



GT AIR



TECHNICAL DATA SHEETS



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DIRECTORY



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GT AIR

AIR CONDITIONING



Air treatment and air movement are fundamental principles that must be considered in every cleanroom design. Filtration naturally plays an essential part in achieving classification, however, the methodology of moving air through that media must also be considered.

Added to air movement are the principles of air treatment or conditioning, this may include heating, cooling, humidification and dehumidification. The parameters to which these must be controlled and the accepted tolerances balanced against the constraints of the budget will be the guiding influence behind the decision-making process.

The following pages outline alternative HVAC methods with clear and detailed explanation of the differences between the system types and comparisons of benefits and compromises.

Let Guardtech take your operation to the next level.



AIR PHARMA

An elite solution delivering configurable air handling for Healthcare cleanrooms, combining HTM 03-01 aligned design, efficient EC fans and tailored filtration to support controlled, reliable ventilation for demanding facilities.



AIR MAX

Guardtech's elite-level HVAC solution – a range of high-performance air-cooled and water-cooled chillers that deliver a level of close control and large-scale facility competence unmatched by any other GT Air solution.



AIR PRO

A high-performance customised HVAC solution – these high-performance Air Handling Units (AHUs) provide optimum temperature and humidity conditions for a diverse range of applications.



AIR PLUS

A series of high-specification close control CRAC units that offer tight temperature and humidity conditions with a reduced plant footprint, offering significant benefits in terms of redundancy and maintenance.



AIR LITE

A range of high-capacity fan coil units that provide temperature control only, either directly ducted or used for distribution within a plenum above the cleanroom, laboratory or containment suite.



AIR FIRE

ATEX-rated air handling solutions for high-risk applications that also require classification and conditioning. For more information on your potential options, contact the Guardtech Commercial team via sales@guardtech.com.



AIR LAB

GT Air Lab delivers efficient heating and cooling for labs and cleanroom support spaces. Its compact wall-mounted design, adjustable airflow and quiet operation provide reliable indoor temperature control.





GT AIR PHARMA

An elite solution delivering configurable air handling for Healthcare cleanrooms, combining HTM 03-01 aligned design, efficient EC fans and tailored filtration to support controlled, reliable ventilation for demanding facilities.



quirements of each project.

The unit combines ISO 16890-rated filtration with EC fans as standard. Casing options address strength, airtightness, thermal performance and fire safety, including a Euroclass A fire rating.

Materials and internal details can be selected to limit corrosion, condensation and microbial growth while supporting effective inspection

and maintenance. GT Air Pharma can incorporate appropriate heating, cooling, heat recovery and controls to balance environmental performance with energy efficiency.

The solution is suited to Healthcare and Pharmaceutical facilities requiring a carefully coordinated ventilation system. Final filter stages, humidity provision, room pressure regimes and cleanroom classification must be defined through the project design and verified during commissioning.

GT Air Pharma is a healthcare-focused air handling solution designed for cleanrooms and other controlled environments where ventilation must be specified in

line with HTM 03-01 (2021). Its configurable construction supports the delivery of filtered, conditioned air while accommodating the airflow, temperature and pressure re-

TECHNICAL FEATURES



- Air handling unit designed to meet HTM 03-01 (2021) healthcare ventilation guidance
- Euroclass A fire rating
- Filtration specified in accordance with ISO 16890
- EC fans as standard
- T2/TB2 casing thermal performance and thermal bridging classification
- D2 casing strength as standard, with D1 available on request
- L2 factory and site airtightness classification, with L1 available on request
- Configurable heating, cooling, heat recovery and control options
- Construction designed to address corrosion, condensation and microbial growth



Stay in control



GT Air Pharma can be integrated with remote monitoring to give facilities teams a view of HVAC performance. Live dashboards, reporting and diagnostic tools help track operating conditions, identify unusual behaviour and plan maintenance before faults disrupt critical spaces. Monitoring capabilities depend on the selected controls and connectivity, with the final scope tailored to the cleanroom's operational and compliance requirements. Where enabled, alerts can notify responsible personnel promptly, supporting faster investigation, informed decisions and a more proactive approach to servicing.

BENEFITS

- Designed for healthcare ventilation projects specified to HTM 03-01 (2021)
- EC fans and optional heat recovery support energy efficiency
- ISO 16890 filtration can be specified
- Euroclass A fire rating and documented casing performance
- Construction considers corrosion, condensation and microbial growth

COMPROMISES

- Requires more detailed specification than a standard comfort-cooling unit
- Needs plant space, ductwork and coordinated controls
- Higher likely capital cost than GT Air Lab or GT Air Lite
- Maintenance access and filter replacement must be planned into the installation

APPLICATIONS



Pharmaceuticals



Cell & Gene



Healthcare



GT Air Pharma suits the most demanding of applications, typically where temperature & humidity need to be controlled to extremely tight tolerances. Bespoke air handling units provide a high degree of flexibility in regard to component specification, ensuring that quality and consistency of air delivery can be achieved.



GT AIR MAX

Guardtech's elite-level HVAC solution – a range of high-performance air-cooled and water-cooled chillers that deliver a level of close control and large-scale facility competence unmatched by any other GT Air solution.

High efficiency, low noise and close control are the hallmarks of the GT Air Max air-cooled chiller range.

A robust portfolio of options features a wide operating map – so we can find the ideal solution for your facility. Guardtech Group offer an array of tonnage sizes, efficiencies and performance features to meet your requirements. As part of a complete HVAC system supplied by Guardtech, GT Air Max can deliver exceptional close control tolerance

of at least $20^{\circ}\text{C} \pm 0.1^{\circ}\text{C}$ and relative humidity of $\pm 1\%$, helping to achieve the level of performance that your process requires.

You define the outcomes, and we'll get you there. GT Air Max air-cooled chillers give you the flexibility to choose from a wide range of capacities and features.

From outstanding efficiency to amazing acoustics, occupant comfort and well-being. You can have it all – in varying degrees!



AIR-COOLED CHILLERS

TECHNICAL FEATURES



GT Air Max air-cooled chillers deliver amazing efficiency under all operating conditions, plus

free cooling in units up to 550 tons. The GT Air Max Ascend Model ACR can maximise savings,

especially in spaces that require more energy. An optional harmonic filtration system utilises a matrix filter design to meet the requirements of IEEE@ 519, while also reducing harmonic distortion to 5% (or less) total demand distortion (TDD).

The environmentally conscious free-cooling option takes advantage of cooler ambient air temperature to reduce energy consumption.

PRODUCT FEATURES

SUSTAINABILITY

High efficiency solution with optional free cooling. No cooling toward helps to conserve water usage.

PRECISION

Maintains temperatures within tight tolerances.

ACOUSTICAL PERFORMANCE

Acoustical data used to help system designers achieve appropriate sound levels for any context.

RELATIVE LOW COST

Best performance for your budget guaranteed with long-lasting reliable HVAC solution.



PRODUCT FEATURES

CAPACITY COVERED

Broad range of cooling capacities – from 150 to 430 tons.

ENERGY EFFICIENCY

Up to 39 percent better than the industry standard requires.

ULTIMATE CONTROL

Tracer controls are integrated with an easy-to-use 7-inch color touch-screen display that shows vital, at-a-glance information about current chiller performance.



WATER-COOLED CHILLERS

The Guardtech Group offer a comprehensive portfolio of GT Air Max water-cooled chillers. This innovative product line-up meets a variety of application challenges.

The CenTraVac® chiller (above) is one of the industry's quietest, most reliable and efficient low-emission chillers. Critical industrial and

low-temperature process cooling requires precision — precision that GT Air Max chillers excel at providing.

The combination of sophisticated controls, compressors and expansion valve technology can deliver exceptionally precise chilled water temperature control, with variance as tight as 0.3°C .



RELIABLE, LOW-MAINTENANCE OPERATION

Designed to make costs as low as possible with reliable, low-maintenance operation you can depend on.

BENEFITS

- Exceptional close control tolerance of at least $20^{\circ}\text{C} \pm 0.1^{\circ}\text{C}$ and relative humidity of $\pm 1\%$
- Highly energy efficient and sustainable option
- Engineered to deliver excellent acoustical performance
- Relatively low running costs for large-scale facility management

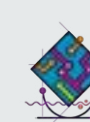
COMPROMISES

- More expensive solution than GT Air Plus and Lite
- Longer lead times than GT Air Plus and Lite
- Not suitable for smaller applications
- Requires substantial roof or exterior plant space for housing

APPLICATIONS



Pharmaceuticals



Semiconductor



Graphene



Cell & Gene



Battery



Laser & Optical

GT Air Max suits the most demanding of applications, typically where temperature & humidity need to be controlled to extremely tight tolerances. Bespoke air handling units provide a high degree of flexibility in regard to component specification, ensuring that quality and consistency of air delivery can be achieved.





GT AIR PRO

A high-performance customised HVAC solution – these high-performance Air Handling Units (AHUs) provide optimum temperature and humidity conditions for a diverse range of applications.



GT Air Pro is a bespoke air handling solution designed around the airflow and conditioning requirements of each cleanroom. Built to suit the space and access, its configurable construction allows filtration, heating, cooling and heat recovery components to be specified for the application.

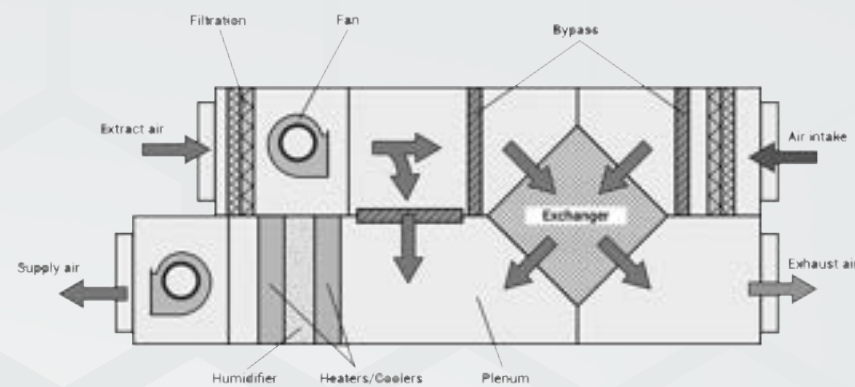
Supply and extract arrangements can be tailored to the room layout, with options including stainless steel construction, double-wall panels and thermal breaks. Fans and heat recovery can help reduce energy demand, while integrated controls allow the

unit to connect with a building management system. Filter pressure monitoring and sound attenuation can be incorporated where required. Units can be supplied in sections or assembled on site, providing flexibility for restricted plant areas and refurbishment projects.

As part of a cleanroom HVAC design, GT Air Pro supports controlled air delivery, temperature management and room pressurisation. Final filtration, humidity control and performance tolerances are established according to the project specification.



AIR HANDLING UNITS EXPLAINED



Air Handling Units (AHUs) collect **Air Intake** from outside, which is then treated and distributed throughout the cleanrooms and/or indoor air that is "recycled". Depending on the

air purity requirements, the **Filter** applied will have a higher or lower particle retention level – countering viruses, bacteria, odours, and other air pollutants.

The **Fan** forms part of the electromechanical system that powers the air, expelling it from the AHU to the ducts which distribute it throughout the rooms.

Heat exchangers transfer temperature between two fluids, such as coolant and air, separated by a solid barrier.

The air passing through a **Cooling Coil** module is cooled.

Water droplets can be generated, which are then collected in a condensate tray thanks to a built-in droplet separator. Coatings that considerably reduce the sound level of the installation are known as **Silencers**. The empty spaces in which airflow is homogenised are called **Plenums**.



PRODUCT FEATURES

- Bespoke air handling units designed to project specifications
- Configurable supply and extract airflow
- Optional heating, cooling and heat recovery sections
- Choice of energy-efficient fans
- Filtration tailored to the cleanroom design
- Controls that can be integrated with a building management system
- Optional filter differential-pressure monitoring
- Stainless steel construction available
- Double-wall panels and thermal-break options
- Optional built-in or separate sound attenuation
- Sectional or flat-pack delivery for restricted access
- On-site assembly and refurbishment options



BENEFITS

- Bespoke design to suit each cleanroom's airflow, filtration and conditioning requirements
- Centralised air handling for multiple rooms
- Optional efficient fans and heat recovery
- Sectional or flat-pack delivery for restricted access
- Service access and optional filter-pressure monitoring
- Supports facility's airflow and pressure strategy

COMPROMISES

- Requires detailed design and coordination with ductwork and controls
- Needs plant space and ductwork route
- Typically involves a longer procurement and installation process than local units
- Likely to cost more than GT Air Lab or GT Air Lite
- May create a single point of failure unless redundancy is specified

APPLICATIONS



Medical Device



Healthcare



Oil & Gas



Cell & Gene



Battery



Laser & Optical

GT Air Pro suits a wide variety of applications in a diverse range of sectors. Whilst it may not boast the same capacity for catering to the needs of the largest-scale facilities as GT Air Max, as an air handling solution GT Air Pro has the capability to cover the same spectrum of demanding applications.



GT AIR PLUS

A series of high-specification close control CRAC units that offer tight temperature and humidity conditions with a reduced plant footprint, offering significant benefits in terms of redundancy and maintenance.



GT Air Plus delivers precision cooling and environmental control for cleanrooms, laboratories and process spaces. This air-cooled direct expansion system removes heat from indoor air and rejects it outdoors through a remote condenser, making it suitable for facilities where a water-cooled heat rejection circuit is unavailable.

Inverter scroll compressors and efficient EC fans help match output to changing cooling loads. The range offers cooling capacities from 5.6kW to 104.6kW, with stated control accuracy of $\pm 1^{\circ}\text{C}$ for temperature and $\pm 5\%$ for relative

humidity when appropriately configured. Forced dehumidification is included, while an electrode humidifier and electric heater are optional.

Upflow or downflow supply arrangements provide flexibility for different room layouts. An isolated technical compartment supports maintenance, and system monitoring aids fault diagnosis. Optional indirect free cooling can reduce compressor run time when conditions allow. Cleanroom filtration, airflow and pressure must be designed alongside GT Air Plus to meet the intended classification.



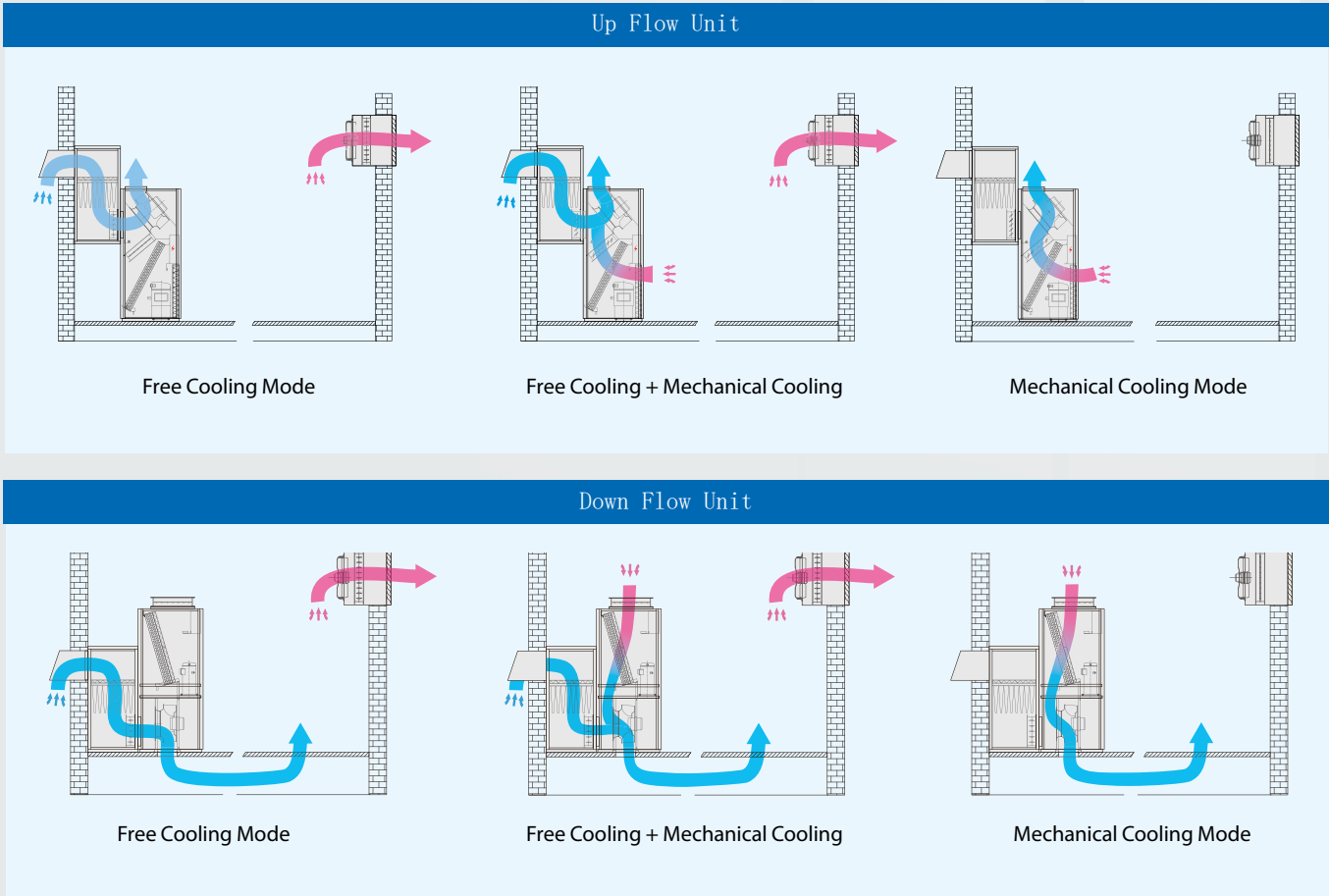
TECHNICAL FEATURES

- Air-cooled direct expansion (DX) cooling with an outdoor condenser
- 5.6–104.6 kW cooling capacity across the range
- Inverter scroll compressor and energy-efficient EC supply fans
- Stated control accuracy of $\pm 1^{\circ}\text{C}$ for temperature and $\pm 5\%$ RH with appropriate configuration
- Forced dehumidification, with an optional electrode humidifier
- Optional electric heater
- Upflow or downflow air supply, with top, bottom, front or rear return-air options
- Washable G4 filter as standard
- Corrosion-protected frame and a separate technical compartment for maintenance
- Power monitoring and self-diagnostics
- Optional free-cooling and dual cooling-source configurations

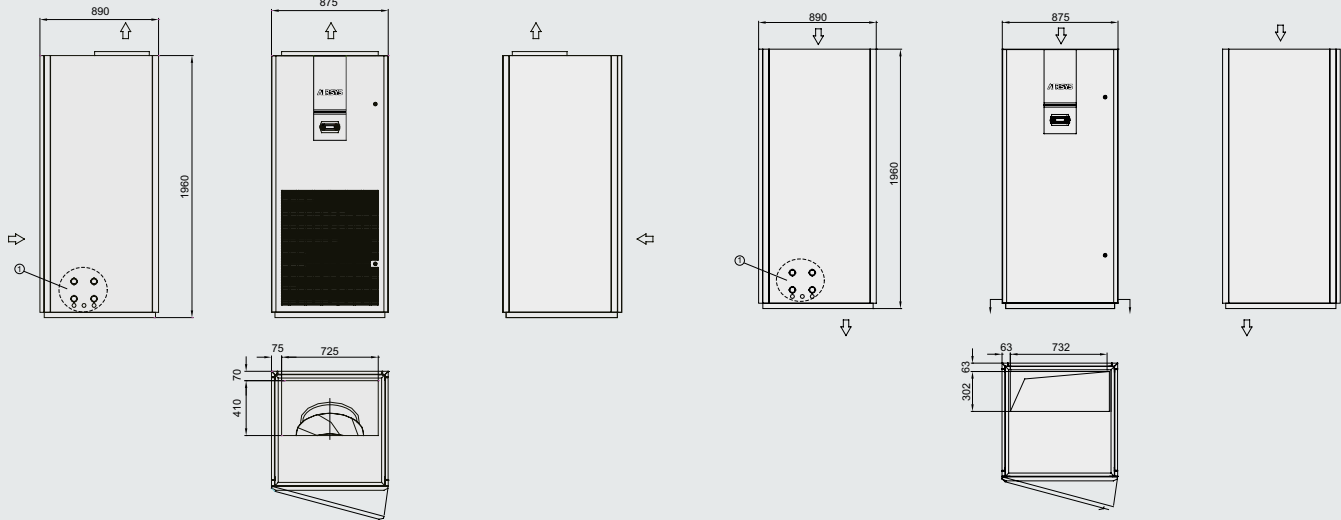


TECHNICAL DRAWINGS

Direct Free Cooling (DFC)



DIMENSION DRAWINGS



	A1	A2	A3	A4	A5
WIDTH/mm	875	1480	1750	2490	3095
DEPTH/mm	890	890	890	890	890
HEIGHT/mm	1960	1960	1960	1960	1960

	A1	A2	A3	A4	A5
WIDTH/mm	875	1480	1750	2490	3095
DEPTH/mm	890	890	890	890	890
HEIGHT/mm	1960	1960	1960	1960	1960

Unit model		16V1A1	20V1A1	25V1A1	30V1A2	35V1A2	40V1A3
Supply air scheme(1)		O/U					
Cooling capacity							
Total (2)	kW	16.3	22.3	25.1	30.2	36.9	40.6
Sensible (2)	kW	15.0	20.7	23.3	27.5	34.0	38.2
Total (3)	kW	17.9	24.5	27.6	33.2	40.6	44.7
Sensible (3)	kW	16.0	22.2	24.9	29.4	36.4	40.9
Compressor							
Type		Hermetic inverter scroll					
Power input (2)	kW	4.2	5.9	7.1	7.9	9.2	10.6
Current (2)	A	6.8	9.5	11.4	12.7	14.7	17
Max power input (4)	kW	6.8	11.5	11.5	13.7	15.2	11.5
Max current input (4)	A	10.9	18.4	18.4	22.0	24.5	18.5
Supply fan							
Type		Caseless backward EC centrifugal fan					
Qty. of fan	n.	1	1	1	1	1	2
Air volume	m³/h	5750	6500	7300	8800	9600	12600
Extra pressure (5)	Pa	Standard ESP is 75Pa, adjustment range is 50~300Pa					
Power input	kW	1.1	1.25	1.46	1.7	2.0	2.4
Current	A	1.7	2	2.3	2.6	3.	3.7
Condenser fan (3)							
MAE Model		AMAE5	AMAE6	AMAE8	AMAE10	AMAE12	AMAE15
Quantity	n.	1	1	1	1	1	1
Electric heater							
Type	kW	6	6	9	9	9	13.5
Heating capacity	A	9.1	9.1	13.5	13.5	13.5	20.4
Working steps	n.	2	2	2	2	2	2
Humidifier							
Type		Electrode					
Capacity	kg/h	3	3	5	5	5	8
Power input	kW	2.3	2.3	3.8	3.8	3.8	5.9
Current	a	3.4	3.4	5.7	5.7	5.7	9
Power supply							
Power supply		380V/3Ph/50Hz					
Unit maximum operating power input(6)	kW	17.0	21.7	24.7	26.9	33.6	33.4
Unit maximum operating current (6)	A	28.6	36.1	40.5	44.1	56.5	56.1
Air filter							
		G4/plate					
Unit piping connection							
Humidifier water supply	in	1/2					
Condensing water drainage	in	3/4					
Gas pipe	mm	19	22	22	22	22	2x22
Liquid pipe`	mm	12.7	12.7	12.7	16	16	2x12.7
Unit dimension and weight							
Width	mm	875	875	1480	1480	1480	1750
Depth	mm	890	890	890	890	890	890
Height	mm	1960	1960	1960	1960	1960	1960
Weight	kg	280	320	380	420	460	525



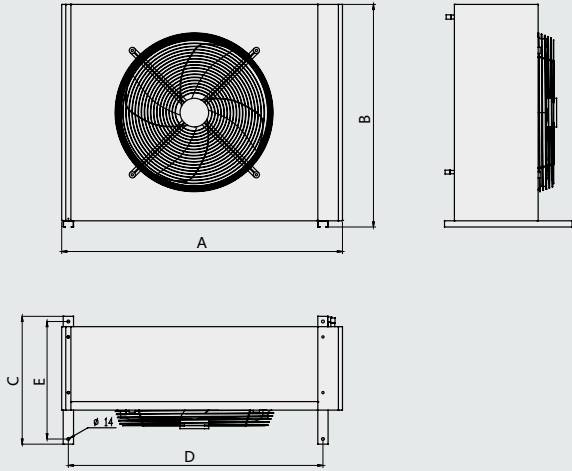
Unit model		45V2A3	55V2A3	60V2A4	70V2A4	80V2A4	90V2A5	100V2A5
Supply air scheme(1)		O/U						
Cooling capacity								
Total (2)	kW	45.0	55.0	61.6	70.8	80.3	90.3	100.8
Sensible (2)	kW	41.5	50.2	56.1	64.4	72.3	82.1	93.5
Total (3)	kW	49.5	60.5	67.8	77.9	88.3	99.3	110.9
Sensible (3)	kW	44.4	53.7	60.0	68.9	77.3	87.9	100.0
Compressor								
Type		Hermetic inverter scroll circuit 1, hermetic fixed speed scroll circuit 2						
Power input (2)	kW	12	13.9	16.2	18.2	20.5	22.2	27.6
Current (2)	A	19.2	31.3	33.5	36.3	40.3	42.5	50.3
Max power input (4)	kW	11.5	13.7	13.7	15.2	15.2	16.7	21
Max current input (4)	A	18.5	22	22.0	24.5	24.5	27	31
Supply fan								
Type		Caseless backward EC centrifugal fan						
Qty. of fan	n.	2	2	3	3	3	3	3
Air volume	m³/h	13200	13600	17800	19200	24000	26000	27900
Extra pressure (5)	Pa	Standard ESP is 75Pa, adjustment range is 50~300Pa						
Power input	kW	2.5	2.7	3.4	3.7	5.1	5.6	6.4
Current	A	3.9	4.1	5.2	5.7	7.8	8.7	9.9
Condenser fan (3)								
MAE Model		AMAE6	AMAE8	AMAE10	AMAE12	AMAE15	AMAE18	AMAE20
Quantity	n.	2	2	2	2	2	2	2
Electric heater								
Type	kW	13.5	13.5	18	18	18	18	18
Heating capacity	A	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Working steps	n.	2	2	2	2	2	2	2
Humidifier								
Type		Electrode						
Capacity	kg/h	8	8	8	8	8	8	8
Power input	kW	5.9	5.9	5.9	5.9	5.9	5.9	5.9
Current	a	9	9	9	9	9	9	9
Power supply								
Power supply		380V/3Ph/50Hz						
Unit maximum operating power input (6)	kW	33.4	35.6	43.6	46.5	46.5	48.0	52.3
Unit maximum operating current (6)	A	56.1	59.6	72.1	74.6	74.6	77.1	81.1
Air filter								
		G4/plate						
Unit piping connection								
Humidifier water supply	in	1/2						
Condensing water drainage	in	3/4						
Gas pipe	mm	2x22	2x22	2x22	2x25.4	2x25.4	2x25.4	2x25.4
Liquid pipe`	mm	2x12.7	2x16	2x16	2x16	2x19	2x19	2x19
Unit dimension and weight								
Width	mm	1750	1750	2490	2490	2490	3095	3095
Depth	mm	890	890	890	890	890	890	890
Height	mm	1960	1960	1960	1960	1960	2050	2050
Weight	kg	530	550	700	770	790	980	1000



Unit model		16V1A1	20V1A1	26V1A1	30V1A2	35V1A2	40V1A3
Supply air scheme(1)		O/U					
Cooling capacity							
Total (2)	kW	18.2	23.0	28.9	34.0	37.0	41.3
Sensible (2)	kW	16.4	20.7	26.0	30.6	33.3	37.2
FC unit free cooling/DC unit cooling coil capacity							
Total (3)	kW	18.6	22.9	29.6	37.3	40.5	43.6
Sensible (3)	kW	16.7	20.6	26.3	33.2	36.0	39.7
DFC unit free cooling capacity							
Free cooling (4)	kW	9.7	10.7	15.0	16.2	16.2	21.3
Free cooling (5)	kW	19.4	21.3	30.1	32.4	32.4	42.5
Compressor							
Type		Hermetic inverter scroll					
Power input (2)	kW	3.6	4.6	5.8	7.0	7.5	8.5
Supply fan							
Type		Caseless backward EC centrifugal fan					
Qty. of fan	n.	1	1	1	1	1	2
Air volume	m³/h	5750	6320	8900	9600	9600	12600
External static (7)	Pa	Standard ESP is 75Pa, adjustment range is 50~300Pa					
Power input	kW	1.0	1.2	1.4	1.7	1.7	2.4
Noise level (8)							
	dB	63	63	63	66	66	66
Electric heater							
Type		Stainless steel					
Heating capacity	kW	6	6	9	9	9	13.5
Working steps	n.	2	2	2	2	2	2
Air filter							
		G4/plate					
Humidifier							
Type		Electrode					
Capacity	kg/h	3	3	5	5	5	8
Power input	kW	2.3	2.3	3.8	3.8	3.8	5.9
Air condenser (10)							
Model*Qty		AMAE5*1	AMAE6*1	AMAE8*1	AMAE10*1	AMAE12*1	AMAE15*1
Dry cooler (only available for FC unit)							
Model		CMEH20	CMEH30	CMEH30	CMEH40	CMEH50	CMEH60
Qty		1	1	1	1	1	1
FC unit free cooling coil/DC unit chilled water coil							
Water flow	m³/h	3.2	4.1	5.2	6.7	7.1	7.5
Pressure drop	kPa	54.2	45.2	56.4	63.1	69.2	56.7
DFC unit fresh air inlet box (11)							
Model*Qty		S1*1	S1*1	S2*1	S2*1	S2*1	S1*2
DFC unit air outlet box (12)							
Model*Qty		B*1	B*1	B*1	B*1	B*1	B*2
Power supply							
Power source		380V/3Ph/50Hz					

Unit model		45V2A3	50V2A3	60V2A3	70V2A4	80V2A4	90V2A5	100V2A5
Supply air scheme(1)		O/U						
Cooling capacity								
Total (2)	kW	48.3	52.3	65.6	73.5	84.7	93.7	102.3
Sensible (2)	kW	43.5	47.1	59.0	66.2	76.2	84.3	92.1
FC unit free cooling/DC unit cooling coil capacity								
Total (3)	kW	55.2	55.2	63.1	77.5	84.1	102.5	116.2
Sensible (3)	kW	50.2	50.2	57.4	70.5	75.7	92.3	104.6
DFC unit free cooling capacity								
Free cooling (4)	kW	23.0	23.0	30.1	32.4	35.5	41.5	47.1
Free cooling (5)	kW	45.9	45.9	60.1	64.8	70.9	83.1	94.2
Compressor								
Type		Hermetic inverter scroll circuit 1, hermetic fixed speed scroll circuit 2						
Power input (2)	kW	9.6	10.6	12.9	14.8	17.3	19.1	19.8
Supply fan								
Type		Caseless backward EC centrifugal fan						
Qty. of fan	n.	2	2	3	3	3	3	3
Air volume	m³/h	12600	13600	17800	19200	21000	24600	27900
External static (7)	Pa	Standard ESP is 75Pa, adjustment range is 50~300Pa						
Power input	kW	2.4	2.8	3.6	3.9	4.0	4.2	5.1
Noise level (8)								
	dB	66	66	69	69	69	69	69
Electric heater								
Type		Stainless steel						
Heating capacity	kW	13.5	13.5	18	18	18	18	18

AIR-COOLED
CONDENSER

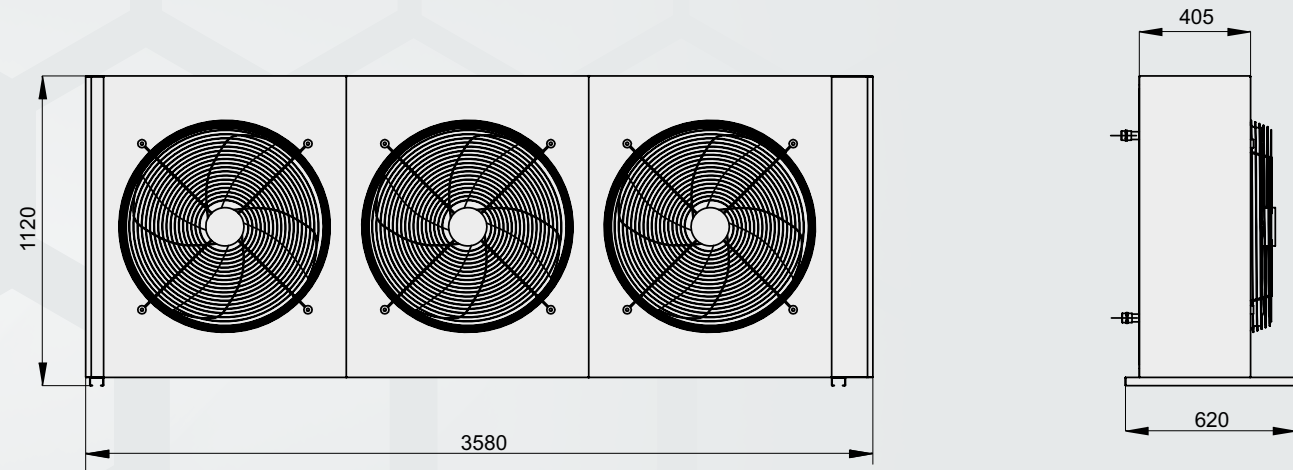


	AMAE5	AMAE6	AMAE8	AMAE10	AMAE12	AMAE15	AMAE18	AMAE20
A	1365	1365	1665	1665	1985	1985	2785	2785
B	1080	1080	1080	1080	1080	1080	1080	1080
C	620	620	620	620	620	620	620	620
D	1237	1237	1537	1537	1857	1857	2657	2657
E	570	570	570	570	570	570	570	570

AMAE

Unit model		AMAE5	AMAE6	AMAE8	AMAE10	AMAE12	AMAE15	AMAE18	AMAE20
Capacity (1)	kW	24.2	29.7	36.2	41.3	50.7	57.2	62.4	74.3
Fan									
Qty. of fan	n.	1	1	1	1	2	2	2	2
Air flow rate	m³/h	12500	11600	11800	11500	23500	22000	23400	22600
Power supply									
Input power	kW	0.63	0.63	0.63	0.63	1.26	1.26	1.26	1.26
Input current	A	2.8	2.8	2.8	2.8	5.6	5.6	5.6	5.6
Connection tube size									
Gas pipe	mm	19	19	19	22	22	22	22	28
Liquid pipe	mm	16	16	16	16	16	16	19	19
Unit external dimensions and weight									
Width	mm	1365	1365	1665	1665	1985	1985	2785	2785
Depth	mm	620	620	620	620	620	620	620	620
Height	mm	1080	1080	1080	1080	1080	1080	1080	1080
Weight	kg	60	73	92	109	130	139	163	177

(1)The capacity is rated at entering air temperature 35°C and condensing temperature 50°C condition.



PROJECT
EXAMPLES



BENEFITS

- Close control of $\pm 1^{\circ}\text{C}$ temperature and $\pm 5\%$ RH accuracy when appropriately configured
- 5.6–104.6 kW of cooling covers a variety of room sizes and process loads
- Inverter compressors and EC fans adjust output as demand changes
- Upflow and downflow versions offer several return-air arrangements

COMPROMISES

- Inferior control tolerances compared to GT Air Pro, Max and Pharma
- Requires space for the indoor unit, outdoor condenser and associated services
- More complex to install and commission than GT Air Lab or Lite
- Humidification, heating and free cooling depend on the chosen configuration

APPLICATIONS



Cosmetics



Automotive



Horticulture



Digital Printing



Aerospace



Manufacturing

GT Air Plus is a robust cleanroom air handling solution suitable for a number of different industries using controlled environments as part of their process. Whilst it doesn't offer the same level of close control that GT Air Max and Pharma can achieve, it's a versatile, cost-effective alternative for less demanding needs.



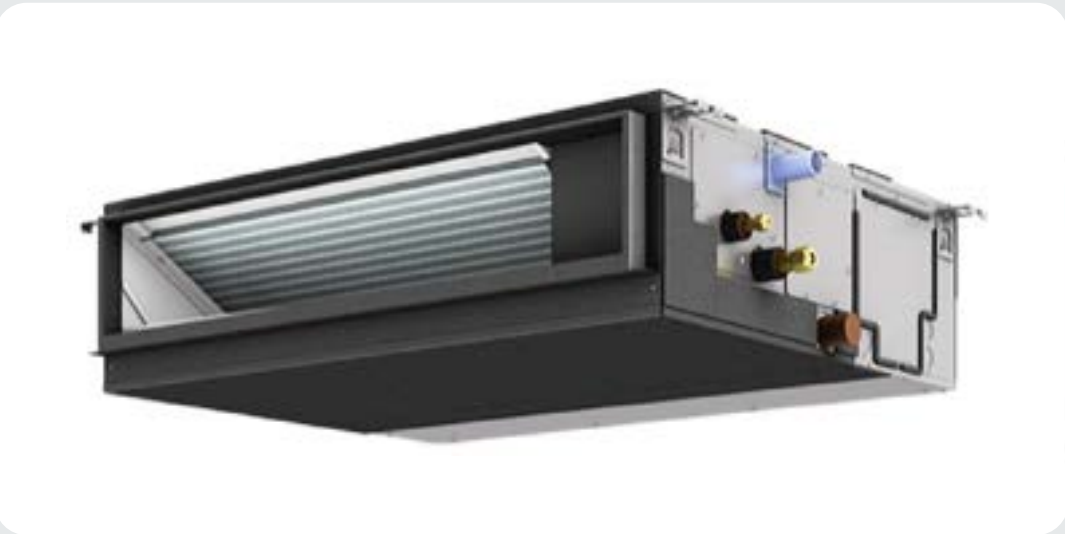
GT AIR LITE

A range of high-capacity fan coil units that provide temperature control only, either directly ducted or used for distribution within a plenum above the cleanroom, laboratory or containment suite.

GT Air Lite brings discreet heating and cooling to cleanroom support spaces through a compact, ceiling concealed ducted system. At just 250mm high, the indoor unit can be accommodated above the ceiling, helping keep the working environment clear while allowing access for maintenance.

The Power Inverter heat pump offers a choice of capacities to suit different room sizes, with adjustable external static pressure settings for ductwork design.

An improved fan motor supports efficient operation,



while advanced airflow and smart defrost functions help maintain comfort for operators working within the controlled environment.

A drain pump is included

as standard, and the wired room controller can display energy usage. GT Air Lite can be specified as part of a wider cleanroom climate control strategy, providing heating and cooling where the project

design calls for it. Air filtration, room pressure and cleanliness should be addressed through the overall HVAC design to meet each cleanroom's specific requirements and operating conditions.

TECHNICAL SPECIFICATION

PEAD-M INDOOR UNITS		PEAD-M35JA2	PEAD-M50JA2	PEAD-M60JA2	PEAD-M71JA2	PEAD-M100JA	PEAD-M125JA	PEAD-M140JA
CAPACITY (kW)	Heating (nominal)	4.1 (1.6-5.2)	6.0 (2.5-7.3)	7.0 (2.8-8.2)	8.0 (3.5-10.2)	11.2 (2.7-14.0)	14.0 (3.2-16.0)	16.0 (3.70-18.0)
	Cooling (nominal)	3.6 (1.6-4.5)	5.0 (2.3-5.6)	6.1 (2.7-6.7)	7.1 (3.3-8.1)	9.5 (4.9-11.4)	12.5 (5.1-14.0)	13.4 (5.40-15.0)
	Heating (UK)	3.5 (1.35-4.4)	5.1 (2.15-6.2)	5.95 (2.4-6.95)	6.8 (3.0-8.65)	8.4 (2.025-10.5)	10.5 (2.4-12.0)	12.0 (2.775-13.5)
	Cooling (UK)	3.3 (1.45-4.15)	4.6 (2.1-5.15)	5.5 (2.5-6.15)	6.55 (3.05-7.45)	9.025 (4.655-10.83)	11.88 (4.85-13.3)	12.73 (5.13-14.25)
SHF (nominal)		0.85	0.84	0.83	0.80	0.82	0.78	0.77
COP / EER (nominal)		4.50 / 4.30	4.40 / 4.20	4.40 / 4.10	4.20 / 4.00	4.40 / 4.20	3.72 / 3.70	3.90 / 3.62
SCOP (nsh) / SEER (nsc) (BS EN14825)		4.1 (161.6%) / 6.3 (278.9%)	4.4 (174.1%) / 6.4 (274.1%)	4.2 (165.8%) / 6.2 (264.9%)	4.3 (170.1%) / 6.3 (265.6%)	4.40 / 6.60	4.18 (164.5%) / 6.68 (264.1%)	4.16 (163.2%) / 6.53 (258.3%)
ErP ENERGY EFFICIENCY CLASS	Heating/Cooling	A / A++	A+ / A++	A+ / A++	A+ / A++	A+ / A++	-	-
AIRFLOW (l/s)	Lo-Mi-Hi	167-200-233	200-242-283	242-300-350	242-300-383	383-466-533	466-566-616	491-591-666
PIPE SIZE mm (in)	Gas	12.7 (1/2")	12.7 (1/2")	15.88 (5/8")	15.88 (5/8")	15.88 (5/8")	15.88 (5/8")	15.88 (5/8")
	Liquid	6.35 (1/4")	6.35 (1/4")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")
EXTERNAL STATIC PRESSURE (Pa)		35-50-70-100-150	35-50-70-100-150	35-50-70-100-150	35-50-70-100-150	40-50-70-100-150	40-50-70-100-150	40-50-70-100-150
SOUND PRESSURE LEVEL (dBA)	Lo-Mi-Hi	24-29-32	27-33-35	26-32-35	26-32-37	31-36-39	35-39-41	34-38-41
SOUND POWER LEVEL (dBA)		54	58	56	58	62	66	66
DIMENSIONS (mm)	Width x Depth x Height	900 x 732 x 250	900 x 732 x 250	1100 x 732 x 250	1100 x 732 x 250	1400 x 732 x 250	1400 x 732 x 250	1600 x 732 x 250
WEIGHT (kg)		25	26.5	29.5	29.5	37	38	42
ELECTRICAL SUPPLY		Fed by Outdoor Unit	Fed by Outdoor Unit	Fed by Outdoor Unit	Fed by Outdoor Unit	Fed by Outdoor	Fed by Outdoor	Fed by Outdoor
FUSE RATING (BS88) - HRC (A)		6	6	6	6	6	6	6
INTERCONNECTING CABLE No. CORES		4	4	4	4	4	4	4
WIRED REMOTE CONTROLLER REFERENCE		PAR-41MAA	PAR-41MAA	PAR-41MAA	PAR-41MAA	PAR-41MAA	PAR-41MAA	PAR-41MAA



TECHNICAL DRAWING



Designed for easy installation in ceiling or bulkhead spaces, ducted heat pumps are largely hidden from view, with only subtle grilles visible.

Using concealed ducting to connect multiple rooms for heating or cooling, these systems are ideal for a wide range of applications.

BENEFITS

- Quiet alternative that is largely hidden from view – with only subtle air grilles visible
- Ideal for heating or cooling a large number of rooms at once
- Includes a Deluxe PAR wired controller with backlit LCD display and user-friendly menus
- Suits virtually all room layouts airflow-wise
- More cost-effective than GT Air Max and Pro



PRODUCT FEATURES

FRESH AIR VENTILATION

The system recovers energy from stale air to pre-heat or pre-cool incoming fresh air, reducing the amount of additional heating or cooling required.

UNOBTRUSIVE

Ducted units are the ultimate hidden heating and cooling solution with only grilles visible.

EASY INSTALLATION

Versatile and easy installation is possible – adjust the distance between the air-intake and air-outlet vents to create the optimal airflow configuration.

IDEAL AIRFLOW

The flexible duct design and high-pressure of our ducted systems increase variation in airflow options ensuring the system operates in a way that best suits virtually all room layouts.

DELUXE PAR CONTROLLER

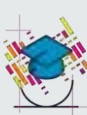
This attractive liquid crystal display (pictured left) incorporates a backlit screen and simple menus.



COMPROMISES

- Temperature control-only solution
- Unsuitable for applications requiring humidity control

APPLICATIONS



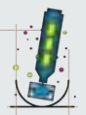
Universities



R&D



Packaging



Injection Moulding



Food



Diagnostics

GT Air Lite suits the least demanding of applications – most commonly laboratories or non-classified controlled environments where considerations on the movement of air and type of airflow is of far less significance.



GT AIR LAB

GT Air Lab delivers efficient heating and cooling for labs and cleanroom support spaces. Its compact wall-mounted design, adjustable airflow and quiet operation provide reliable indoor temperature control.



GT Air Lab is a compact, wall-mounted heating and cooling solution for laboratory and cleanroom support areas. Its streamlined flat-panel design offers a neat installation where ceiling space is limited, while adjustable louvres help distribute conditioned air around the room.

The Power Inverter heat pump provides a choice of capacities to match the thermal demands of each space.

Quiet operation helps maintain a comfortable working environment, and advanced control options support day-to-day temperature management. Internal pipe connections keep the installation tidy, while extended pipe runs offer flexibility when positioning the outdoor unit. The system uses R32 refrigerant and offers high seasonal energy efficiency.

GT Air Lab can provide local tem-



perature control as part of a coordinated facility design.

For classified cleanrooms, its suitability depends on the room's cleaning regime,

airflow pattern and contamination control requirements. Filtration, ventilation and pressure control must be designed separately to achieve the required cleanroom conditions.

TECHNICAL SPECIFICATION

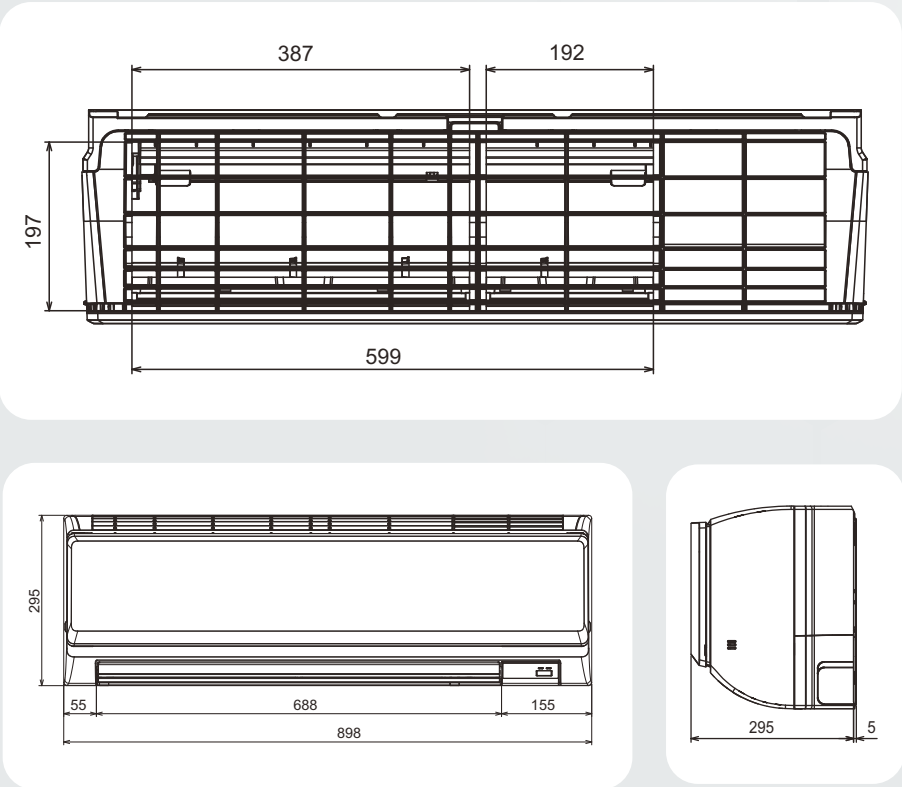
PKA-M - INDOOR UNITS		PKA-M35HA	PKA-M50HA	PKA-M60KA	PKA-M71KA	PKA-M100KA
CAPACITY (kW)	Heating (nominal)	4.1 (1.6-5.2)	5.0 (2.5-7.3)	7.0 (2.8-8.2)	8.0 (3.5-10.2)	11.2 (4.5-14.0)
	Cooling (nominal)	3.6 (1.6-4.5)	4.6 (2.3-5.6)	6.1 (2.7-6.7)	7.1 (3.3-8.1)	9.5 (4.9-11.4)
COP / EER (nominal)		3.94 / 4.14	3.71 / 3.71	4.04 / 3.91	3.78 / 3.81	3.61 / 3.95
SCOP / SEER (BS EN14825)		4.0 / 6.3	4.1 / 6.4	4.2 / 6.8	4.3 / 6.8	4.4 / 6.5
ERP ENERGY EFFICIENCY CLASS	Heating/Cooling	A+ / A++	A+ / A++	A+ / A++	A+ / A++	A+ / A++
	Lo-Mi-Hi	150-175-200	150-175-200	300-333-367	300-333-367	333-383-433
AIRFLOW (l/s)		Lo-Mi-Hi	Lo-Mi-Hi	Lo-Mi-Hi	Lo-Mi-Hi	Lo-Mi-Hi
PIPE SIZE MM (in)	Gas	12.7 (1/2")	12.7 (1/2")	15.88 (5/8")	15.88 (5/8")	15.88 (5/8")
	Liquid	6.35 (1/4")	6.35 (1/4")	9.52 (3/8")	9.52 (3/8")	9.52 (3/8")
SOUND PRESSURE LEVEL (dBA)		Lo-Mi-Hi	Lo-Mi-Hi	Lo-Mi-Hi	Lo-Mi-Hi	Lo-Mi-Hi
SOUND POWER LEVEL (dBA)	Lo-Mi-Hi	36-40-43	36-40-43	39-42-45	39-42-45	41-45-49
	Lo-Mi-Hi	60	60	64	64	65
DIMENSIONS (mm)		Width x Depth x Height	898 x 249 x 295	898 x 249 x 295	1170 x 295 x 365	1170 x 295 x 365
WEIGHT (kg)		13	13	21	21	21
ELECTRICAL SUPPLY		Fed by Outdoor Unit	Fed by Outdoor Unit	Fed by Outdoor Unit	Fed by Outdoor Unit	Fed by Outdoor Unit
FUSE RATING (BS88) - HRC (A)		6	6	6	6	6
INTERCONNECTING CABLE NO. CORES		4	4	4	4	4
WIRED REMOTE CONTROLLER REFERENCE		PAR-33MAA	PAR-33MAA	PAR-33MAA	PAR-33MAA	PAR-33MAA



TECHNICAL DRAWINGS

Power Inverter Heat Pump Wall Mounted System (Single Phase)

PRODUCT FEATURES



- Compact, flat-panel wall-mounted indoor unit
- Power Inverter heating and cooling
- Five sizes, offering 3.6–9.5 kW nominal cooling capacity
- Adjustable louvres for improved air distribution
- Quiet operation, from 36 dBA on the smallest units at low fan speed
- A+ heating and A++ cooling energy ratings
- R32 refrigerant
- Internal pipe connections for a tidy installation
- Pipe runs of up to 100 m, depending on model
- Compatible with a hard-wired controller
- Full heating capacity down to –3°C outdoor temperature

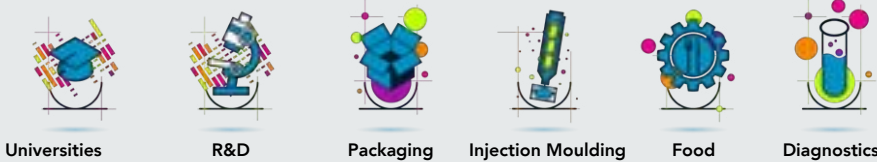
BENEFITS

- Compact installation – useful where ceiling space is limited
- Local control – heats or cools an individual laboratory or support room
- Adjustable airflow – louvres allow the discharge direction to be changed
- Straightforward specification: a simpler solution for spaces that need comfort cooling

COMPROMISES

- Visible unit in the room – GT Air Lite's ducted arrangement leaves only grilles visible
- Less control over air distribution – GT Air Lite can use ductwork to place supply grilles around a room or serve several spaces
- Temperature control only: it does not provide dedicated humidity control or the close control offered by GT Air Plus, Pro or Max

APPLICATIONS



GT Air Lab suits the least demanding of applications – most commonly laboratories or non-classified controlled environments where considerations on the movement of air and type of airflow is of far less significance.



QUICK-LOOK COMPARISON GUIDE

FEATURES				
Temperature control				
Humidity control				
Custom-built solution				
Higher power consumption				
Suitable for cGMP environments				
Regular maintenance advised				
Superior precise control				
Can be ducted – either directly or to plenum				
Wall or ceiling-mounted				
Plant room(s)/external area required				
Straightforward maintenance				





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