



Very high air flow rates

High total pressures

Airtightness - Class L2

High mechanical resistance



Air flow rate: 50 000 to 130 000 m³/h

Use

- This range of very strong units is especially suitable for specific industrial applications (process, clean rooms) and for particular comfort air conditioning systems.
- Self-supporting construction. Double-skin panels 50 mm mineral wool insulation.
- External casing painted in prelacquered sheet metal (RAL 7024).
- Casing designed to resist to high mechanical loads and to comply with Class L2 airtightness in accordance with Eurovent 2/2 and EN 1886.
- Casing assembly ensures smooth internal and external surfaces.
- Various options available such as: air washers, wet deck humidifiers, direct gas burner with gas piping, control panels, access corridor and all type of filters.

Standard EN 1886

To conform with the EN 1886 specifications, the **MASTAIR** range meets the following requirements:

Airtightness of casing

Class L2 as standard (EN 1886).

Pressure resistance of casing

2 600 Pa as standard.

(-1 200 Pa).

(+ 1 400 Pa).

3600 Pa in strengthened construction.

(-1 200 Pa).

(+ 2 400 Pa).

Thermal insulation of casing

Class T3 as standard.

Noise insulation

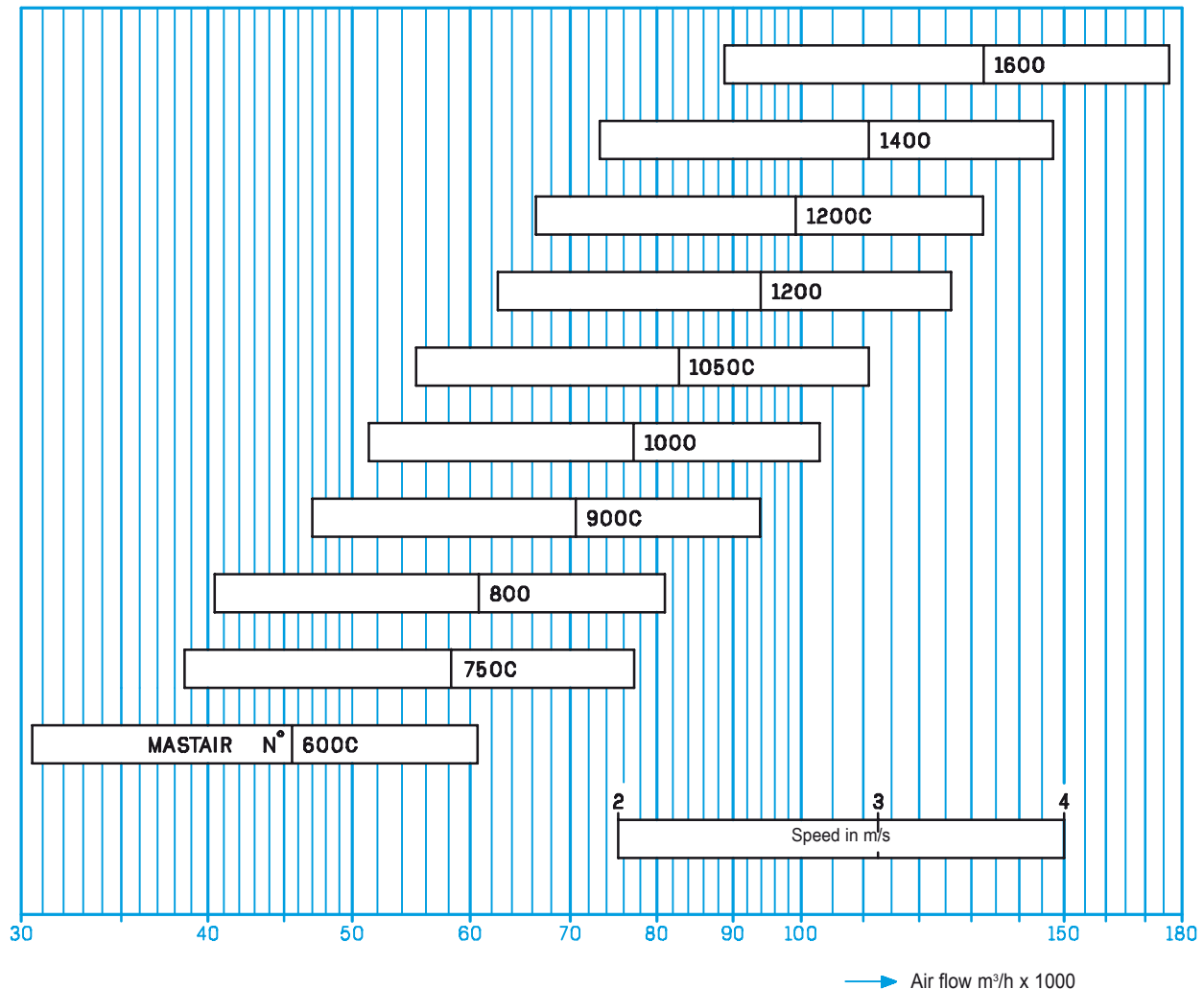
Sound spectra are available and conform with the measurement method of EN 1886.

Other criteria

Depending on unit's components and arrangement.

Please consult us.

QUICK SELECTION



DESCRIPTION

Horizontal version only

Internal or external units

(external units with bitumen felt roof).

Air intake sections

(Damper single air intake or mixing box section) equipped with modulating or airtight dampers.

More than one servomotor is needed due to the extensive areas to be treated.

Filter sections

All filters are of universal sizes, frame mounted with front withdrawal through access section.

Only G4 prefilters can be side withdrawn when access is not possible.

Coil sections

4 different geometrical-type of fins - Fins in aluminium, polyurethane prepainted aluminium or copper.

2 different tube diameters in copper, steel or stainless steel.

Coils can be in one piece (equal to the width of the unit) or split vertically and staggered in the direction of air flow. In the later case, only half of the unit's width is needed to withdraw the coil.

2 types of droplet eliminator:

- Galvanised steel wiremesh for coil face velocity up to 3,25m/s.

- PPHD blades for coil face velocity up to 4m/s.

A drawer for a frost protection sensor can be factory-mounted in the unit.

Electric heater sections

Humidifier section

- Wet deck humidifier.
- Steam humidifier.
- Air washer 90% efficiency.

Gas heating (Make-up) section

Direct combustion in the air stream (with no exchanger)

Operating in fresh air only mode

Components:

Burner and gas equipment fitted on the service panel.
Adjustable diaphragm, flame protection and control cabinet.

Fan section

2 or 3 possibilities to optimise the fan selection by using 1 or 2 fans, 2 or 3 impeller diameters, 4 different fan discharges.

Fan section includes fan and motor chassis, antivibration mounts, adjustable belt tension device, internal flexible sleeve and door guard.

Options: door switch, proximity switch, lockable door handle, etc ...

The sound traps of various lengths can be planned upstream or downstream from the ventilation system.

Access corridor

Particularly suitable for external units, it allows the fitting and protection of components such as actuators, manometers, differential pressure sensors, coil pipes and valves, control panel.

Flat-pack delivery

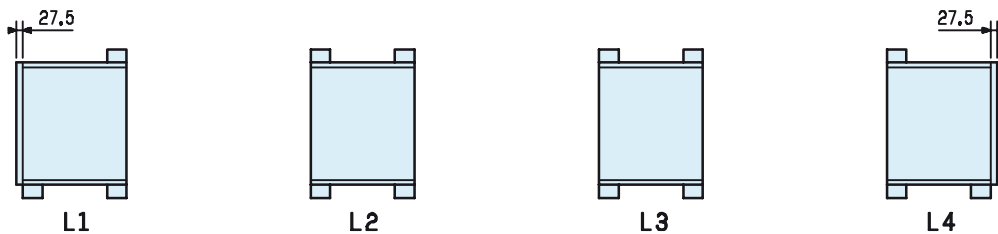
Generally units are delivered in factory-assembled sections. In case of limited site access, units can be delivered flat-packed for assembly on site with technical assistance from CIAT.

CLIMACIAT MASTAIR

UNIT LENGTH DETERMINATION

The unit's overall length is the sum of each component's functional length mentioned in the following pages + (2 x 27.5 mm for the inlet and outlet panels).

The real length of each section is the sum of the functional lengths except for the 2 end sections which are 27.5 mm longer.



$$\text{MASTAIR overall length} = L1 + L2 + L3 + L4 + (2 \times 27,5\text{mm})$$

FUNCTIONAL LENGTHS

Actual length of functional components

Function	Symbol	Designation	MASTAIR Standard height					MASTAIR Reduced height				
			800	1000	1200	1400	1600	600C	750C	900C	1050C	1200
Rain guard		Rain guard	200	200	200	200	200	200	200	200	200	200
Air intake		Air intake damper	240	240	240	240	240	240	240	240	240	240
Damper		Safety of volume control damper	360	360	360	360	360	360	360	360	360	360
Mixing box (internal version)		Single air intake or 2-way mixing box	1200	1200	1200	1200	1200	1080	1080	1080	1080	1080
		2-way mixing box with one side damper	1320	1440	1800	1920	2160	1440	1680	1920	2160	2520
		3-way mixing box	2400	2400	2400	2400	2400	2160	2160	2160	2160	2160

FUNCTIONAL LENGTHS

Actual length of functional components

Function	Symbol	Designation	MASTAIR Standard height					MASTAIR Reduced height					
			800	1000	1200	1400	1600	600C	750C	900C	1050C	1200	
Air filters (international sizes)		95% gravimetric prefilter Front or side withdrawal	240	240	240	240	240	240	240	240	240	240	240
		Short bag filters Front withdrawal	480	480	480	480	480	480	480	480	480	480	480
		Long bag filters Front withdrawal	840	840	840	840	840	840	840	840	840	840	840
		Absolute (very high efficiency) filters Front withdrawal	480	480	480	480	480	480	480	480	480	480	480
		Activated carbon filters Front withdrawal	600	600	600	600	600	600	600	600	600	600	600
Access		Access section with hinged door	720	720	720	720	720	720	720	720	720	720	720
Heating coils		Tube Ø 12,7 - 1/2" Fin 28 x 32 Q	1 to 6 rows	360	360	360	360	360	360	360	360	360	360
			7 to 12 rows	480	480	480	480	480	480	480	480	480	480
		Tube Ø 15,87 - 5/8" Fin 40 x 40 A	1 to 4 rows	360	360	360	360	360	360	360	360	360	360
			5 to 8 rows	480	480	480	480	480	480	480	480	480	480
		Tube Ø 12,7 - 1/2" Fin 28 x 32 Q	1 to 6 rows			840	840	840			840	840	840
			7 to 12 rows			1080	1080	1080			1080	1080	1080
	Tube Ø 15,87 - 5/8" Fin 40 x 40 A	1 to 4 rows			840	840	840			840	840	840	
		5 to 8 rows			1080	1080	1080			1080	1080	1080	
Frost sensor drawer		Drawer on runners	120	120	120	120	120	120	120	120	120	120	120
Electrical heaters		Module 1 with anti-radiation screen	360	360	360	360	360	360	360	360	360	360	360
		Module 2 with anti-radiation screen	480	480	480	480	480	480	480	480	480	480	480

FUNCTIONAL LENGTHS

Actual length of functional components

Function	Symbol	Designation	MASTAIR Standard height					MASTAIR Reduced height				
			800	1000	1200	1400	1600	600C	750C	900C	1050C	1200
Cooling coils		Tube Ø 12,7 - 1/2" 1 to 6 rows	480	480	480	480	480	480	480	480	480	480
		Fin 28 x 32 Q 7 to 12 rows	600	600	600	600	600	600	600	600	600	600
		Tube Ø 15,87 - 5/8" 1 to 4 rows	480	480	480	480	480	480	480	480	480	480
		Fin 40 x 40 A 5 to 8 rows	600	600	600	600	600	600	600	600	600	600
		Tube Ø 12,7 - 1/2" 1 to 6 rows			960	960	960			960	960	960
		Fin 28 x 32 Q 7 to 12 rows			1200	1200	1200			1200	1200	1200
	Tube Ø 15,87 - 5/8" 1 to 4 rows			960	960	960			960	960	960	
	Fin 40 x 40 A 5 to 8 rows			1200	1200	1200			1200	1200	1200	
Burner		Air stream burner section with membrane, flame trap and door	2400	2400	2400	2400	2400	2400	2400	2400	2400	2400
Humidification		Wet deck humidifiers $\eta = 60\%, 80\%, 90\%$	960	960	960	960	960	960	960	960	960	960
		Air washer $\eta = 90\%$	1760	1760	1760	1760	1760	1760	1760	1760	1760	1760
		Empty section for steam humidifier	Without access 840	840	840	840	840	840	840	840	840	840
			With access 1200	1200	1200	1200	1200	1200	1200	1200	1200	1200
Ventilation		Nb and fan type	1x800	1x900	1x1000			1x710	1x800	1x900		
		Maxi motor size (kW) 1500 rpm	45	45	55			30	45	45		
		Maxi motor frame	225	225	250			200	225	225		
		Discharge direction	H60 - H62	2160	2280	2400			1920	2160	2280	
		H61	2280	2400	2400			2040	2280	2400		
		Nb and fan type	1x900	1x1000	2x710	2x800	2x900	1x800	1x900	2x630	2x710	2x800
		Maxi motor size (kW) 1500 rpm	45	55	2x30	2x45	2x45	45	45	2x30	2x30	2x45
		Maxi motor frame	225	250	200	225	225	225	225	200	200	225
		Discharge direction	H60 - H62	2280	2400	1920	2160	2280	2160	2280	1800	1920
		H61	2400	2400	2040	2280	2400	2280	2400	1920	2040	2280
		Nb and fan type	1x1000		2x800	2x900	2x1000	1x900	2x630	2x710	2x800	2x900
		Maxi motor size (kW) 1500 rpm	55		2x45	2x45	2x55	45	2x30	2x30	2x45	2x45
Maxi motor frame		250		225	225	250	225	200	200	225	225	
Discharge direction		H60 - H62	2400		2160	2280	2400	2280	1800	1920	2160	2280
	H61	2400		2280	2400	2400	2400	1920	2040	2280	2400	

FUNCTIONAL LENGTHS

Actual length of functional components.

Function	Symbol	Designation	MASTAIR Standard height					MASTAIR Reduced height				
			800	1000	1200	1400	1600	600C	750C	900C	1050C	1200
Distribution		Expansion section with or without access 2 fans			1080	1080	1080		720	720	960	960
		1 fan	1080	1080	1080	1080	1080	960	960	960		
Mufflers		Sound attenuators L : 900	1080	1080	1080	1080	1080	1080	1080	1080	1080	1080
		L : 1200	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320
		L : 1500	1680	1680	1680	1680	1680	1680	1680	1680	1680	1680
Technical corridor		Access corridor on access side L = mm	1320	1320	1320	1320	1320	1320	1320	1320	1320	1320

Coils

4 different tube arrangements and 2 different fin types can be selected to optimise the ratio performance / price

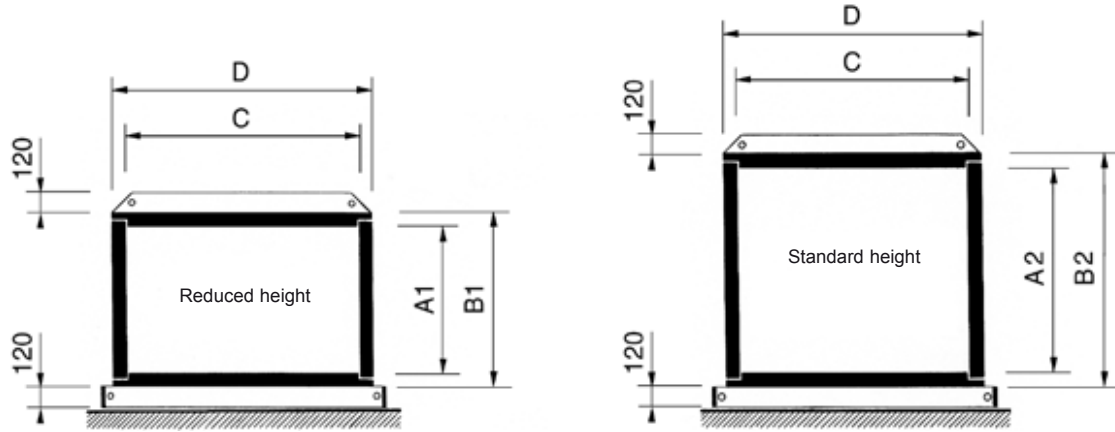
	Staggered tubes Pitch 32 x 28	Staggered tubes Pitch 40 x 35	Tubes in-line 40 x 40
∅ 12,7 mm Cu	 BG 1232 Q	 BG 1240 Q	
∅ 15,87 mm Cu or ∅ 16 mm steel		 BG 1640 Q	 BG 1640 A

Functional lengths are given for tube arrangements, for other types please consult us.

CLIMACIAT MASTAIR

RANGE

5 sizes for air flows from 50 000 to 130 000 m³/s with 2 different cross sections to be chosen depending on available site space and type of transport (on truck, in container or sea packing for ocean freight).



CLIMACIAT MASTAIR	Air flow m ³ /h	Coil H x W	Filter cells	A1	B1	A2	B2	C	D	Overall height		
Reduced height	600C	45 620	1920 x 2200	3 x 4	2074	2180			2520	2633	2420	Module 2280 transportable by container for sections down to 2350 mm length
	750C	58 060	1920 x 2800	3 x 5	2074	2180			3120	3233	2420	
	900C	70 500	1920 x 3400	3 x 6	2074	2180			3840	3953	2420	
	1050C	82 950	1920 x 4000	3 x 7	2074	2180			4440	4553	2420	
	1200C	99 530	1920 x 4800	3 x 8	2074	2180			5220	5333	2420	
Standard height	800	60 825	2560 x 2200	4 x 4			2790	2896	2520	2633	3136	Module 2400 Transportable on truck for sections down to 2500 mm length
	1000	77 400	2560 x 2800	4 x 5			2790	2896	3120	3233	3136	
	1200	94 000	2560 x 3400	4 x 6			2790	2896	3840	3953	3136	
	1400	110 590	2560 x 4000	4 x 7			2790	2896	4440	4553	3136	
	1600	132 710	2560 x 4800	4 x 8			2790	2896	5220	5333	3136	

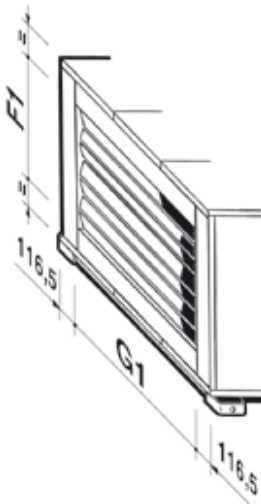
Air flows given at 3 m/s on cooling coil.

In some cases, coils can be split vertically and staggered in the direction of air flow as an option.

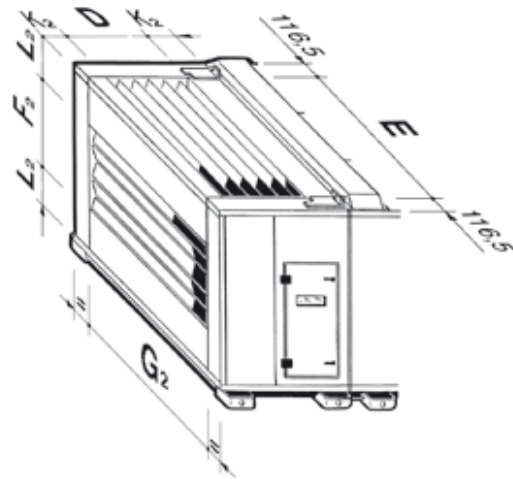
DIMENSIONS

Air intake sections - Damper dimensions

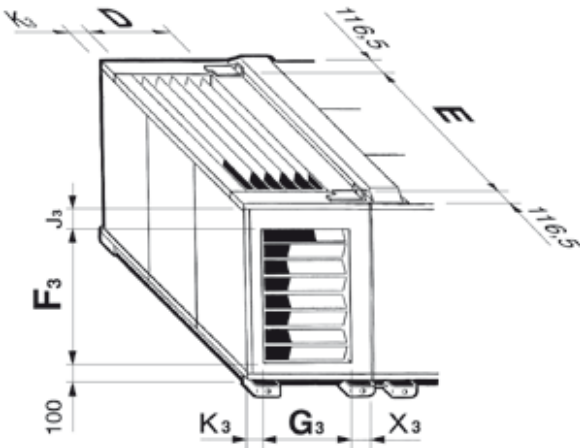
Air intake damper



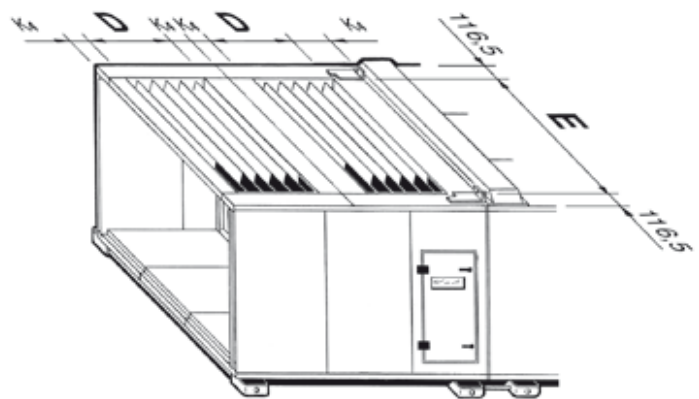
Standard 2-way mixing box



2-way mixing box (1 side damper)



3-way mixing box

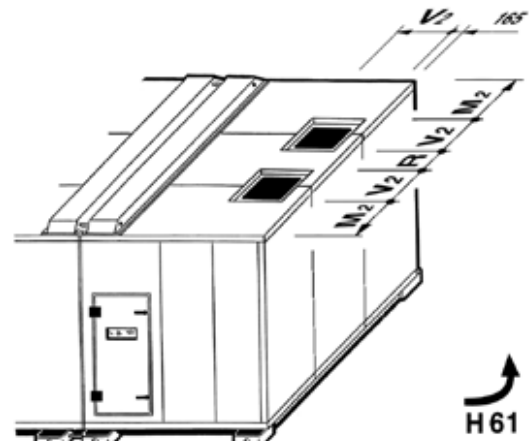
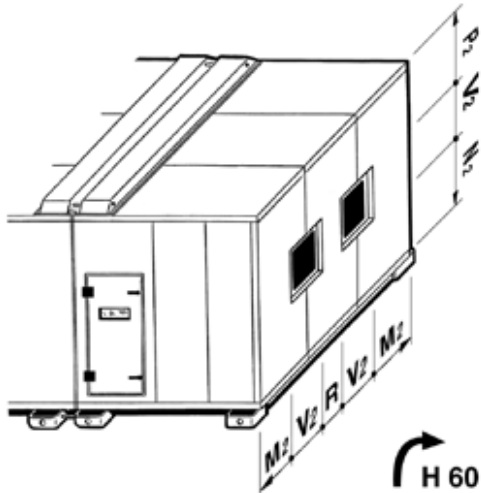
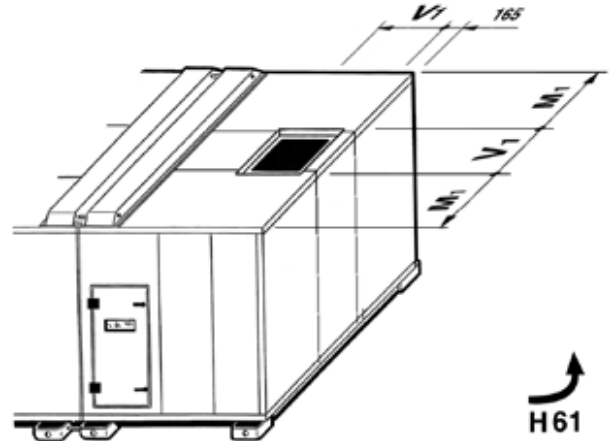
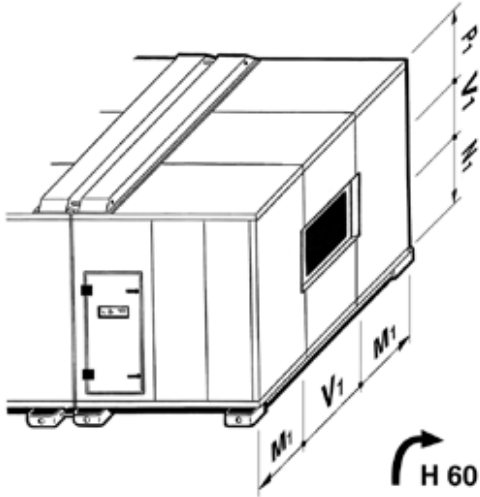


MASTAIR		air flow	F1	G1 (dampers)	F2	G2 (dampers)	F3	G3 (dampers)	D	E (dampers)	L2	K2	J3	K3	K4	X3
Reduced height	600C	45 620	1 995	2 400 (2 x 1 100)	1 005	1 770 (1 x 1 770)	1 665	1 090 (1 x 1 090)	840	2 400 (2 x 1 090)	587.5	133.5	415	111	120	266.5
	750C	58 060	1 995	3 000 (2 x 1 410)	1 170	1 770 (1 x 1 770)	1 665	1 320 (1 x 1 320)	840	300 (2 x 1 410)	505	133.5	415	111	120	276.5
	900C	70 500	1 995	3 720 (2 x 1 770)	1 500	1 770 (1 x 1 770)	1 665	1 580 (1 x 1 580)	840	3 720 (2 x 1 770)	340	133.5	415	111	120	256.5
	1050C	82 950	1 995	4 320 (3 x 1 320)	840	3 720 (2 x 1 770)	1 665	1 770 (1 x 1 770)	840	4 320 (2 x 1 090 + 1 x 1 770)	670	133.5	415	111	120	306.5
	1200C	99 530	1 995	5 100 (3 x 1 580)	1 005	3 720 (2 x 1 770)	1 665	2 360 (2 x 1 090)	840	5100 (3 x 1580)	587.5	133.5	415	111	120	76.5
Standard height	800	60 825	2 655	2 400 (2 x 1 100)	1 335	1 770 (1 x 1 770)	2 490	900 (1 x 900)	1 005	2400 (2 x 1090)	780	111	306	111	97.5	336.5
	1000	77 400	2 655	3 000 (2 x 1 410)	1 665	1 770 (1 x 1 770)	2 490	1 090 (1 x 1 090)	1 005	3000 (2 x 1410)	615	111	306	111	97.5	266.5
	1200	94 000	2 655	3 720 (2 x 1 770)	1 995	1 770 (1 x 1 770)	2 490	1 410 (1 x 1 410)	1 005	3720 (2 x 1770)	450	111	306	111	97.5	136.5
	1400	110590	2 655	4 320 (3 x 1 320)	1 170	3 720 (2 x 1 770)	2 490	1 580 (1 x 1 580)	1 005	4320 (2 x 1090 + 1 x 1770)	863	111	306	111	97.5	256.5
	1600	132710	2 655	5 100 (3 x 1 580)	1 335	3 720 (2 x 1 770)	2 490	1 770 (1 x 1770)	1 005	5100 (3 x 1580)	780	111	306	111	97.5	306.5

DIMENSIONS

Fan sections

Discharge dimensions



MASTAIR	Fan Ø	Nb	V1	M1	N1	P1	V2	M2	N2	P2	R	MASTAIR	Fan Ø	Nb	V1	M1	N1	P1	V2	M2	N2	P2	R
600C	710	1	930	851	685	1281						800	800	1	1035	199	740	1121					
	800	1	1035	799	740	1121							900	1	1160	736	795	941					
	900	1	1160	736	795	941							1000	1	1294	669	823	779					
750 C	630	2					830	486	640	1426	600	1000	900	1	1160	1036	195	941					
	800	1	1035	1099	740	1121							100	1	1294	969	823	779					
	900	1	1160	1036	795	941																	
900C	630	2					830	621	640	1426	1050	1200	710	2					930	521	685	1281	1050
	710	2				930	521	685	1281	1050	800		2						1035	476	740	1121	930
	900	1	1160	1395	795	941							1000	1	1294	1329	823	779					
1050C	710	2					930	701	685	1281	1290	1400	800	2					1035	656	740	1121	1170
	800	2				1035	596	740	1121	1290	900		2						1160	561	795	941	1110
1200C	800	2					1035	806	740	1121	1650	1600	900	2					1160	741	795	941	1530
	900	2				1160	741	795	941	1530	1000		2						1294	697	823	779	1350

PACKING AND TRANSPORT

Due to the size of the sections and the strength of the panels, units can be delivered without packing.

Alternatively, elaborate packing may be provided (for ocean freight, for example).

For international long haul, the most appropriate solution is shipping by container. For this, the reduced height range should be selected = 600C to 1200C.

MASS

Standard sections can easily vary from 1000 kg up to 3000 kg.

For example, a MASTAIR 1050C AHU, which is illustrated below :

M1: Single air intake section and sound attenuator: 1 490 kg

M2: Fan section: 1 930 kg

M3: 3 way mixing box: 1 230 kg

M4: Filter and fan section: 2 300 kg

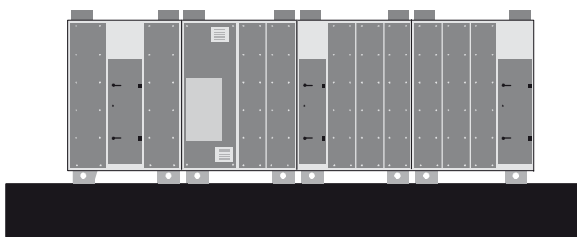
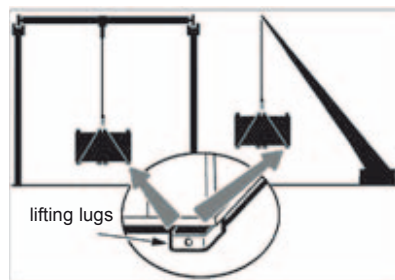
M5: Expansion section, coils and access: 1 250 kg

M6: Cooling coil and sound attenuator: 2 110 kg

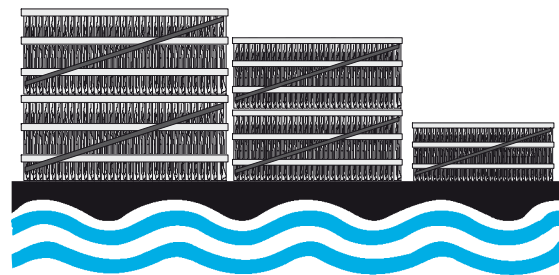
M7: Vertical air outlet section: 780 kg

HANDLING

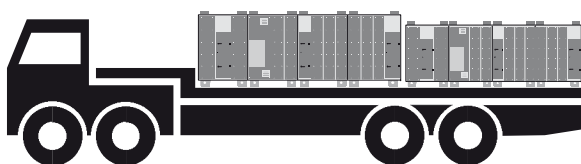
The sections should only be lifted using a bridge crane (in factory) or a crane (on site) using the lifting lugs located at the base of the units.



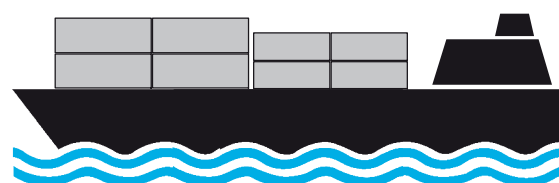
Sections without packing



Sea packing

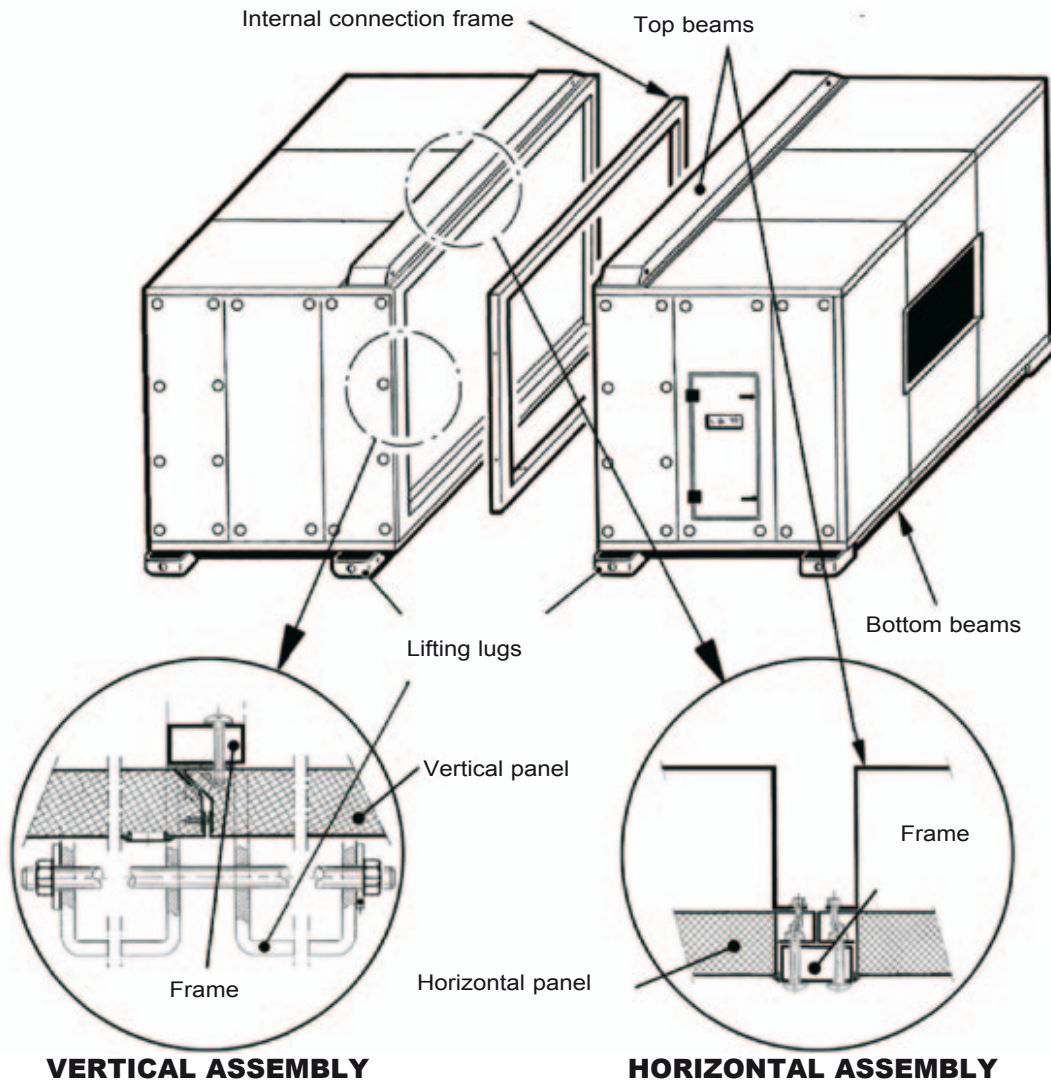


Sections on truck



Containers on vessel

SECTIONS ASSEMBLY



Each section is provided with top and bottom beams. Bottom beams are fitted with EC marked lifting lugs. To assembly sections, an internal connection frame is fixed to one of the two sections. This frame allows for self-alignment when the 2 sections are brought together. Vertical connections on the frame are made externally and horizontal connections internally. Additional threaded rods passing through the bottom and top beams ensure correct alignment and tightening between the two sections.

This document is non-contractual. As part of its policy of continual product improvement, CIAT reserves the right to make any technical modification it feels appropriate without prior notification.

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