

Amichi Series

Air cooled Scroll DC Inverter reversible heat pump

YMPA 045 to 260

A complete range from 40 kW up to 254 kW



Heat Pump Product of the Year
WINNER ACR AWARDS 2021

Exceeding Efficiency Standards

The YORK® Amichi Series Air-Cooled DC Inverter Scroll Chillers and Heat Pumps have been designed to meet tomorrow's efficiency standards today. Delivering performance beyond typical chiller and heat pump efficiency levels, the YORK® Amichi Series meets or exceeds stringent regulatory requirements (see chart below) through an optimized combination of efficiency-enhancing technologies from YORK®.

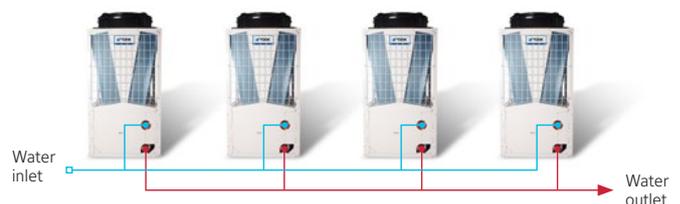
ECODESIGN REGULATIONS CATEGORY:	EFFICIENCY METRIC:	TOMORROW'S STANDARDS MET TODAY:
Comfort Heating	SCOP/ηsh	Amichi Heat Pump: Sept. 2017 Compliant (Tier 2)
Comfort Cooling	SEER/ηsc	Amichi Chiller: Jan. 2021 Compliant (Tier 2)
Process Cooling (Med. Temp.)	SEPR	Amichi Chiller: July 2018 Compliant (Tier 2)
Process Cooling (High Temp.)	SEPR	Amichi Chiller: Jan. 2021 Compliant (Tier 2)

Performance Without Compromise

The YORK® Amichi Series is a no-compromise solution for a variety of climates and locations. It can maintain efficiency in a variety of conditions without kits or add-ons (down to -18°C ambient in cooling mode and -15°C ambient in heating mode). With the smallest footprint across the widest capacity range on the market, the YORK® Amichi Series is also the perfect solution for high performance in smaller spaces. Our systems offer two levels of sound performance. If requirements call for sound attenuation beyond our standard low-noise levels, an optional Ultra Quiet Kit can further reduce sound power by 6 dBA, providing one of the quietest units available.

Modular system - Greater design flexibility

- 9 package models or modular combinations
- Controls can be parent/child controller if application requires
- Maximum of 32 units below 130 kW
- Maximum of 16 units above 130 kW



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YMPA 045 to 260



YMPA 45 to 260 PJ - technical features for R454B unit

Model			YMPA								
			45	65	80	100	130	160	200	230	260
Performance	Cooling capacity h/p units w/o LN	kW	43	58	76	96	119	155	184	216	248
	Cooling capacity h/p units w/ LN	kW	40	57	72	91	111	152	183	208	240
	EER w/ LN		3.03	3.25	3.18	3.20	3.02	3.20	3.10	3.15	3.11
	SEER w/ LN		4.72	4.65	4.23	4.81	4.30	4.47	4.41	4.74	4.89
	η _{s,c} w/ LN		186	183	166	190	169	176	174	187	193
	Heating capacity h/p units w/o LN	kW	49	60	87	98	131	160	189	229	254
	Heating capacity h/p units w/ LN	kW	45	55	83	91	124	155	180	222	243
	COP w/ LN		3.17	3.21	3.35	3.27	3.04	3.3	3.29	3.27	3.29
	SCOP w/ LN		3.61	3.64	3.58	3.55	3.56	3.73	3.72	3.58	3.50
	η _{s,h} w/ LN		142	143	140	139	140	146	146	140	137
Sound power level STD / LN (cooling)	dB(A)	79/73	81/76	80/76	82/77	83/79	85/80	86/81	86/81	87/82	
Refrigerant	Refrigerant circuits	#	1	1	2	2	2	3	3	4	4
	Refrigerant charge (R454B)	kg	8	10.8	16	18	20	26.3	28.7	38	40
Compressor	Type		DC Scroll Inverter + Scroll								
	Capacity steps	%	Stepless (Inverter)								
	Quantity		2	2	3	3	4	5	6	7	8
Air side heat exchanger	Fan motor type		EC motor								
	Fans quantity		1	1	2	2	2	3	3	4	4
	Working ambient temp. cooling mode		-18 ~ 48°C								
	Working ambient temp. heat. mode		-15 ~ 25°C								
Water side heat exchanger	Type		Plate Heat Exchanger								
	Unit water volume (w/o pump kit)	l	9	10	11	14	15	27	29	32	34
	Pump Type		Fixed / Variable Speed Drive Pump				Variable Speed Drive Pump				
	Nominal water flow	l/s	1.9	2.6	3.5	4.3	5.5	7.4	8.4	10.0	11.4
	Pressure drop (cooling)	kPa	27	21	24	25	32	23	29	37	34
	Working range water leaving temp. cooling		-12 ~ 20°C								
	Working range water leaving temp. heating		25 ~ 55°C								
	Water connections type		Victaulic								
Dimensions and weight	Height (w/o pump kit)	mm	2440								
	Width (w/o pump kit)	mm	1200				3050				
	Depth (w/o pump kit)	mm	1500			2250					
	Operating weight (w/o pump kit)	kg	587	610	893	920	999	1922	2003	2235	2316
	Voltage/Phases/Frequency	V/ph/hz	400/3/50+E								

Net values at Eurovent nominal conditions:

Cooling capacities in kW given for 7°C water leaving temperature Δt 5°C and 35°C ambient temperature.

Heating capacities in kW given for 45°C water leaving temperature and 7°C ambient temperature.

SEER and SCOP calculated according to EN14511 and EN14825.

η_s calculated according to Ecodesign regulation for chillers comfort cooling and heating (813/2013, 2016/2281).

Ecodesign figures are calculated following fixed water and variable outlet approach (FW/VO). For other Ecodesign calculations, please contact your JCI representative.

All the values are for a standard YMPA with low noise (w/ LN) kits except the cooling capacity, heating capacity and sound power data show both with (w/) and without (w/o) LN kits.

The above data is based on Johnson Controls' selection software YORKworks 21.04a. Please refer to the latest version of the software for specific projects.



Manufacturer reserves the rights to change specifications without prior notice.

Air cooled Scroll DC Inverter reversible heat pump

YMPA 045 to 260



YMPA 45 to 260 PE - technical features for R410A unit

Model			YMPA									
			45	65	80	100	130	160	200	230	260	
Performance	Cooling capacity h/p units w/o LN	kW	44	60	78	99	122	159	188	221	254	
	Cooling capacity h/p units w/ LN	kW	41	56	75	92	117	157	180	214	245	
	EER w/ LN		2.87	2.84	3.06	3.00	2.90	2.99	2.92	2.92	2.92	
	SEER w/ LN		4.61	4.71	4.24	4.43	4.37	4.06	4.39	4.39	4.68	
	$\eta_{s,c}$ w/ LN		182	185	166	174	172	159	173	172	184	
	Heating capacity h/p units w/o LN	kW	50	61	87	99	132	161	191	231	256	
	Heating capacity h/p units w/ LN	kW	46	55	84	91	126	156	182	224	245	
	COP w/ LN		2.96	2.99	3.12	3.05	2.83	3.08	3.06	3.05	3.07	
	SCOP w/ LN		3.43	3.45	3.40	3.37	3.39	3.54	3.53	3.40	3.32	
	$\eta_{s,h}$ w/ LN		134	135	133	132	133	139	138	133	130	
Sound power level STD / LN (cooling)	dB(A)	79/73	81/76	80/76	82/77	83/79	85/80	86/81	86/81	87/82		
Refrigerant	Refrigerant circuits	#	1	1	2	2	2	3	3	4	4	
	Refrigerant charge (R410A)	kg	9.5	12.3	17.6	20.5	22.8	29.5	32	43.3	46	
Compressor	Type		DC Scroll Inverter + Scroll									
	Capacity steps	%	Stepless (Inverter)									
	Quantity		2	2	3	3	4	5	6	7	8	
Air side heat exchanger	Fan motor type		EC motor									
	Fans quantity		1	1	2	2	2	3	3	4	4	
	Working ambient temp. cooling mode		-18 ~ 48°C									
	Working ambient temp. heat. mode		-15 ~ 25°C									
Water side heat exchanger	Type		Plate Heat Exchanger									
	Unit water volume (w/o pump kit)	l	9	10	11	14	15	27	29	32	34	
	Pump Type		Fixed / Variable Speed Drive Pump				Variable Speed Drive Pump					
	Nominal water flow	l/s	2.0	2.7	3.6	4.4	5.6	7.5	8.6	10.2	11.7	
	Pressure drop (cooling)	kPa	28	22	25	26	34	24	30	38	36	
	Working range water leaving temp. cooling		-12 ~ 20°C									
	Working range water leaving temp. heating		25 ~ 55°C									
	Water connections type		Victaulic									
Dimensions and weight	Height (w/o pump kit)	mm	2440					2500				
	Width (w/o pump kit)	mm	1200					3050				
	Depth (w/o pump kit)	mm	1500			2240						
	Operating weight (w/o pump kit)	kg	587	610	893	920	999	1922	2003	2235	2316	
Electrical	Voltage/Phases/Frequency	V/ph/hz	400/3/50+E									

Net values at Eurovent nominal conditions:

Cooling capacities in kW given for 7°C water leaving temperature Δt 5°C and 35°C ambient temperature.

Heating capacities in kW given for 45°C water leaving temperature and 7°C ambient temperature.

SEER and SCOP calculated according to EN14511 and EN14825.

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Advanced Control Made Easy

Comfort, productivity, and up to half of the energy used in your building – these are all factors affected by how your chiller operates and how it interacts with other components in your HVAC/R system. To help maximize efficiency and keep you in control, the YORK® Amichi Series comes as standard with integrated Smart Equipment. This technology allows the equipment to connect seamlessly to building controls, such as our world-class Verasys™ system, where smart-enabled equipment can self-identify and interoperate.



Perfect solution for rental application

- Ambient operating range in cooling mode from -18 to 48°C
- Outstanding minimum leaving fluid temperature, down to -12°C
- Power quick connector CEE17 for main power (400/3/50, 3P+G) and 220V compressor heater (in chiller panel)
- Water quick connector Camlock (EN14420-7)
- Gate valves for water inlet/outlet connections
- Condenser coil: Gold fin pre-coating and wire mesh around coil

- Chiller IP54 and control panel IP55
- Low Sound compressor enclosure
- Available ESP up to 200 kPa at standard conditions
- Rental Panel (by request)
- Connected Service Kit (by request)
- Perfect solution for Ice-Rink rental applications

Note: please contact your JCI representative for getting your special quotation

Safety is our priority

The YORK® Amichi Series Air-Cooled DC Inverter Scroll Heat Pump is designed for safe operation. The new R454B refrigerant was chosen with safety and low toxicity in mind.

R454B has a 78 percent lower GWP value in comparison to R410A and is classified in safety class A2L (non-toxic and difficult to ignite).

This heat pump is equipped with refrigerant leakage sensors, additional switch cabinet ventilation, and software management for leak warning messages. With multiple functional and reliability tests, quality assurance is enhanced.

To maximise safety, the system design has been verified by a third-party certification body to increase customer peace of mind. The customized components together with our advanced technology, give absolute confidence.

		Refrigerants Safety Groups	
Flammability	Higher	A3	B3
	Lower	A2	B2
	Difficult to Ignite and Sustain	A2L	B2L
	No Flame Propagation	A1	B1
		Lower	Higher
		No identified toxicity at concentrations ≤ 400 ppm	Evidence of toxicity below 400 ppm
		Toxicity	

Source: ASHRAE Standard 34 Safety Classification



Customized hermetic scroll compressors designed for A2L refrigerant



Optimized plate heat exchanger, suitable for R454B application



A ventilation system installed inside the unit to ensure no A2L gas accumulates



Leakage detective sensor equipped to detect any gas leakage



Amichi Series

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Main features

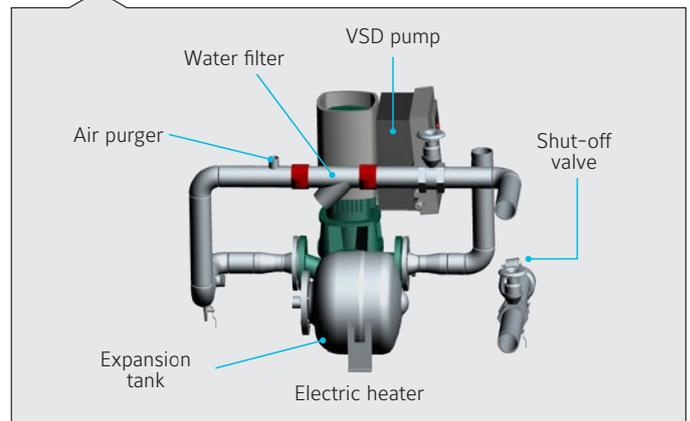
EC Fans

- High efficiency
- Low sound level
- Up to 50Pa available static pressure



Hydronic Kit

- Single fix speed pump hydronic kit or with variable speed **VSD**
- External available pressure up to **100 kPa (10m)** for fix speed pump
- External available pressure up to **150 kPa (15m)** for VSD pump



Easy installation

- Victaulic connections
- Water filter
- Flow switch
- Electrical heater on evaporator as standard

High performance and flexibility

The YORK® Amichi Series has up to 4 completely independent circuits to offer greater flexibility and performance.



YMPA 45 and 65
45kW and 65kW
2 compressors
1 circuit



YMPA 80 to 130
80kW, 100kW and 130kW
3-4 compressors
2 circuits



YMPA 160 and 200
160kW and 200kW
5-6 compressors
3 circuits



YMPA 230 and 260
230kW and 260kW
7-8 compressors
4 circuits

Amichi Series

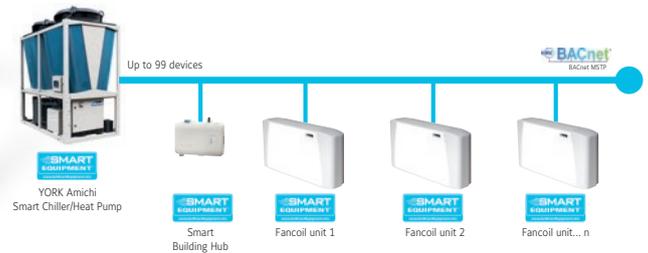
Air cooled Scroll DC Inverter reversible heat pump

Main features



Always connected

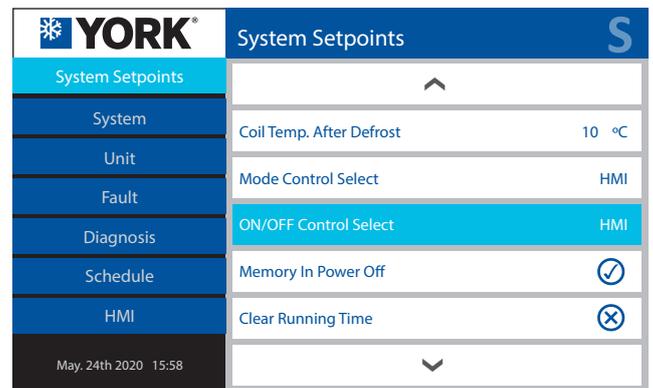
- BACnet and Modbus communication protocol as standard.



Easy to set up

Comfort, productivity and up to half of the energy used in your building – these are all factors affected by how your chiller operates and how it interacts with other components in your HVAC&R system.

To help maximize efficiency and keep you in control, the YORK® Amichi Series comes standard with integrated Smart Equipment. This technology allows the equipment to connect seamlessly to building controls where smart-enabled equipment can self-identify and interoperate. In addition, with the 7" Optiview LT touch panel, setting chiller parameters has never been easier.



Maximum reliability

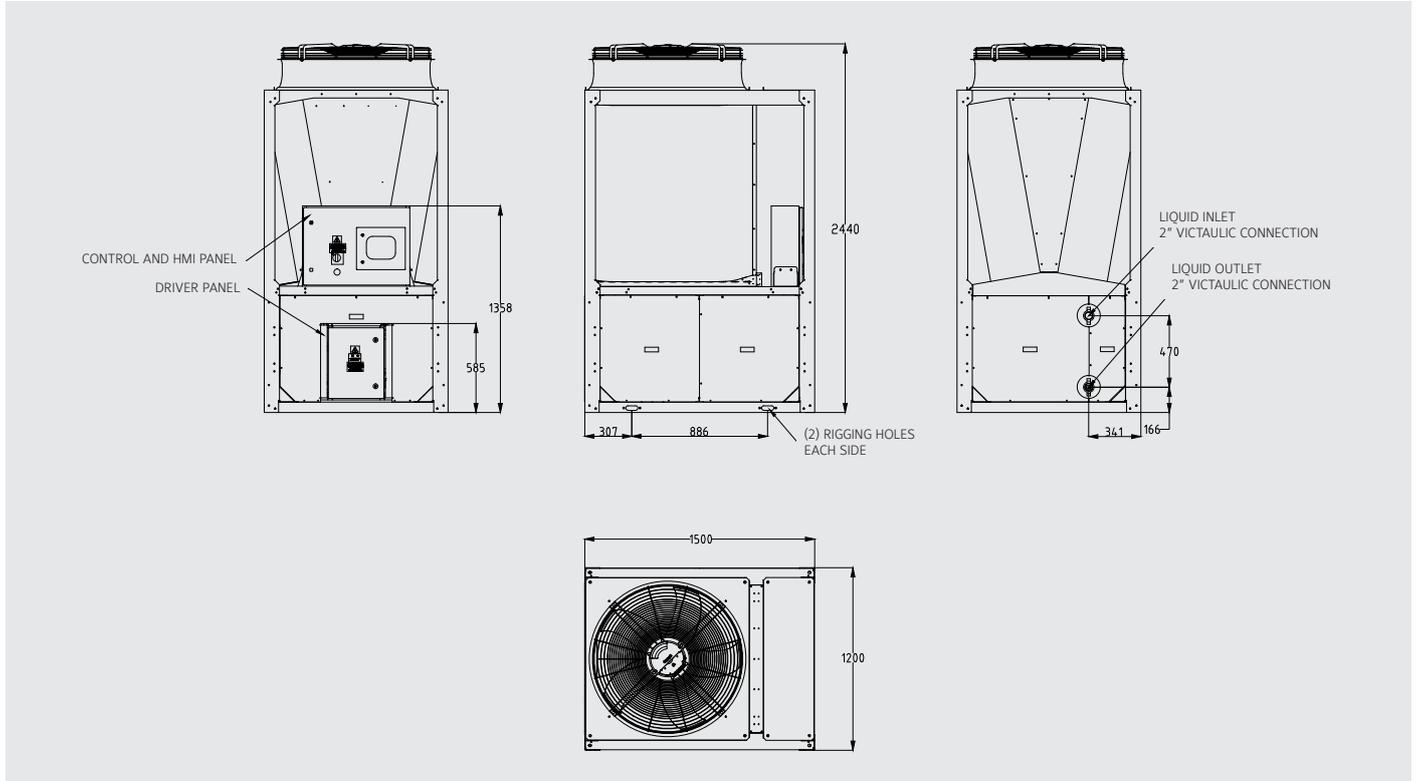
Every new YORK® chiller is subjected to a Highly Accelerated Life Test (HALT) during the design product development stages, allowing us to simulate a variety of extreme conditions and ensuring long-term operational reliability and quality. But our pursuit of quality doesn't stop there.

- **Intelligent defrost** optimizes the sequencing of the defrost cycle and allows the remaining modules in the system to continue to provide heat, reducing interruptions.
- **Compliance and certifications** include EcoDesign 2021 regulatory compliance, Eurovent certification and CE/PED certification.



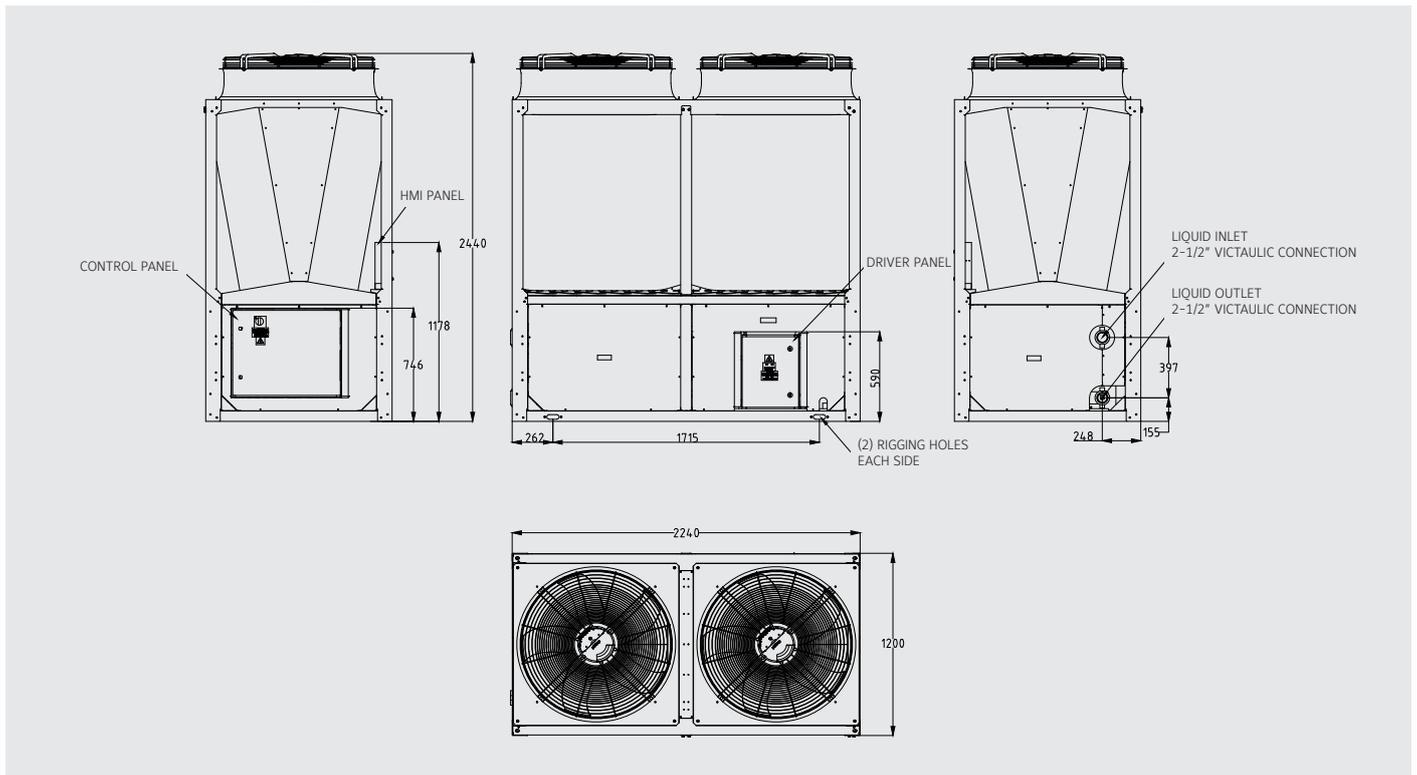
Dimensions and hydraulic connections

YMPA 045 and 065 Single unit



All dimensions in mm. Drawings not in scale.

YMPA 080 to 130 Single unit

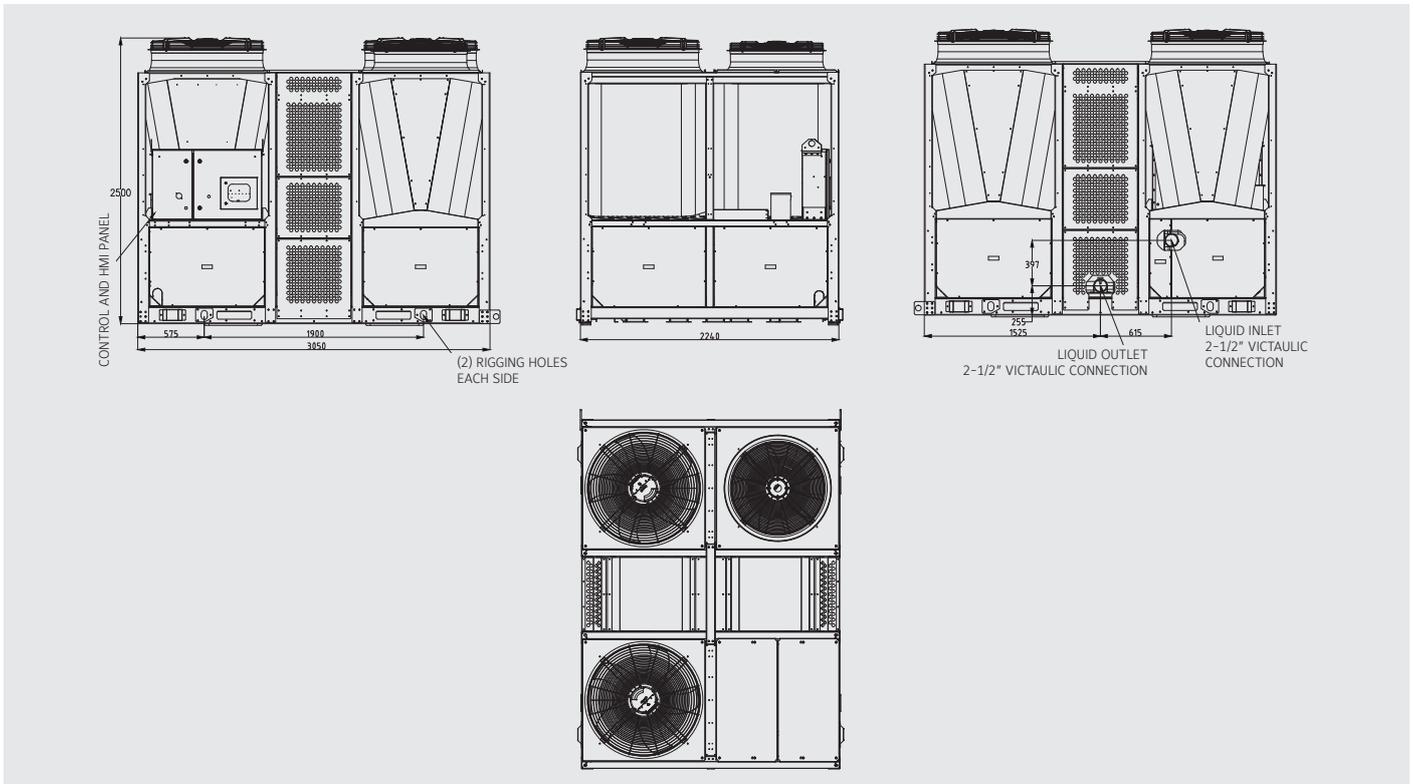


All dimensions in mm. Drawings not in scale.

YMPA 045 to 260

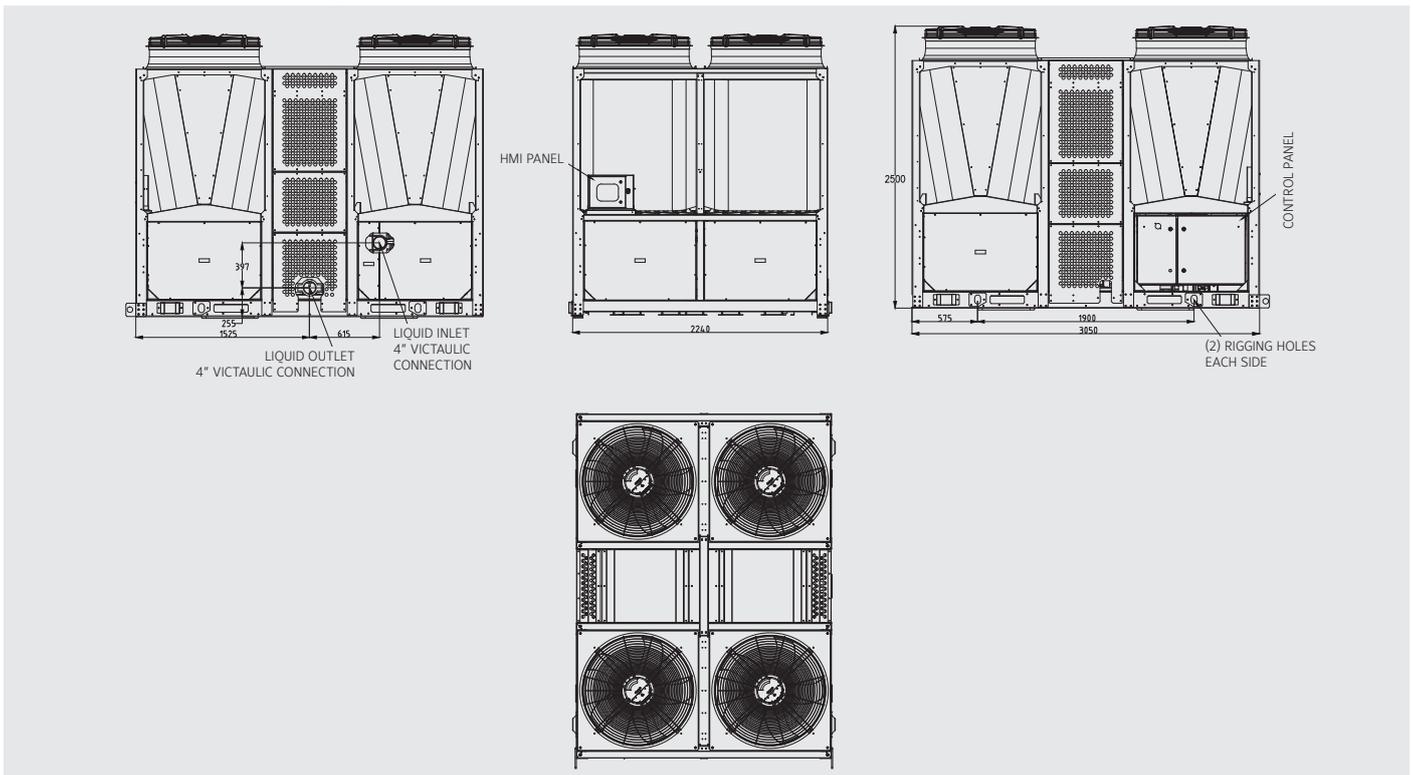


YMPA 160 and 200 Single unit



All dimensions in mm. Drawings not in scale.

YMPA 230 and 260 Single unit



All dimensions in mm. Drawings not in scale.