump** to prevent stagnant water.
- **Basin for water outside air stream** and accessible during operation

## For reduced noise

- **Low noise centrifugal fans** for a quieter environment.
- Single-side air inlet, and a **quieter tower rear** for more noise-sensitive areas.

## Easy to install

- Single-side air inlet lets you install **next to solid walls**.
- Units housable **indoors** thanks to centrifugal fans allowing intake or discharge ductwork.

## Guaranteed year-round reliable operation

- During dry winter operation, **no extra sump drainage needed.** With HFL water basin outside airstream, and heaters to prevent basin water freezing, even with fans at top speed.
- **Non-plume** wet operation **thanks to optional** [dry finned coil](#): it reduces humidity of discharge air from the prime surface coil.
- Various **corrosion-resistant** materials, including the unique [Baltibond hybrid coating](#) for guaranteed long service life.

**Interested in the HFL hybrid closed circuit cooling tower for cooling your process fluid?** Contact your local [BAC representative](#) for more information.



## Downloads

- [HFL closed circuit cooling tower](#)
- [Operating and Maintenance HFL](#)
- [Rigging and Installation HFL](#)
- [HFL Hybrid closed circuit cooling tower - brochure](#)

# HFL

## Closed circuit cooling towers

### Principle of operation

#### Dry operation

The spray water **pump (1)** and **spray system (2)** are turned off and the modulating **flow control valve (3-way valve) (3)** remains fully open. The warm process **fluid (4)** flows both through the **finned discharge coil (5)** and the **prime surface coil (6)**. A **fan (7)** blows the ambient **air (8)** over the coil and cools the **fluid (9)** inside the coil. In this mode neither water consumption nor plume occurs.



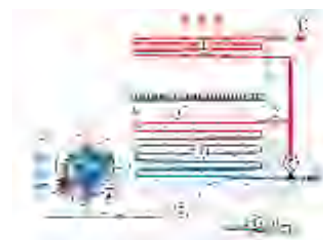
#### Adiabatic operation

The **flow control valve (3-way valve) (1)** lets the warm process **fluid (2)** flow through the **finned discharge coil (3)**, by-passing the **wet prime surface coil (4)**. The prime surface coil is wetted by the **spray water (5)** but there is no water evaporation for heat rejection purposes. Some water will however evaporate, which will humidify the incoming ambient **air (6)** that is blown by a **fan (7)** over the coils. This saturated air has a better cooling capacity to cool down the process **fluid (8)** in the finned coil. The spray water drops into a plenum with sloping **bottom (9)** and drains into the separated wet **sump (10)**. The pump recirculates the water to the spray system. Visible plume and water consumption are greatly reduced while the design fluid outlet temperature is kept.



## Wet-dry operation

The warm process **fluid (1)** flows both through the **finned discharge coil (2)** and the **prime surface coil (3)**. A **fan (4)** blows the **air (5)** over the coils. At the top where the warm fluid enters the tower, the discharge air is saturated and pre-cools already the fluid. Then a next heat transfer process occurs in the prime surface coil which is wetted by the **spray system (6)**. The spray water drops into a plenum with **sloping bottom (7)** and drains into the separated wet **sump (8)**. The pump recirculates the water to the spray system. When there is less heat load or the ambient temperature drops, the **modulating valve (9)** will control the flow through the prime surface coil in a way that the design fluid outlet temperature is kept. Plume is also minimized because there is less evaporated water and the discharge air is heated with the dry finned coil.



**You want to use the HFL hybrid closed cooling tower to cool your process fluid?** Contact your local [BAC representative](#) for more information.

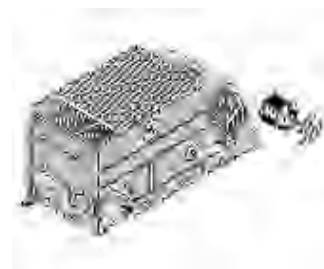
# HFL

## Closed circuit cooling towers

### Construction details

#### 1. Material options

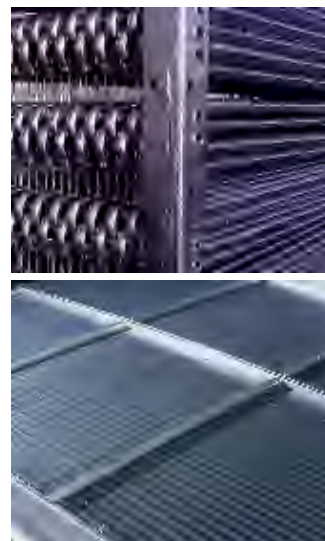
- Heavy-gauge hot-dip galvanized steel is used for external unit steel panels and structural elements featuring [Baltiplus Corrosion Protection](#).
- The unique [Baltibond hybrid coating](#) **is an optional extra**. A hybrid polymer coating for longer service life, applied pre-assembly to all hot-dip galvanized steel components of the unit.
- Optional [stainless steel](#) panels and structural elements of type 304 or 316 for extreme applications.
- Or the economical alternative: a **water-contact stainless steel cold water basin**. Its key components and the basin itself are stainless steel. The rest is protected with the Baltibond hybrid coating.



## 2. Heat transfer media

### Prime surface coil

- The coil is constructed of continuous length of prime surface steel, hot-dip galvanized after fabrication. Designed for free drainage of the fluid and maximum 10 bar operating pressure according to PED. Pneumatically tested at 15 bar.
- All hot dip galvanized and stainless steel coils are delivered with BAC's **Internal Coil Corrosion Protection**, to ensure an optimal internal corrosion protection and guaranteed quality.



**Optional stainless steel coils** are in type 304L or 316L.

### Optional finned coil

- The dry finned coil is constructed of minimum 4 circuits of **staggered copper tubes** with aluminium plate fins.
- In galvanised steel casing with **access door** and enough space for inspection.
- Designed for free drainage of the fluid and maximum 10 bar operating pressure according to PED. Pneumatically tested at 15 bar.
- In combination with a **flow control package** including a [3-way valve](#), temperature sensor and piping.

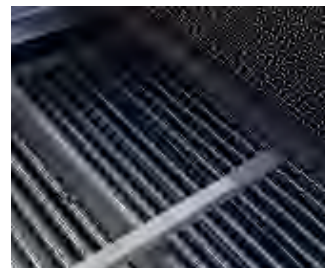
## 3. Air movement system

- With motor-driven centrifugal fan and a **V-belt drive**, sized for dry operation as standard. You can easily remove the entire motor base for proper belt tensioning to ensure constantly correct belt alignment. Together with the **heavy duty fan shaft bearings** this guarantees optimal operational efficiency.
- **Centrifugal fan(s)** are forward-curved and nearly noiseless. Overcome external static pressure! Use [sound attenuators](#) and duct work etc. for air intake/discharge with no loss of thermal performance!
- **Our drift eliminators** come in UV-resistant plastic, which will not rot, decay or decompose and their performance is tested and **certified by Eurovent**. They are assembled in **easily handled and removable sections**, for optimal internal access.



## 4. Water distribution system

- A **header** and **spray branches** with wide non-clog plastic **nozzles**, secured by rubber **grommets**.
- A spray water collection section with:
  - dry sloped basin with circular access doors
  - wet water basin out of the air stream including easy to lift-out anti-vortexing **strainer, make up** , rectangular access doors.
- Close coupled, bronze fitted centrifugal **spray pump** with totally enclosed fan cooled (TEFC) motor at connection end of the unit. Bleed line with metering valve installed from pump discharge to overflow.
- The **electric water level control package** maintains a constant water level in the cold water sump independent of cooling load changes and water supply pressure variations.



Like to know more about the HFL construction details? Contact your [local BAC representative](#).

# HFL

## Closed circuit cooling towers

### Options and accessories

Below is a listing of the main HFL options and accessories. If you required option or accessory is not listed, look no further than your [local BAC representative](#).



#### Plume abatement coil

A finned discharge coil is installed in your cooling tower discharge and piped in series with the wet coil. This **reduces or eliminates plumes** and **extends the dry cooling capacity**.



#### 3-way-valve

A 3-way-valve is installed on your cooling tower in order to assure maximum water savings.



## Sound attenuation

Reducing noise at air intake and discharge points brings us closer to silent cooling equipment.

- The sound reductions obtained by HS sound attenuation are perfect for **residential** sound requirements.
- Heavy noise reductions can be achieved with HD sound attenuation, making it ideal for **rural** requirements.



## Baltiguard drive system

With this, operate your system like a dual-speed motor, but with standby reserve capacity **to cope with any failure**.



## Remote sump connection

The best way to **prevent a sump freezing** is to use the auxiliary remote variety within a heated area. Shutting off the circulating pump allows all the water in the water distribution, as well as that in suspension and the sump to drain freely to the auxiliary sump.



## Basin heater package

Thanks to our factory-installed heaters, the water stays at 4°C and **never freezes**, even during equipments downtime and however cold it gets outside.



## Discharge hood

Discharge hoods **reduce the risk of re-circulation** in tight enclosures by increasing discharge air velocity, and can be used to elevate the unit discharge above adjacent walls to comply with layout guidelines.



## Standby pump

Install a standby **reserve spray pump** as failure backup!



## Pump relocation

Move the pump to the connection side and make it **more accessible** when using sound attenuation at the fan side.



### Steel drift eliminators

Steel drift eliminators are more **robust** than plastic alternatives.



### Safety switch

Cuts power to motors **with safety in mind** during inspection or maintenance.



### Water treatment equipment

Devices to control water treatment are needed to ensure proper **cooling tower water care**. Not only does this help protect the components and fill pack, controlling corrosion, scaling and fouling, it also avoids the proliferation of harmful bacteria, including **legionella**, in the recirculating water.



## Filter

Separators and media filters efficiently **remove suspended solids** in the recirculating water, reducing system cleaning costs and optimizing water treatment results. Filtration helps you keep the recirculating water clean.



## Clean out port

Clean out port **makes it easy to eliminate silt and sludge** from the cooling tower basin when cleaning and flushing the sump.



## Flanges

Flanges facilitate **pipng connections** on-site.



# HFL

## Closed circuit cooling towers

### Special needs?

Our ongoing [R&D](#) investment helps BAC offer you a complete set of solutions **for HFL hybrid closed circuit cooling towers that meet your needs**. Plus, we also cater for extra requirements such as:

#### Sound control

HFL uses a centrifugal fan in a V-design enclosure for better sound-control.

**A quieter tower rear** for more noise-sensitive areas.

Helping keep it near noiseless:

- [Sound attenuators](#)
- [Baltiguard drive system](#)

#### Plume control

Tap into abundant BAC plume control experience. For the HFL line, we offer [plume abatement coils](#) with **reduced plume** and an optional 3-way valve for **intelligent flow control**.

Check out our [BAC plume visualization software](#) for insight into **how your cooling equipment will plume** before installation. Helping you choose the best and most effective plume abatement solution.

## Water savings

You need water for evaporative cooling. At BAC, however, we offer acclaimed and advanced water saving technologies. Helping in this aim are:

- [Electric water level control package](#)
- [Water treatment equipment](#)
- [Sump sweeper piping](#)
- [3-way valve control](#)
- [Plume abatement coil](#)

## Energy saving

HFL uses evaporative cooling technology for lower operating temperatures than other cooling methods. With the following options, reduce energy costs still further:

- [Baltiguard drive system](#)
- Thermostat

## Enhanced hygiene and water care

Water circulates in evaporative cooling towers and it is important to avoid excessive accumulation of dissolved solids. The following options help keep your cooling tower clean:

- [Remote sump connection](#)
- [Water treatment equipment](#)
- [Sump sweeper piping](#)
- [Clean out port](#)
- [Filters](#)

To control biological growth and scale formation, the water quality of the circulated water should be checked regularly. [Water quality guidelines](#) can be found in the [Knowledge center](#) of the website.



## Year-round reliable operation

Inspect and maintain your cooling tower and protect it against extreme weather for year-round reliability. The options below help keep your cooling tower running smoothly and reliably and facilitate maintenance.

- [Remote sump connection](#)
- [Water treatment equipment](#)
- [Sump sweeper piping](#)
- [Clean out port](#)
- [Filters](#)
- [Electric water level control package](#)
- [Basin heater package](#)
- [Standby pump](#)

**Do you too want to benefit from the above solutions?** Contact your [local BAC representative](#) for more information.



# HFL

## Closed circuit cooling towers

### Engineering data

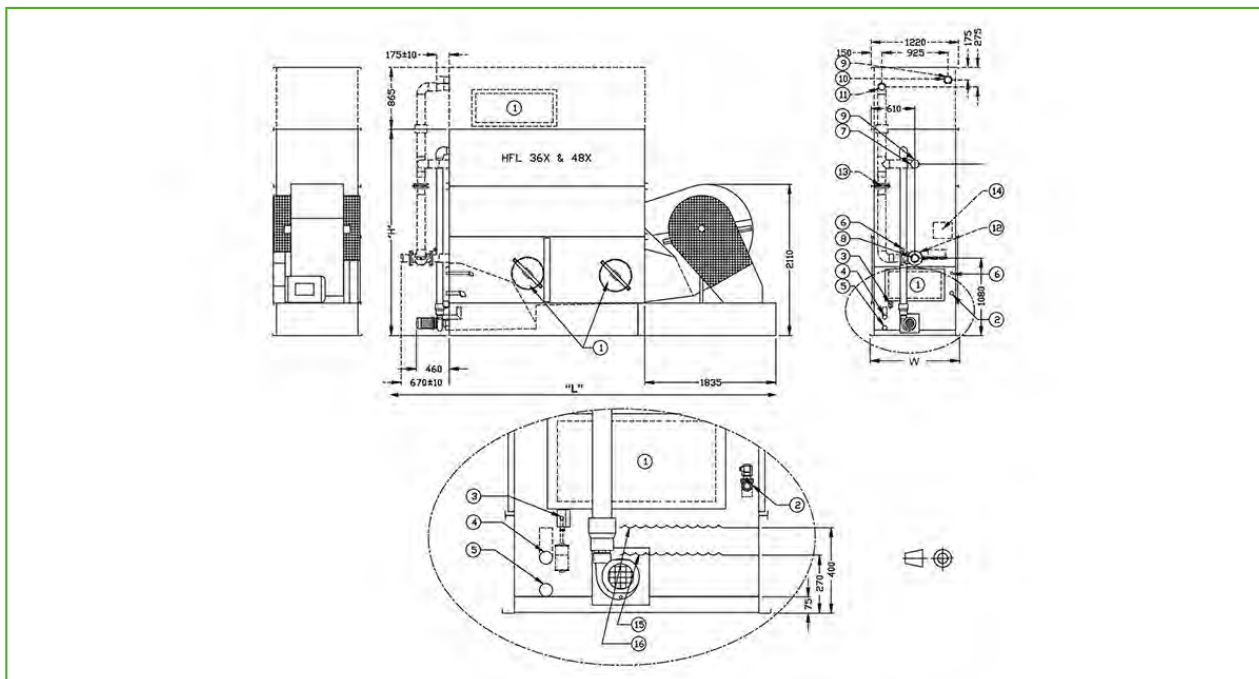
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#### General notes

1. All connections 100 mm and smaller are MPT. Connections larger than 100 mm are beveled for welding.
2. Fan kW is for HFL units without FDC (0 Pa ESP) and in wet operation. To operate against external static pressure up to 125 Pa, consult your local BAC Balticare representative for size and location.
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6. The weights for the 3-way-valve arrangement are the maximum weights.

**Last update:** 30/06/2019

#### HFL 36X-48X



1. Access; 2. Make up; 3. Electric float switch; 4. Overflow; 5. Drain; 6. Water treatment connection; 7. Bare coil fluid inlet ND100; 8. Bare coil fluid outlet ND100; 9. Vent; 10. FDC fluid inlet ND80; 11. FDC fluid outlet ND80; 12. Three-way-valve; 13. Orifice; 14. Terminal box; 15. Operating level; 16. Overflow level.

| Model        | Weights (kg)         |                     |                             | Dimensions (mm) |      |      | Air Flow<br>(m³/s) | Fan Motor<br>(kW) | Water Flow<br>(l/s) | Pump<br>Motor (kW) |
|--------------|----------------------|---------------------|-----------------------------|-----------------|------|------|--------------------|-------------------|---------------------|--------------------|
|              | Oper.<br>Weight (kg) | Ship.<br>Weight(kg) | Heaviest<br>Section<br>(kg) | L               | W    | H    |                    |                   |                     |                    |
| HFL<br>361-L | 2680                 | 2025                | 2025                        | 4565            | 1250 | 2175 | 12.7               | (1x)<br>11.0      | 9.0                 | (1x)<br>0.75       |
| HFL<br>361-M | 2690                 | 2035                | 2035                        | 4565            | 1250 | 2175 | 13.8               | (1x)<br>15.0      | 9.0                 | (1x)<br>0.75       |
| HFL<br>362-M | 3010                 | 2305                | 2305                        | 4565            | 1250 | 2410 | 13.4               | (1x)<br>15.0      | 9.0                 | (1x)<br>0.75       |
| HFL<br>363-K | 3350                 | 2495                | 2495                        | 4565            | 1250 | 2675 | 10.8               | (1x) 7.5          | 9.0                 | (1x)<br>0.75       |
| HFL<br>363-M | 3420                 | 2565                | 2565                        | 4565            | 1250 | 2675 | 13.0               | (1x)<br>15.0      | 9.0                 | (1x)<br>0.75       |
| HFL<br>364-M | 3690                 | 2835                | 2835                        | 4565            | 1250 | 2880 | 12.5               | (1x)<br>15.0      | 9.0                 | (1x)<br>0.75       |
| HFL<br>481-M | 3135                 | 2410                | 2410                        | 5485            | 1250 | 2175 | 15.1               | (1x)<br>15.0      | 12.1                | (1x) 1.1           |
| HFL<br>482-L | 3575                 | 2730                | 2730                        | 5485            | 1250 | 2410 | 13.6               | (1x)<br>11.0      | 12.1                | (1x) 1.1           |
| HFL<br>483-L | 4035                 | 3070                | 3070                        | 5485            | 1250 | 2675 | 13.4               | (1x)<br>11.0      | 12.1                | (1x) 1.1           |
| HFL<br>483-M | 4045                 | 3080                | 3080                        | 5485            | 1250 | 2675 | 14.6               | (1x)<br>15.0      | 12.1                | (1x) 1.1           |
| HFL<br>484-M | 4505                 | 3410                | 3410                        | 5485            | 1250 | 2880 | 14.3               | (1x)<br>15.0      | 12.1                | (1x) 1.1           |



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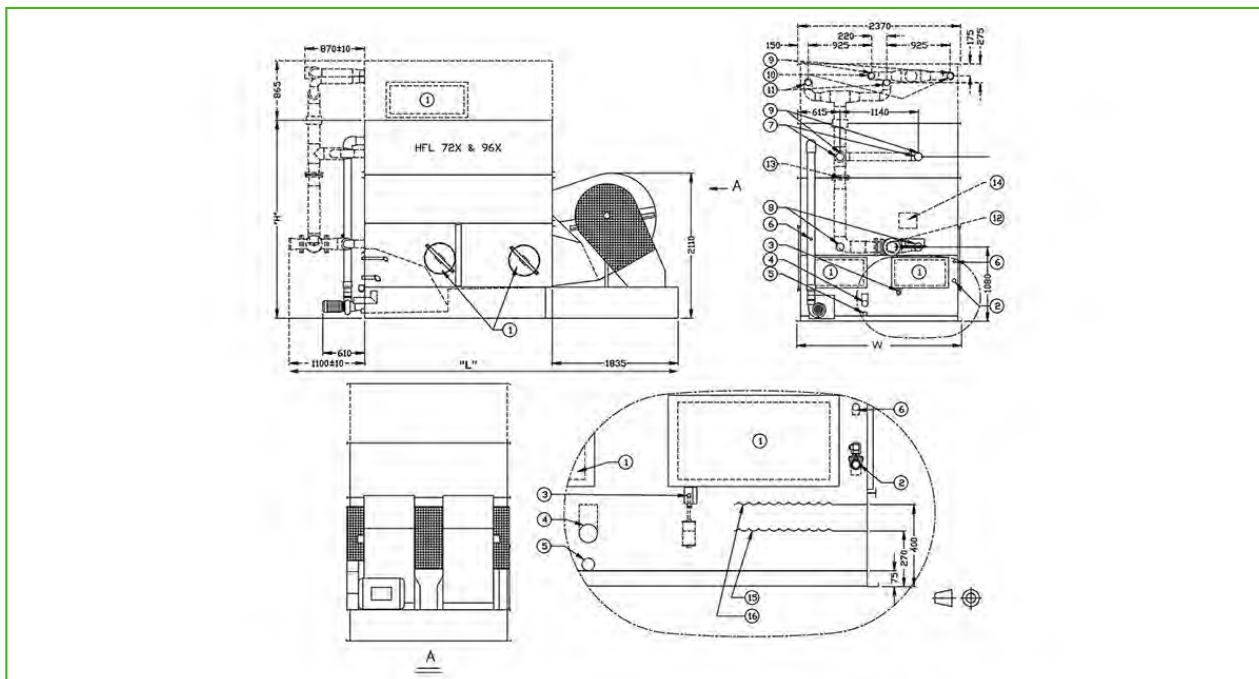
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**Last update:** 30/06/2019

#### HFL 72X-96X



1. Access; 2. Make up; 3. Electric float switch; 4. Overflow; 5. Drain; 6. Water treatment connection; 7. Bare coil fluid inlet ND100; 8. Bare coil fluid outlet ND100; 9. Vent; 10. FDC fluid inlet ND80; 11. FDC fluid outlet ND80; 12. Three-way valve; 13. Orifice; 14. Terminal box; 15. Operating level; 16. Overflow level.

| Model        | Weights (kg)         |                     |                             | Dimensions (mm) |      |      | Air Flow<br>(m³/s) | Fan Motor<br>(kW) | Water Flow<br>(l/s) | Pump<br>Motor (kW) |
|--------------|----------------------|---------------------|-----------------------------|-----------------|------|------|--------------------|-------------------|---------------------|--------------------|
|              | Oper.<br>Weight (kg) | Ship.<br>Weight(kg) | Heaviest<br>Section<br>(kg) | L               | W    | H    |                    |                   |                     |                    |
| HFL<br>721-L | 4765                 | 3450                | 3450                        | 4565            | 2400 | 2175 | 20.0               | (1x)<br>11.0      | 17.9                | (1x) 1.1           |
| HFL<br>721-M | 4775                 | 3460                | 3460                        | 4565            | 2400 | 2175 | 21.8               | (1x)<br>15.0      | 17.9                | (1x) 1.1           |
| HFL<br>721-O | 4805                 | 3490                | 3490                        | 4565            | 2400 | 2175 | 24.6               | (1x)<br>22.0      | 17.9                | (1x) 1.1           |
| HFL<br>722-N | 5495                 | 4000                | 4000                        | 4565            | 2400 | 2410 | 22.8               | (1x)<br>18.5      | 17.9                | (1x) 1.1           |
| HFL<br>722-O | 5515                 | 4020                | 4020                        | 4565            | 2400 | 2410 | 24.0               | (1x)<br>22.0      | 17.9                | (1x) 1.1           |
| HFL<br>723-L | 6225                 | 4510                | 4510                        | 4565            | 2400 | 2675 | 19.3               | (1x)<br>11.0      | 17.9                | (1x) 1.1           |
| HFL<br>723-O | 6265                 | 4550                | 4550                        | 4565            | 2400 | 2675 | 23.4               | (1x)<br>22.0      | 17.9                | (1x) 1.1           |
| HFL<br>724-O | 6935                 | 5090                | 5090                        | 4565            | 2400 | 2880 | 22.9               | (1x)<br>22.0      | 17.9                | (1x) 1.1           |
| HFL<br>961-P | 5650                 | 4190                | 4190                        | 5485            | 2400 | 2175 | 28.7               | (1x)<br>30.0      | 24.2                | (1x) 2.2           |
| HFL<br>962-N | 6400                 | 4700                | 4700                        | 5485            | 2400 | 2410 | 24.5               | (1x)<br>18.5      | 24.2                | (1x) 2.2           |
| HFL<br>962-O | 6440                 | 4740                | 4740                        | 5485            | 2400 | 2410 | 25.9               | (1x)<br>22.0      | 24.2                | (1x) 2.2           |
| HFL<br>962-P | 6540                 | 4840                | 4840                        | 5485            | 2400 | 2410 | 28.3               | (1x)<br>30.0      | 24.2                | (1x) 2.2           |
| HFL<br>963-O | 7340                 | 5400                | 5400                        | 5485            | 2400 | 2675 | 25.6               | (1x)<br>22.0      | 24.2                | (1x) 2.2           |
| HFL<br>963-P | 7440                 | 5500                | 5500                        | 5485            | 2400 | 2675 | 27.9               | (1x)<br>30.0      | 24.2                | (1x) 2.2           |
| HFL<br>964-O | 8330                 | 6050                | 6050                        | 5485            | 2400 | 2880 | 24.71              | (1x)<br>22.0      | 24.2                | (1x) 2.2           |
| HFL<br>964-P | 8430                 | 6150                | 6150                        | 5485            | 2400 | 2880 | 27.4               | (1x)<br>30.0      | 24.2                | (1x) 2.2           |



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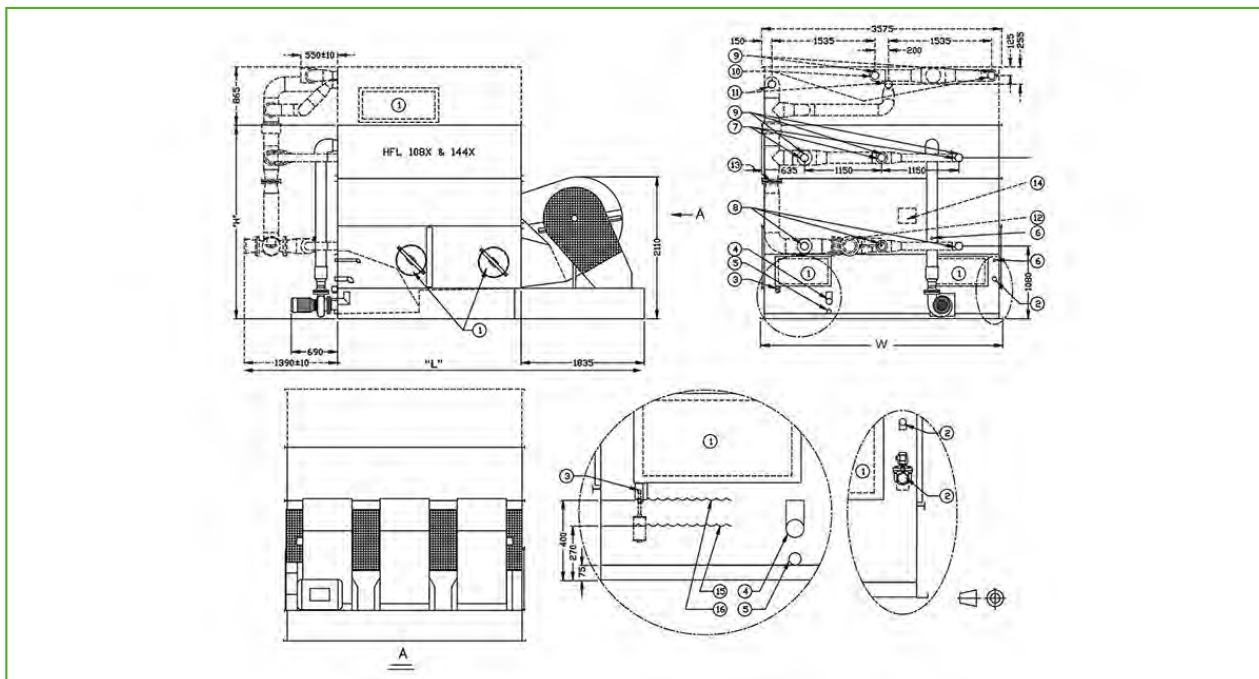
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**Last update:** 30/06/2019

#### HFL 108X-144X



1. Access; 2. Make up; 3. Electric float switch; 4. Overflow; 5. Drain; 6. Water treatment connection; 7. Bare coil fluid inlet ND100; 8. Bare coil fluid outlet ND100; 9. Vent; 10. FDC fluid inlet ND100; 11. FDC fluid outlet ND100; 12. Three-way valve; 13. Orifice; 14. Terminal box; 15. Operating level; 16. Overflow level.

| Model         | Weights (kg)         |                     |                             | Dimensions (mm) |      |      | Air Flow<br>(m³/s) | Fan Motor<br>(kW) | Water Flow<br>(l/s) | Pump<br>Motor (kW) |
|---------------|----------------------|---------------------|-----------------------------|-----------------|------|------|--------------------|-------------------|---------------------|--------------------|
|               | Oper.<br>Weight (kg) | Ship.<br>Weight(kg) | Heaviest<br>Section<br>(kg) | L               | W    | H    |                    |                   |                     |                    |
| HFL<br>1081-O | 7280                 | 5310                | 5310                        | 4565            | 3605 | 2175 | 33.29              | (1x)<br>22.0      | 26.9                | (1x) 4.0           |
| HFL<br>1081-P | 7300                 | 5330                | 5330                        | 4565            | 3605 | 2175 | 36.92              | (1x)<br>30.0      | 26.9                | (1x) 4.0           |
| HFL<br>1082-O | 8250                 | 6050                | 6050                        | 4565            | 3605 | 2410 | 32.35              | (1x)<br>22.0      | 26.9                | (1x) 4.0           |
| HFL<br>1082-P | 8270                 | 6070                | 6070                        | 4565            | 3605 | 2410 | 35.87              | (1x)<br>30.0      | 26.9                | (1x) 4.0           |
| HFL<br>1083-O | 9410                 | 6840                | 6840                        | 4565            | 3605 | 2675 | 31.12              | (1x)<br>22.0      | 26.9                | (1x) 4.0           |
| HFL<br>1083-P | 9430                 | 6860                | 6860                        | 4565            | 3605 | 2675 | 34.51              | (1x)<br>30.0      | 26.9                | (1x) 4.0           |
| HFL<br>1084-O | 10340                | 7640                | 7640                        | 4565            | 3605 | 2880 | 30.45              | (1x)<br>22.0      | 26.9                | (1x) 4.0           |
| HFL<br>1084-P | 10360                | 7660                | 7660                        | 4565            | 3605 | 2880 | 33.77              | (1x)<br>30.0      | 26.9                | (1x) 4.0           |
| HFL<br>1084-Q | 10460                | 7760                | 7760                        | 4565            | 3605 | 2880 | 36.21              | (1x)<br>37.0      | 26.9                | (1x) 4.0           |
| HFL<br>1441-Q | 8660                 | 6340                | 6340                        | 5485            | 3605 | 2175 | 40.67              | (1x)<br>37.0      | 36.3                | (1x) 4.0           |
| HFL<br>1442-O | 9770                 | 7220                | 7220                        | 5485            | 3605 | 2410 | 33.65              | (1x)<br>22.0      | 36.3                | (1x) 4.0           |
| HFL<br>1442-P | 9790                 | 7240                | 7240                        | 5485            | 3605 | 2410 | 37.31              | (1x)<br>30.0      | 36.3                | (1x) 4.0           |
| HFL<br>1443-O | 11080                | 8170                | 8170                        | 5485            | 3605 | 2675 | 32.75              | (1x)<br>22.0      | 36.3                | (1x) 4.0           |
| HFL<br>1443-P | 11100                | 8190                | 8190                        | 5485            | 3605 | 2675 | 36.31              | (1x)<br>30.0      | 36.3                | (1x) 4.0           |
| HFL<br>1443-Q | 11190                | 8290                | 8290                        | 5485            | 3605 | 2675 | 39.94              | (1x)<br>37.0      | 36.3                | (1x) 4.0           |
| HFL<br>1444-O | 13110                | 9140                | 9140                        | 5485            | 3605 | 2880 | 32.09              | (1x)<br>22.0      | 36.3                | (1x) 4.0           |
| HFL<br>1444-P | 12535                | 9160                | 9160                        | 5485            | 3605 | 2880 | 35.58              | (1x)<br>30.0      | 36.3                | (1x) 4.0           |
| HFL<br>1444-Q | 12635                | 9260                | 9260                        | 5485            | 3605 | 2880 | 38.15              | (1x)<br>37.0      | 36.3                | (1x) 4.0           |

# HFL

## Closed circuit cooling towers

### Engineering data

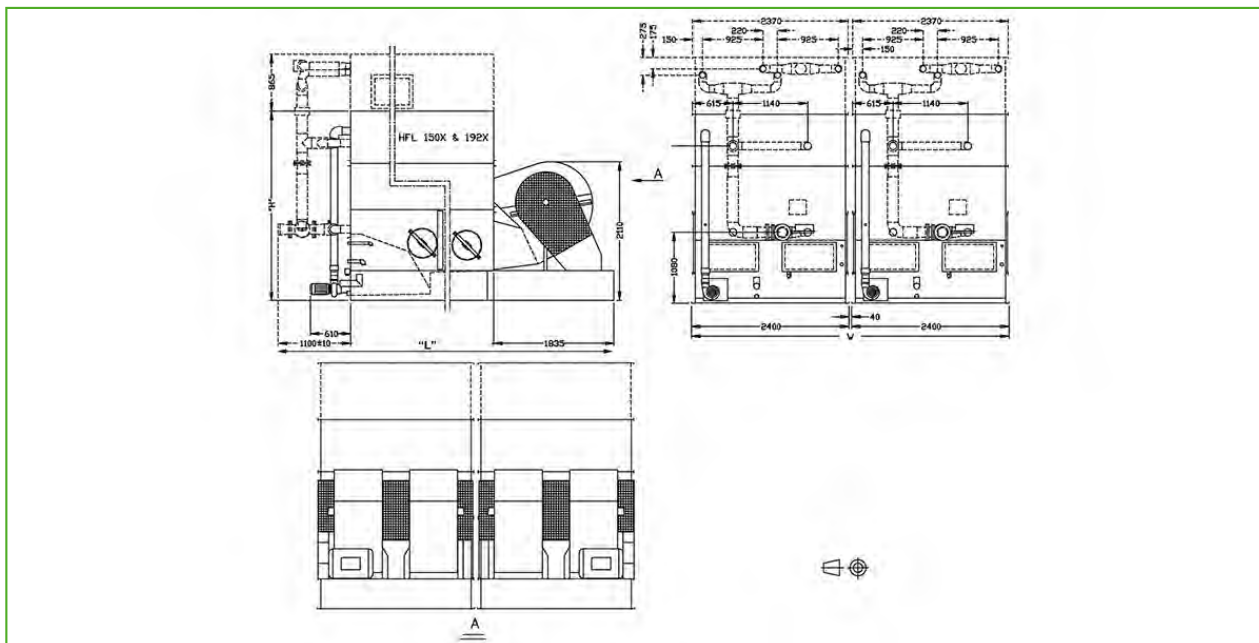
**REMARK:** Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interests of product improvement, specifications, weights and dimensions are subject to change without notice.

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**Last update:** 30/06/2019

#### HFL 150X-192X



| Model         | Weights (kg)         |                     |                             | Dimensions (mm) |      |      | Air Flow<br>(m³/s) | Fan Motor<br>(kW) | Water Flow<br>(l/s) | Pump<br>Motor (kW) |
|---------------|----------------------|---------------------|-----------------------------|-----------------|------|------|--------------------|-------------------|---------------------|--------------------|
|               | Oper.<br>Weight (kg) | Ship.<br>Weight(kg) | Heaviest<br>Section<br>(kg) | L               | W    | H    |                    |                   |                     |                    |
| HFL<br>1501-L | 9530                 | 6900                | 3450                        | 4565            | 4840 | 2175 | 40.0               | (2x)<br>11.0      | 35.8                | (2x) 1.1           |
| HFL<br>1501-M | 9550                 | 6920                | 3460                        | 4565            | 4840 | 2175 | 43.6               | (2x)<br>15.0      | 35.8                | (2x) 1.1           |
| HFL<br>1501-O | 9610                 | 6980                | 3490                        | 4565            | 4840 | 2175 | 49.2               | (2x)<br>22.0      | 35.8                | (2x) 1.1           |
| HFL<br>1502-N | 10990                | 8000                | 4000                        | 4565            | 4840 | 2410 | 45.6               | (2x)<br>18.5      | 35.8                | (2x) 1.1           |
| HFL<br>1502-O | 11030                | 8040                | 4020                        | 4565            | 4840 | 2410 | 48.0               | (2x)<br>22.0      | 35.8                | (2x) 1.1           |
| HFL<br>1503-L | 12450                | 9020                | 4510                        | 4565            | 4840 | 2675 | 38.6               | (2x)<br>11.0      | 35.8                | (2x) 1.1           |
| HFL<br>1503-O | 12530                | 9100                | 4550                        | 4565            | 4840 | 2675 | 46.8               | (2x)<br>22.0      | 35.8                | (2x) 1.1           |
| HFL<br>1504-O | 13870                | 10180               | 5090                        | 4565            | 4840 | 2880 | 45.8               | (2x)<br>22.0      | 35.8                | (2x) 1.1           |
| HFL<br>1921-P | 11300                | 8380                | 4190                        | 5485            | 4840 | 2175 | 57.4               | (2x)<br>30.0      | 48.4                | (2x) 2.2           |
| HFL<br>1922-N | 12800                | 9400                | 4700                        | 5485            | 4840 | 2410 | 49.0               | (2x)<br>18.5      | 48.4                | (2x) 2.2           |
| HFL<br>1922-O | 12880                | 9480                | 4740                        | 5485            | 4840 | 2410 | 51.8               | (2x)<br>22.0      | 48.4                | (2x) 2.2           |
| HFL<br>1922-P | 13080                | 9680                | 4840                        | 5485            | 4840 | 2410 | 56.6               | (2x)<br>30.0      | 48.4                | (2x) 2.2           |
| HFL<br>1923-O | 14680                | 10800               | 5400                        | 5485            | 4840 | 2675 | 51.2               | (2x)<br>22.0      | 48.4                | (2x) 2.2           |
| HFL<br>1923-P | 14880                | 11000               | 5500                        | 5485            | 4840 | 2675 | 55.8               | (2x)<br>30.0      | 48.4                | (2x) 2.2           |
| HFL<br>1924-P | 16860                | 12300               | 6150                        | 5485            | 4840 | 2880 | 54.8               | (2x)<br>30.0      | 48.4                | (2x) 2.2           |



# HFL

## Closed circuit cooling towers

### Engineering data

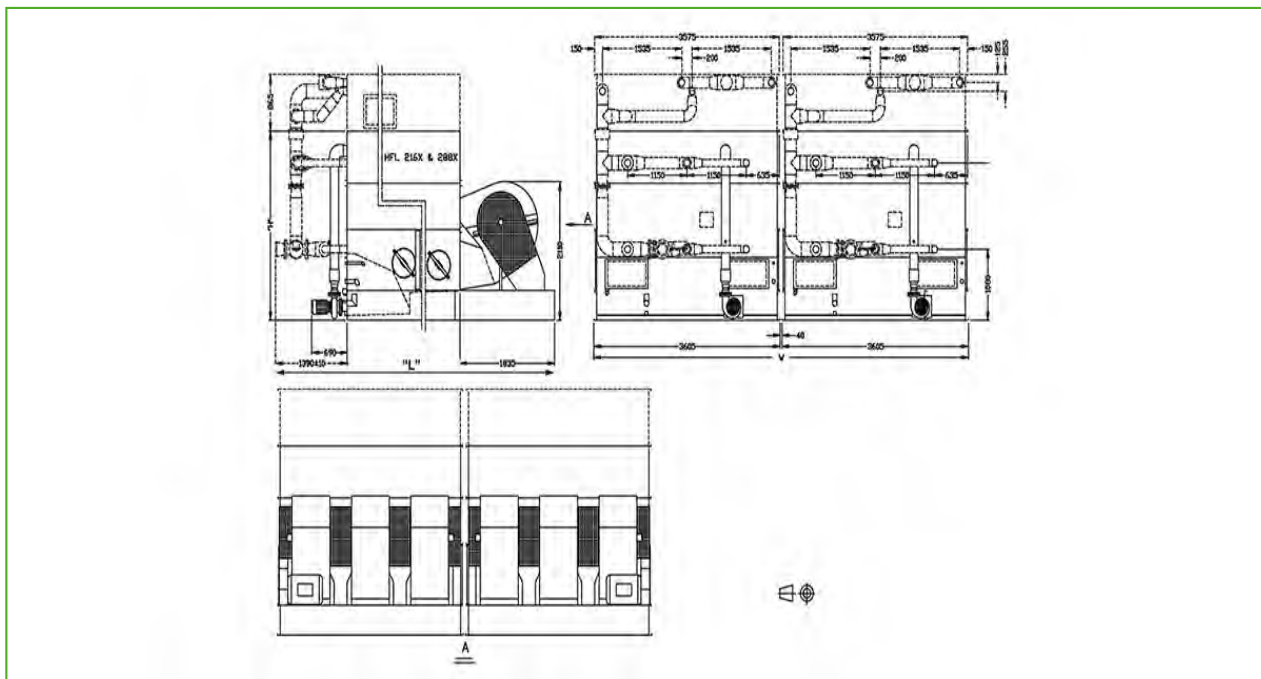
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**Last update:** 30/06/2019

#### HFL 216X-288X



| Model         | Weights (kg)         |                     |                             | Dimensions (mm) |      |      | Air Flow<br>(m³/s) | Fan Motor<br>(kW) | Water Flow<br>(l/s) | Pump<br>Motor (kW) |
|---------------|----------------------|---------------------|-----------------------------|-----------------|------|------|--------------------|-------------------|---------------------|--------------------|
|               | Oper.<br>Weight (kg) | Ship.<br>Weight(kg) | Heaviest<br>Section<br>(kg) | L               | W    | H    |                    |                   |                     |                    |
| HFL<br>2161-O | 14560                | 10620               | 5310                        | 4565            | 7250 | 2175 | 66.58              | (2x)<br>22.0      | 53.8                | (2x) 4.0           |
| HFL<br>2161-P | 14600                | 10660               | 5330                        | 4565            | 7250 | 2175 | 73.84              | (2x)<br>30.0      | 53.8                | (2x) 4.0           |
| HFL<br>2162-O | 16500                | 12100               | 6050                        | 4565            | 7250 | 2410 | 64.7               | (2x)<br>22.0      | 53.8                | (2x) 4.0           |
| HFL<br>2162-P | 16540                | 12140               | 6070                        | 4565            | 7250 | 2410 | 71.74              | (2x)<br>30.0      | 53.8                | (2x) 4.0           |
| HFL<br>2163-O | 18820                | 13680               | 6840                        | 4565            | 7250 | 2675 | 62.24              | (2x)<br>22.0      | 53.8                | (2x) 4.0           |
| HFL<br>2163-P | 18860                | 13720               | 6860                        | 4565            | 7250 | 2675 | 69.02              | (2x)<br>30.0      | 53.8                | (2x) 4.0           |
| HFL<br>2164-O | 20680                | 15280               | 7640                        | 4565            | 7250 | 2880 | 60.91              | (2x)<br>22.0      | 53.8                | (2x) 4.0           |
| HFL<br>2164-P | 20720                | 15320               | 7660                        | 4565            | 7250 | 2880 | 67.54              | (2x)<br>30.0      | 53.8                | (2x) 4.0           |
| HFL<br>2164-Q | 20920                | 15520               | 7760                        | 4565            | 7250 | 2880 | 72.42              | (2x)<br>37.0      | 53.8                | (2x) 4.0           |
| HFL<br>2881-Q | 17320                | 12680               | 6340                        | 5485            | 7250 | 2175 | 81.34              | (2x)<br>37.0      | 72.6                | (2x) 4.0           |
| HFL<br>2882-O | 19540                | 14440               | 7220                        | 5485            | 7250 | 2410 | 67.3               | (2x)<br>22.0      | 72.6                | (2x) 4.0           |
| HFL<br>2882-P | 19580                | 14480               | 7240                        | 5485            | 7250 | 2410 | 74.62              | (2x)<br>30.0      | 72.6                | (2x) 4.0           |
| HFL<br>2883-O | 22160                | 16340               | 8170                        | 5485            | 7250 | 2675 | 65.5               | (2x)<br>22.0      | 72.6                | (2x) 4.0           |
| HFL<br>2883-P | 22200                | 16380               | 8190                        | 5485            | 7250 | 2675 | 72.62              | (2x)<br>30.0      | 72.6                | (2x) 4.0           |
| HFL<br>2883-Q | 22380                | 16580               | 8290                        | 5485            | 7250 | 2675 | 77.88              | (2x)<br>37.0      | 72.6                | (2x) 4.0           |
| HFL<br>2884-P | 25070                | 18320               | 9160                        | 5485            | 7250 | 2880 | 71.16              | (2x)<br>30.0      | 72.6                | (2x) 4.0           |
| HFL<br>2884-Q | 25270                | 18520               | 9260                        | 5485            | 7250 | 2880 | 76.3               | (2x)<br>37.0      | 72.6                | (2x) 4.0           |

# HFL

## Closed circuit cooling towers

## Engineering data

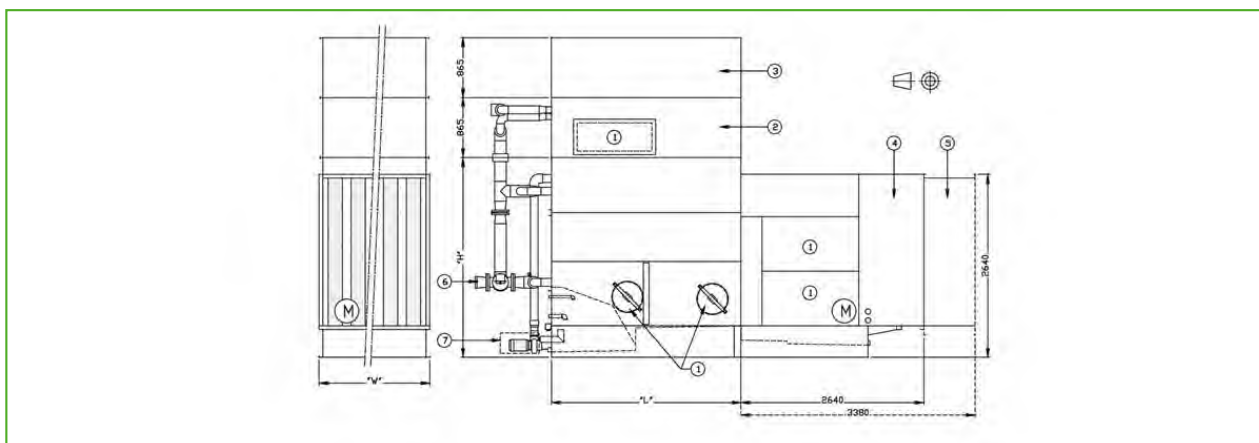
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**Last update:** 30/06/2019

## Sound attenuation HS



1. Access; 2. FDC; 3. Discharge attenuator; 4. Intake attenuator HS; 5. Intake attenuator HD; 6. Three-way valve arrangement.



| Model      | Weight Sound Attenuator Without Plenum (kg) |           |       | Weight Sound Attenuator With Plenum (kg) |           |       |
|------------|---------------------------------------------|-----------|-------|------------------------------------------|-----------|-------|
|            | Intake                                      | Discharge | Total | Intake                                   | Discharge | Total |
| HFL 361-L  | 515                                         | 255       | 770   | 515                                      | 295       | 810   |
| HFL 361-M  | 515                                         | 255       | 770   | 515                                      | 295       | 810   |
| HFL 362-M  | 515                                         | 255       | 770   | 515                                      | 295       | 810   |
| HFL 363-K  | 515                                         | 255       | 770   | 515                                      | 295       | 810   |
| HFL 363-M  | 515                                         | 255       | 770   | 515                                      | 295       | 810   |
| HFL 364-M  | 515                                         | 255       | 770   | 515                                      | 295       | 810   |
| HFL 481-M  | 515                                         | 315       | 830   | 515                                      | 365       | 880   |
| HFL 482-L  | 515                                         | 315       | 830   | 515                                      | 365       | 880   |
| HFL 483-L  | 515                                         | 315       | 830   | 515                                      | 365       | 880   |
| HFL 483-M  | 515                                         | 315       | 830   | 515                                      | 365       | 880   |
| HFL 484-M  | 515                                         | 315       | 830   | 515                                      | 365       | 880   |
| HFL 721-L  | 790                                         | 420       | 1210  | 790                                      | 465       | 1255  |
| HFL 721-M  | 790                                         | 420       | 1210  | 790                                      | 465       | 1255  |
| HFL 721-O  | 790                                         | 420       | 1210  | 790                                      | 465       | 1255  |
| HFL 722-N  | 790                                         | 420       | 1210  | 790                                      | 465       | 1255  |
| HFL 722-O  | 790                                         | 420       | 1210  | 790                                      | 465       | 1255  |
| HFL 723-L  | 790                                         | 420       | 1210  | 790                                      | 465       | 1255  |
| HFL 723-O  | 790                                         | 420       | 1210  | 790                                      | 465       | 1255  |
| HFL 724-O  | 790                                         | 420       | 1210  | 790                                      | 465       | 1255  |
| HFL 961-P  | 790                                         | 510       | 1300  | 790                                      | 565       | 1355  |
| HFL 962-N  | 790                                         | 510       | 1300  | 790                                      | 565       | 1355  |
| HFL 962-O  | 790                                         | 510       | 1300  | 790                                      | 565       | 1355  |
| HFL 962-P  | 790                                         | 510       | 1300  | 790                                      | 565       | 1355  |
| HFL 963-O  | 790                                         | 510       | 1300  | 790                                      | 565       | 1355  |
| HFL 963-P  | 790                                         | 510       | 1300  | 790                                      | 565       | 1355  |
| HFL 964-O  | 790                                         | 510       | 1300  | 790                                      | 565       | 1355  |
| HFL 964-P  | 790                                         | 510       | 1300  | 790                                      | 565       | 1355  |
| HFL 1081-O | 1065                                        | 590       | 1655  | 1065                                     | 650       | 1715  |
| HFL 1081-P | 1065                                        | 590       | 1655  | 1065                                     | 650       | 1715  |
| HFL 1082-O | 1065                                        | 590       | 1655  | 1065                                     | 650       | 1715  |
| HFL 1082-P | 1065                                        | 590       | 1655  | 1065                                     | 650       | 1715  |
| HFL 1083-O | 1065                                        | 590       | 1655  | 1065                                     | 650       | 1715  |
| HFL 1083-P | 1065                                        | 590       | 1655  | 1065                                     | 650       | 1715  |
| HFL 1084-O | 1065                                        | 590       | 1655  | 1065                                     | 650       | 1715  |
| HFL 1084-P | 1065                                        | 590       | 1655  | 1065                                     | 650       | 1715  |
| HFL 1084-Q | 1065                                        | 590       | 1655  | 1065                                     | 650       | 1715  |
| HFL 1441-Q | 1065                                        | 715       | 1780  | 1065                                     | 785       | 1850  |
| HFL 1442-O | 1065                                        | 715       | 1780  | 1065                                     | 785       | 1850  |
| HFL 1442-P | 1065                                        | 715       | 1780  | 1065                                     | 785       | 1850  |
| HFL 1443-O | 1065                                        | 715       | 1780  | 1065                                     | 785       | 1850  |
| HFL 1443-P | 1065                                        | 715       | 1780  | 1065                                     | 785       | 1850  |
| HFL 1443-Q | 1065                                        | 715       | 1780  | 1065                                     | 785       | 1850  |
| HFL 1444-O | 1065                                        | 715       | 1780  | 1065                                     | 785       | 1850  |
| HFL 1444-P | 1065                                        | 715       | 1780  | 1065                                     | 785       | 1850  |
| HFL 1444-Q | 1065                                        | 715       | 1780  | 1065                                     | 785       | 1850  |
| HFL 1501-L | 1580                                        | 840       | 2420  | 1580                                     | 930       | 2510  |
| HFL 1501-M | 1580                                        | 840       | 2420  | 1580                                     | 930       | 2510  |
| HFL 1501-O | 1580                                        | 840       | 2420  | 1580                                     | 930       | 2510  |
| HFL 1502-N | 1580                                        | 840       | 2420  | 1580                                     | 930       | 2510  |
| HFL 1502-O | 1580                                        | 840       | 2420  | 1580                                     | 930       | 2510  |
| HFL 1503-L | 1580                                        | 840       | 2420  | 1580                                     | 930       | 2510  |
| HFL 1503-O | 1580                                        | 840       | 2420  | 1580                                     | 930       | 2510  |
| HFL 1504-O | 1580                                        | 840       | 2420  | 1580                                     | 930       | 2510  |
| HFL 1921-P | 1580                                        | 1020      | 2600  | 1580                                     | 1130      | 2710  |
| HFL 1922-N | 1580                                        | 1020      | 2600  | 1580                                     | 1130      | 2710  |
| HFL 1922-O | 1580                                        | 1020      | 2600  | 1580                                     | 1130      | 2710  |

|            |      |      |      |      |      |      |
|------------|------|------|------|------|------|------|
| HFL 1922-P | 1580 | 1020 | 2600 | 1580 | 1130 | 2710 |
| HFL 1923-O | 1580 | 1020 | 2600 | 1580 | 1130 | 2710 |
| HFL 1923-P | 1580 | 1020 | 2600 | 1580 | 1130 | 2710 |
| HFL 1924-P | 1580 | 1020 | 2600 | 1580 | 1130 | 2710 |
| HFL 2161-O | 2130 | 1180 | 3310 | 2130 | 1300 | 3430 |
| HFL 2161-P | 2130 | 1180 | 3310 | 2130 | 1300 | 3430 |
| HFL 2162-O | 2130 | 1180 | 3310 | 2130 | 1300 | 3430 |
| HFL 2162-P | 2130 | 1180 | 3310 | 2130 | 1300 | 3430 |
| HFL 2163-O | 2130 | 1180 | 3310 | 2130 | 1300 | 3430 |
| HFL 2163-P | 2130 | 1180 | 3310 | 2130 | 1300 | 3430 |
| HFL 2164-O | 2130 | 1180 | 3310 | 2130 | 1300 | 3430 |
| HFL 2164-P | 2130 | 1180 | 3310 | 2130 | 1300 | 3430 |
| HFL 2164-Q | 2130 | 1180 | 3310 | 2130 | 1300 | 3430 |
| HFL 2881-Q | 2130 | 1430 | 3560 | 2130 | 1570 | 3700 |
| HFL 2882-O | 2130 | 1430 | 3560 | 2130 | 1570 | 3700 |
| HFL 2882-P | 2130 | 1430 | 3560 | 2130 | 1570 | 3700 |
| HFL 2883-O | 2130 | 1430 | 3560 | 2130 | 1570 | 3700 |
| HFL 2883-P | 2130 | 1430 | 3560 | 2130 | 1570 | 3700 |
| HFL 2883-Q | 2130 | 1430 | 3560 | 2130 | 1570 | 3700 |
| HFL 2884-P | 2130 | 1430 | 3560 | 2130 | 1570 | 3700 |
| HFL 2884-Q | 2130 | 1430 | 3560 | 2130 | 1570 | 3700 |

# HFL

## Closed circuit cooling towers

## Engineering data

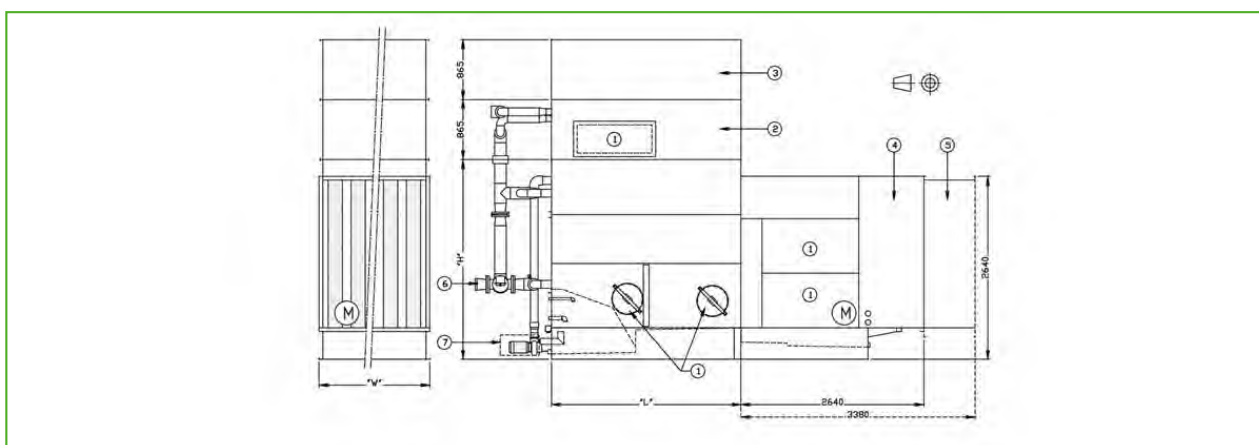
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**Last update:** 10/05/2019

## Sound attenuation HD



1. Access; 2. FDC; 3. Discharge attenuator; 4. Intake attenuator HS; 5. Intake attenuator HD; 6. Three-way valve arrangement.



| Model      | Weight Sound Attenuator Without Plenum (kg) |           |       | Weight Sound Attenuator With Plenum (kg) |           |       |
|------------|---------------------------------------------|-----------|-------|------------------------------------------|-----------|-------|
|            | Intake                                      | Discharge | Total | Intake                                   | Discharge | Total |
| HFL 361-L  | 710                                         | 275       | 985   | 710                                      | 315       | 1025  |
| HFL 361-M  | 710                                         | 275       | 985   | 710                                      | 315       | 1025  |
| HFL 362-M  | 710                                         | 275       | 985   | 710                                      | 315       | 1025  |
| HFL 363-K  | 710                                         | 275       | 985   | 710                                      | 315       | 1025  |
| HFL 363-M  | 710                                         | 275       | 985   | 710                                      | 315       | 1025  |
| HFL 364-M  | 710                                         | 275       | 985   | 710                                      | 315       | 1025  |
| HFL 481-M  | 710                                         | 335       | 1045  | 710                                      | 385       | 1095  |
| HFL 482-L  | 710                                         | 335       | 1045  | 710                                      | 385       | 1095  |
| HFL 483-L  | 710                                         | 335       | 1045  | 710                                      | 385       | 1095  |
| HFL 483-M  | 710                                         | 335       | 1045  | 710                                      | 385       | 1095  |
| HFL 484-M  | 710                                         | 335       | 1045  | 710                                      | 385       | 1095  |
| HFL 721-L  | 1105                                        | 455       | 1560  | 1105                                     | 500       | 1605  |
| HFL 721-M  | 1105                                        | 455       | 1560  | 1105                                     | 500       | 1605  |
| HFL 721-O  | 1105                                        | 455       | 1560  | 1105                                     | 500       | 1605  |
| HFL 722-N  | 1105                                        | 455       | 1560  | 1105                                     | 500       | 1605  |
| HFL 722-O  | 1105                                        | 455       | 1560  | 1105                                     | 500       | 1605  |
| HFL 723-L  | 1105                                        | 455       | 1560  | 1105                                     | 500       | 1605  |
| HFL 723-O  | 1105                                        | 455       | 1560  | 1105                                     | 500       | 1605  |
| HFL 724-O  | 1105                                        | 455       | 1560  | 1105                                     | 500       | 1605  |
| HFL 961-P  | 1105                                        | 550       | 1655  | 1105                                     | 605       | 1710  |
| HFL 962-N  | 1105                                        | 550       | 1655  | 1105                                     | 605       | 1710  |
| HFL 962-O  | 1105                                        | 550       | 1655  | 1105                                     | 605       | 1710  |
| HFL 962-P  | 1105                                        | 550       | 1655  | 1105                                     | 605       | 1710  |
| HFL 963-O  | 1105                                        | 550       | 1655  | 1105                                     | 605       | 1710  |
| HFL 963-P  | 1105                                        | 550       | 1655  | 1105                                     | 605       | 1710  |
| HFL 964-O  | 1105                                        | 550       | 1655  | 1105                                     | 605       | 1710  |
| HFL 964-P  | 1105                                        | 550       | 1655  | 1105                                     | 605       | 1710  |
| HFL 1081-O | 1520                                        | 640       | 2160  | 1520                                     | 700       | 2220  |
| HFL 1081-P | 1520                                        | 640       | 2160  | 1520                                     | 700       | 2220  |
| HFL 1082-O | 1520                                        | 640       | 2160  | 1520                                     | 700       | 2220  |
| HFL 1082-P | 1520                                        | 640       | 2160  | 1520                                     | 700       | 2220  |
| HFL 1083-O | 1520                                        | 640       | 2160  | 1520                                     | 700       | 2220  |
| HFL 1083-P | 1520                                        | 640       | 2160  | 1520                                     | 700       | 2220  |
| HFL 1084-O | 1520                                        | 640       | 2160  | 1520                                     | 700       | 2220  |
| HFL 1084-P | 1520                                        | 640       | 2160  | 1520                                     | 700       | 2220  |
| HFL 1084-Q | 1520                                        | 640       | 2160  | 1520                                     | 700       | 2220  |
| HFL 1441-Q | 1520                                        | 770       | 2290  | 1520                                     | 840       | 2360  |
| HFL 1442-O | 1520                                        | 770       | 2290  | 1520                                     | 840       | 2360  |
| HFL 1442-P | 1520                                        | 770       | 2290  | 1520                                     | 840       | 2360  |
| HFL 1443-O | 1520                                        | 770       | 2290  | 1520                                     | 840       | 2360  |
| HFL 1443-P | 1520                                        | 770       | 2290  | 1520                                     | 840       | 2360  |
| HFL 1443-Q | 1520                                        | 770       | 2290  | 1520                                     | 840       | 2360  |
| HFL 1444-O | 1520                                        | 770       | 2290  | 1520                                     | 840       | 2360  |
| HFL 1444-P | 1520                                        | 770       | 2290  | 1520                                     | 840       | 2360  |
| HFL 1444-Q | 1520                                        | 770       | 2290  | 1520                                     | 840       | 2360  |
| HFL 1501-L | 2210                                        | 910       | 3120  | 2210                                     | 1000      | 3210  |
| HFL 1501-M | 2210                                        | 910       | 3120  | 2210                                     | 1000      | 3210  |
| HFL 1501-O | 2210                                        | 910       | 3120  | 2210                                     | 1000      | 3210  |
| HFL 1502-N | 2210                                        | 910       | 3120  | 2210                                     | 1000      | 3210  |
| HFL 1502-O | 2210                                        | 910       | 3120  | 2210                                     | 1000      | 3210  |
| HFL 1503-L | 2210                                        | 910       | 3120  | 2210                                     | 1000      | 3210  |
| HFL 1503-O | 2210                                        | 910       | 3120  | 2210                                     | 1000      | 3210  |
| HFL 1504-O | 2210                                        | 910       | 3120  | 2210                                     | 1000      | 3210  |
| HFL 1921-P | 2210                                        | 1100      | 3310  | 2210                                     | 1210      | 3420  |
| HFL 1922-N | 2210                                        | 1100      | 3310  | 2210                                     | 1210      | 3420  |
| HFL 1922-O | 2210                                        | 1100      | 3310  | 2210                                     | 1210      | 3420  |

|            |      |      |      |      |      |      |
|------------|------|------|------|------|------|------|
| HFL 1922-P | 2210 | 1100 | 3310 | 2210 | 1210 | 3420 |
| HFL 1923-O | 2210 | 1100 | 3310 | 2210 | 1210 | 3420 |
| HFL 1923-P | 2210 | 1100 | 3310 | 2210 | 1210 | 3420 |
| HFL 1924-P | 2210 | 1100 | 3310 | 2210 | 1210 | 3420 |
| HFL 2161-O | 3040 | 1280 | 4320 | 3040 | 1400 | 4440 |
| HFL 2161-P | 3040 | 1280 | 4320 | 3040 | 1400 | 4440 |
| HFL 2162-O | 3040 | 1280 | 4320 | 3040 | 1400 | 4440 |
| HFL 2162-P | 3040 | 1280 | 4320 | 3040 | 1400 | 4440 |
| HFL 2163-O | 3040 | 1280 | 4320 | 3040 | 1400 | 4440 |
| HFL 2163-P | 3040 | 1280 | 4320 | 3040 | 1400 | 4440 |
| HFL 2164-O | 3040 | 1280 | 4320 | 3040 | 1400 | 4440 |
| HFL 2164-P | 3040 | 1280 | 4320 | 3040 | 1400 | 4440 |
| HFL 2164-Q | 3040 | 1280 | 4320 | 3040 | 1400 | 4440 |
| HFL 2881-Q | 3040 | 1540 | 4580 | 3040 | 1680 | 4720 |
| HFL 2882-O | 3040 | 1540 | 4580 | 3040 | 1680 | 4720 |
| HFL 2882-P | 3040 | 1540 | 4580 | 3040 | 1680 | 4720 |
| HFL 2883-O | 3040 | 1540 | 4580 | 3040 | 1680 | 4720 |
| HFL 2883-P | 3040 | 1540 | 4580 | 3040 | 1680 | 4720 |
| HFL 2883-Q | 3040 | 1540 | 4580 | 3040 | 1680 | 4720 |
| HFL 2884-P | 3040 | 1540 | 4580 | 3040 | 1680 | 4720 |
| HFL 2884-Q | 3040 | 1540 | 4580 | 3040 | 1680 | 4720 |

# HFL

## Closed circuit cooling towers

### Engineering data

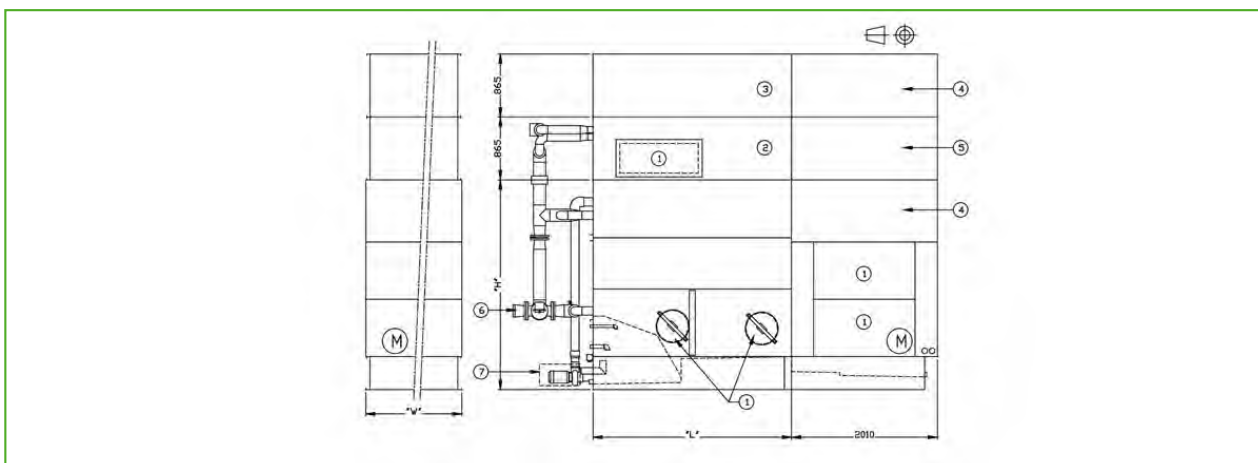
**REMARK:** Do not use for construction. Refer to factory certified dimensions & weights. This page includes data current at time of publication, which should be reconfirmed at the time of purchase. In the interests of product improvement, specifications, weights and dimensions are subject to change without notice.

### General notes

1. All connections 100 mm and smaller are MPT. Connections larger than 100 mm are beveled for welding.
2. Fan kW is for HFL units without FDC (0 Pa ESP) and in wet operation. To operate against external static pressure up to 125 Pa, consult your local BAC Balticare representative for size and location.
3. Airflow is for HFL units without FDC. For airflow of units equipped with the FDC consult your local BAC Balticare representative.
4. Unit height is indicative, for precise value refer to certified print.
5. Shipping/operating weights indicated are for units without accessories such as sound attenuators, discharge hoods, etc. Consult factory certified prints to obtain weight additions and the heaviest section to be lifted.
6. The weights for the 3-way-valve arrangement are the maximum weights.

**Last update:** 30/06/2019

### Sound attenuation VS



1. Access; 2. FDC; 3. Discharge attenuator; 4. Intake attenuator VS; 5. Intake plenum VS; 6. Three-way valve arrangement.



| Model      | Weight Sound Attenuator Without Plenum (kg) |           |       | Weight Sound Attenuator With Plenum (kg) |           |       |
|------------|---------------------------------------------|-----------|-------|------------------------------------------|-----------|-------|
|            | Intake                                      | Discharge | Total | Intake                                   | Discharge | Total |
| HFL 361-L  | 0                                           | 880       | 880   | 0                                        | 855       | 855   |
| HFL 361-M  | 0                                           | 880       | 880   | 0                                        | 855       | 855   |
| HFL 362-M  | 0                                           | 880       | 880   | 0                                        | 855       | 855   |
| HFL 363-K  | 0                                           | 880       | 880   | 0                                        | 855       | 855   |
| HFL 363-M  | 0                                           | 880       | 880   | 0                                        | 855       | 855   |
| HFL 364-M  | 0                                           | 880       | 880   | 0                                        | 855       | 855   |
| HFL 481-M  | 0                                           | 965       | 965   | 0                                        | 950       | 950   |
| HFL 482-L  | 0                                           | 965       | 965   | 0                                        | 950       | 950   |
| HFL 483-L  | 0                                           | 965       | 965   | 0                                        | 950       | 950   |
| HFL 483-M  | 0                                           | 965       | 965   | 0                                        | 950       | 950   |
| HFL 484-M  | 0                                           | 965       | 965   | 0                                        | 950       | 950   |
| HFL 721-L  | 0                                           | 1330      | 1330  | 0                                        | 1300      | 1300  |
| HFL 721-M  | 0                                           | 1330      | 1330  | 0                                        | 1300      | 1300  |
| HFL 721-O  | 0                                           | 1330      | 1330  | 0                                        | 1300      | 1300  |
| HFL 722-N  | 0                                           | 1330      | 1330  | 0                                        | 1300      | 1300  |
| HFL 722-O  | 0                                           | 1330      | 1330  | 0                                        | 1300      | 1300  |
| HFL 723-L  | 0                                           | 1330      | 1330  | 0                                        | 1300      | 1300  |
| HFL 723-O  | 0                                           | 1330      | 1330  | 0                                        | 1300      | 1300  |
| HFL 724-O  | 0                                           | 1330      | 1330  | 0                                        | 1300      | 1300  |
| HFL 961-P  | 0                                           | 1435      | 1435  | 0                                        | 1415      | 1415  |
| HFL 962-N  | 0                                           | 1435      | 1435  | 0                                        | 1415      | 1415  |
| HFL 962-O  | 0                                           | 1435      | 1435  | 0                                        | 1415      | 1415  |
| HFL 962-P  | 0                                           | 1435      | 1435  | 0                                        | 1415      | 1415  |
| HFL 963-O  | 0                                           | 1435      | 1435  | 0                                        | 1415      | 1415  |
| HFL 963-P  | 0                                           | 1435      | 1435  | 0                                        | 1415      | 1415  |
| HFL 964-O  | 0                                           | 1435      | 1435  | 0                                        | 1415      | 1415  |
| HFL 964-P  | 0                                           | 1435      | 1435  | 0                                        | 1415      | 1415  |
| HFL 1081-O | 0                                           | 1830      | 1830  | 0                                        | 1800      | 1800  |
| HFL 1081-P | 0                                           | 1830      | 1830  | 0                                        | 1800      | 1800  |
| HFL 1082-O | 0                                           | 1830      | 1830  | 0                                        | 1800      | 1800  |
| HFL 1082-P | 0                                           | 1830      | 1830  | 0                                        | 1800      | 1800  |
| HFL 1083-O | 0                                           | 1830      | 1830  | 0                                        | 1800      | 1800  |
| HFL 1083-P | 0                                           | 1830      | 1830  | 0                                        | 1800      | 1800  |
| HFL 1084-O | 0                                           | 1830      | 1830  | 0                                        | 1800      | 1800  |
| HFL 1084-P | 0                                           | 1830      | 1830  | 0                                        | 1800      | 1800  |
| HFL 1084-Q | 0                                           | 1830      | 1830  | 0                                        | 1800      | 1800  |
| HFL 1441-Q | 0                                           | 1980      | 1980  | 0                                        | 1955      | 1955  |
| HFL 1442-O | 0                                           | 1980      | 1980  | 0                                        | 1955      | 1955  |
| HFL 1442-P | 0                                           | 1980      | 1980  | 0                                        | 1955      | 1955  |
| HFL 1443-O | 0                                           | 1980      | 1980  | 0                                        | 1955      | 1955  |
| HFL 1443-P | 0                                           | 1980      | 1980  | 0                                        | 1955      | 1955  |
| HFL 1443-Q | 0                                           | 1980      | 1980  | 0                                        | 1955      | 1955  |
| HFL 1444-O | 0                                           | 1980      | 1980  | 0                                        | 1955      | 1955  |
| HFL 1444-P | 0                                           | 1980      | 1980  | 0                                        | 1955      | 1955  |
| HFL 1444-Q | 0                                           | 1980      | 1980  | 0                                        | 1955      | 1955  |
| HFL 1501-L | 0                                           | 2660      | 2660  | 0                                        | 2600      | 2600  |
| HFL 1501-M | 0                                           | 2660      | 2660  | 0                                        | 2600      | 2600  |
| HFL 1501-O | 0                                           | 2660      | 2660  | 0                                        | 2600      | 2600  |
| HFL 1502-N | 0                                           | 2660      | 2660  | 0                                        | 2600      | 2600  |
| HFL 1502-O | 0                                           | 2660      | 2660  | 0                                        | 2600      | 2600  |
| HFL 1503-L | 0                                           | 2660      | 2660  | 0                                        | 2600      | 2600  |
| HFL 1503-O | 0                                           | 2660      | 2660  | 0                                        | 2600      | 2600  |
| HFL 1504-O | 0                                           | 2660      | 2660  | 0                                        | 2600      | 2600  |
| HFL 1921-P | 0                                           | 2870      | 2870  | 0                                        | 2830      | 2830  |
| HFL 1922-N | 0                                           | 2870      | 2870  | 0                                        | 2830      | 2830  |
| HFL 1922-O | 0                                           | 2870      | 2870  | 0                                        | 2830      | 2830  |



|            |   |      |      |   |      |      |
|------------|---|------|------|---|------|------|
| HFL 1922-P | 0 | 2870 | 2870 | 0 | 2830 | 2830 |
| HFL 1923-O | 0 | 2870 | 2870 | 0 | 2830 | 2830 |
| HFL 1923-P | 0 | 2870 | 2870 | 0 | 2830 | 2830 |
| HFL 1924-P | 0 | 2870 | 2870 | 0 | 2830 | 2830 |
| HFL 2161-O | 0 | 3660 | 3660 | 0 | 3600 | 3600 |
| HFL 2161-P | 0 | 3660 | 3660 | 0 | 3600 | 3600 |
| HFL 2162-O | 0 | 3660 | 3660 | 0 | 3600 | 3600 |
| HFL 2162-P | 0 | 3660 | 3660 | 0 | 3600 | 3600 |
| HFL 2163-O | 0 | 3660 | 3660 | 0 | 3600 | 3600 |
| HFL 2163-P | 0 | 3660 | 3660 | 0 | 3600 | 3600 |
| HFL 2164-O | 0 | 3660 | 3660 | 0 | 3600 | 3600 |
| HFL 2164-P | 0 | 3660 | 3660 | 0 | 3600 | 3600 |
| HFL 2164-Q | 0 | 3660 | 3660 | 0 | 3600 | 3600 |
| HFL 2881-Q | 0 | 3960 | 3960 | 0 | 3910 | 3910 |
| HFL 2882-O | 0 | 3960 | 3960 | 0 | 3910 | 3910 |
| HFL 2882-P | 0 | 3960 | 3960 | 0 | 3910 | 3910 |
| HFL 2883-O | 0 | 3960 | 3960 | 0 | 3910 | 3910 |
| HFL 2883-P | 0 | 3960 | 3960 | 0 | 3910 | 3910 |
| HFL 2883-Q | 0 | 3960 | 3960 | 0 | 3910 | 3910 |
| HFL 2884-P | 0 | 3960 | 3960 | 0 | 3910 | 3910 |
| HFL 2884-Q | 0 | 3960 | 3960 | 0 | 3910 | 3910 |