



polar
Cooling Technologies

α
Alpha

Polar Alpha Line of Equipment

Flexibility • Quality • Technology

Raising the bar

for Cooling and Heating Equipment



α

Alpha

Flexibility

Alpha Equipment Architecture is based on **3 pools** of Assembling Modules, **to achieve unparalleled flexibility in equipment configuration**
Internal **C,F,M,R,P,V Modules** (see next page for more info)
will fit all **H -MOD** Polar Housing and Cabinets

1

Cabinets

Size and Style / Standard,
Semi or full Custom

2

C,F,M,R,P,V Mod Mechanical, Electrical and Control Modules

3

Application Software

Alpha Air → 100% OA, mix Air or Recirculation

Alpha Multi Air → Multi zone VRF or VAV

Alpha Aqua → Chilled Water

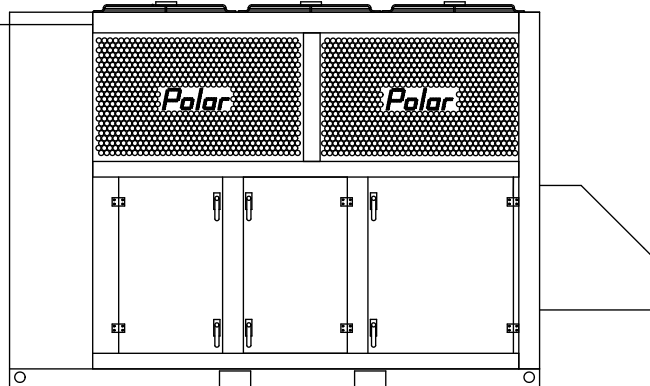
= Endless Flexible Solutions



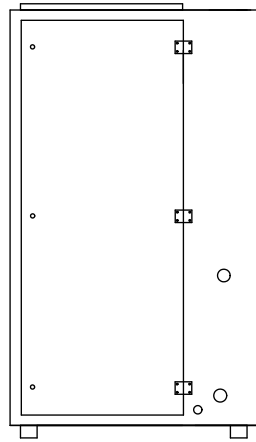
Polar Alpha Equipment Architecture

Available H- Mod Standard Housing / semi or full Customizable

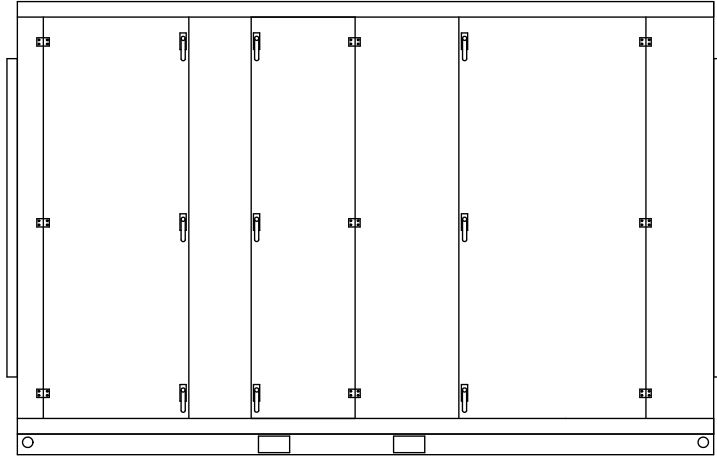
H-P.AC



H-AHU.V

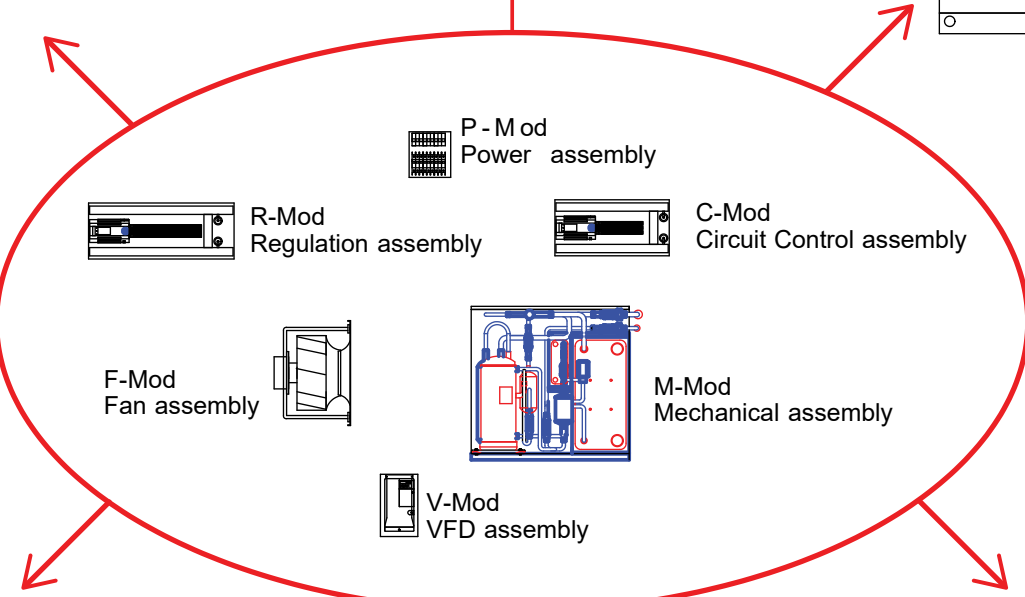


H-AHU

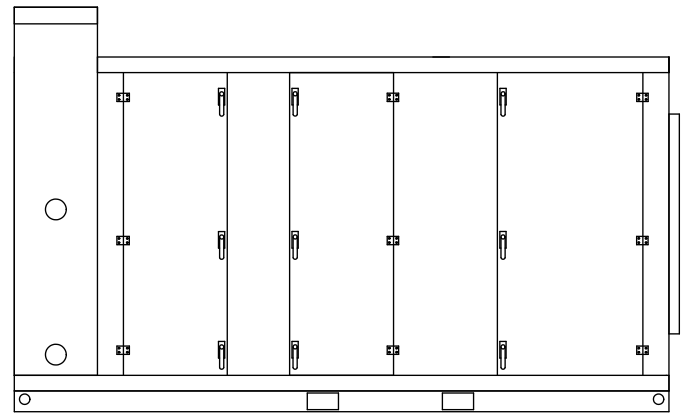
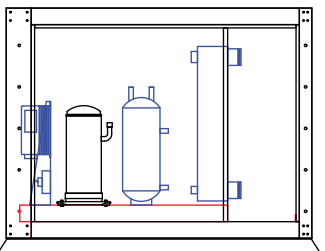


**C,F,M,R,P,V Internal
Mechanical, Electrical
and Control Modules**

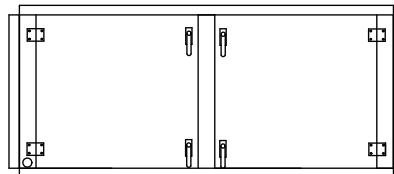
**In Alpha Air, Multi Air and
Aqua Application**



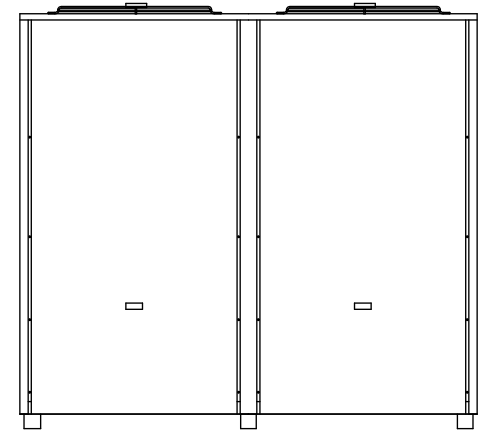
H-CU.WC



H-P.WC



H-AHU-H



H-CU.AC



2. *Mechanical, Electrical and Control Modules:*

Polar architecture allows below modules to fit in all Polar Cabinets resulting in a flexible choice of equipment:

- H** Module : Housing, Cabinets and Heat Exchangers
- M** Module : Mechanical Compressor w or w.o Condenser
- C** Module : Regulation for 1 independent circuit
- R** Module : Unit application Regulation and to manage up to 10 Circuits
- V** Module : VFD Inverter for variable speed Compressor Control
- F** Module : ECM style Supply/Exhaust Fan
- P** Module : Power Supply and Distribution
- A** Module : Add On

Polar α Alpha line of equipment

Cabinet Style	Module	α Air	α Multi Air	α Aqua	Tons
Air Cooled Package	<i>H-P.AC</i>	✓	✓		0.75 1 1.5 2 2.5 3 5 7.5 10 12.5 15 18 20 25 30 35 40 50 60 70 80 100 125 150
Water Cooled Package	<i>H-P.WC</i>	✓	✓		0.75 1 1.5 2 2.5 3 5 7.5 10 12.5 15 18 20 25 30 35 40 50 60 70 80 100 125 150
Moduelar Air Handlers , w. or w.o. mechanical/Control	<i>H-AHU</i>	✓	✓	✓	0.75 1 1.5 2 2.5 3 5 7.5 10 12.5 15 18 20 25 30 35 40 50 60 70 80 100 125 150
Air Handlers Horizontal, w. or w.o. mechanical/Con.	<i>H-AHU-H</i>	✓	✓	✓	0.75 1 1.5 2 2.5 3 5 7.5 10 12.5 15 18 20 25 30 35 40 50 60 70 80 100 125 150
Air Handlers Vertical, w. or w.o. mechanical/Con.	<i>H-AHU-V</i>	✓	✓	✓	0.75 1 1.5 2 2.5 3 5 7.5 10 12.5 15 18 20 25 30 35 40 50 60 70 80 100 125 150
Small Single or Multi Zone Ducted	<i>H-DIU</i>	✓	✓	✓	0.75 1 1.5 2 2.5 3 5 7.5 10 12.5 15 18 20 25 30 35 40 50 60 70 80 100 125 150
Modular Cabinets					
Chillers/Condensing Units Air Cooled, Module Size	<i>H-CU.AC</i>	✓	✓	✓	0.75 1 1.5 2 2.5 3 5 7.5 10 12.5 15 18 20 25 30 35 40 50 60 70 80 100 125 150
Chillers/Condensing Units Water Cooled, Module Size	<i>H-CU.WC</i>	✓	✓	✓	0.75 1 1.5 2 2.5 3 5 7.5 10 12.5 15 18 20 25 30 35 40 50 60 70 80 100 125 150
Air Cooled Split Condenser , Module Size	<i>H-C.AC</i>	✓	✓	✓	0.75 1 1.5 2 2.5 3 5 7.5 10 12.5 15 18 20 25 30 35 40 50 60 70 80 100 125 150

1) Cabinets

α
Alpha

H – Module

Standard Cabinets

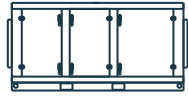

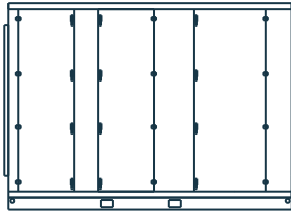
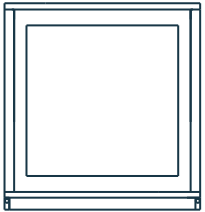
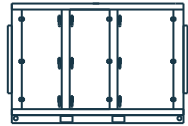
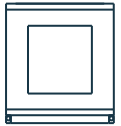
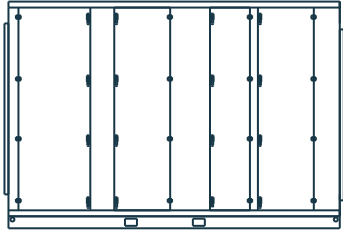
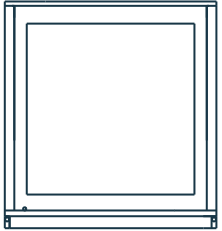
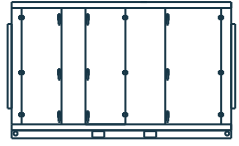
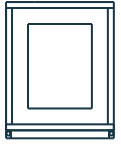
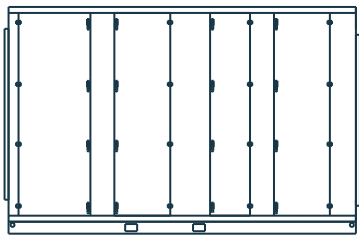
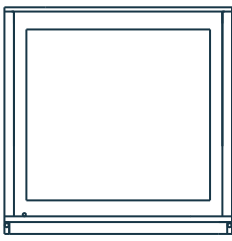
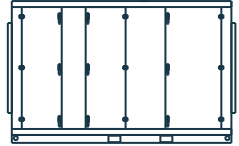
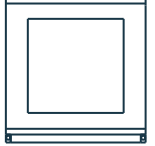
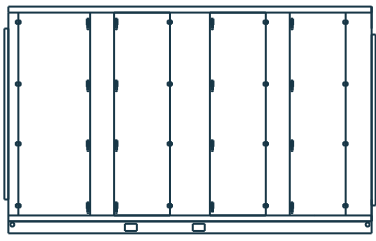
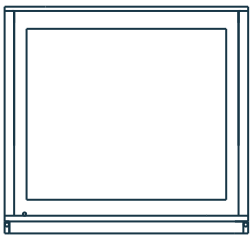
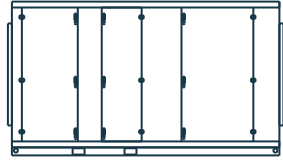
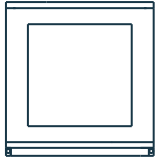
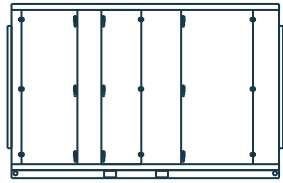
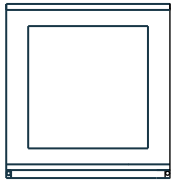
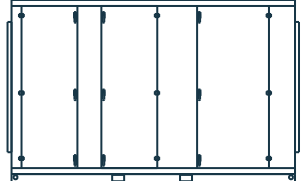
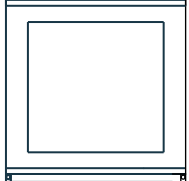
The following drawings show standard 100% OA DX Cooling Equipment with or without either Heat Pump, Natural Gas, Electric, Water or Steam Heat.

Gas Heat, Energy Recovery, Exhaust Fans, High CFM Fan Walls, Chilled Water, Heat Pipe or other Parts optional are available but will result in a change of dimensions, drawings are available on request.

Semi or full customization available



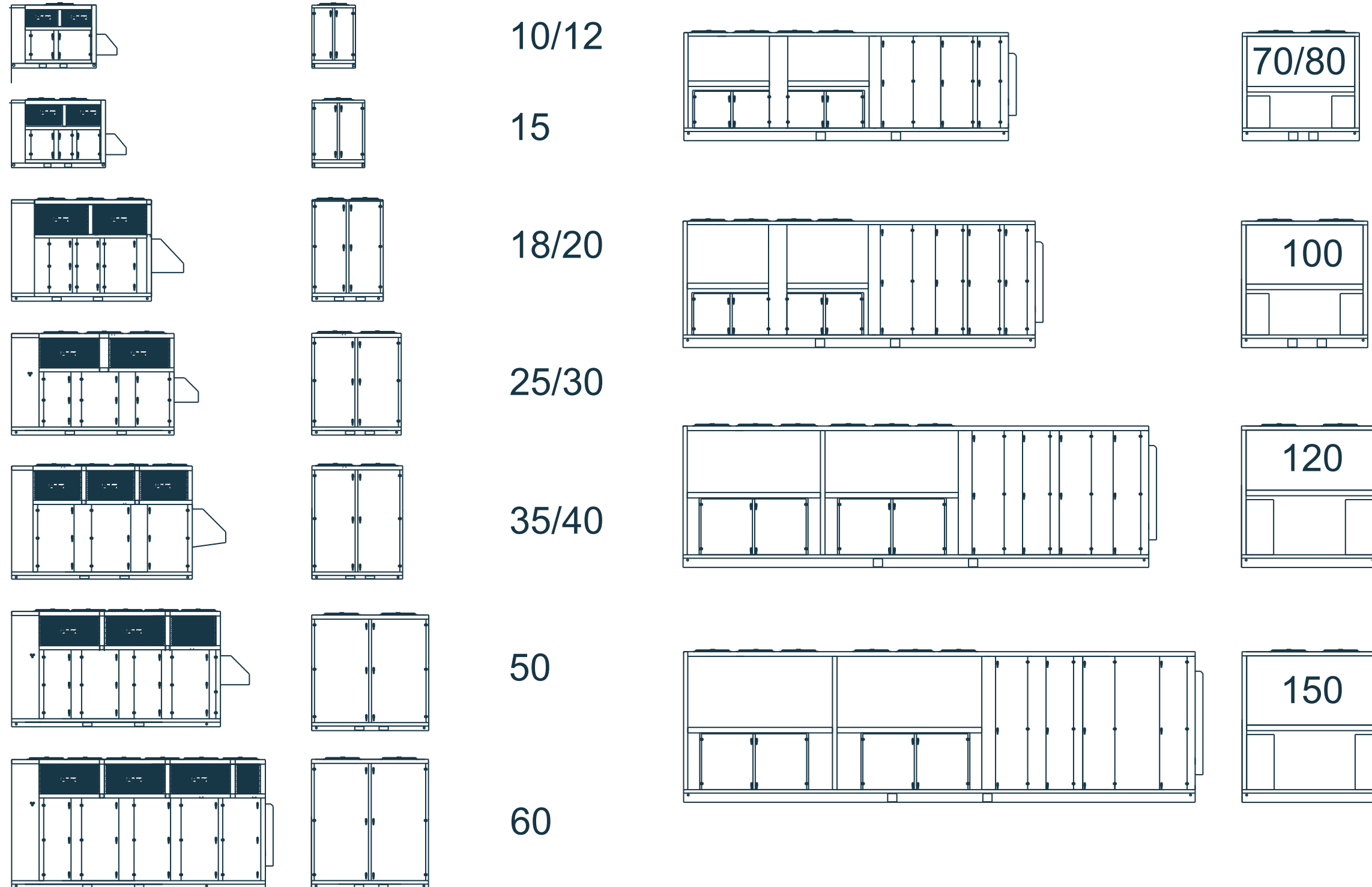
H-AHU, modular Air Handlers for Alpha Air and Alpha Multi Air (VAV), and for Alpha Aqua as Chilled Water AHU, 10 to 150 Ton

		10/12			70/80
		15			100
		18/20			120
		25/30			150
		35/40			
		50			
		60			



*H-AHU, Modular Air handlers,
10 to 150 Ton*

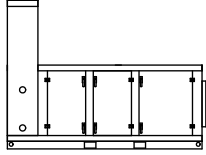
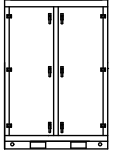
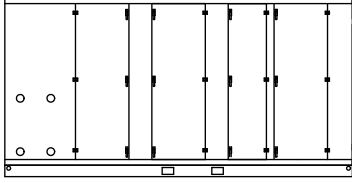
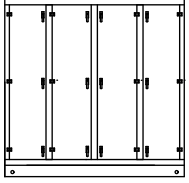
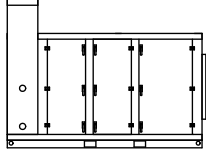
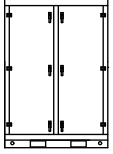
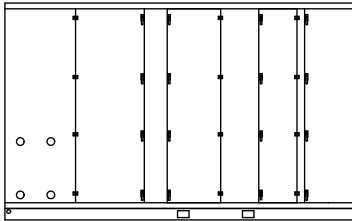
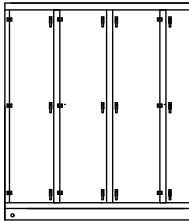
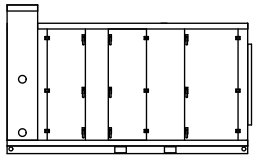
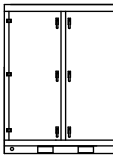
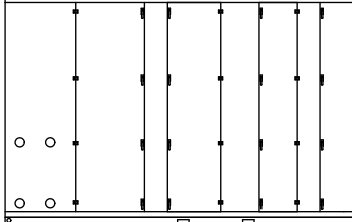
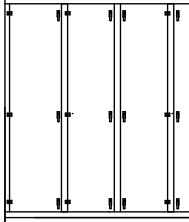
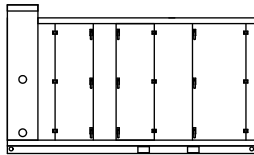
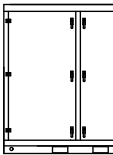
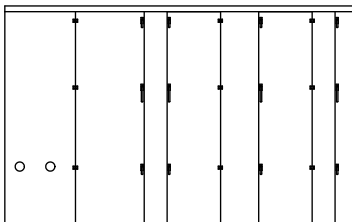
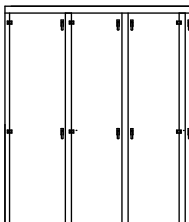
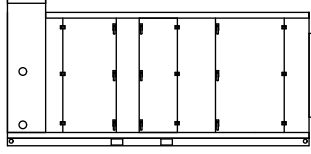
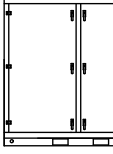
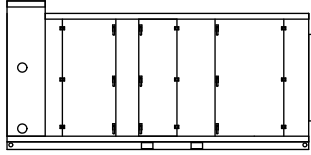
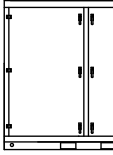
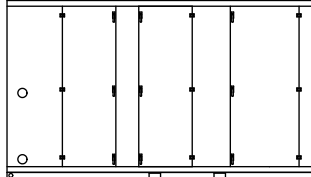
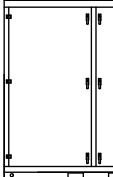
H-P.AC , modular Air Cooled Package for Alpha Air and Alpha Multi Air (VAV), 3 to 150 Ton





*H-P.AC , Air Cooled Package,
3 to 150 Ton*

H-P.AC, modular Air Cooled Package for Alpha Air and Alpha Multi Air (VAV), 3 to 150 Ton

		10/12			70/80
		15			100
		18/20			120
		25/30			150
		35/40			
		50			
		60			

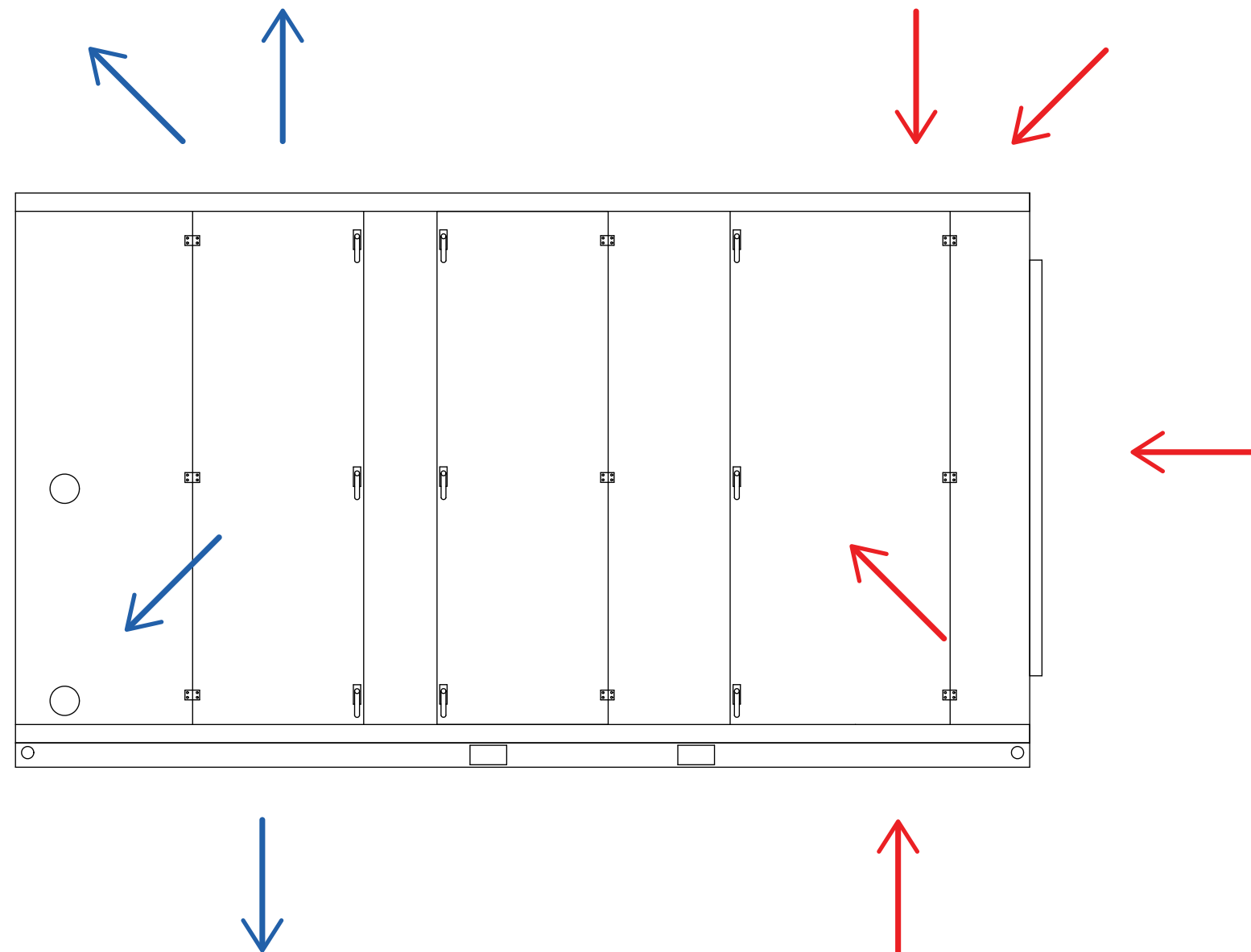


*H-P.WC , Water Cooled Package,
3 to 150 Ton*

- Water Cooled Package **H-P.WC**
- Air cooled Package **H-P.AC**
- Air Handler **H-AHU**

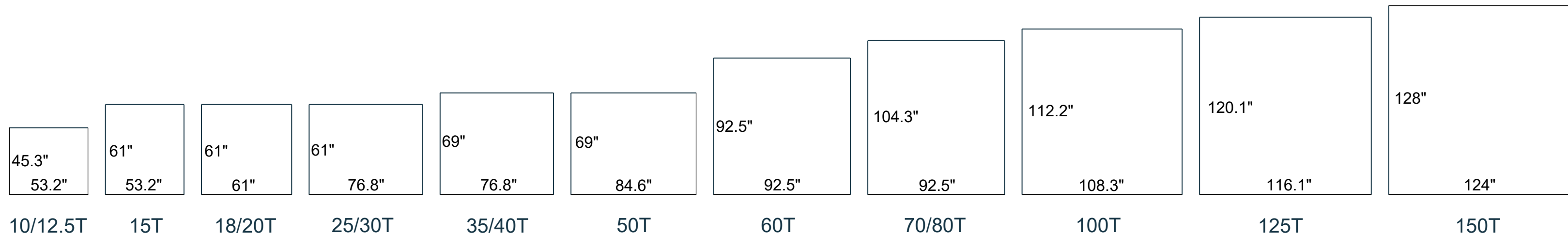
Possible air flow directions

Horizontal Straight
Through , not for
H-P.WC
H-P.AC



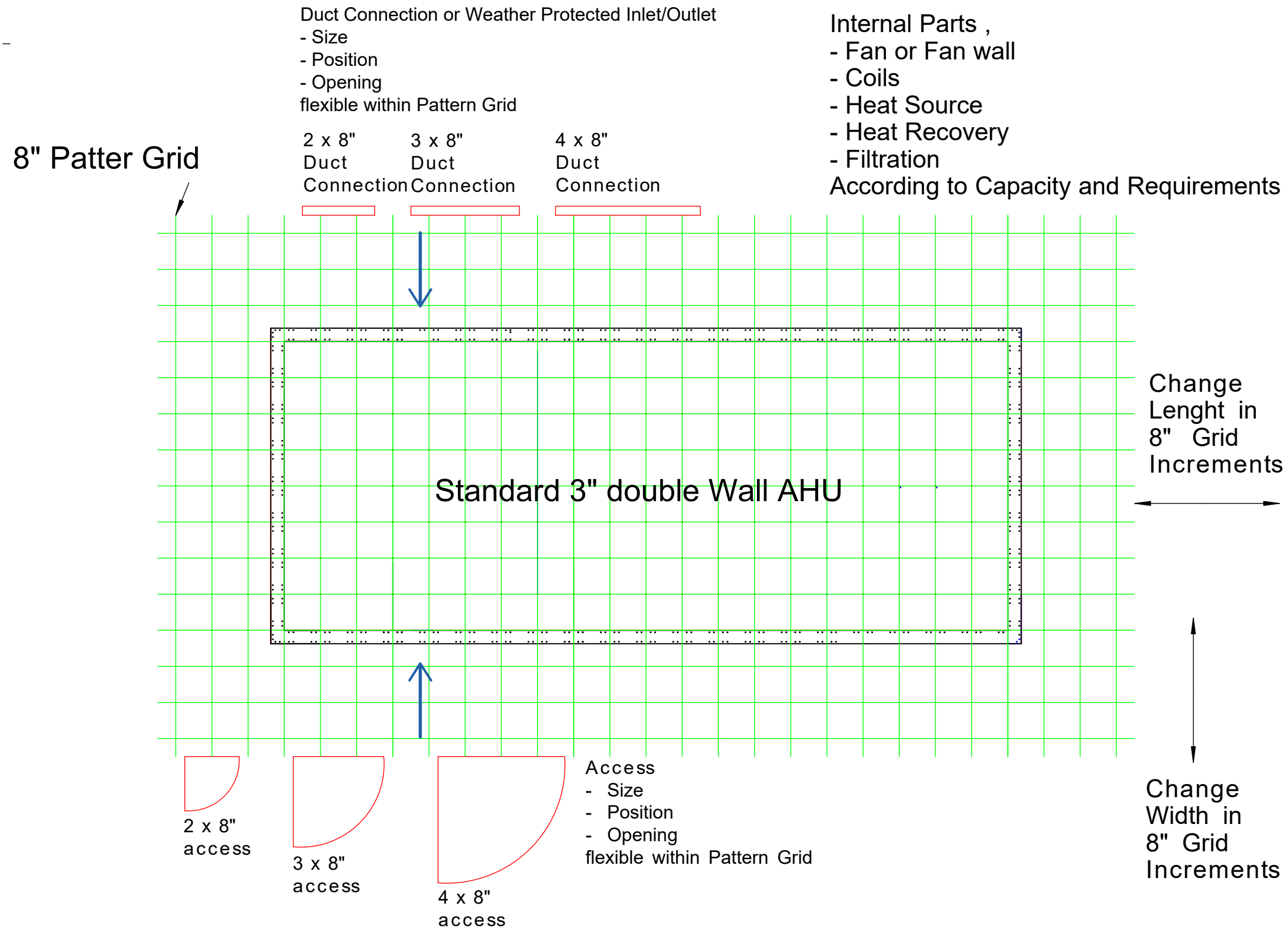
- Water Cooled Package **H-P.WC**
- Air cooled Package **H-P.AC**
- Air Handler **H-AHU**

Standard Width and Height Semi and Full Custom Dimension available

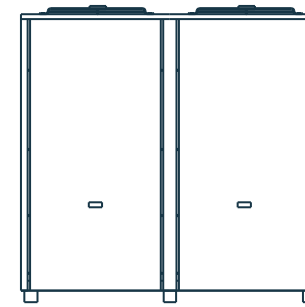
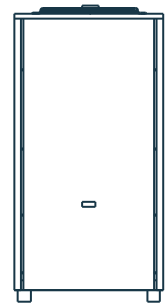


Polar AHU Cabinet, 8

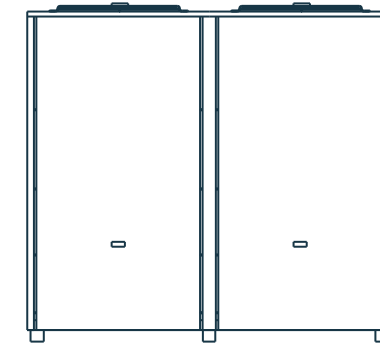
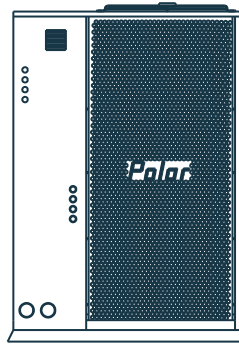
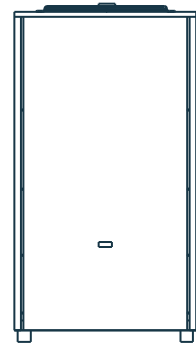
“modular AHU Architecture example for total Flexibility”



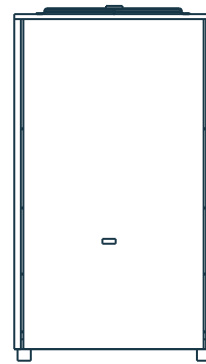
**H-CU.AC, Air Cooled Split
Type Condensing Units
for Alpha Air and Alpha
Multi Air
(VRF / VAV), and Alpha
Aqua as Chillers.
Modular and Expandable
in Sizes of 3 to 35 Ton, up
to 10 Modules**



H-CU.5.AC1 , 5 Ton
H-CU.2x5.AC1 , 8 , 10 Ton

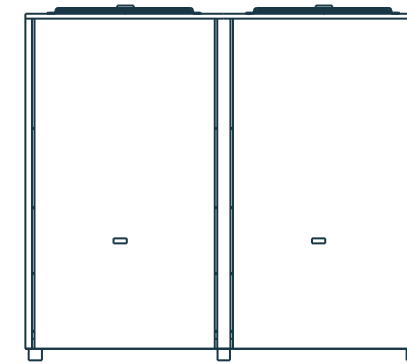
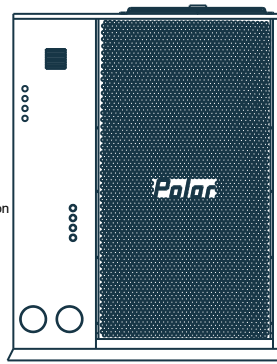


H-CU.10.AC1 , 8 and 10 Ton
H-CU.2x10.AC1 , 16 and 20 Ton

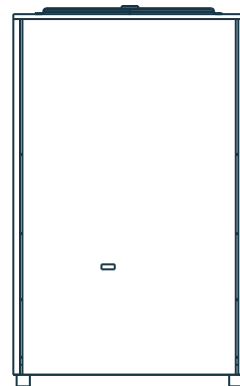


Power Supply
and Control

Refrigerant Connection
If Condensing Unit
Single or Multi Zone

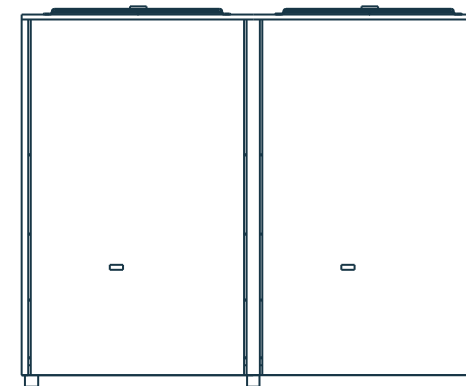
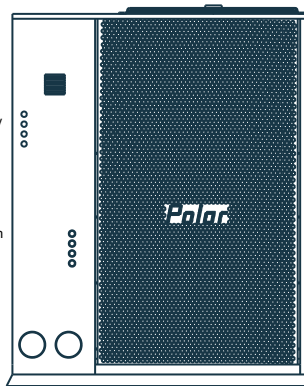


H-CU.15.AC1 , 12 and 15 Ton
H-CU.2x15.AC1 , 25 and 30 Ton



Power Supply
and Control

Refrigerant Connection
If Condensing Unit
Single or Multi Zone



H-CU.20.AC1 , 18 and 20 Ton
H-CU.2x20.AC1 , 35 and 40 Ton

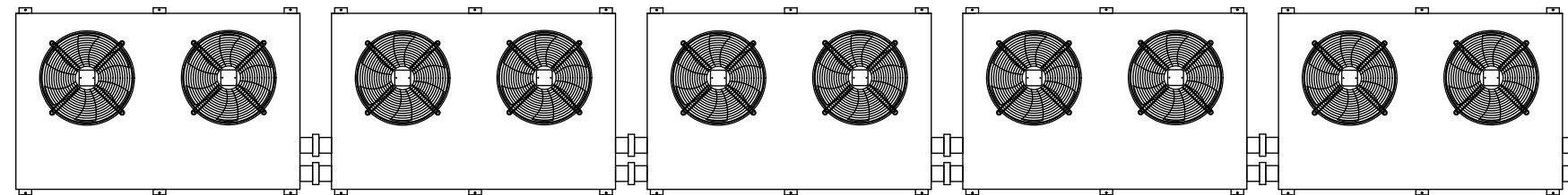
Model:			Capacity / Ton:
H-CU.AC1			
Length:	Width:	Height:	Weight:
Date:	Drawing Nr:	Scale:	Rev:
11.19.2019		1:50	1 .0

H-CU.AC , Air Cooled Split Type Condensing Units

Modules 3 to 35 Ton , Modular Expansions for up to 10 Modules and max 350 Ton

Chiller up to 10 Modules , Capacity up to 400 Ton

DX Single or Multi zone , up to 2 Modules , Capacity up to 80 Ton



Model		A.AC2 , Example for modular Expansion	
Type		Air Cooled Unit Single or double Module	
Capacity max		20 Ton	
Depth	Width	Height	Polar
Date	Drawn by	Drawing No.	Scale
9-30-2019	Danner		1:40
			Rev.
			2





*H-CU.AC,
Condensing Units/ Chillers Air*

H-CU.WC, Water Cooled or Split Type Air Cooled Condensing Units for Alpha Air and Alpha Multi Air, (VRF / VAV), and Alpha Aqua as Chillers, Single and Double Modules, in Sizes of 3 to 35 Ton, Expandable up to 10 Modules

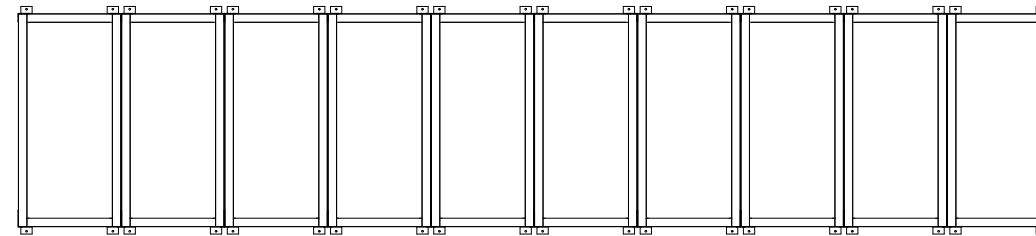


H-CU.WC, Water Cooled Split Type Condensing Units

Modules 3 to 35 Ton, Modular Expansions for up to 10 Modules and max 350 Ton

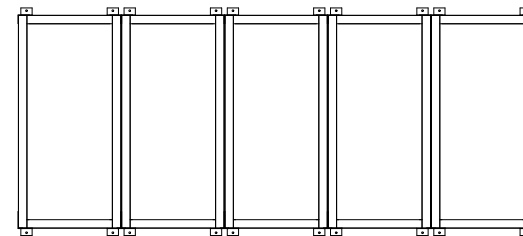
Top View

A-WC/NC.2
max 35 Ton
Single Height



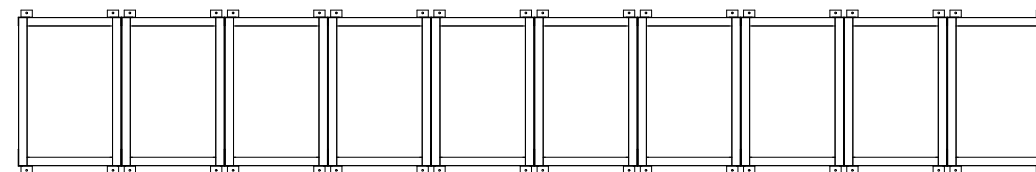
Max
350 Ton

A-WC/NC.2-D
max 35 Ton
Double Height



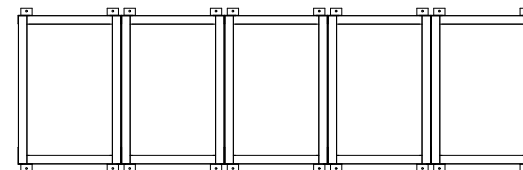
Max
350 Ton

A-WC/NC.1
max 15 Ton
Single Height



Max
150 Ton

A-WC/NC.1-D
max 15 Ton
Double Height



Max
150 Ton

Capacity Range 10 to 35 Tons per Module ,
with 10 Modules up to 350 Ton max

A-WC/NC

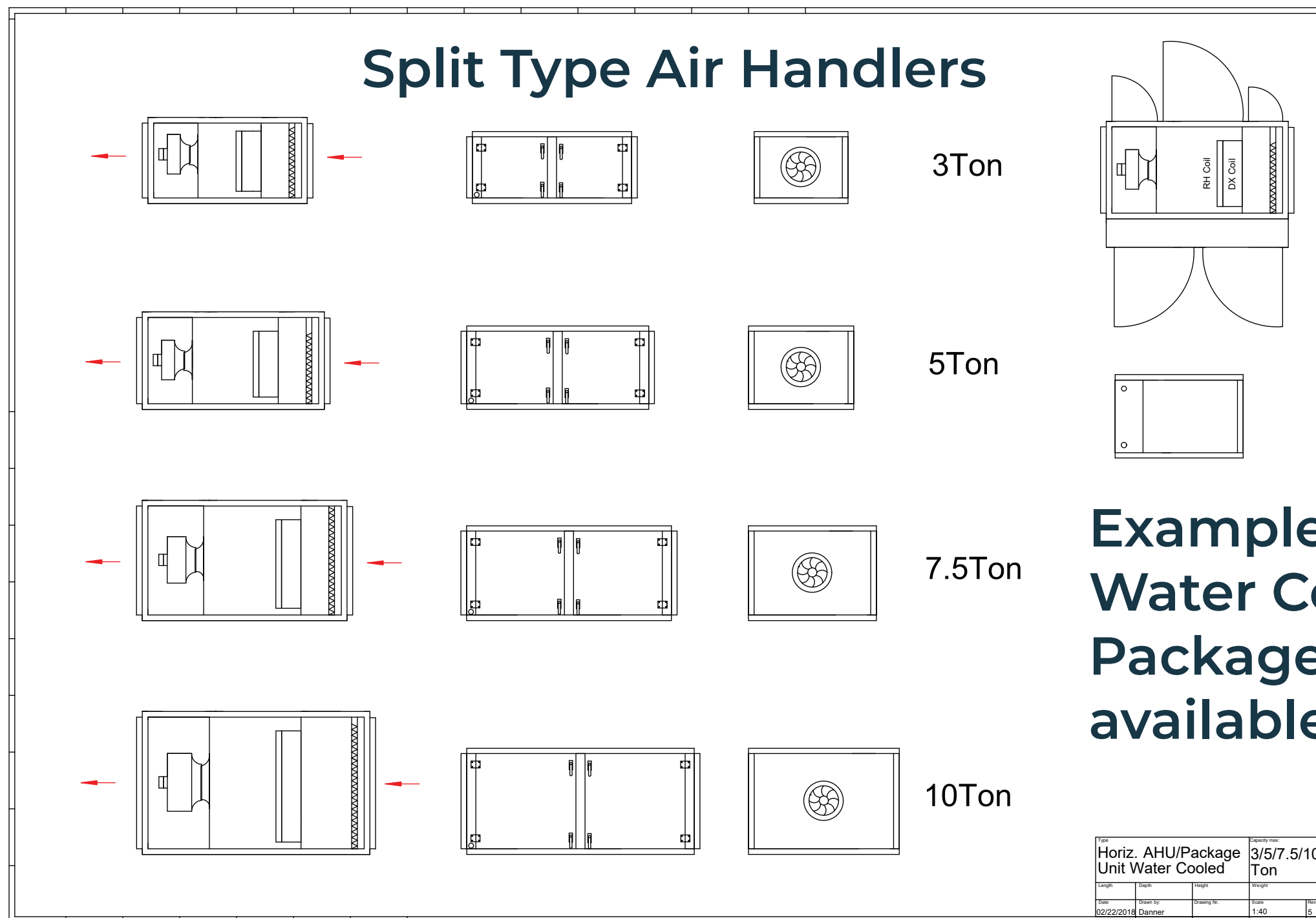
A-WC/NC Module
Water Cooled/Split

Date	Drawn by:	Drawing Nr.	Scale	Rev.
11-29-18	Danner		1:50	1



H-AHU-H, AHU /Package for Alpha Air and Alpha Multi Air (VAV) 3 to 10 Ton, available as:

- Split Type AHU for External CU
- Split Type AHU incl. Compressor and Controls for external Condenser
- Water Cooled Package



Example for Water Cooled Package, available for all Models





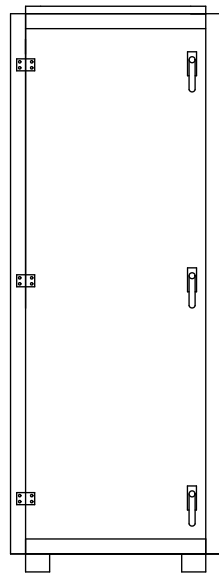
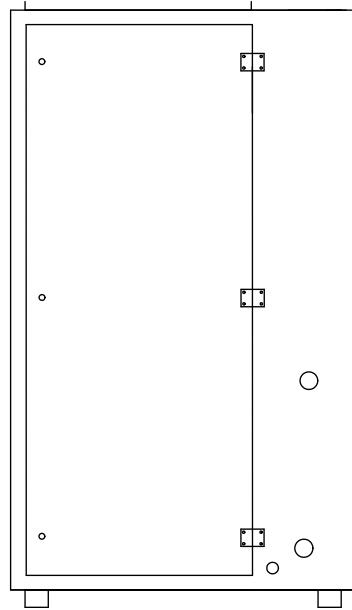
*H-CU.WC, Water Cooled or Split
Type Air Cooled Condensing Units*

H-AHU-V, AHU /Package for Alpha Air and Alpha Multi Air (VAV) 3 to 30 Ton, available as:

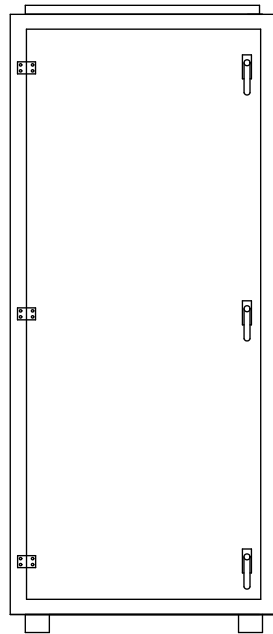
- Split Type AHU for external CU
- Split Type AHU incl. Compressor and Controls for external Condenser
- Water Cooled Package

Multiple Inlet and Outlet Air Options available

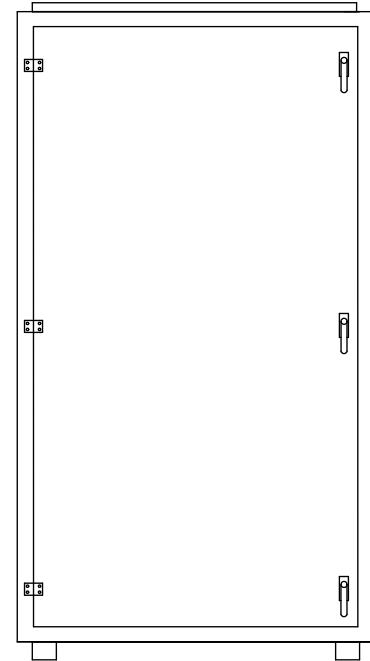
Example for Water Cooled Package, available for all Models



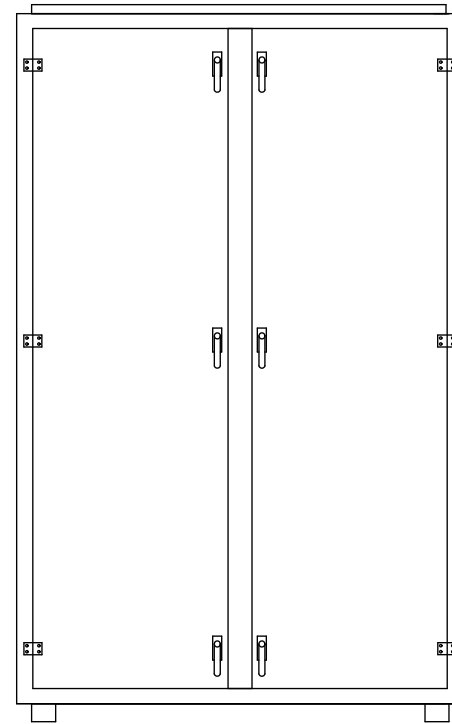
3 Ton



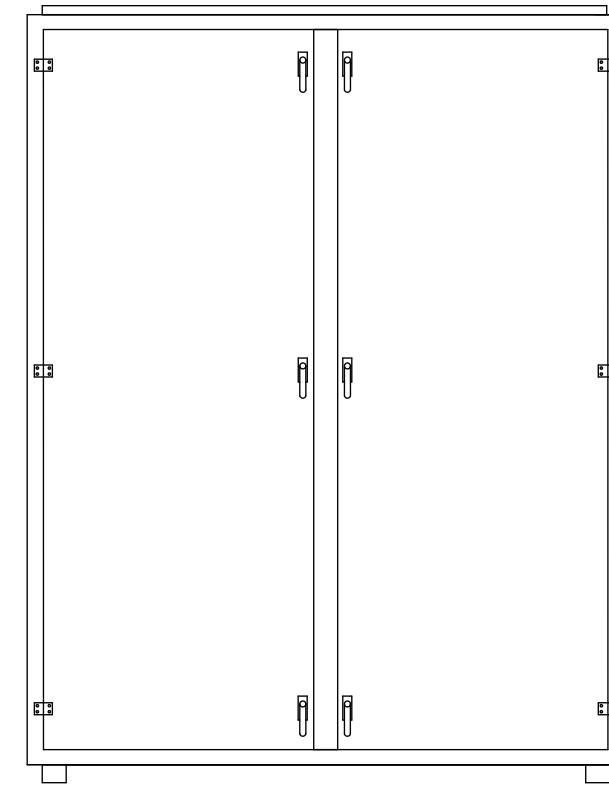
5/8 Ton



10 Ton



15/20 Ton

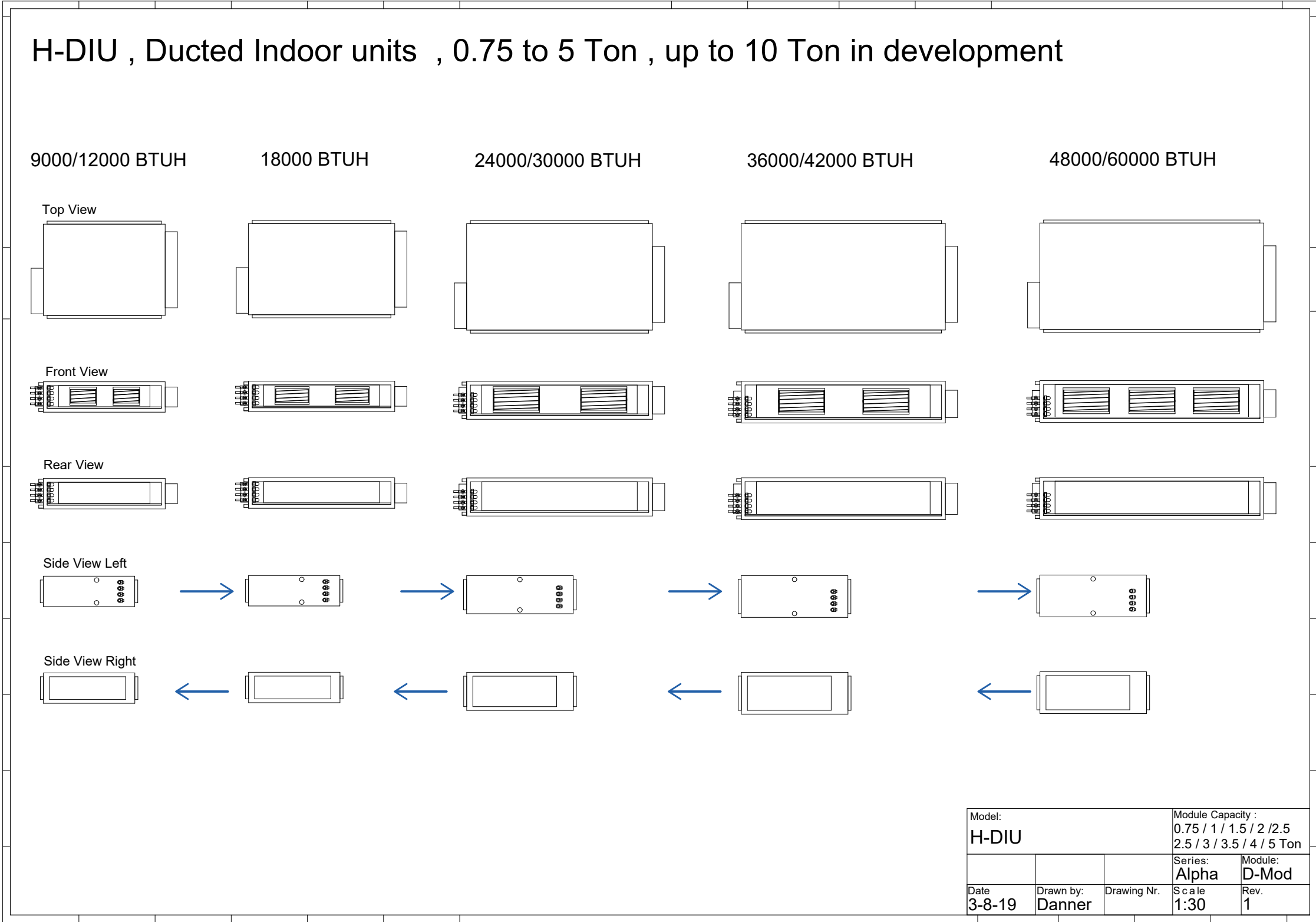


25/30 Ton

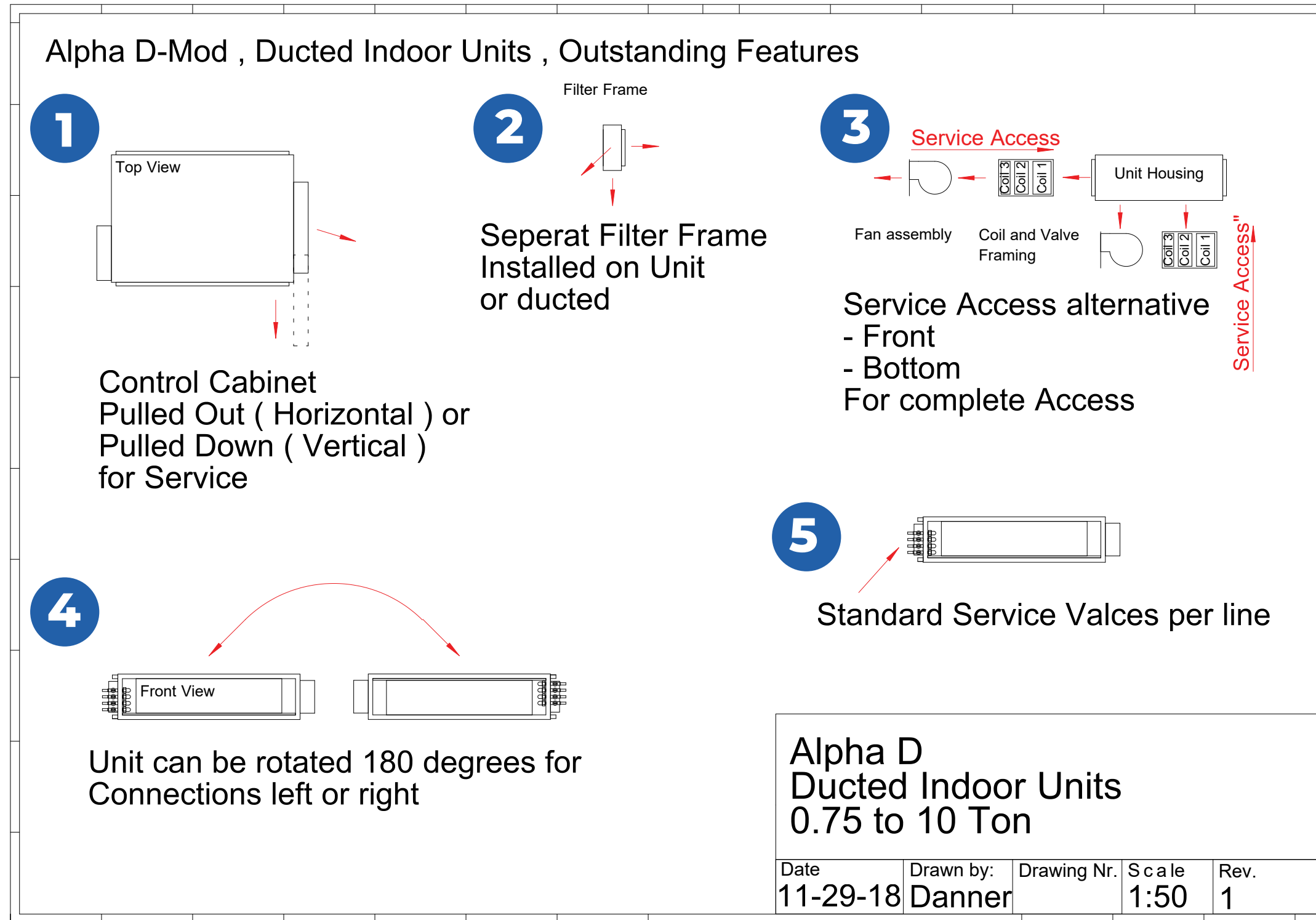


*H-AHU-V, AHU /Package
for Alpha Air and Alpha Multi Air
(VAV) 3 to 30 Ton*

H-DIU , Small Single or Multi Zone Ducted AHU , 9000 – 60000 BTUH



H-DIU, Small Single or Multi Zone Ducted AHU, 9000 – 60000 BTUH





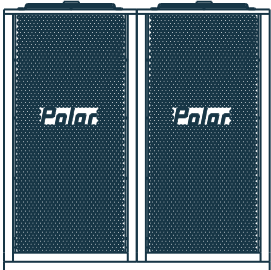


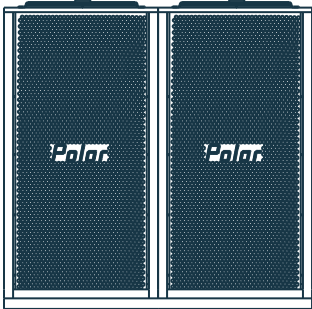


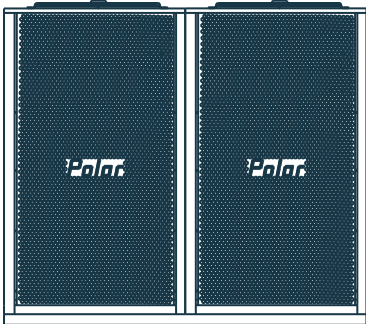


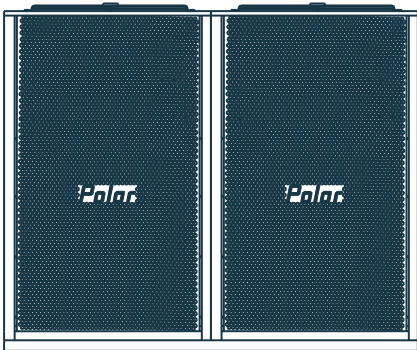
**POLAR Alpha
H-DIU Mod
Ducted Indoor units,
0.75 to 10 Ton,
Outstanding and
exclusive features:**

- ✓ Connection Left or Right Available, **unit can be 180 degree Flipped over**
- ✓ Full service access from **Front** or Bottom , incl. Controls
(with Slide out Parts , both ways fully Serviceable)
- ✓ Microprocessor Controller with LCD display
**Connectivity to POLAR VRF , POLAR or other manufacturers Chillers ,
Daikin , Mitsubishi and Samsung VRF systems**
- ✓ Touch Screen Thermostat
- ✓ 3 Slots for coils to allow multiple heating and cooling sources as well as hot
gas Re Heat , see next Page for available sources
- ✓ Low Noise
Low Height
- ✓ Double wall , Foam Injected Construction , R 6 insulation
- ✓ Aluminum Housing , Low weight
- ✓ ECM Style Variable speed Blowers with fully adjustable speed
- ✓ Control for external Install available
- ✓ External Filter Box
- ✓ Filter Management
- ✓ Optional build in Condensate Pump



H-C.AC, Air Cooled Split Type Condenser

Modular and Expandable in Sizes of 3 to 35 Ton, up to 10 Modules

  	<p>H-C.5.AC1 , 5 Ton H-C.2x5.AC1 , 8 , 10 Ton</p>												
  	<p>H-C.10.AC1 , 8 and 10 Ton H-C.2x10.AC1 , 16 and 20 Ton</p>												
  	<p>H-C.15.AC1 , 12 and 15 Ton H-C.2x15.AC1 , 25 nd 30 Ton</p>												
  	<p>H-C.20.AC1 , 18 and 20 Ton H-C.2x20.AC1 , 35 nd 40 Ton</p>												
<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td colspan="3" style="text-align: center;">Model: H-C.AC1</td> <td style="text-align: center;">Capacity / Ton:</td> </tr> <tr> <td style="text-align: center;">Length:</td> <td style="text-align: center;">Width:</td> <td style="text-align: center;">Height:</td> <td style="text-align: center;">Weight:</td> </tr> <tr> <td style="text-align: center;">Date: 11.19.2019</td> <td style="text-align: center;">Drawing Nr:</td> <td style="text-align: center;">Scale: 1:50</td> <td style="text-align: center;">Rev: 1 .0</td> </tr> </tbody> </table>		Model: H-C.AC1			Capacity / Ton:	Length:	Width:	Height:	Weight:	Date: 11.19.2019	Drawing Nr:	Scale: 1:50	Rev: 1 .0
Model: H-C.AC1			Capacity / Ton:										
Length:	Width:	Height:	Weight:										
Date: 11.19.2019	Drawing Nr:	Scale: 1:50	Rev: 1 .0										



What to know about H - Module Cabinets

- ✓ H-AHU, H- and H- are available also with Mechanical , Electrical or Control Modules
- ✓ Cooling: DX or Chilled Water
- ✓ Heating: Heat Pump, Electric, Gas, Steam Heat or combinations
- ✓ Energy Recovery, Exhaust Fan, Heat Pipe
- ✓ Dehumidification or Humidification
- ✓ Several Filter Options with Filter Monitoring
- ✓ Build in a modular Pattern of 100/200 mm (4 / 8 Inch)
- ✓ **All Aluminum Construction, Sheets and Fasteners** for corrosion resistance and light weight ,
- ✓ Powder Coated by standard white RAL 9010
- ✓ Closed cell Foam insulation, 3" R 18
- ✓ Sealed to prevent air leakage
- ✓ No Seam Construction for reduced air Leakage and Hygiene
- ✓ Fully Thermally Broken
- ✓ Semi or Full Customizable
- ✓ Double Silicone Gasket
- ✓ Flexible Access Door and Air Connection Position
- ✓ Expandable
- ✓ Lighting available
- ✓ Fast Lock Access Hardware

Available Conditioning on all above Polar Cabinets

Each Cabinet can hold either 1, 2 or 3 Heat exchangers for:

- A** Direct Expansion Cooling
- B** Heat Pump Heating
- C** Chilled Water Cooling
- D** Hot Water Heating
- E** Hot Water Re Heat
- F** Hot Gas Re Heat
- G** Steam Heat (Not H-DIU Model)
- H** Electric Heating
- I** Electric Re Heat
- J** Hot Gas Re Heat
- K** Steam Humidification (Not H-DIU Model)

2. *Application Software*

- **Alpha Air**

Software application to operate and manage 100% OA, mix Air or Recirculation Equipment , Up to 10 Circuits

- **Alpha Multi Air**

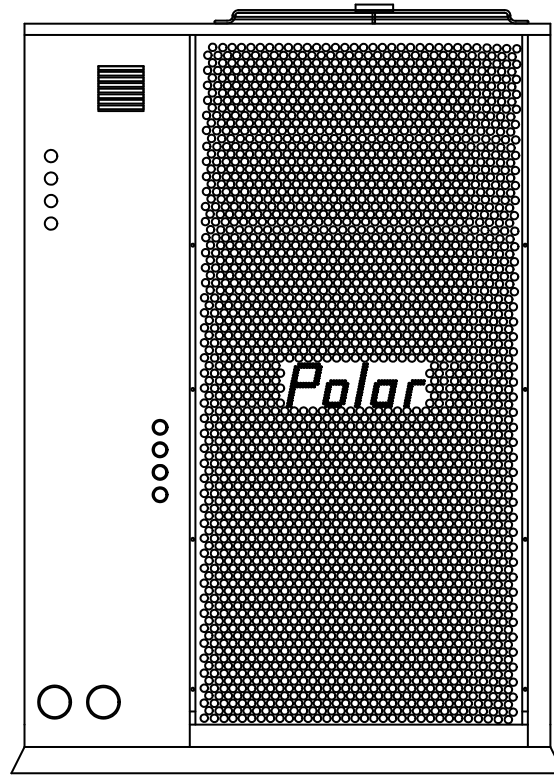
Software application to operate and manage Multi zone VRF Equipment, Up to 4 Circuits

- **Alpha Aqua**

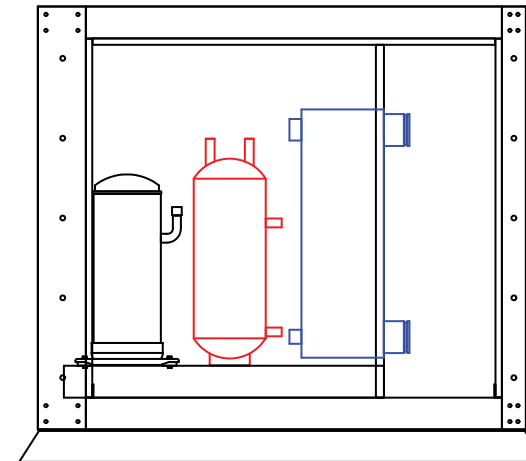
Software application to operate and manage Chilled Water Equipment, up to 10 Circuits

ALPHA Flexibility

One Line → Six Applications

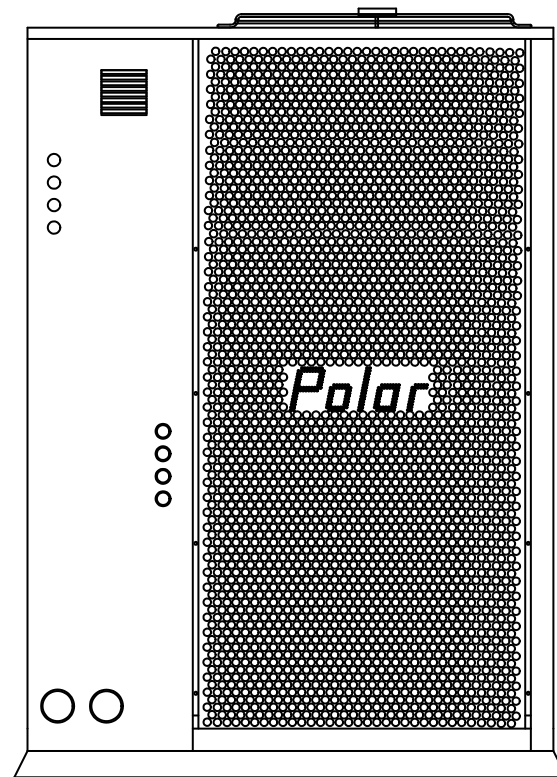


Air cooled

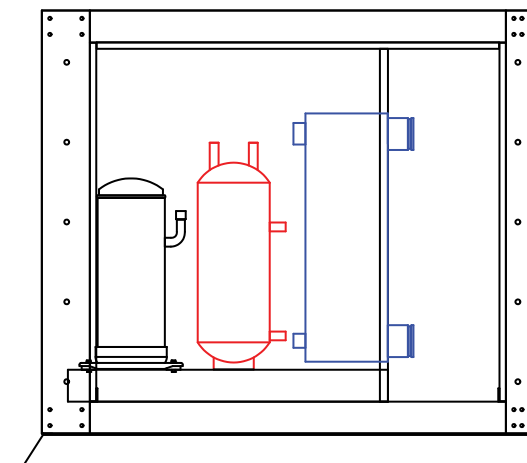


Water cooled

1. *ALPHA aqua* *Chillers*

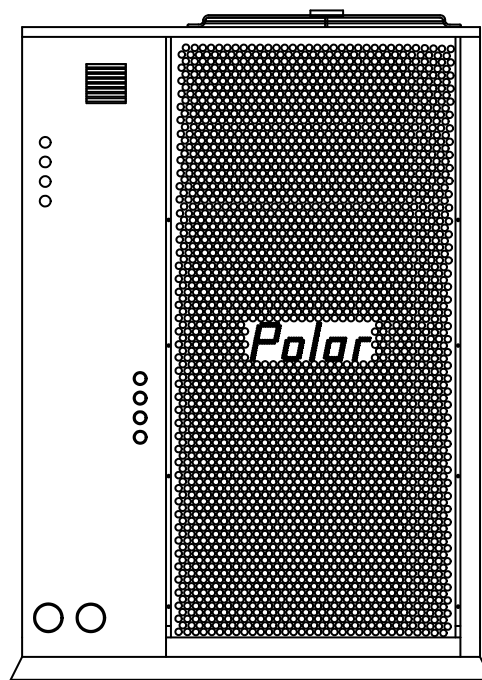


Air cooled

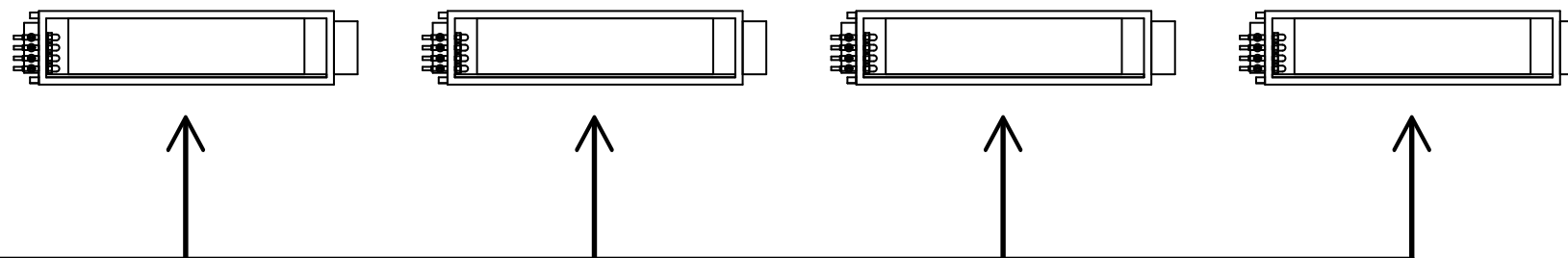
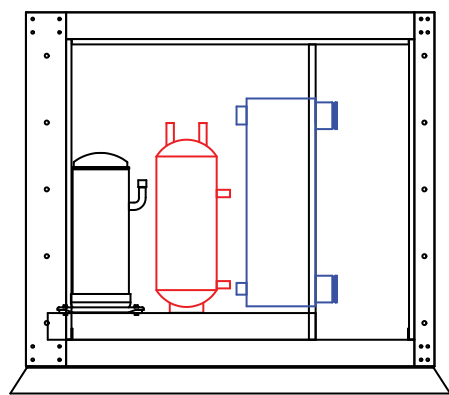


Water cooled

2. *ALPHA Multi Air VRF Multi Zone*



OR

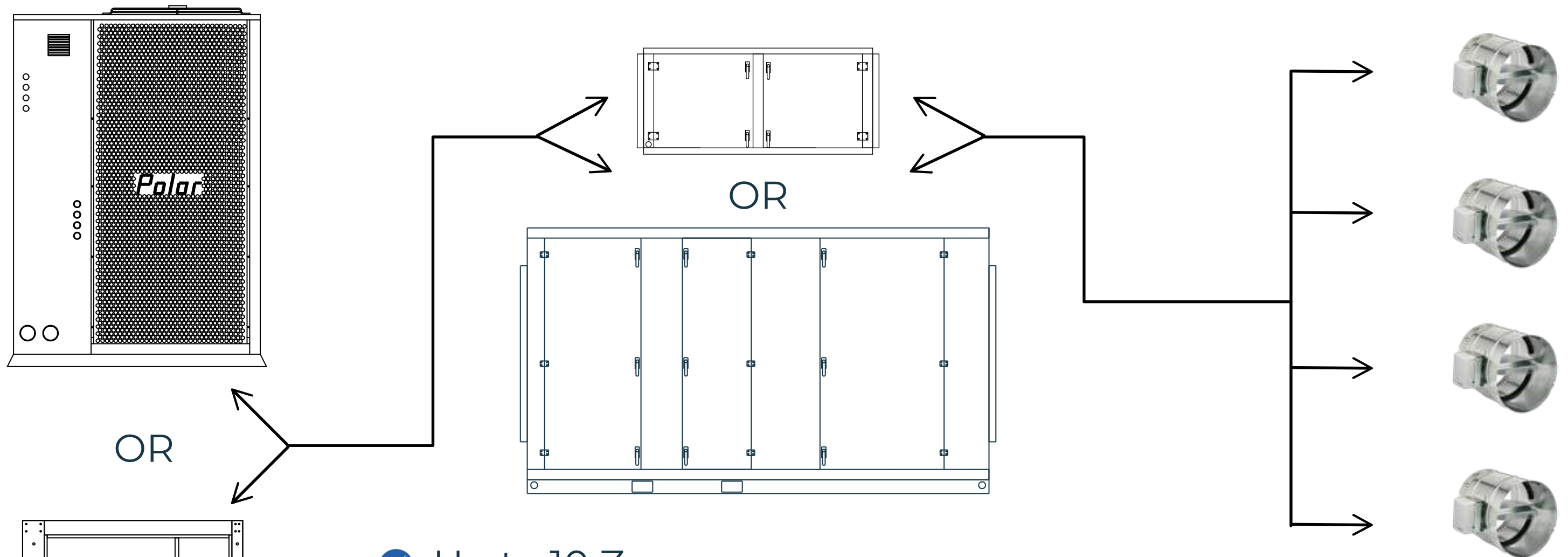


- ✓ Up to 20 Zones
- ✓ Heat Pump, Heat Recovery or Cooling Only
- ✓ Connectivity to 0.75 -10 Ton Indoor unit or 10 to 150 Ton AHU
- ✓ Optional humidity Control and modulating hot gas Re Heat
- ✓ H-DIU, H-AHU , H-AHU-V , H-AHU,H indoor units connectivity

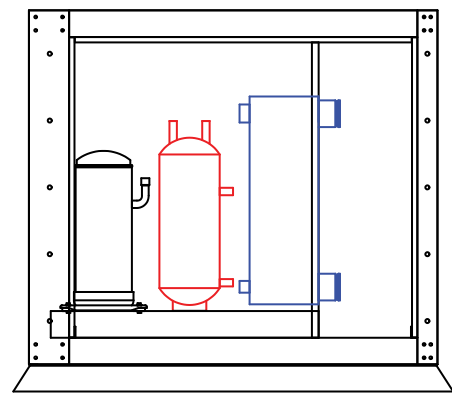
Only US Made VRF Multi Zone System

3. ALPHA Multi Air VAV Damper based Multi Zoning

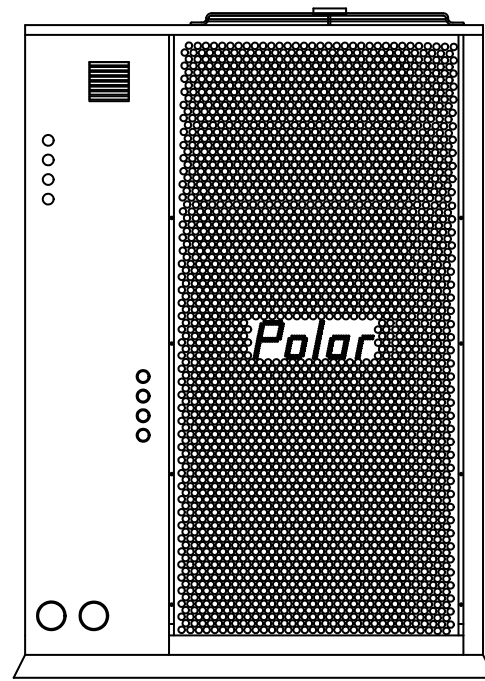
Zone
Dampers



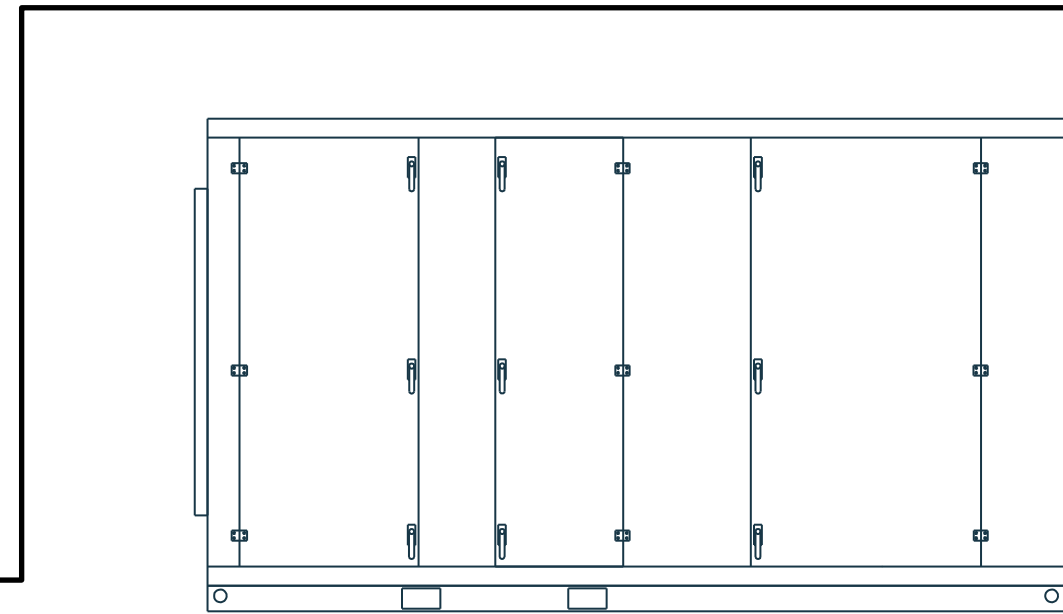
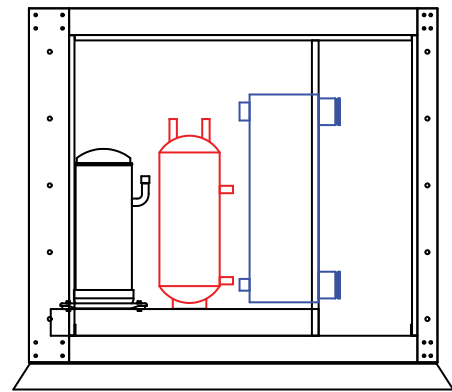
- ✓ Up to 10 Zones
- ✓ Full Control Set up incl. Zone control
- ✓ Connectivity to 10 Ton indoor units or 10 to 150 Ton AHU
- ✓ Optional modulating hot gas Re Heat
- ✓ H-DIU , H-AHU , H-AHU-V , H-AHU,H indoor units connectivity



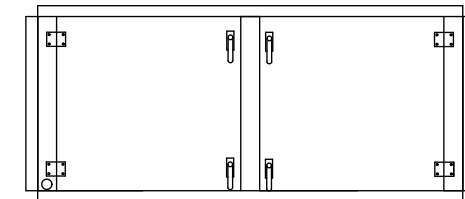
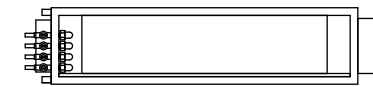
4. ALPHA Air VRF Single Zone Split



OR

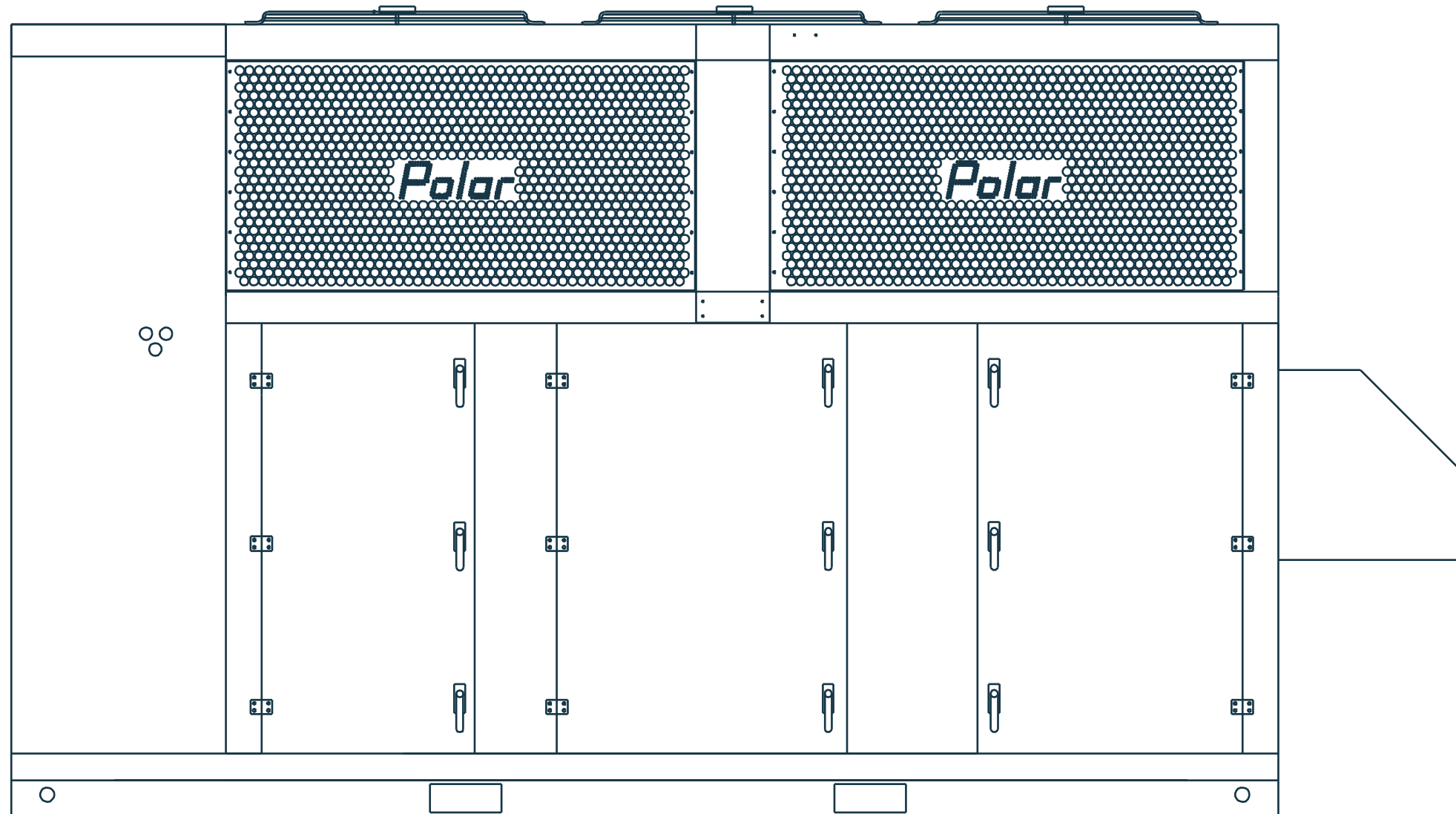


OR



- ✓ Connectivity to 10 Ton indoor units or 10 to 150 Ton AHU
- ✓ Heat Pump , Cooling Only , Electric , Gas , Steam
- ✓ Optional modulating hot gas Re Heat
- ✓ H-DIU , H-AHU , H-AHU-V , H-AHU,H indoor units connectivity

6. *ALPHA Air / Alpha Multi Air VRF Package Unit*



α

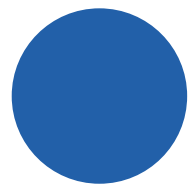
Alpha

Quality

Raising the bar in Quality



- ✔ Material
- ✔ Protection
- ✔ Design
- ✔ Supplier
- ✔ Assembling
- ✔ Hygiene
- ✔ Organization
- ✔ Serviceability



Organization and Serviceability



**Organized Quality
for ease of service**

VS

**Other
manufacturer**

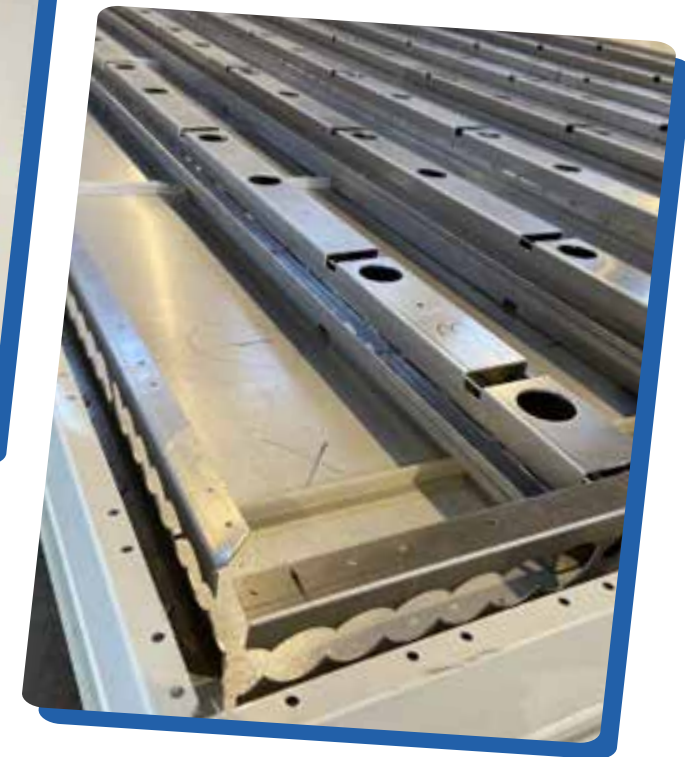


α

Alpha

Technology

Raising the bar in Technology



- ✔ Inverter Compressor Technology
- ✔ ECM Blower and Condenser Fan(s)
- ✔ Innovative Control Applications incl BMS Connectivity
- ✔ Modular Design
- ✔ Intelligent and Flexible Equipment Architecture

ALPHA

Solutions for:

α
Alpha

- ✓ Design
- ✓ Performance
- ✓ Lead Time
- ✓ Quality
- ✓ Capacity and Expansion
- ✓ Service and Maintenance
- ✓ Hauling
- ✓ Space and Footprint
- ✓ Flexibility
- ✓ Noise
- ✓ Vibration
- ✓ Others.



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www.polarct.com