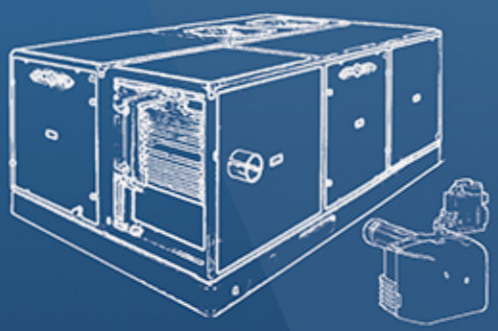
AIR CONDITIONERS
FROST
ITALY

AIR TO AIR
COMPACT UNITS WHIT GAS BURNER
ROOF-TOP
FROM 10 KW TO 240 KW
MIRAC GR



R407c

Air Conditioners

MIRAC GR

AIR TO AIR COMPACT UNIT
FROM 10 KW TO 240 KW

General Features

Air cooled ROOF-TOP chiller units, designed for outdoor installation. The delivery and pickup air is processed by ductwork with fans with a high delivery head. The air cooled air conditioner is projected to obtain a noiseless efficient and reliable working, easy for installing with a reduced maintenance. All the units are completed tested before its delivery.

Technical Features

- **Frame:** self-supporting made of structural aluminum galvanized steel frame protected with polyester powder painting to be protected of external agents. Internal thermal coating anti-condensate, made with polyethylene with aluminum protection. Steel screws and bolts.

- **Compressors:** Scroll single phase for 10m size, scroll three phase from 10 to 180. All compressors are completed with the internal thermo protection and crankcase heater. For size 240: semi hermetic screw, three phase, completed with crankcase heater and internal thermo protection. Suction and discharge shut off valves standard. Lubrication by means gear pump. Motor starting "part winding" type.

- **Gas heating section:** the heating section made with multigas burner with gas-oil supply with stainless steel AISI 430 (optional) high efficiency heat exchangers with high surface, they secure high thermal efficiency, always above 90%

- **Indoor and outdoor heat exchanger coils:** made of copper tubes and aluminum fins with a big heat exchanger surface.

- **Refrigerant circuit:** made of pickled copper, it includes thermostatic expansion valves filter drier high and low pressure switches, sight glass, liquid line solenoid valve and faucet service connections. For H versions also are included: liquid separator, liquid receiver, inversion valve and no-return valves.

- **Internal fans:** centrifugal fan dual suction type, directly coupled to the electrical motor, smaller sizes or by pulley and belt to a four pole three phase electric motor.

- **External fans:** axial fan directly coupled to electric motor. Internal electrical insulating second grade with protection IP 54 (DIN VDE 0470 / EN 60529:1991). The fans are fitted with a guard net on the discharge air flow side.

- **Air filter:** regenerable G4 class, flame resistance F1class, DIN 534338, autoestinguishing with 87,5% maximum separation grade (ASHRAE 52.2)The baffles are made of polyester fibber coated with synthetic resins. A galvanized steel frame and protection grid.

- **Electrical board:** includes main circuit breaker, compressor and fan control switch, security circuit breaker, condensation control predisposition, electrical correct wiring phases device, all wires and terminals are identified. In agreement with standard EN60204.

- **Microprocessor:** it controls automatically compressor timing, and the alarms. It visualizes on the display the unit running condition, the device inlet temperature, and the alarms' code. Remote display to be used immediately.

Model Number Nomenclature

MIRAC

X	Y
↓	↓
10 – 240	**R, H, GR, GH**
Size	Version*

*

Only cooling, external axial fan	R
Heat pump, external axial fan	H
Only cooling with gas burner, external axial fan	GR
Heat pump with gas burner, external axial fan	GH

Main components

Compressor: scroll type, for the bigger size screw type.

Fan: axial type with tube and guard net.

Fan: radial type.

Air-refrigerant heat exchanger: finned coil.

Microprocessor: (STANDARD) it controls all device functions.

Thermostatic expansion valve: (STANDARD) it laminates the condensed refrigerant.

Integrative burner : (STANDARD) it can operate with many types of fuels, gas, gasoline.

Accessories

Remote terminal: (STANDARD) it controls the start, the standby and the set point maintenance.

Sequence control steps: (STANDARD) it allows the correct connection of the motor to the electric grid.

Thermal freecooling : (OPTIONAL) freecooling with external and internal temperatures control.

Enthalpy freecooling : (OPTIONAL) freecooling with external and internal enthalpies control.

Manual external damper : (OPTIONAL) it controls the external air input, it is manually controlled.

External air damper ON/OFF : (OPTIONAL) It closes when the ventilation is OFF and it opens when the ventilation setting is ON. This keeps away from any kind of thermal leakage to outside.

External modulating air damper : (OPTIONAL) It allows to use a percentage of external fresh air based on the V.O.C. or CO2 quantity; it must be coupled to an external air quality sensor.

Progressive centrifugal motor starter (softstarter) : (OPTIONAL) it reduces the start peak fans current.

Air filter efficiency F7 : (OPTIONAL) it keeps back the pollutant agents in the air.

High efficiency electrostatic filter H10: (OPTIONAL) it reduces the pollutant agents with an electrostatic field.

Pressure differential grubby filters: (OPTIONAL) it signals the necessity to clean or substitution of the filters, and the incorrect fan functioning.

Humidifier submerged electrodes: (OPTIONAL) it regulates the air humidity.

Humidifier evaporant package with water to be missed : (OPTIONAL) it regulates the air humidity.

Co2 air quality probe : (OPTIONAL) signals the CO2 air concentration, eventually connected to external signal or to the damper.

VOC (Volatile Organic Compounds) air quality probe: (OPTIONAL) signals the VOC air concentration, eventually connected to external signal or to the damper.

Refrigerant gauges for high and low pressure: (OPTIONAL) detect operating pressures.

Axial fans speed control, external section: (OPTIONAL) it controls the condensation (or evaporation in heat pump), it reduces the active power absorbed and the noise.

Smoke detector : (OPTIONAL) detect smoke presence in the internal ambient.

Condensers of correction (cos ϕ>0,9): (OPTIONAL) it decreases active and reactive power absorption.

Serial port R485 with protocol mod-bus: (OPTIONAL) it allows the communication with a central system.

Serial port R485 with protocol long work : (OPTIONAL) it allows the communication with a central system.

Frost web vision : (OPTIONAL) management remote control system using internet connection.

Electronic expansion valve : (OPTIONAL) it laminates the condensed refrigerant.

Operating kit up to -10°C external air temperature : (OPTIONAL) it allows to the chiller to operate with external temperatures up to -10°C.

Operating kit up to -25°C external air temperature : (OPTIONAL) it allows to the chiller to operate with external temperatures up to -25°C.

Double panel system: (OPTIONAL) the device has double panel system, the cavity between the two panel is filled with insulating material, to improve thermal insulation.

Technical Features

Model		10m	10	14	18	25	30	35	45	50
Cooling capacity	kW	9,1	9,3	14,2	17,9	25,0	29,0	35,8	44,2	50,0
Sensible Cooling capacity	kW	7,8	7,9	12,1	15,2	21,2	24,6	30,4	37,6	42,5
Nominal Burner capacity	kW	34	34	34	34	46	46	46	46	69
Available burner capacity	kW	31,2	31,2	31,2	31,2	42,4	42,4	42,4	42,4	63,3
Burner efficiency	%	92,7	92,7	92,7	92,7	92,2	92,2	92,2	92,2	91,8
N°compressor / circuits		1\1	1\1	1\1	1\1	1\1	1\1	1\1	1\1	2\1
N° capacity steps		1	1	1	1	1	1	1	1	2
Compressor type		Scroll								
Axial fan number		1	1	2	2	2	2	2	2	2
Total air flow	m^3/h x10^3	4.7	4.8	7.3	9.1	12.2	14.1	17.4	20.4	23.2
Motor unit input	kW	0,2	0,2	0,39	0,7	0,32	0,39	0,45	0,7	0,7
Radial fan number		1	1	1	1	1	1	1	1	1
Total air flow	m^3/h x10^3	1.7	1.7	2.6	3.4	4.6	5.4	6.7	8.2	9.3
Available static pressure head	Pa	150	150	150	150	150	150	150	150	150
Unit input power	kW	0,27	0,27	0,41	0,54	0,73	0,85	1,06	1,30	1,47
Nominal absorbed power	kW	3,1	3,2	5,1	6,8	8,5	9,6	12,0	15,0	17,0
Nominal absorbed current	A	16,2	5,9	8,3	10,8	14,9	17,2	21,2	26,5	30
Maximum peak current	A	96	34	61	76	92	124	170	185	145
Electrical supply		*	400 V/ 50 Hz/ 3+N+PE							
Sound pressure level (1)	dB(A)	58	58	59	60	62	62	64	66	67

* mono-Phase 230 V / 50 Hz / 1+N+PE

Technical Features

Model		60	70	90	100	120	140	180	240
Cooling capacity	kW	58,0	71,6	88,5	96	111	137	170	243
Sensible Cooling capacity	kW	49,3	60,8	75,2	76,6	88,2	110,9	136,8	206,5
Nominal Burner capacity	kW	69	69	69	69	93	93	93	127
Available burner capacity	kW	63,3	63,3	63,3	63,3	84,9	84,9	84,9	115,5
Burner efficiency	%	91,8	91,8	91,8	91,8	91,3	91,3	91,3	91
N°compressor / circuits		2\1	2\1	2\1	4\2	4\2	4\2	4\2	2\2
N° capacity steps		2	2	2	4	4	4	4	6
Compressor type		Scroll							**
Axial fan number		2	2	2	4	4	4	4	6
Total air flow	m^3/h $x10^3$	25.3	31.2	38.5	40.0	42.0	54.0	70.0	90.0
Motor unit input	kW	0,78	0,78	1,5	0,7	0,7	1,5	1,5	1,5
Radial fan number		1	1	1	1	1	1	2	2
Total air flow	m^3/h $x10^3$	10.8	13.3	16.4	18.0	20.0	26.0	30.0	38.0
Available static pressure head	Pa	150	150	150	120	120	130	150	130
Unit input power	kW	1,71	2,1	2,59	3	3	4	4	5,5
Nominal absorbed power	kW	19,5	23,6	30,3	35,4	42,4	54,8	65,6	97,9
Nominal absorbed current	A	34,6	42	53,3	70,4	83,4	94,8	108,4	169
Maximum peak current	A	153	195	225	170	180	228	270	321
Electrical supply		400 V / 50 Hz / 3+N+PE							
Sound pressure level(1)	dB(A)	69	69	71	72,5	73,5	75	75,5	77,5

** semi-hermetic screw compressors

References Conditions

Nominal conditions:
Air ambient temperature T=35°C
Internal ambient air (inlet evaporator temperature) T=27°C
DB – 19,5°C WB

(1) Full sound pressure level measured at 5m
from the unit in free field (ISO3744)

Operation Limits		Cooling	
		Min	Max
Internal air temperature	(°C)	12	32
External air temperature	(°C)	15	45

Cooling Performances

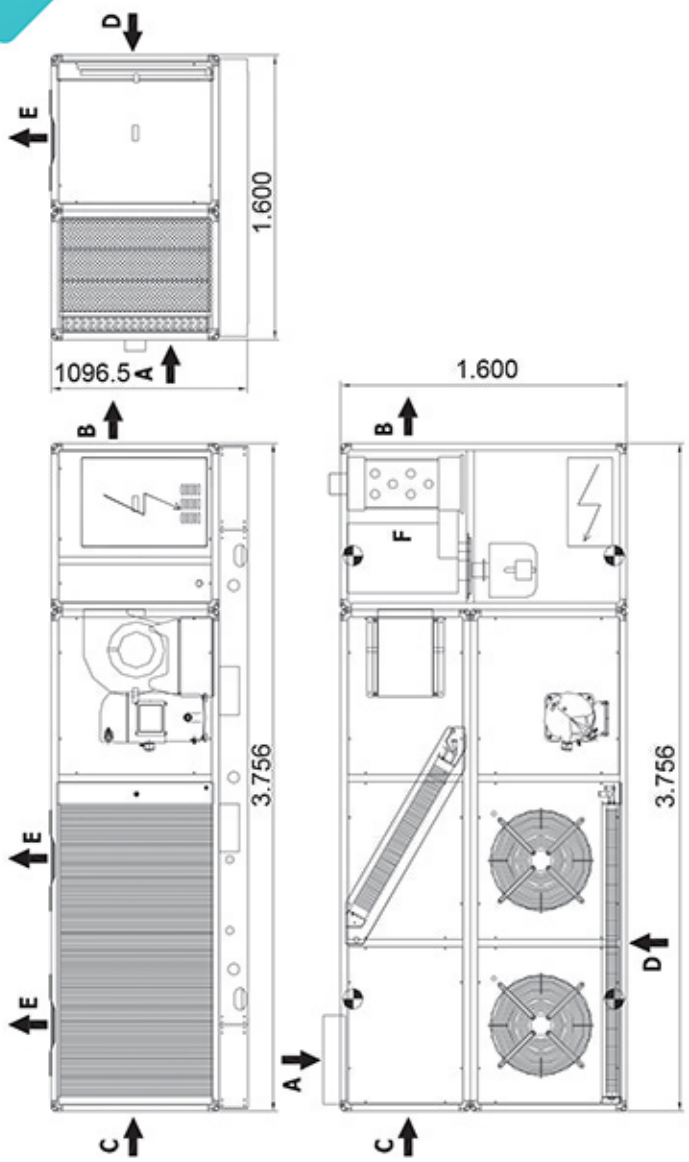
Model	ta		25			30			35			40			45		
	tbs	tbu	Pf	Pfs	Pa	Pf	Pfs	Pa	Pf	Pfs	Pa	Pf	Pfs	Pa	Pf	Pfs	Pa
MIRAC 10m	22	16	8,4	7,1	2,6	8,0	6,8	2,9	7,5	6,4	3,1	7,0	5,9	3,0	6,3	5,4	3,7
	24	17	9,1	7,7	2,6	8,6	7,3	2,9	8,1	6,9	3,1	7,6	6,4	3,0	6,9	5,9	3,7
	26	19	9,8	8,3	2,6	9,3	7,9	2,9	8,8	7,4	3,1	8,2	7,0	3,0	7,6	6,4	3,7
	27	20	10,2	8,7	2,6	9,7	8,2	2,9	**9,1**	**7,8**	**3,1**	8,5	7,3	3,0	7,9	6,7	3,7
	30	22	11,5	9,7	2,6	10,8	9,2	2,9	10,2	8,7	3,1	9,6	8,1	3,0	8,8	7,5	3,7
MIRAC 10	22	16	8,5	7,2	2,6	8,1	6,9	2,9	7,6	6,5	3,1	7,1	6,0	3,1	6,5	5,5	3,9
	24	17	9,2	7,8	2,6	8,7	7,4	2,9	8,2	7,0	3,2	7,7	6,5	3,1	7,1	6,0	3,9
	26	19	10,0	8,5	2,6	9,4	8,0	2,9	8,9	7,6	3,2	8,3	7,1	3,1	7,7	6,5	3,9
	27	20	10,3	8,8	2,6	9,8	8,3	2,9	**9,3**	**7,9**	**3,2**	8,7	7,4	3,1	8,0	6,8	3,9
	30	22	11,5	9,8	2,6	11,0	9,3	2,9	10,3	8,8	3,2	9,7	8,2	3,1	9,0	7,6	3,9
MIRAC 14	22	16	13,0	11,0	4,4	12,2	10,4	4,8	11,4	9,7	5,1	10,5	9,0	5,6	9,6	8,1	6,1
	24	17	14,1	12,0	4,4	13,3	11,3	4,8	12,5	10,6	5,1	11,5	9,8	5,6	10,5	8,9	6,1
	26	19	15,4	13,1	4,4	14,5	12,3	4,7	13,6	11,6	5,1	12,6	10,7	5,6	11,5	9,7	6,1
	27	20	16,0	13,6	4,4	15,1	12,9	4,7	**14,2**	**12,1**	**5,1**	13,1	11,2	5,6	12,0	10,2	6,1
	30	22	18,1	15,4	4,4	17,2	14,6	4,7	16,1	13,7	5,1	15,0	12,7	5,7	13,7	11,6	6,1
MIRAC 18	22	16	16,3	13,9	5,9	15,5	13,1	6,3	14,5	12,4	6,8	13,6	11,5	7,4	12,5	10,7	8,1
	24	17	17,8	15,1	5,9	16,8	14,3	6,3	15,8	13,4	6,8	14,8	12,5	7,4	13,6	11,6	8,1
	26	19	19,3	16,4	5,9	18,3	15,5	6,3	17,2	14,6	6,8	16,0	13,6	7,4	14,8	12,6	8,1
	27	20	20,1	17,1	5,9	19,0	16,2	6,3	**17,9**	**15,2**	**6,8**	16,7	14,2	7,4	15,4	13,1	8,1
	30	22	22,7	19,3	5,9	21,5	18,3	6,3	4,8	4,1	6,8	18,9	16,1	7,4	17,4	14,8	8,1
MIRAC 25	22	16	23,3	19,8	7,0	21,9	18,6	7,7	20,5	17,4	8,5	19,1	16,2	9,3	17,7	15,1	10,2
	24	17	25,2	21,5	7,0	23,7	20,2	7,7	22,2	18,9	8,5	20,7	17,6	9,3	19,3	16,4	10,2
	26	19	27,3	23,2	7,0	25,7	21,8	7,7	24,0	20,4	8,5	22,4	19,1	9,3	20,9	17,7	10,2
	27	20	28,3	24,1	7,0	26,7	22,7	7,7	**25,0**	**21,2**	**8,5**	23,3	19,8	9,3	21,7	18,5	10,2
	30	22	31,7	27,0	7,0	29,9	25,4	7,7	28,1	23,9	8,5	26,2	22,3	9,4	24,4	20,8	10,2
MIRAC 30	22	16	27,0	23,0	8,1	25,4	21,6	8,9	23,7	20,2	9,6	22,1	18,8	10,7	20,6	17,5	11,7
	24	17	29,3	24,9	8,1	27,5	23,4	8,9	25,7	21,9	9,6	24,0	20,4	10,7	22,3	19,0	11,7
	26	19	31,6	26,9	8,0	29,7	25,3	8,9	27,9	23,7	9,6	26,0	22,1	10,7	24,2	20,6	11,7
	27	20	32,8	27,9	8,0	30,9	26,3	8,9	**29,0**	**24,6**	**9,6**	27,0	23,0	10,7	25,2	21,4	11,7
	30	22	36,8	31,3	8,0	34,7	29,5	8,9	32,5	27,6	9,6	30,4	25,8	10,7	28,3	24,1	11,7
MIRAC 35	22	16	33,5	28,5	9,9	31,5	26,7	10,9	29,4	25,0	11,9	27,2	23,1	13,0	25,1	21,4	14,2
	24	17	36,2	30,8	10,0	34,0	28,9	10,9	31,8	27,0	11,9	29,5	25,1	13,1	27,3	23,2	14,2
	26	19	39,1	33,3	10,0	36,8	31,3	10,9	34,4	29,2	12,0	32,0	27,2	13,1	29,6	25,2	14,3
	27	20	40,7	34,6	10,0	38,2	32,5	10,9	**35,8**	**30,4**	**12,0**	33,3	28,3	13,1	30,8	26,2	14,4
	30	22	45,6	38,7	10,1	42,9	36,5	11,0	40,2	34,1	12,0	37,5	31,8	13,3	34,8	29,5	14,4
MIRAC 45	22	16	41,1	34,9	11,6	38,7	32,9	13,8	36,3	30,8	15,0	33,8	28,7	16,5	31,2	26,5	18,0
	24	17	44,4	37,7	11,6	41,9	35,6	13,7	39,3	33,4	15,0	36,6	31,1	16,5	33,8	28,7	18,0
	26	19	48,0	40,8	11,7	45,3	38,5	13,7	42,6	36,2	15,0	39,7	33,7	16,5	36,6	31,1	18,0
	27	20	49,8	42,3	11,7	47,1	40,0	13,7	**44,2**	**37,6**	**15,0**	41,3	35,1	16,5	38,1	32,4	18,0
	30	22	55,7	47,4	11,7	52,7	44,8	13,6	49,6	42,1	14,9	46,3	39,3	16,5	42,8	36,4	18,0
MIRAC 50	22	16	46,6	39,6	14,2	43,3	36,8	15,5	41,0	34,8	17,0	38,2	32,4	18,7	35,5	30,2	20,5
	24	17	50,5	42,9	14,1	47,5	40,3	15,5	44,4	37,7	17,0	41,4	35,2	18,7	38,5	32,7	20,5
	26	19	54,5	46,4	14,1	51,3	43,6	15,5	48,1	40,9	17,0	44,9	38,1	18,7	41,7	35,5	20,5
	27	20	56,7	48,2	14,1	53,3	45,3	15,5	**50,0**	**42,5**	**17,0**	46,7	39,7	18,7	43,4	36,9	20,5
	30	22	63,4	53,9	14,0	59,8	50,8	15,4	56,1	47,7	16,9	52,5	44,6	18,7	48,9	41,5	20,5

Model	ta		25			30			35			40			45		
	tbs	tbu	Pf	Pfs	Pa	Pf	Pfs	Pa	Pf	Pfs	Pa	Pf	Pfs	Pa	Pf	Pfs	Pa
MIRAC 60	22	16	54,0	45,9	16,3	50,8	43,1	17,8	47,5	40,4	19,6	44,2	37,5	20,5	40,8	34,7	23,5
	24	17	58,4	49,7	16,3	55,0	46,7	17,8	51,5	43,7	19,6	47,9	40,7	20,5	44,4	37,7	23,5
	26	19	63,1	53,7	16,3	59,5	50,5	17,8	55,7	47,4	19,5	52,0	44,2	20,5	48,2	40,9	23,6
	27	20	65,6	55,8	16,3	61,8	52,5	17,8	**58,0**	**49,3**	**19,5**	54,1	46,0	20,5	50,2	42,6	23,6
	30	22	73,5	62,5	16,2	69,3	58,9	17,8	65,1	55,4	19,5	60,9	51,7	20,4	56,6	48,1	23,6
MIRAC 70	22	16	67,1	57,0	19,6	63,0	53,5	21,4	58,7	49,9	23,5	54,4	46,2	25,7	50,1	42,6	28,0
	24	17	72,5	61,6	19,6	68,1	57,9	21,4	63,6	54,1	23,6	59,0	50,2	25,8	54,5	46,3	29,2
	26	19	78,3	66,6	19,7	73,6	62,6	21,4	68,8	58,5	23,6	64,0	54,4	25,9	59,2	50,3	29,3
	27	20	81,4	69,2	19,7	76,5	65,1	21,5	**71,6**	**60,8**	**23,6**	66,6	56,6	25,9	61,6	52,4	29,4
	30	22	91,2	77,5	19,9	85,8	73,0	21,6	80,4	68,3	23,7	74,9	63,7	26,0	69,5	59,1	29,5
MIRAC 90	22	16	82,1	69,8	25,4	77,4	65,8	27,7	72,6	61,7	30,4	67,6	57,4	33,1	62,3	53,0	36,1
	24	17	88,8	75,5	25,4	83,9	71,3	27,6	78,6	66,8	30,4	73,3	62,3	33,1	67,6	57,5	36,1
	26	19	95,9	81,5	25,3	90,6	77,0	27,6	85,1	72,3	30,3	79,3	67,4	33,0	73,3	62,3	36,1
	27	20	99,6	84,7	25,2	94,1	80,0	27,4	**88,5**	**75,2**	**30,3**	82,5	70,1	33,0	76,2	64,8	36,1
	30	22	111,4	94,7	25,2	105,4	89,6	27,3	99,2	84,3	30,2	92,6	78,7	32,9	85,6	72,8	36,1
MIRAC 100	22	16	93,0	73,7	29,6	88,0	69,7	32,4	82,0	64,9	35,6	76,0	60,2	39,0	71,0	56,2	42,8
	24	17	101,0	80,0	29,4	95,0	75,2	32,4	89,0	70,5	35,6	83,0	65,7	39,0	77,0	61,0	42,8
	26	19	109,0	86,3	29,4	103,0	81,6	32,2	96,0	76,0	35,6	90,0	71,3	39,0	83,0	65,7	43,0
	27	20	113,0	89,5	29,4	107,0	84,7	32,2	**96,0**	**76,6**	**35,4**	93,0	73,7	39,0	87,0	68,9	43,0
	30	22	127,0	100,6	29,2	120,0	95,0	32,2	112,0	88,7	35,4	105,0	83,2	39,0	98,0	77,6	43,0
MIRAC 120	22	16	108,0	85,5	33,0	102,0	80,8	36,4	95,0	75,2	40,0	88,0	69,7	44,0	82,0	64,9	48,2
	24	17	117,0	92,7	33,0	110,0	87,1	36,4	103,0	81,6	40,0	96,0	76,0	44,0	89,0	70,5	48,4
	26	19	126,0	99,8	33,0	119,0	94,2	36,2	111,0	87,9	40,0	104,0	82,4	44,0	96,0	76,0	48,4
	27	20	131,0	103,8	32,8	124,0	98,2	36,2	**111,0**	**88,2**	**42,4**	108,0	85,5	44,0	100,0	79,2	48,4
	30	22	147,0	116,4	32,8	139,0	110,1	36,0	130,0	103,0	42,4	122,0	96,6	44,0	113,0	89,5	48,4
MIRAC 140	22	16	134,0	106,1	43,4	126,0	99,8	47,4	117,0	92,7	51,6	109,0	86,3	56,4	100,0	79,2	61,2
	24	17	145,0	114,8	43,6	136,0	107,7	47,4	127,0	100,6	51,8	118,0	93,5	56,6	109,0	86,3	61,6
	26	19	157,0	124,3	43,8	147,0	116,4	47,6	138,0	109,3	52,0	128,0	101,4	56,8	118,0	93,5	61,8
	27	20	163,0	129,1	43,8	153,0	121,2	47,6	**137,0**	**110,9**	**54,8**	133,0	105,3	56,8	123,0	97,4	62,0
	30	22	182,0	144,1	44,0	172,0	136,2	47,8	161,0	127,5	52,2	150,0	118,8	57,0	139,0	110,1	62,4
MIRAC 180	22	16	164,0	129,9	51,8	155,0	122,8	56,6	145,0	114,8	62,0	135,0	106,9	67,8	125,0	99,0	77,4
	24	17	178,0	141,0	51,6	168,0	133,1	56,4	157,0	124,3	61,8	147,0	116,4	67,8	135,0	106,9	77,2
	26	19	192,0	152,1	51,4	181,0	143,4	56,2	170,0	134,6	61,6	159,0	125,9	67,8	147,0	116,4	77,2
	27	20	199,0	157,6	51,4	188,0	148,9	56,2	**170,0**	**136,6**	**65,6**	165,0	130,7	67,8	152,0	120,4	77,2
	30	22	223,0	176,6	51,2	211,0	167,1	56,0	199,0	157,6	61,4	185,0	146,5	67,6	171,0	135,4	77,2
MIRAC 240	22	16	238,2	202,5	79,9	222,4	189,0	84,7	196,8	167,3	92,5	190,4	161,8	94,5	174,8	148,6	99,5
	24	17	258,6	219,8	81,3	241,6	205,4	86,3	214,4	182,2	94,7	207,6	176,5	96,9	190,6	162,0	102,3
	26	19	280,2	238,2	82,5	262,0	222,7	87,9	233,0	198,1	96,9	225,8	191,9	99,1	207,6	176,5	105,1
	27	20	291,6	247,9	83,1	272,8	231,9	88,5	**242,8**	**206,4**	**97,9**	235,2	199,9	100,3	216,6	184,1	106,3
	30	22	327,6	278,5	84,7	307,0	261,0	90,7	274,0	232,9	100,9	265,6	225,8	103,5	245,0	208,3	110,3

Internal air temperature (°C)	ta
External air temperature (°C) D.B.	tbs
External air temperature (°C) W.B.	tbu
Cooling capacity (kW)	Pf
Cooling sensible capacity (kW)	Pfs
Absorbed power (kW)	Pa

DIMENSIONAL DRAWING

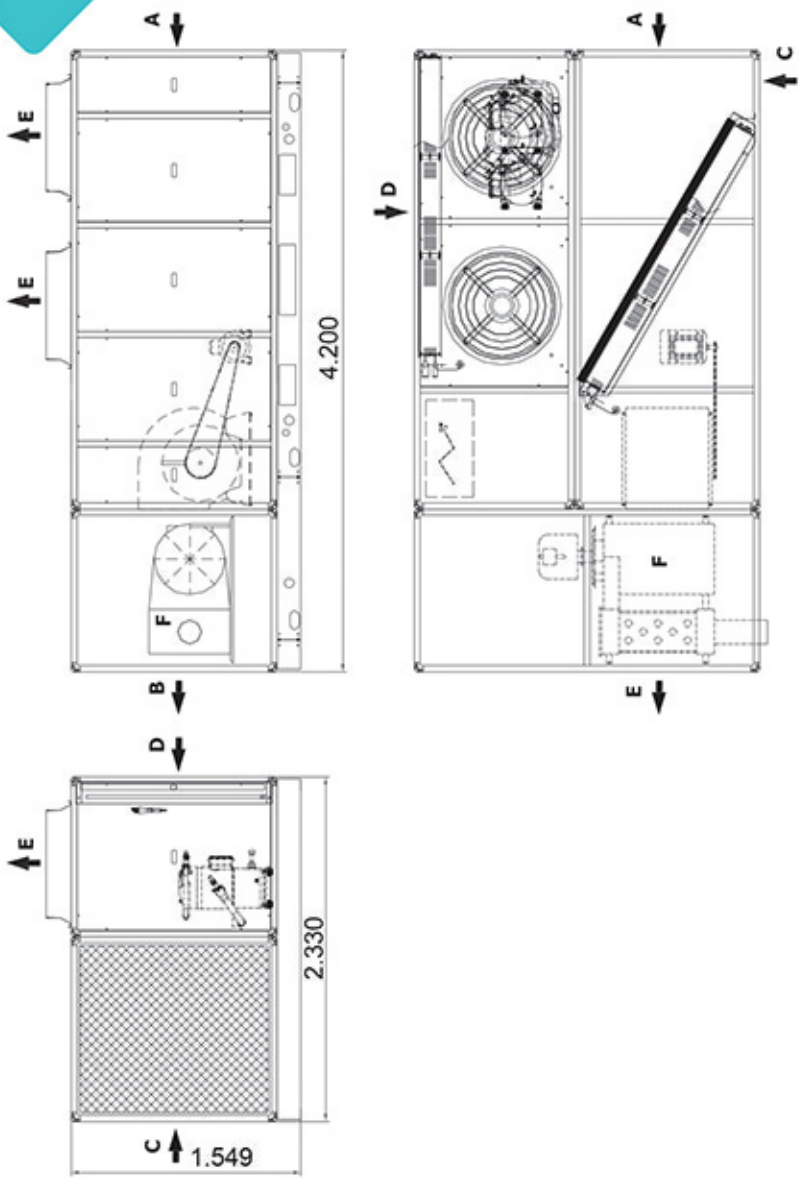
Mirac GR 30-45



AI R FROM USERS	A
AIR TO USERS	B
SUBSTITUTION AIR	C
INLET SOURCE AIR	D
OUTLET SOURCE AIR	E
BURNER	F

DIMENSIONAL DRAWING

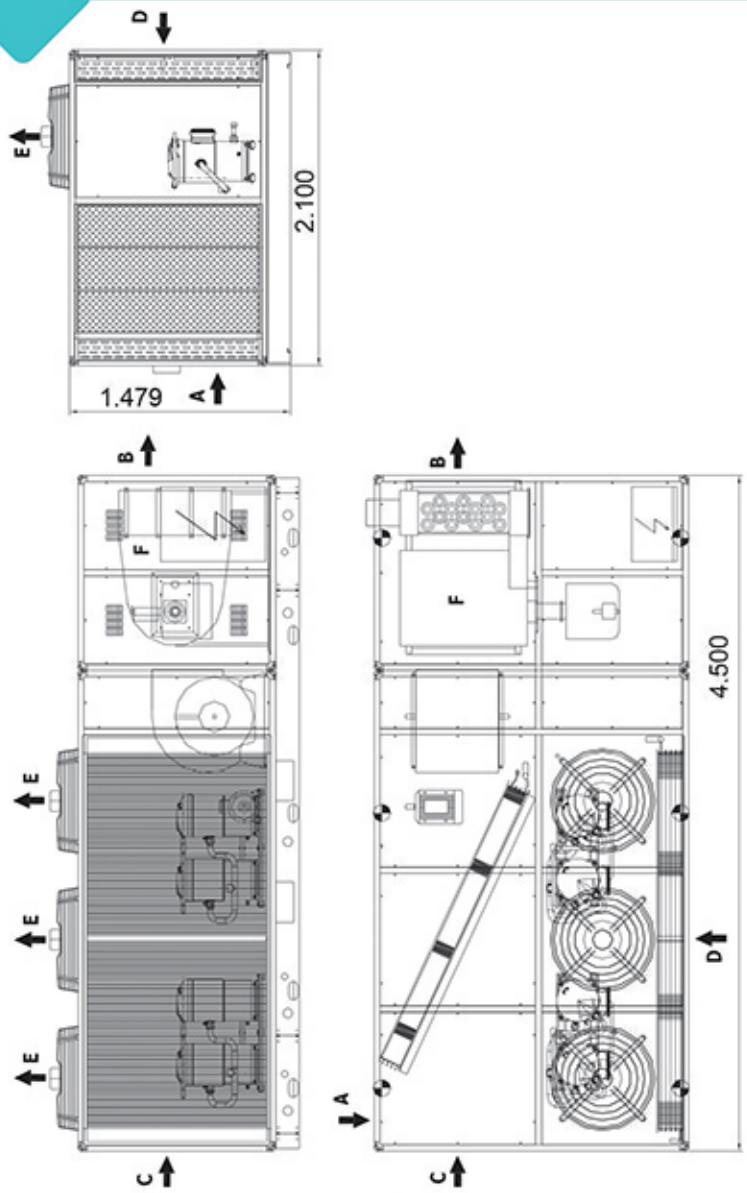
Mirac GR 50-90



AI R FROM USERS	A
AIR TO USERS	B
SUBSTITUTION AIR	C
INLET SOURCE AIR	D
OUTLET SOURCE AIR	E
BURNER	F

DIMENSIONAL DRAWING

Mirac GR 100-140

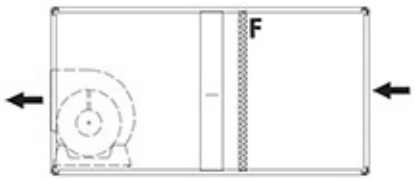


AI R FROM USERS	A
AIR TO USERS	B
SUBSTITUTION AIR	C
INLET SOURCE AIR	D
OUTLET SOURCE AIR	E
BURNER	F

For bigger sizes contact THE TECHNICAL OFFICE

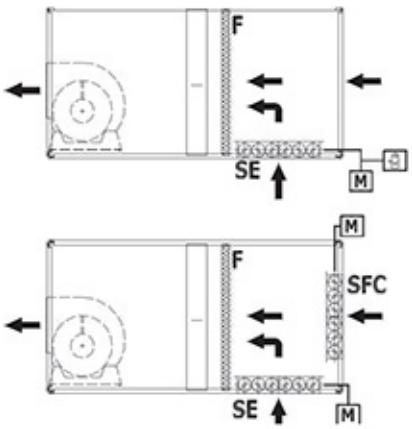
Operating configurations

1) Standard



It treats all the air intake : the air intake will be handled and then reject into the room.

2) With external air damper



Outdoor air damper "SE" which allows the introduction of air intake.

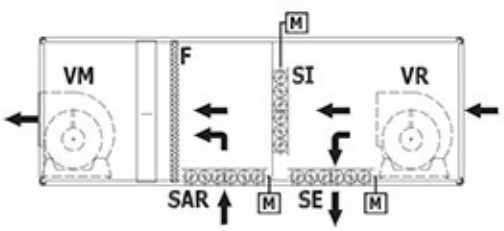
Manual SE: the percentage of outdoor air is fix.

ON/OFF motorized SE: it closes if the ventilation is OFF

MODULAR: it has a variable opening controlled by an air sensor (for example the VOC probe, or CO2 probe and so on)

FREE COOLING: it has a variable opening for the introduction of primary external air, able to bring down the indoor thermal charges.

3) Mixing chamber with 3 dampers



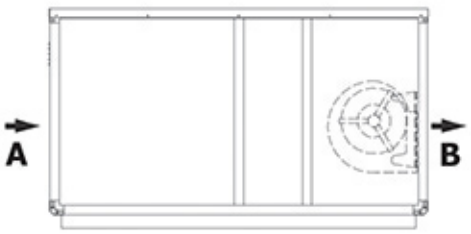
Complete management of the air delivery flow, outdoor air inlet and intake with automatic ejection of the air intake, by means of a VR intake fan.

Working mode :
- all recycle
- with a mixing air intake and fresh air
- only fresh air with a total expulsion of the air intake (total free-cooling)

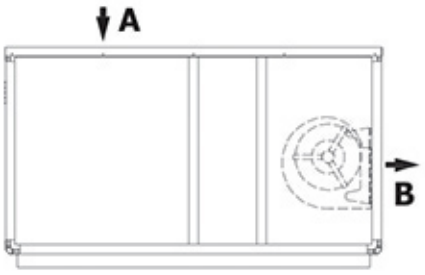
The free-cooling mode can be developed in the following way:
- temperature
- enthalpy

Air flow configurations

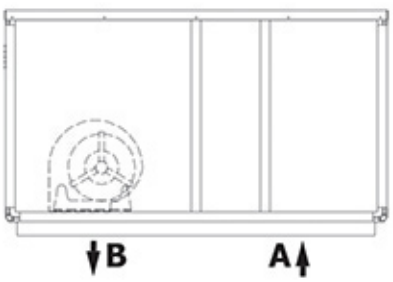
Configuration A



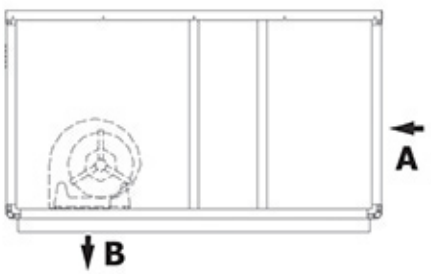
Configuration B



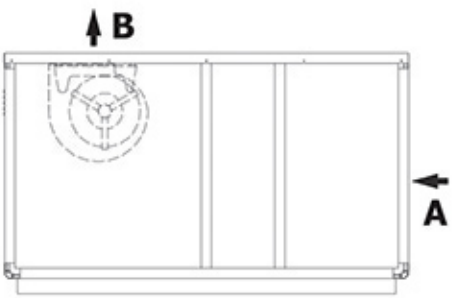
Configuration C



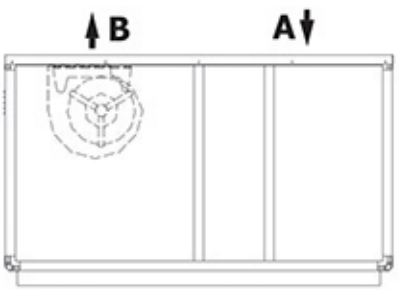
Configuration D



Configuration E



Configuration F



AI R FROM USERS (A)

AIR TO USERS (B)

The technical present data in the technical bulletin are not binding. The FROST ITALY S.p.A. reserves the faculty of make in any moment all the modifications thought necessary to the improvement of the product.