



Comms Room Air Conditioning – Technical Submittal (TSM)

Project: Manchester Metropolitan University – Institute of Sports
Project No: MC1136
TSM No: 1918-AME-XX-XX-TS-M-0015
Revision: -

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Building Services Engineering

Air Conditioning - Technical Submittal



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Indoor Unit Schedule

Ref.	Level	Location	Manufacturer	Model	Description	*Total Cooling (kW)	Cooling Capacity (kW)	Total Heating (kW)	Heating Capacity (kW)	Weight (KG)	Height (mm)	Width (mm)	Depth (mm)	Condenser Ref.
AC/01	L2	Comms Room	Toshiba	RAV-GM1101KRTP-E	Wall Mounted Unit w/ RBC-AMT32E Controller	8.8	9.5	N/A	11.2	19.0	348	1200	280	CD/01
AC/02	L2	Comms Room	Toshiba	RAV-GM1101KRTP-E	Wall Mounted Unit w/ RBC-AMT32E Controller	8.8	9.5	N/A	11.2	19.0	348	1200	280	CD/01
AC/03	L2	Comms Room	Toshiba	RAV-GM1101KRTP-E	Wall Mounted Unit w/ RBC-AMT32E Controller	8.8	9.5	N/A	11.2	19.0	348	1200	280	CD/02
AC/04	L2	Comms Room	Toshiba	RAV-GM1101KRTP-E	Wall Mounted Unit w/ RBC-AMT32E Controller	8.8	9.5	N/A	11.2	19.0	348	1200	280	CD/02

Notes:
1) *Cooling requirements based on 4a total comms room load of 17.6kw
2) N+1 functionality is to be provided via BMS control

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Condenser Unit Schedule

Ref.	Location	Manufacturer	Model	Description	Total Cooling (kW)	Cooling Capacity (kW)	Total Heating (kW)	Heating Capacity (kW)	Weight (kg)	Height (mm)	Width (mm)	Depth (mm)	Serving
CD/01	Roof	Toshiba	RAV-GM2241AT8-E	Digital Inverter Condensing Unit	17.6	19.0	N/A	22.4	142.0	1550	1010	370	AC/01
CD/02	Roof	Toshiba	RAV-GM2241AT8-E	Digital Inverter Condensing Unit	17.6	19.0	N/A	22.4	142.0	1550	1010	370	AC/02

Toshiba Air Conditioning - RAV-GM Data Sheet

RAV-GM1101KRTP-E High-Wall

Features

- For use with refrigerant R32
- Easy installation
- Special coating fan coil unit fin (magic coil)
- Wireless remote controller with pre-set functions or hard-wired remote controller option

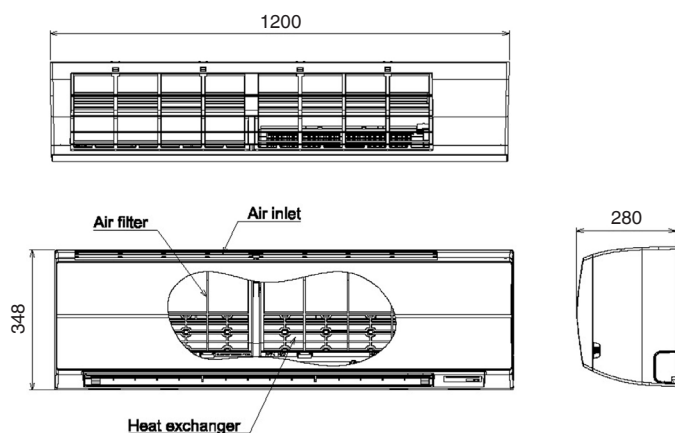


Technical Data

Model reference			RAV-GM1101KRTP-E
Nominal	Cooling Capacity	kW	9.5
	Heating Capacity	kW	11.2
	EER/COP	W/W	3.20/3.23
UK	Cooling Total/Sensible	kW	9.50/7.22
	Heating	kW	8.00
Cooling EN14825	Range Min. - Max.	kW	3.0 - 11.2
	Power Input	kW	2.97
	Pdesign	kW	9.5
	SEER/Energy Efficiency Class		6.1/A++
	Seasonal Energy Consumption	kWh/a	-*
Heating EN14825	Range Min. - Max.	kW	3.0 - 13.0
	Power Input	kW	3.47
	Pdesign	kW	8.0
	SCOP/Energy Efficiency Class		4.2/A+
	Seasonal Energy Consumption	kWh/a	-*
Air Flow	High - Medium - Low	l/s	447 - 375 - 328
	High - Medium - Low	m³/h	1610 - 1350 - 1180
Sound	Pressure High - Medium - Low	dB(A)	49 - 45 - 41
	Power High - Medium - Low	dB(A)	64 - 60 - 56
Unit	Height x Width x Depth	mm	348 x 1200 x 280
	Weight	kg	19
Pipe Connection	Flare Connections (gas - liquid)	inch	5/8 - 3/8
	Drain Pipe Connection OD/ID	mm	VP16/14
Remote Controller			WH-TA09NE (Infra-red)
Power Cable	Outdoor to Indoor		3 core + earth

* Waiting for published data.

Dimensional Drawings



Cool Designs Ltd

Raising the Standards in Air Conditioning Distribution

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All UK duties are based on Cooling Indoor air temperature 22°C DB/16°C WB Outdoor air temperature 28°C DB 50% RH, high fan speed, 5 m pipe run.
Heating Indoor air temperature 20°C DB Outdoor air temperature -5°C DB 100% RH, high fan speed, 5 m pipe run. Values are based on the maximum compressor output.
Data obtained from Toshiba Air Conditioning Published Data July 2018.

Toshiba Air Conditioning - Controls Data Sheet

RBC-AMT32E

Standard Remote Controller

Features

- Compatible with all R410A Digital/Super Digital Inverter and VRF systems*
- Energy-saving mode**
- Frost protection feature**
- Full control including service functions
- 7-day countdown/up timer (not scheduled)
- Built-in room temperature sensor
- External ventilation control
- Individual louvre control**
- Individual or group control of up to 8 units under simultaneous control

* Not compatible with DI Flexi.

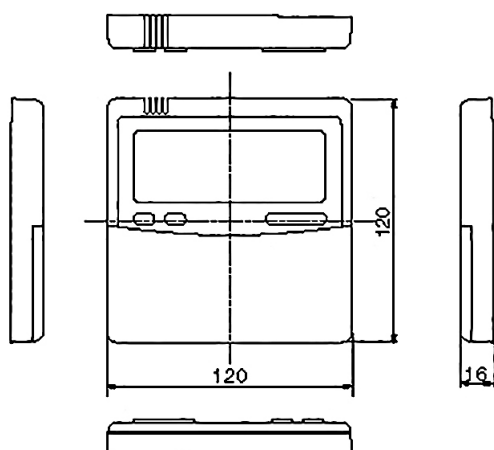
** Feature available on specific models and unit combinations.



Technical Data

Model reference		RBC-AMT32E
Total dimensions (H x W x D)	mm	120 x 120 x 16
Electrical connection (low voltage)		Screw terminals
Functions	Setting	Monitor
On/Off	✓	✓
Mode	Auto, Heat, Cool, Dry, Fan Only	✓
Set point	18-29°C	✓
Fan speed	Auto, High, Medium, Low	✓
Louvre	Swing, Fix	✓
Filter display	Reset	✓
Fault code	Reset	Hexadecimal
Countdown timer	30 minutes - 168 hours	
Schedule timer	X	X

Dimensional Drawings



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 Data obtained from Toshiba Air Conditioning Published Data September 2014.

Toshiba Air Conditioning - RAV-GM Data Sheet

RAV-GM2241AT8-E Outdoor Unit

Features

- Redesigned for use with refrigerant R32
- New compressor design
- Reduced refrigerant charge - 5 kg
- Flexible, can be utilised for twin, triple and quad indoor applications
- Compact size

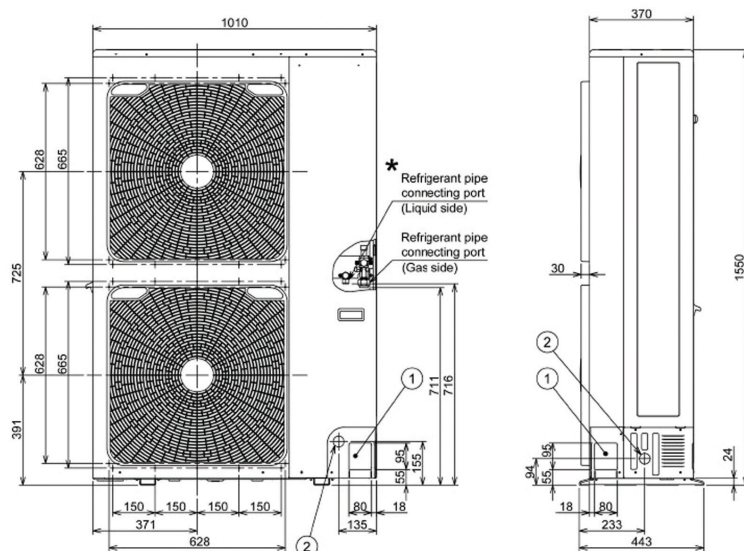


Technical Data

Model reference		RAV-GM2241AT8-E
Nominal cooling	kW	19.0
Nominal heating	kW	22.4
Maximum air flow	m ³ /h	9150
Maximum air flow	l/s	2541
Sound power (cool/heat)	dB(A)	76/76
Sound pressure (cool/heat)	dB(A)	58/60
Dimensions (H x W x D)	mm	1550 x 1010 x 370
Unit weight	kg	142
Power supply	V-ph-Hz	380/415-3-50
Interconnecting cable		3 core + earth
Suggested fuse size	A	16
Maximum operating current (cooling)	A	-*
Operating range, cooling	°C	-15 to 46
Operating range, heating	°C	-27 to 15
Pipe sizes (liquid - suction)	inch	1/2 - 1-1/8
Minimum/maximum pipe length	m	5/60
Maximum height difference	m	30
Pre-charge pipe length	m	30

* Waiting for published data

Dimensional Drawings



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Heating Indoor air temperature 20°C DB Outdoor air temperature -5°C DB 100% RH, high fan speed, 5 m pipe run. Values are based on the maximum compressor output.
Data obtained from Toshiba Air Conditioning Published Data September 2019.