AiCool

POWERED BY AiFO

DURABILITY STARTS WITH THE MATERIAL

REFRIGERATION
MONOBLOCKS

Save time and money

with modern, proven refrigeration technology

AiCool monoblock units provide efficient cooling while reducing operating costs through the use of energy-efficient components.
These plug-and-play units are ready for immediate commissioning, helping to shorten installation time and reduce investment costs.

Technical Advantages

- **Controllers Ready for Remote Monitoring**

  Integration with BMS systems and remote monitoring enable centralized management and rapid diagnostics.

- **Refrigeration System with Expansion Valves**

  Precise superheat control ensures stable refrigeration system operation, higher efficiency, and enhanced compressor protection.

- **Optimized Evaporator Design**

  Optimized evaporator geometry ensures heat transfer uniformity and supports effective defrosting, reducing performance losses.

- **Condensers Located in the Lower Section of the Unit**

  Optimized airflow improves heat transfer and enhances system operating stability.

- **Innovative Solutions**
  - Custom-made solutions designed to operate in ambient temperatures ranging from -20°C to +43°C
  - Hybrid condensing systems

Service Benefits

- **Faster Diagnostics and Service Response Through Remote Monitoring**

  Remote access to parameters, alarm history, and BMS integration speed up fault diagnosis.

- **Standardized Service and Easy Spare Parts Access**

  Standardized components and widely available solutions shorten repair times and simplify servicing.

- **Simplified Service and Reduced Maintenance Time**

  A well-designed construction and easy access to components reduce service time and operating costs.

- **Clear Technical Documentation Supporting Installation and Maintenance**

  Clear electrical and refrigeration diagrams facilitate diagnostics, installation, and subsequent technical maintenance.

- **Easier Refrigeration System Management**

  An intuitive controller and simple menu structure speed up commissioning and training while reducing errors.

Ensure safety and reliability

with durable solutions and long service life

A durable construction, proven components, and intelligent control ensure a long service life, helping to protect your investment.

Safety

- **High resistance to demanding operating conditions**

  Designed to operate at ambient temperatures up to +43°C (up to +50°C on request), the unit ensures stable operation even under high summer loads.

- **Protection of stored products**

  Intelligent hot-gas defrosting and stable temperature control minimize temperature fluctuations and the risk of product loss.

- **Quality control of every unit before delivery**

  Quality checks at every stage of production reduce the risk of assembly errors and commissioning issues.

- **Safe and predictable operation**

  High-quality components and durable construction ensure controlled and safe operating conditions.

- **Extended warranty to protect your investment**

  An extended warranty provides greater financial security and reduces risk for the end user.

Durability and operational stability

- **Built to withstand demanding conditions**

  The stainless steel and galvanized steel construction provides excellent durability and mechanical resistance.

- **Designed for demanding environments and applications**

  The units are designed for intensive industrial use and high ambient temperatures.

- **High reliability with proven components**

  Embraco compressors and components from leading manufacturers, including Ferro Coils, Dixell, Carel, and Sanhua, combined with reliable control systems, ensure stable and consistent operation.

- **Consistent performance across every unit**

  Quality control of every unit ensures consistent and predictable operating parameters.

- **High system uptime**

  Standardized, high-quality components minimize failures and ensure reliable system operation.

Designed for HEAVY DUTY operation

Built for performance and flexibility

AiCool monoblock units combine a robust industrial design with advanced engineering solutions, ensuring reliable operation, easy installation, and simple maintenance.

Financial benefits of a premium monoblock

- **Lower installation and commissioning costs**

  Fast delivery, easy configuration, and quick commissioning shorten project lead times and can reduce installation costs by up to 80% compared with traditional split systems.

- **Lower total cost of ownership (TCO)**

  EC fans, intelligent defrost control, and an optimized system design significantly reduce energy consumption throughout the unit's lifecycle.

- **Lower operating costs**

  Embraco compressors, reliable control systems, and remote monitoring reduce the risk of costly failures and service interventions.

- **Reduced downtime and operational losses**

  Standardized components, fast spare parts availability, and remote diagnostics reduce service downtime and minimize operational losses.

- **Faster return on investment**

  Lower energy consumption, reduced service costs, and unattended operation help accelerate ROI.

New implementations

- **Monoblock units with hybrid condensing system**

  Hybrid monoblock units with an air-cooled condenser and a water-cooled plate heat exchanger offer high flexibility, allowing heat recovery through a Waterloop system or direct heat rejection outside the unit.

- **Dual-range monoblock units for cooling and freezing**

  A versatile monoblock unit with an inverter compressor, operating on 230 V at both 50 Hz and 60 Hz, designed for cooling rooms (-5°C to +5°C) and freezing rooms (-25°C to -15°C), with one-button mode switching.

- **Monoblock units for extreme ambient temperatures**

  Designed to operate in ambient temperatures from +10°C to +50°C. A dedicated condenser and control algorithm ensure efficient heat rejection and stable operation under demanding conditions.

- **Side air discharge system**

  Enables monoblock operation in confined spaces by directing heat away from the installation area or redirecting warm air to spaces requiring additional heating.

Long-term testing

in a climate chamber

We conduct precise testing of our monoblock units under extreme temperature and climate conditions. These tests allow us to accurately assess performance, parameter stability, and refrigeration system reliability.

Technical options

available for configuration

VERSION TYPE	STANDARD MODELS	OPTIONAL VERSIONS
OPERATING TEMPERATURE RANGE	+10°C to +43°C	+10°C do +43°C – high- and low-pressure switches and crankcase heater +10°C do +50°C – monoblock designed for operation in demanding ambient conditions
COOLED SPACE VOLUME	3 – 65 m³ (larger volumes on request)	> 65 m³
COOLING CAPACITY	0,5 – 3,9 kW (higher capacities on request)	> 3,9 kW
COMPRESSOR	on/off	Inverter compressor
POWER SUPPLY	230V / 50Hz	230V / 50-60Hz, 110-120V / 50-60Hz
EVAPORATOR	Corrosion protection	
MONITORING	Possibility of integration with remote monitoring systems	Optional IoT gateway
HEAT EXCHANGER FANS	Energy-efficient EC motors	
CONDENSATE EVAPORATION	AISI 316 stainless steel coil	
HOUSING	Stainless steel	
CONDENSING SYSTEM	Conventional – air cooling	WATERLOOP – water cooling and heat recovery HYBRID – air-cooled and plate condenser (WATERLOOP) in one unit
AIR DISCHARGE	At the equipment installation site	With damper – directed air discharge
COOLING SYSTEM	Single-range – refrigeration or freezing	Dual-range operating temperature – refrigeration and freezing in one unit
FOR PU PANELS WITH A THICKNESS OF	PU panel 60/80/100 mm	Any PU panel thickness
LIGHTING	—	Lighting integrated into the monoblock
DOOR OPENING SENSOR	Yes	—

WALL-MOUNTED MONOBLOCK FOR COLD ROOMS

- Complete refrigeration and freezing systems with a stainless steel housing, designed for wall-mounted installation in cold rooms
- Designed for installation in sheltered areas, protected from weather conditions, with ambient temperatures from +10°C to +43°C (from -20°C to +43°C on request)
- Dual-range operation: cooling and freezing in one unit (on request)
- Hot-gas condensate evaporation system
- Automatic hot-gas defrost

TECHNICAL SPECIFICATIONS

MBP (-5°C / 0°C / +5°C) — OPERATING TEMPERATURE RANGE: +10°C / +43°C

COLD-ROOM INTERNAL TEMP.		-5°C				0°C				+5°C				POWER SUPPLY	AIRFLOW CONDENSER	NET WEIGHT
SYMBOL	SIZE BY TABLE	EXTERNAL TEMPERATURE				EXTERNAL TEMPERATURE				EXTERNAL TEMPERATURE						
		43°C		32°C		43°C		32°C		43°C		32°C				
		m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	V~/Ph/Hz	m³/h	Kg
MBP-KOB-M04.SA	(1)	4	790	4,8	948	5,2	932	6,8	1118	8	1182	9,5	1400	230/1/50	850	46
MBP-KOB-M05.SA	(1)	5	930	5,9	1099	6,5	1136	8,3	1339	9,8	1373	11,3	1614		850	48
MBP-KOB-M07.SA	(2)	7	1045	8,5	1293	9,5	1320	10,8	1625	12,1	1637	13,5	1998		1700	60
MBP-KOB-M08.SA	(2)	8	1362	9,5	1638	10	1685	14,5	2028	15,9	2067	18,5	2482		1700	63
MBP-KOB-M09.SA	(2)	9	1580	10,8	1896	11,2	1864	16,5	2236	18,4	2364	23,4	2800		1700	75
MBP-KOB-M12.SA	(2)	12	1860	14,1	2198	15	2272	20,9	2678	24,5	2746	28	3228		1700	78
MBP-KOB-M18.SA	(3)	18	2090	23,1	2586	21,6	2640	32,6	3250	35	3274	43	3996		1700	90

PARAMETERS CALCULATED ACCORDING TO EN 12900 FOR: ΔT CONDENSATION=10K, ΔT EVAPORATION=10K;
SUGGESTED VOLUME CALCULATED FOR INSULATED PANELS WITH A THICKNESS OF 60 MM AND INSULATED FLOOR.

LBP (-25°C / -20°C / -15°C) — OPERATING TEMPERATURE RANGE: +10°C / +43°C

FREEZING-ROOM INTERNAL TEMP.		-25°C				-20°C				-15°C				POWER SUPPLY	AIRFLOW CONDENSER	NET WEIGHT
SYMBOL	SIZE BY TABLE	EXTERNAL TEMPERATURE				EXTERNAL TEMPERATURE				EXTERNAL TEMPERATURE						
		43°C		32°C		43°C		32°C		43°C		32°C				
		m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	V~/Ph/Hz	m³/h	Kg
MBP-KOB-L03.SA	(1)	3	523	3,3	675	4	699	4,8	873	5,8	900	8	1109	230/1/50	850	56
MBP-KOB-L04.SA	(1)	4	716	4,5	876	5,5	926	6,3	1121	9,7	1171	11	1406		850	59
MBP-KOB-L08.SA	(2)	8	1064	9,3	1350	13	1398	17	1746	23,2	1800	28	2218		1700	90
MBP-KOB-L13.SA	(3)	13	1432	14,6	1752	18,9	1852	23,7	2242	34,6	2342	39	2812		1700	90

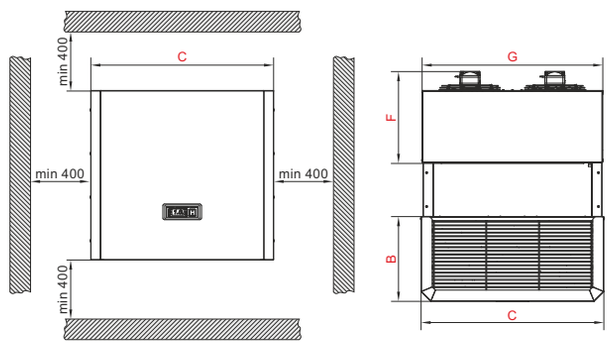
PARAMETERS CALCULATED ACCORDING TO EN 12900 FOR: ΔT CONDENSATION=10K, ΔT EVAPORATION=10K;
SUGGESTED VOLUME CALCULATED FOR INSULATED PANELS WITH A THICKNESS OF 100 MM AND INSULATED FLOOR.

DIMENSIONAL SPECIFICATIONS

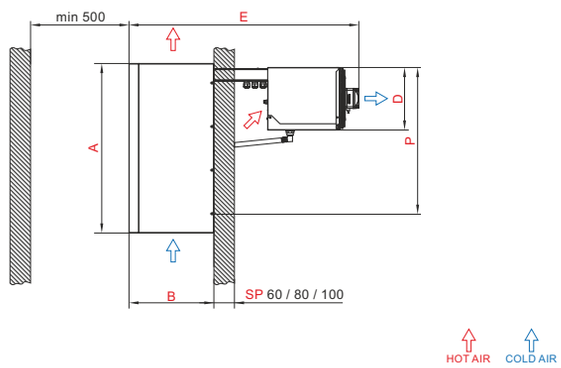
WALL-MOUNTED MONOBLOCK (PANEL-MOUNTED ON PU INSULATION PANEL) **MBP-KO...CH/MR**

	DIMENSIONS [mm]														
SIZE	A	B	C	D	E	F	G	H	L	M	N	O	P	Q	R
(1)	700	350	455	255	950	375	445	350	50	55	330	455	600	460	610
(2)	700	350	755	255	950	375	745	650	50	55	330	755	600	760	610
(3)	800	420	755	420	1060	400	745	650	50	55	480	755	600	760	610

MIN. DISTANCE FROM SIDE WALLS: 400 mm

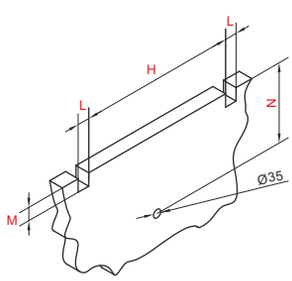


MIN. DISTANCE FROM FRONT WALL: 500 mm

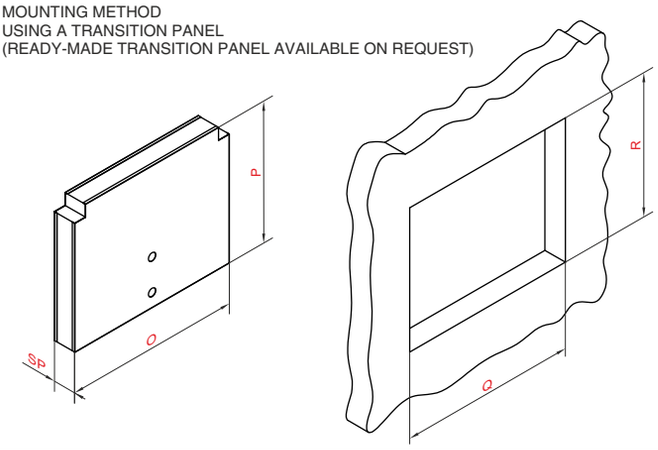


INSULATED COLD ROOM PANEL MOUNTING DIMENSIONS

MOUNTING METHOD DIRECTLY ON THE INSULATED PANEL

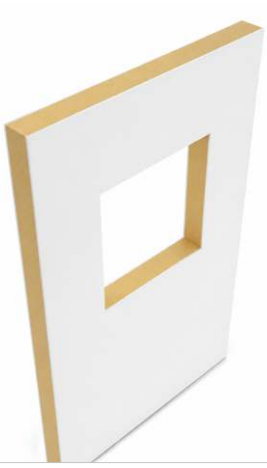


MOUNTING METHOD
USING A TRANSITION PANEL
(READY-MADE TRANSITION PANEL AVAILABLE ON REQUEST)



MONOBLOCK INSTALLATION USING A TRANSITION PANEL

CUT-OUT OPENING
IN THE INSULATED PANEL



TRANSITION PANEL WITH OPENINGS
FOR THE MONOBLOCK MOUNTING BRACKETS
AND CONDENSATE DRAIN PIPE

TRANSITION PANEL SECURED
TO THE MONOBLOCK WITH SCREWS

INSULATED PANEL READY FOR INSTALLATION
IN THE COLD ROOM,
WITH THE MONOBLOCK PRE-INSTALLED

CEILING-MOUNTED MONOBLOCK UNITS FOR COLD AND FREEZER ROOMS

- Complete refrigeration or freezing systems with a stainless steel housing, designed for ceiling-mounted installation in cold rooms
- Designed for installation in sheltered areas, protected from weather conditions, with ambient temperatures from +10°C to +43°C (from -20°C to +43°C on request)
- Dual-range operation: cooling and freezing in one unit (on request)
- Hot-gas condensate evaporation system
- Automatic hot-gas defrost

TECHNICAL SPECIFICATIONS

MBP (-5°C / 0°C / +5°C) — OPERATING TEMPERATURE RANGE: +10°C / +43°C

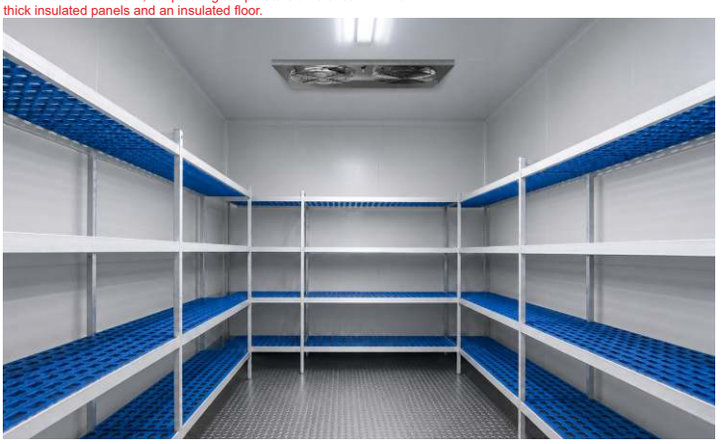
COLD-ROOM INTERNAL TEMP.		-5°C				0°C				+5°C				POWER SUPPLY	AIRFLOW CONDENSER	NET WEIGHT
SYMBOL	SIZE BY TABLE	EXTERNAL TEMPERATURE				EXTERNAL TEMPERATURE				EXTERNAL TEMPERATURE						
		43°C		32°C		43°C		32°C		43°C		32°C				
		m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	V~/Ph/Hz	m³/h	Kg
MBP-KOS-M04.SA	(1)	4	790	4,8	948	5,2	932	6,8	1118	8,0	1182	9,5	1400	230/1/50	850	53
MBP-KOS-M05.SA	(1)	5	930	5,9	1099	6,5	1136	8,3	1339	9,8	1373	11,3	1614		850	54
MBP-KOS-M07.SA	(2)	7	1045	8,5	1293	9,5	1320	10,8	1625	12,1	1637	13,5	1998		1200	75
MBP-KOS-M09.SA	(3)	9	1580	10,8	1869	11,2	1864	16,5	2236	18,4	2364	23,4	2800		1700	85
MBP-KOS-M12.SA	(3)	12	1860	14,1	2198	15	2272	20,9	2678	24,5	2746	28	3228		1700	100
MBP-KOS-M18.SA	(3)	18	2090	23,1	2586	21,6	2640	32,6	3250	35	3274	43	3996		2400	105
MBP-KOS-M23.SA	(4)	23	2790	29,2	3297	28,7	3408	40,2	4017	42,6	4119	51,5	4842	400/3/50	2550	148
MBP-KOS-M27.SA	(4)	27	3135	35,4	3879	34,2	3960	49,2	4875	51,4	4911	64,3	5994		2550	148

Parameters calculated according to EN 12900 with: condensing temperature difference ΔT = 10 K, evaporating temperature difference ΔT = 10 K.
Recommended volume calculated for 60 mm thick insulated panels and an insulated floor.

LBP (-25°C / -20°C / -15°C) — OPERATING TEMPERATURE RANGE: +10°C / +43°C

FREEZING-ROOM INTERNAL TEMP.		-25°C				-20°C				-15°C				POWER SUPPLY	AIRFLOW CONDENSER	NET WEIGHT
SYMBOL	SIZE BY TABLE	EXTERNAL TEMPERATURE				EXTERNAL TEMPERATURE				EXTERNAL TEMPERATURE						
		43°C		32°C		43°C		32°C		43°C		32°C				
		m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	V~/Ph/Hz	m³/h	Kg
MBP-KOS-L03.SA	(1)	3	532	3,3	675	4	699	4,8	873	5,8	900	8	1109	230/1/50	850	62
MBP-KOS-L04.SA	(1)	4	716	4,5	876	5,5	926	6,3	1121	9,7	1171	11	1406		850	63
MBP-KOS-L08.SA	(3)	8	1064	9,3	1350	13	1398	17	1746	23,2	1800	28	2218		1700	100
MBP-KOS-L13.SA	(3)	13	1432	14,6	1752	18,9	1852	23,7	2242	34,6	2342	39	2812		1700	105
MBP-KOS-L15.SA	(4)	15	1596	18,5	2025	21,3	2097	26,8	2619	38,4	2700	48	3327	400/3/50	2550	148
MBP-KOS-L20.SA	(4)	20	2148	23,9	2628	28,5	2778	33,2	3363	50,0	3513	60	4218		2550	148

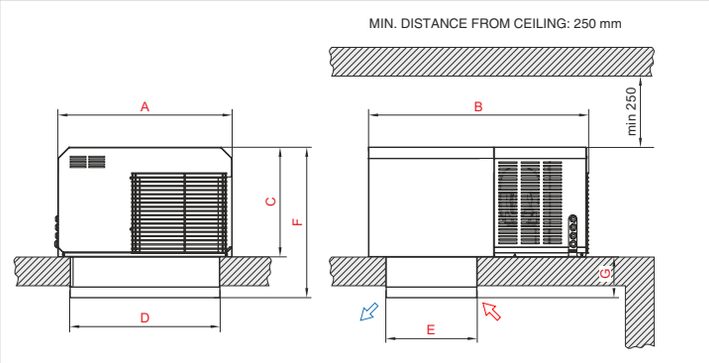
Parameters calculated according to EN 12900 with: condensing temperature difference ΔT = 10 K, evaporating temperature difference ΔT = 10 K.
Recommended volume calculated for 100 mm thick insulated panels and an insulated floor.

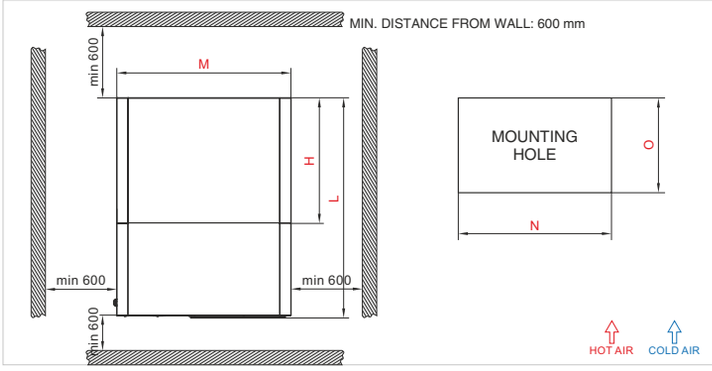


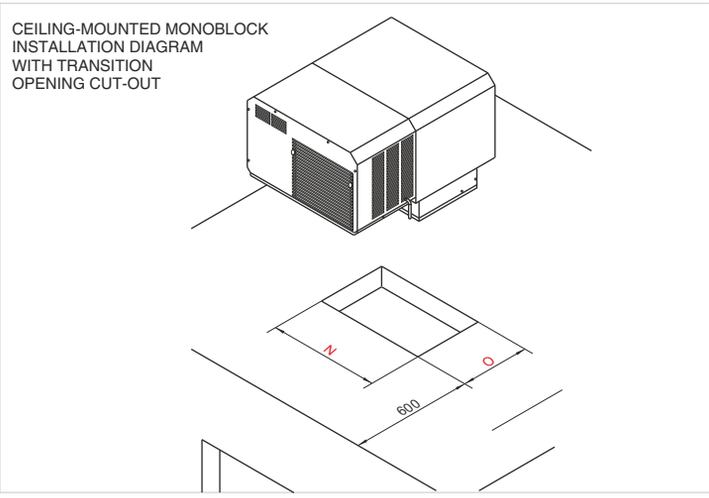
DIMENSIONAL SPECIFICATIONS

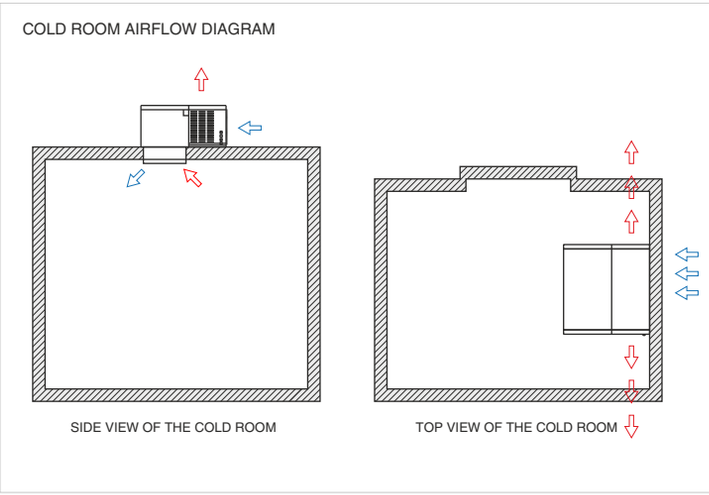
DIMENSIONS [mm] – CEILING-MOUNTED MONOBLOCK UNITS

			DIMENSIONS [mm]											MBP-KO...CH_S/MR_S
	SYMBOL	SIZE	A	B	C	D	E	F	G	H	L	M	N	O
COOLING	MBP-KOS-M04.SA	(1)	625	790	395	540	330	610	135	450	790	625	560	340
	MBP-KOS-M05.SA	(1)	625	790	395	540	330	610	135	450	790	625	560	340
	MBP-KOS-M07.SA	(2)	850	820	395	740	400	610	135	450	820	850	750	410
	MBP-KOS-M09.SA	(3)	1000	960	395	740	400	610	135	450	960	1000	750	410
	MBP-KOS-M12.SA	(3)	1000	960	395	740	400	610	135	450	960	1000	750	410
	MBP-KOS-M18.SA	(3)	1000	960	395	740	400	610	135	450	960	1000	750	410
	MBP-KOS-M23.SA	(4)	1450	960	395	1200	400	610	135	450	960	1450	1210	410
	MBP-KOS-M27.SA	(4)	1450	960	395	1200	400	610	135	450	960	1450	1210	410
FREEZING	MBP-KOS-L03.SA	(1)	625	790	395	540	330	630	155	450	790	625	560	340
	MBP-KOS-L04.SA	(1)	625	790	395	540	330	630	155	450	790	625	560	340
	MBP-KOS-L08.SA	(3)	1000	960	395	740	400	630	155	450	960	1000	750	410
	MBP-KOS-L13.SA	(3)	1000	960	395	740	400	630	155	450	960	1000	750	410
	MBP-KOS-L15.SA	(4)	1450	960	395	1200	400	630	155	450	960	1450	1210	410
	MBP-KOS-L20.SA	(4)	1450	960	395	1200	400	630	155	450	960	1450	1210	410

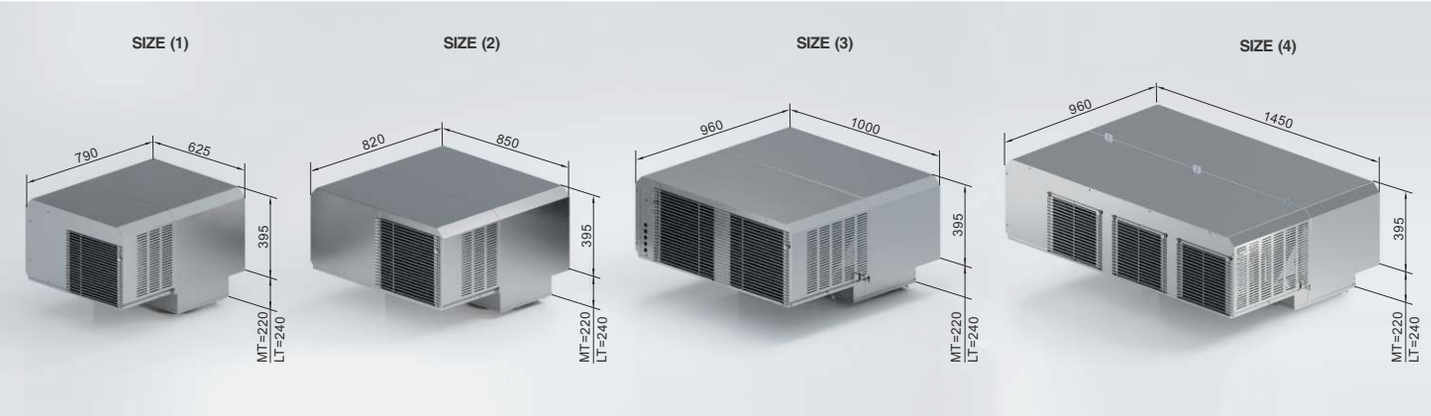








STANDARD MODEL SIZES – OVERALL DIMENSIONS



SIDE AIR DISCHARGE SYSTEM

INOX

R290

MONOBLOCK UNITS WITH SIDE AIR DISCHARGE

- The side air discharge system enables monoblock units to operate in areas with limited installation space and insufficient ventilation. By directing warm air away from the installation area, it prevents ambient temperature buildup, ensuring stable and efficient system operation. Optional dampers can be used to redirect warm air for room heating or exhaust excess heat outdoors.

  This solution is particularly suitable for small technical rooms, retail back-of-house areas, and spaces where heat buildup could reduce system performance or affect usability.

  An additional benefit is the ability to recover and use warm air to heat adjacent spaces, such as warehouses, staff areas, or work zones, improving energy efficiency and building comfort.

CEILING-MOUNTED MONOBLOCK UNITS FOR COLD ROOMS

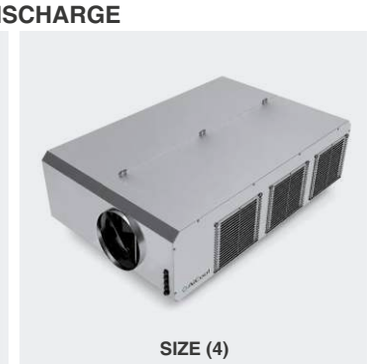
- Complete refrigeration or freezing systems with a stainless steel housing, designed for ceiling-mounted installation in cold and freezer rooms
- Designed for installation in sheltered areas, protected from weather conditions, with ambient temperatures from +10°C to +43°C (from -20°C to +43°C on request)
- Dual-range operation: cooling and freezing in one unit (on request)
- Hot-gas condensate evaporation system
- Automatic hot-gas defrost
- A wall-mounted version with side air discharge is also available on request

STANDARD CEILING-MOUNTED MONOBLOCK SIZES AS PER TABLE (p. 9) WITH SIDE AIR DISCHARGE

SIZE (1)

SIZE (2)

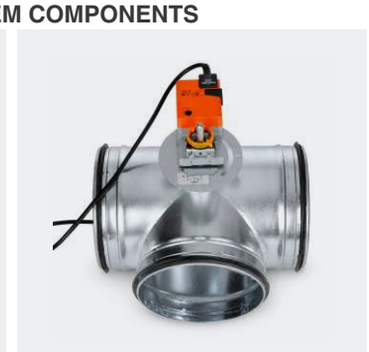
SIZE (3)



SIZE (4)

SIDE AIR DISCHARGE SYSTEM COMPONENTS

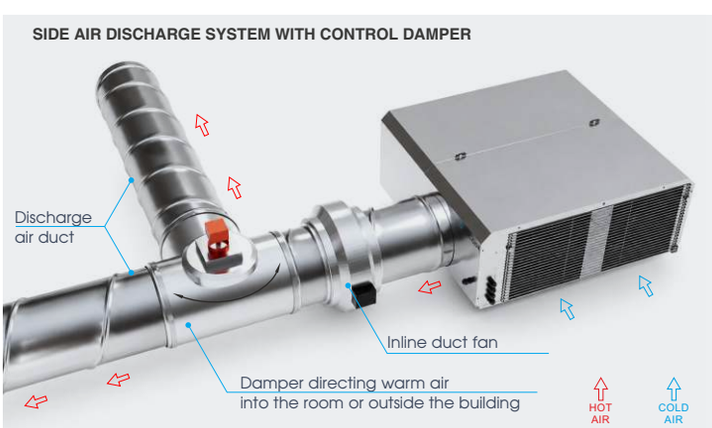
INLINE DUCT FAN



CONTROL DAMPER WITH ACTUATOR*

DISCHARGE DUCT

THERMOSTAT*



*The extended side air discharge system includes a control damper and thermostat

HEAT RECOVERY SYSTEM

INOX

R290

CEILING-MOUNTED MONOBLOCK UNITS FOR COLD AND FREEZER ROOMS – WATERLOOP

- Complete stainless-steel refrigeration or freezing systems, designed for ceiling-mounted installation in cold rooms
- Monoblock units designed for operation in sheltered areas at ambient temperatures of +10°C to +43°C (optionally +0°C to +43°C or -20°C to +43°C)
- Thermostatic expansion valve and hermetic compressor
- Hot-gas condensate evaporation system with AISI 316 stainless-steel coil
- Automatic hot-gas defrost
- Monoblock units equipped with a water-cooled condenser and condensing pressure control valves
- Suitable for systems equipped with flow-balancing valves, with shut-off valves available as an additional option

TECHNICAL SPECIFICATIONS

MBP (-5°C / 0°C / +5°C) WATERLOOP — OPERATING TEMPERATURE RANGE: +5°C / +43°C

COLD-ROOM INTERNAL TEMP.		-5°C						0°C						+5°C						WATER FLOW	PRESSURE DROP	HEAT LOAD	POWER SUPPLY
SYMBOL	SIZE BY TABLE	+48°C$_{H2O}$		+37°C$_{H2O}$		+5°C$_{H2O}$		+48°C$_{H2O}$		+37°C$_{H2O}$		+5°C$_{H2O}$		+48°C$_{H2O}$		+37°C$_{H2O}$		+5°C$_{H2O}$					
		m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	l/h	kPa	W	V~/Ph/Hz
MBP-KOS-M04.SW	(1)	4	790	4,8	948	5,5	990	5,2	932	6,8	1118	7,9	1240	8	1182	9,5	1400	10,5	1480	400	45	1700	230/1/50
MBP-KOS-M05.SW	(1)	5	930	5,9	1099	6,7	1202	6,5	1136	8,3	1339	9,5	1464	9,8	1373	11,3	1614	13	1763	450	50	2100	
MBP-KOS-M07.SW	(2)	7	1045	8,5	1293	10	1485	9,5	1320	10,8	1625	12,5	1848	12,1	1637	13,5	1998	15,8	2252	450	50	2450	
MBP-KOS-M09.SW	(3)	9	1580	10,8	1896	12,3	1980	11,2	1864	16,5	2236	19	2480	18,4	2364	23,4	2800	25,3	2960	800	50	3300	
MBP-KOS-M12.SW	(3)	12	1860	14,1	2272	18,5	2404	15	2272	20,9	2678	24,5	2928	24,5	2746	28	3228	32,5	3526	900	55	4100	
MBP-KOS-M18.SW	(3)	18	2090	23,1	2586	27,5	2970	21,6	2640	32,6	3250	36	3696	35	3274	43	3996	50	4504	900	35	4700	

Parameters calculated in accordance with EN 12900 for: evaporating temperature difference ΔT = 10 K.
Recommended room volume calculated for 60 mm thick insulated panels and an insulated floor.

For the following conditions:
Tint=0°C, TinH2O=+37°C

LBP (-25°C / -20°C / -15°C) WATERLOOP — OPERATING TEMPERATURE RANGE: +5°C / +43°C

FREEZING-ROOM INTERNAL TEMP.		-25°C						-20°C						-15°C						WATER FLOW	PRESSURE DROP	HEAT LOAD	POWER SUPPLY
SYMBOL	SIZE BY TABLE	+48°C$_{H2O}$		+37°C$_{H2O}$		+5°C$_{H2O}$		+48°C$_{H2O}$		+37°C$_{H2O}$		+5°C$_{H2O}$		+48°C$_{H2O}$		+37°C$_{H2O}$		+5°C$_{H2O}$					
		m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	m³	W	l/h	kPa	W	V~/Ph/Hz
MBP-KOS-L03.SW	(1)	3	532	3,3	675	3,8	763	4	699	4,8	873	5,4	980	5,8	900	8	1109	10	1239	350	40	1700	230/1/50
MBP-KOS-L04.SW	(1)	4	716	4,5	876	5,1	972	5,5	926	6,3	1121	7	1240	9,7	1171	11	1406	12	1550	400	40	2100	
MBP-KOS-L08.SW	(3)	8	1064	9,3	1350	10,4	1526	13	1398	17	1746	19	1960	23,2	1800	28	2218	32	2478	700	50	3400	
MBP-KOS-L13.SW	(3)	13	1432	14,6	1752	16,2	1944	18,9	1852	23,7	2242	27	2480	34,6	2342	39	2812	43	3100	800	55	4000	
MBP-KOS-L15.SW	(4)	15	1596	18,5	2025	21	2289	21,3	2097	26,8	2619	33	2940	38,4	2700	48	3327	53	3717	1050	55	5100	400/3/50
MBP-KOS-L20.SW	(4)	20	2148	23,9	2628	28	2916	28,5	2778	33,2	3363	41	3720	50	3513	60	4218	67	4650	1200	55	6300	

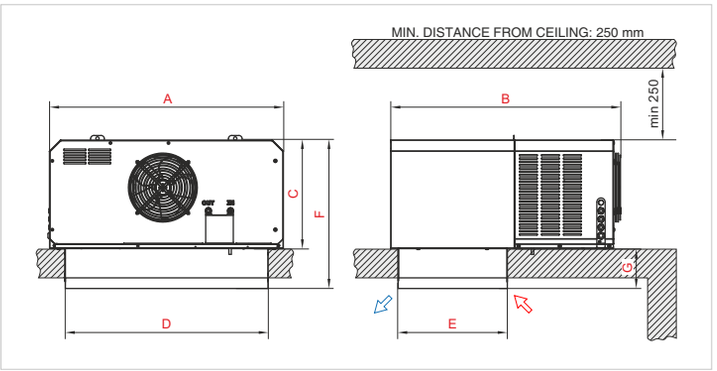
Parameters calculated in accordance with EN 12900 for: evaporating temperature difference ΔT = 10 K.
Recommended room volume calculated for 100 mm thick insulated panels and an insulated floor.

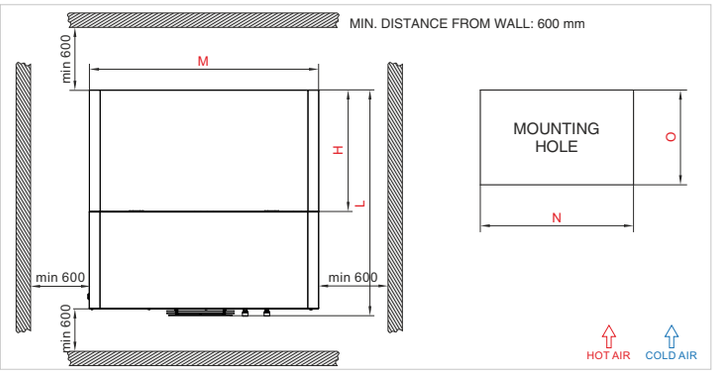
For the following conditions:
Tint=-20°C, TinH2O=+37°C

DIMENSIONAL SPECIFICATIONS

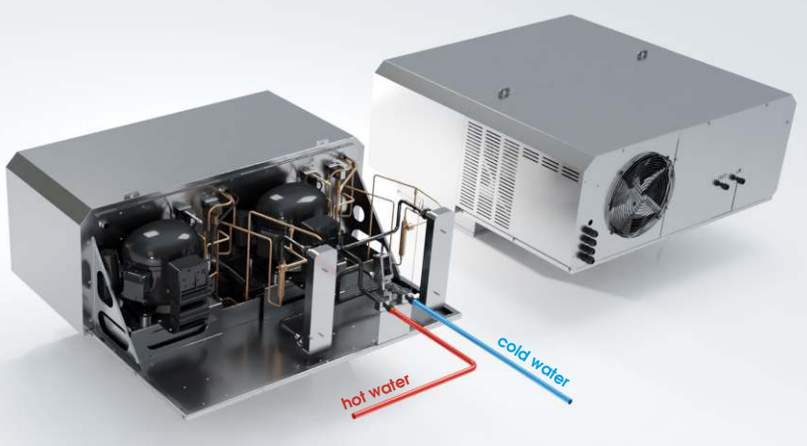
DIMENSIONS [mm] – WATERLOOP CEILING-MOUNTED MONOBLOCK UNITS

			DIMENSIONS [mm]										MBP-KO...CH_SW/MR_SW	
	SYMBOL	SIZE	A	B	C	D	E	F	G	H	L	M	N	O
COOLING	MBP-KOS-M04.SW	(1)	625	807,5	395	540	330	610	135	450	807,5	625	560	340
	MBP-KOS-M05.SW	(1)	625	807,5	395	540	330	610	135	450	807,5	625	560	340
	MBP-KOS-M07.SW	(2)	850	837,4	395	740	400	610	135	450	837,4	850	750	410
	MBP-KOS-M09.SW	(3)	1000	976,9	395	740	400	610	135	450	976,9	1000	750	410
	MBP-KOS-M12.SW	(3)	1000	976,9	395	740	400	610	135	450	976,9	1000	750	410
	MBP-KOS-M18.SW	(3)	1000	976,9	395	740	400	610	135	450	976,9	1000	750	410
FREEZING	MBP-KOS-L03.SW	(1)	625	807,5	395	540	330	630	155	450	807,5	625	560	340
	MBP-KOS-L04.SW	(1)	625	807,5	395	540	330	630	155	450	807,5	625	560	340
	MBP-KOS-L08.SW	(3)	1000	976,9	395	740	400	630	155	450	976,9	1000	750	410
	MBP-KOS-L13.SW	(3)	1000	976,9	395	740	400	630	155	450	976,9	1000	750	410
	MBP-KOS-L15.SW	(4)	1450	976,9	395	1190	400	630	155	450	976,9	1450	1210	410
	MBP-KOS-L20.SW	(4)	1450	976,9	395	1190	400	630	155	450	976,9	1450	1210	410



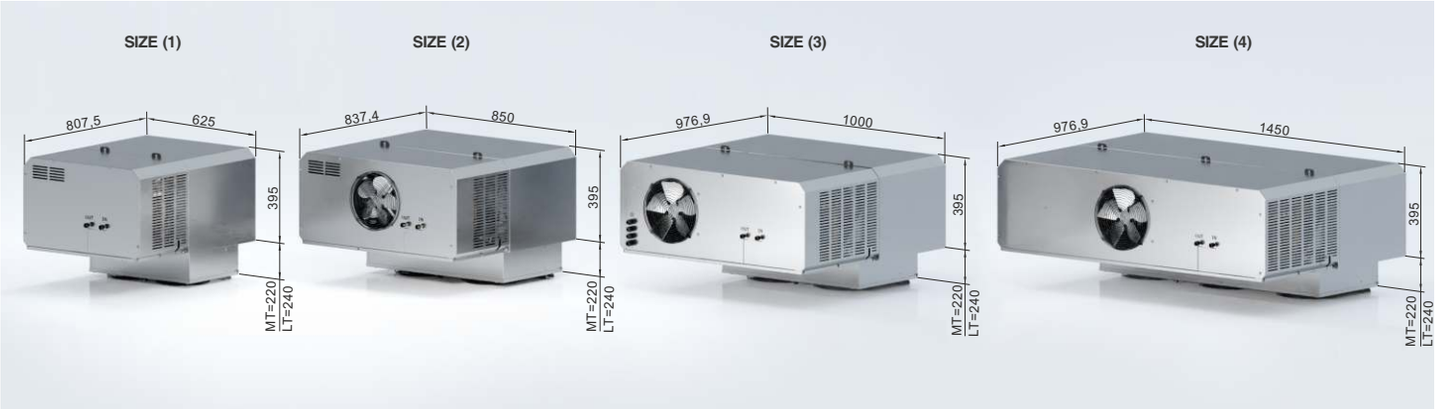


HEAT RECOVERY SYSTEM



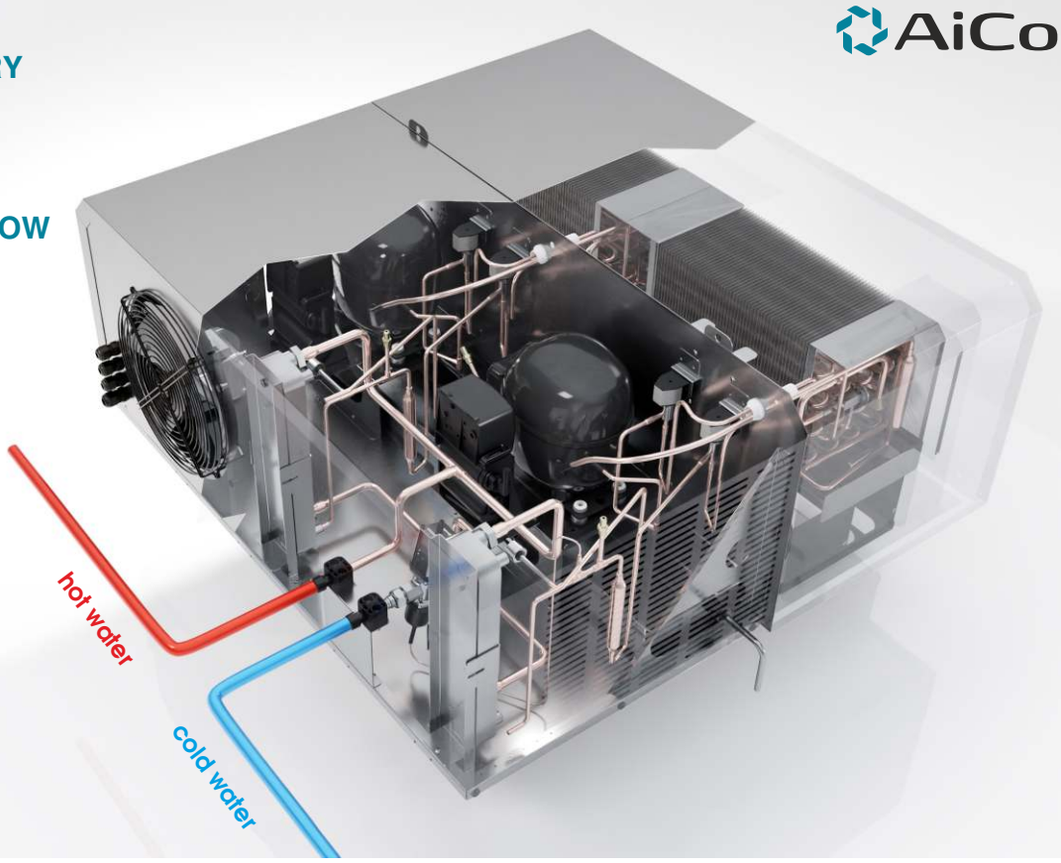
MONOBLOCK UNITS
WITH HEAT RECOVERY SYSTEM,
EQUIPPED WITH A WATER-COOLED CONDENSER (WATERLOOP)

STANDARD MODEL SIZES – OVERALL DIMENSIONS



HEAT RECOVERY SYSTEM

GREENFLOW LOOP

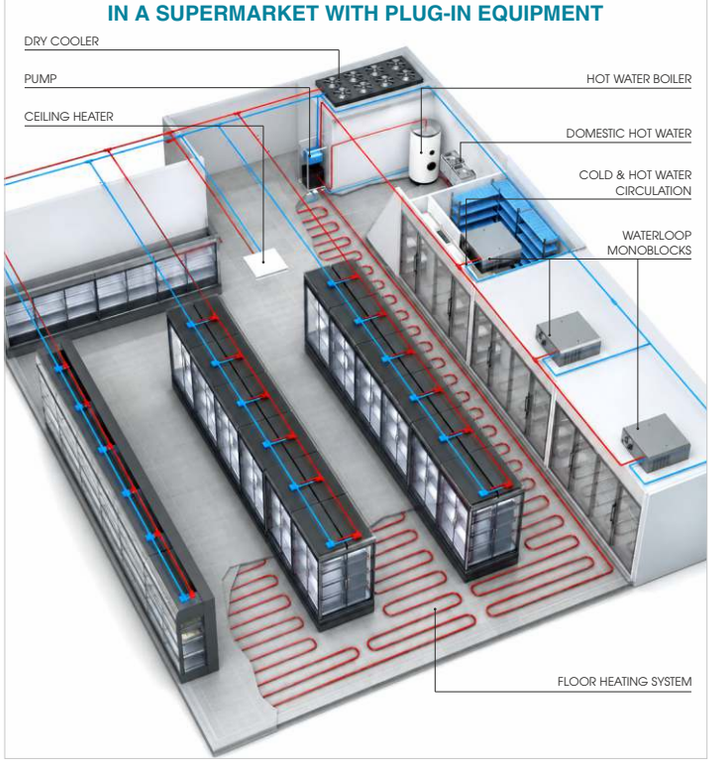


Waterloop monoblock units with plate heat exchangers

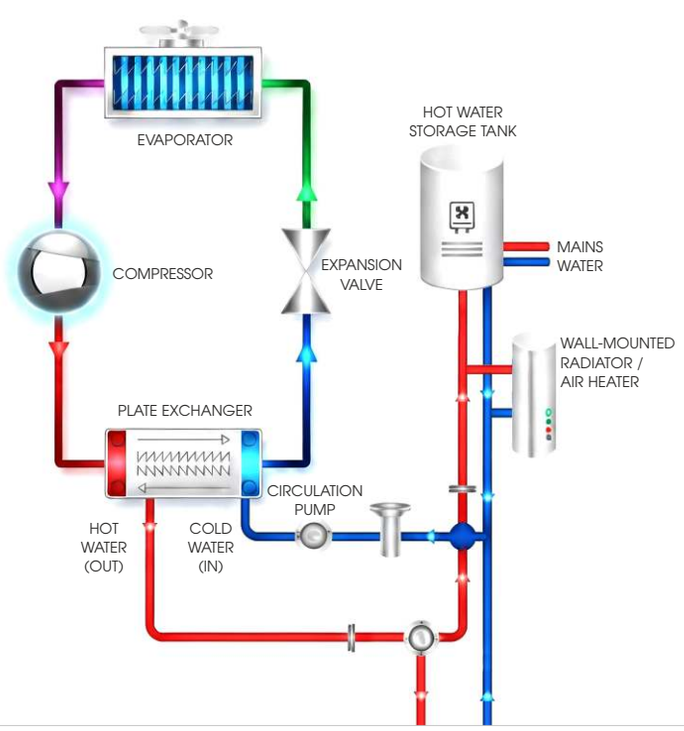
Efficient heat recovery and optimized energy use

Waterloop refrigeration systems are designed to recover heat from the cooling process for domestic hot water production or space heating support. This improves the building's energy efficiency and reduces operating costs.

EXAMPLE OF A HEAT RECOVERY SYSTEM IN A SUPERMARKET WITH PLUG-IN EQUIPMENT



POSSIBLE HEAT RECOVERY APPLICATIONS – SCHEMATIC



NEW
HYBRID
CONDENSING
SYSTEM

R290

MONOBLOCK UNITS WITH HYBRID CONDENSING SYSTEM

- The HYBRID refrigeration monoblock combines two heat rejection methods: Waterloop operation with an intermediate fluid and heat recovery capability, and conventional heat rejection via an air-cooled condenser. This allows the system to switch flexibly between operating modes depending on installation requirements, ambient conditions, and the facility's energy management strategy.

  Integration with a glycol circuit equipped with a plate heat exchanger and an air-cooled condenser enables the recovery and reuse of generated heat, or its efficient discharge outside the building when heat recovery is not required.

- BMS integration for centralized monitoring and control.
- Compatible with the side air discharge system.

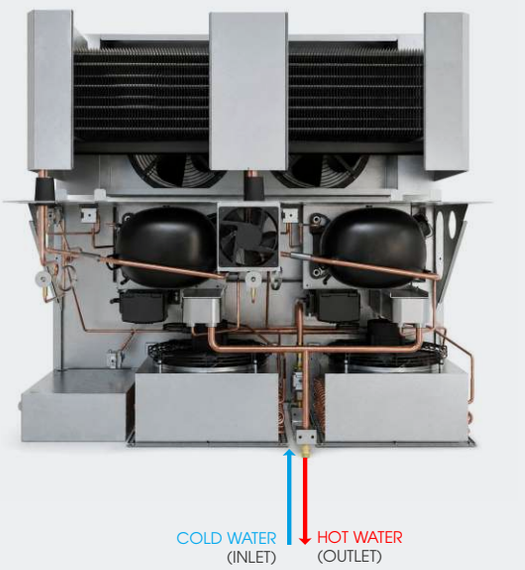
BENEFITS

- **Flexibility** – combining two heat rejection methods with the ability to switch between them allows the system to adapt more effectively to operating conditions.
- **Cost efficiency** – installation is simpler and less expensive than systems with external condensing units, with lower service and operating costs.
- **Energy efficiency** – the HYBRID monoblock can provide up to 60% higher energy efficiency compared with conventional refrigeration systems.
- **Easy installation** – system commissioning does not require certified refrigeration specialists. Only a simple hydraulic circuit and electrical power supply are required.

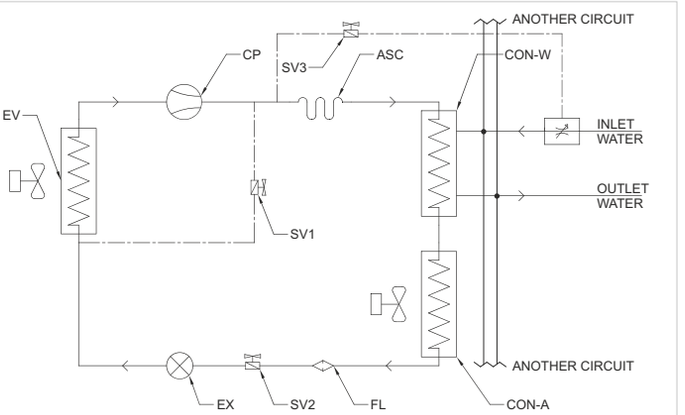
ONE UNIT – TWO OPERATING MODES: AIR-COOLED / WATERLOOP (GLYCOL)

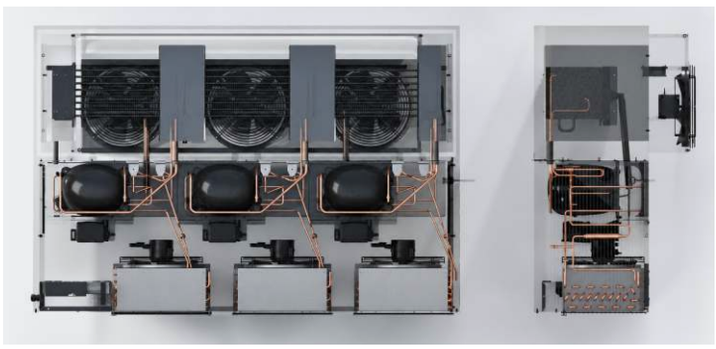
AIR-COOLED MODE

WATERLOOP MODE



HYBRID AIR–WATERLOOP REFRIGERATION MONOBLOCK DIAGRAM





CUSTOM DESIGN SOLUTIONS

- Modern monoblock systems go beyond standard plug-in applications, offering the ability to adjust operating parameters, configure airflow, and integrate with higher-level monitoring and control systems.

The selection of key components, such as condensers, evaporators, and fans, has a decisive impact on system performance, energy efficiency, and reliability, just as a properly designed control system and regulation strategy do.

Drawing on the expertise of our R&D team, we develop solutions tailored to the specific requirements of each application. We support our customers in delivering even the most demanding projects by selecting the optimal system configuration in terms of performance, energy efficiency, and reliability.

EXAMPLES OF CUSTOM DESIGN SOLUTIONS

- Dedicated refrigeration monoblocks for locker systems, designed to operate in demanding outdoor conditions, with ambient temperatures from -20°C to +43°C.
- Individual customization of monoblock parameters, dimensions, and mounting method to suit vending machines, refrigeration or freezing modules.
- Solutions designed for Fresh, Frozen, Pharma, and Click & Collect applications requiring stable and controlled temperatures.

DUAL-TEMPERATURE MONOBLOCK UNITS (COOLING AND FREEZING IN ONE UNIT)

The dual-temperature monoblock is designed as a versatile solution for both cooling and freezing applications in a single compact unit, eliminating the need for system modifications.

The unit features an inverter-driven compressor and an advanced control system that continuously modulates cooling capacity to match the actual heat load. The system architecture enables quick and easy switching between cooling and freezing modes.

The unit is designed for operation in cold rooms at temperatures from **-5°C to +5°C** and in freezer rooms from **-25°C to -15°C.**

Key design features:

- Dual-temperature operation: cooling and freezing in one unit
- Mode switching without modifying the refrigeration system
- High-efficiency inverter compressor with variable capacity control
- Automatic adjustment of cooling capacity to the heat load
- Universal power supply: 230 V / 50 Hz / 60 Hz
- Integrated cold room lighting, eliminating the need for additional installation

A solution developed specifically for applications requiring maximum flexibility, high energy efficiency, and compact refrigeration system integration.

MONOBLOCK UNITS DESIGNED FOR OPERATION IN EXTREME CLIMATIC CONDITIONS

The +50 monoblock series is designed for reliable operation at ambient temperatures from **+10°C to +50°C**. A specially developed condenser and dedicated control algorithm ensure efficient heat rejection and stable cooling performance, even under extreme heat loads.

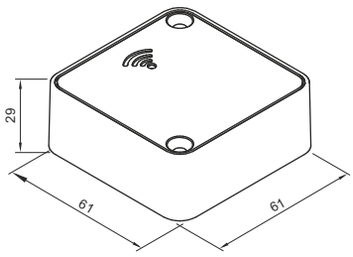
The units are designed for applications requiring high environmental resistance, consistent operating parameters, and continuous operation under demanding climatic conditions.

Key design features:

- High-efficiency condenser optimized for operation at elevated ambient temperatures
- EC fans providing precise airflow control and high energy efficiency
- Integrated control system managing cooling and freezing modes
- Dedicated control algorithm for stable heat transfer under extreme conditions
- Integrated lighting, eliminating the need for additional internal electrical installation

A solution designed for refrigeration applications requiring compact system integration, high energy efficiency, and long-term reliability.

IOT GATEWAY CH-XIG100



IOT GATEWAY

- In cooperation with Copeland, a leading European manufacturer of refrigeration controllers, we have introduced a remote access system dedicated to our refrigeration monoblock units. Based on an IoT gateway, the solution enables continuous equipment monitoring, remote diagnostics, service support, and data collection required by HACCP systems.

  Integration with the refrigeration monoblocks provides users with continuous access to key operating parameters, including temperature, unit status, and alarm history. This enables faster response to potential issues, streamlines service activities, and supports preventive maintenance.

  The system provides greater control over the refrigeration installation and simplifies equipment management in both individual facilities and larger networks across foodservice, retail, and warehousing.

TECHNICAL SPECIFICATIONS

Copeland

- Housing: self-extinguishing PC / PC+ABS
- Dimensions: 61 mm × 61 mm × 29 mm
- Mounting: 2 mounting holes for screws up to Ø4 mm
- Protection rating: IP20
- Power supply: 100–240 Vac, 50/60 Hz and/or 5 Vdc, depending on version
- Overvoltage category: II
- Rated power: 5 VA

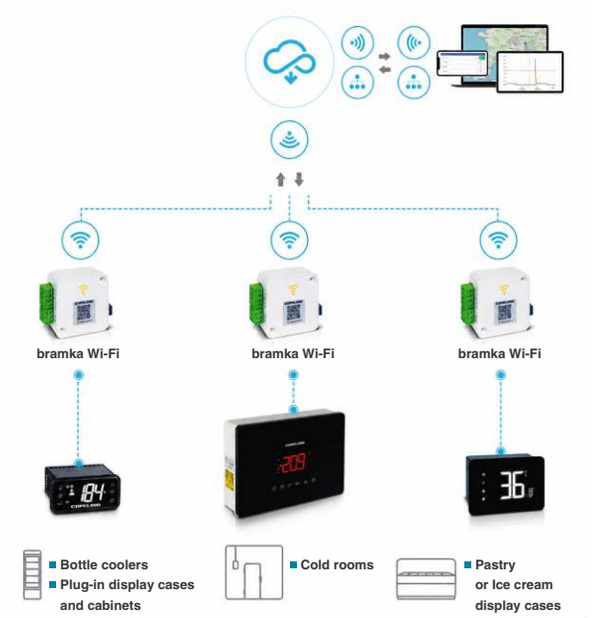
NETWORK CONNECTION	CONTROLLER CONNECTION	POWER SUPPLY	SENSOR INPUTS	MOUNTING
Wi-Fi 2,4GHz	Modbus RS485	85–230 Vac USB-C: 5 Vdc, 300 mA	2 × NTC, 2-wire	2 × Ø4.2 mm through-holes or double-sided tape

- The solution consists of a cloud portal and a Wi-Fi gateway connected to controllers installed directly in the field devices.

*An active connection to a local Wi-Fi network is required for proper operation.

CLOUD PORTAL

- Plug & Play
- Simplified control
- Enhanced safety
- Optimized maintenance
- Improved data visualization
- Energy savings
- Food quality



MONOBLOCKS FOR E-COMMERCE LOGISTICS

- We supply refrigeration monoblocks designed for integration with parcel lockers, refrigerated lockers, and product collection systems requiring controlled temperatures and reliable operation in demanding outdoor conditions.

  We help select the right solution for the specific application, temperature range, compartment capacity, ambient conditions, and equipment design. We support manufacturers throughout the design, prototyping, and serial production stages.

  If you are designing refrigerated lockers, Fresh & Frozen vending machines, or Click & Collect systems, a monoblock refrigeration system offers a simpler, more compact, and easier-to-service alternative to conventional refrigeration systems.

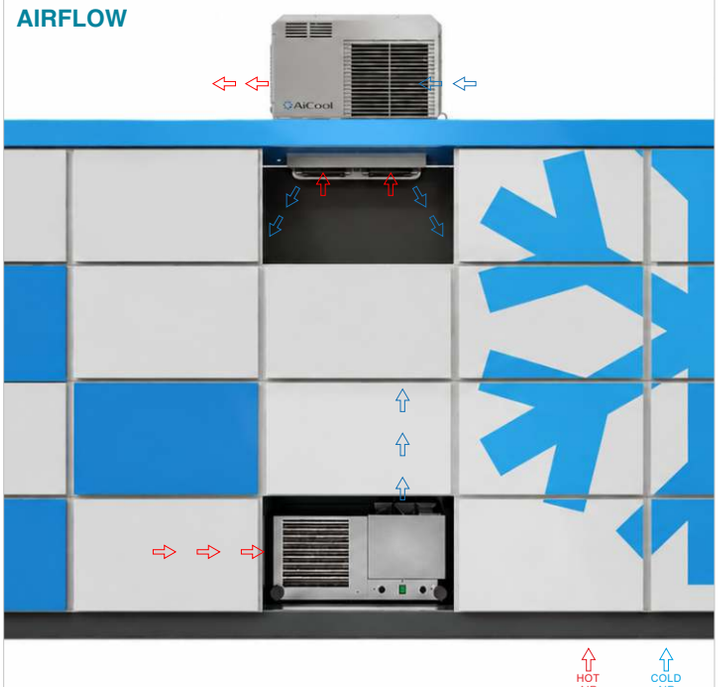
BENEFITS

- Simpler integration of the refrigeration system with the equipment design
- Fewer installation tasks during commissioning
- Reduced risk of installation errors
- Shorter installation time and immediate readiness for operation
- Greater production repeatability in serial manufacturing
- Easy service access or refrigeration unit replacement, with quick return to operation
- Adaptable to cooling, freezing, and multi-temperature applications
- Support for temperature monitoring and remote diagnostics
- Compact design for limited technical spaces
- Suitable for Fresh, Frozen, Pharma, and Click & Collect systems

CEILING-MOUNTED INSTALLATION

BOTTOM-MOUNTED INSTALLATION

AIRFLOW



MONOBLOCKS FOR REFRIGERATED TABLES – CENTRAL-MOUNTED

KEY BENEFITS

- Ready-to-install plug & play refrigeration system
- Durable, corrosion-resistant stainless-steel (INOX) construction
- Centrally positioned refrigeration unit for increased cooling space
- Even temperature distribution thanks to top air discharge
- Easy installation – standard 3 m power cable
- Durable, energy-efficient components from European suppliers (EC motors available on request)
- Electronic temperature controller

TECHNICAL SPECIFICATIONS

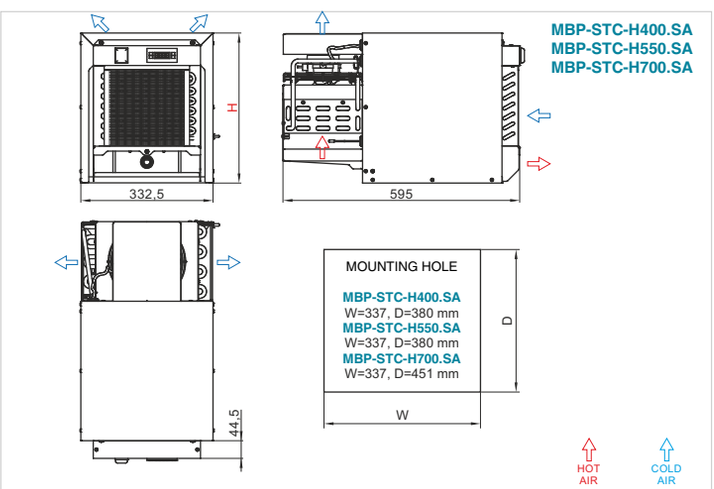
- Power supply: 220–240 V ~ 50 Hz
- Operating temperature range: HBP: +2°C to +8°C; LBP: -25°C to -15°C
- Refrigerant: R290
- Defrost: compressor off-cycle (hot gas in the freezer version)
- Cooling capacity range, depending on model: 360–700 W
- Units per pallet: 16
- Other models and capacities available on request

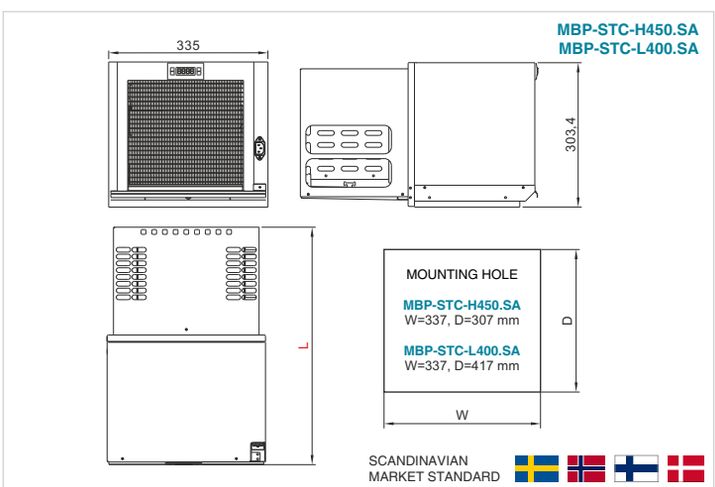
TECHNICAL SPECIFICATIONS

HBP (+2°C / +8°C) / LBP (-25°C / -15°C)								
SYMBOL	POWER SUPPLY	OPERATING TEMP. RANGE	REFRIGERANT	DEFROST	COOLING VOLUME	COOLING CAPACITY	DIMENSIONS	UNITS PER PALLET
MBP-STC-H400.SA	220-240V-50Hz	+2°C / +8°C	R290	compressor off	400 L	360 W *	H=377,5 mm	16
MBP-STC-H550.SA	220-240V-50/60Hz	+2°C / +8°C	R290	compressor off	550 L	550 W *	H=377,5 mm	16
MBP-STC-H700.SA	220-240V-50/60Hz	+2°C / +8°C	R290	compressor off	700 L	700 W *	H=449 mm	16
MBP-STC-H450.SA SCANDINAVIAN STANDARD	220-240V-50Hz	+2°C / +8°C	R290	compressor off	450 L	500 W *	L=499,2 mm, H=303,4 mm	16
MBP-STC-L400.SA	220-240V-50Hz	-25°C / -15°C	R290	hot gas	400 L	300 W *	L=554 mm, H=414,5 mm	16

*Compressor capacity under ASHRAE conditions: evaporating temperature -10°C, condensing temperature +45°C
Other models and capacities available on request.

DIMENSIONAL SPECIFICATIONS





EXAMPLE OF CENTRAL MOUNTING IN A REFRIGERATED TABLE

VENTILATION TYPE / AIRFLOW IN THE REFRIGERATED TABLE

MONOBLOCKS FOR REFRIGERATED AND FREEZER CABINETS

KEY BENEFITS

- Ready-to-use refrigeration system for refrigerated and freezer cabinets
- Easy and quick installation
- Reduced installation, operating, and after-sales service costs
- Integrated evaporator – no space required inside the cabinet
- Quiet operation

TECHNICAL SPECIFICATIONS

- Power supply: 220–240 V ~ 50 Hz
- Ambient temperature range: (Class 5) +10°C / +40°C
- Operating temperature range: HBP (+2°C / +8°C), MBP (-2°C / +10°C), LBP (-20°C / -15°C)
- Refrigerant: R290
- Ventilation: forced ventilation

TECHNICAL SPECIFICATIONS

400 L

SYMBOL	COOLING VOLUME	OPERATING TEMP. RANGE	COOLING CAPACITY	POWER CONSUMPTION	REFRIGERANT	DEFROST	DIMENSIONS	MOUNTING HOLE
MB-SZ-HBP-6PLR22/400H	400 l	0/+10°C	256 W **	162 W **	R290, 36g	heater	L=505 mm, P=530 mm, H=265 mm	435x190mm
MB-SZ-MBP-7PLV22/400G	400 l	-2/+10°C	280 W **	170 W **	R290, 45g	hot gas	L=505 mm, P=530 mm, H=265 mm	435x190mm
MB-SZ-LBP-7NLV22/400G	400 l	-20/-15°C	275 W *	241 W *	R290, 72g	hot gas	L=505 mm, P=530 mm, H=265 mm	435x190mm

700 L

SYMBOL	COOLING VOLUME	OPERATING TEMP. RANGE	COOLING CAPACITY	POWER CONSUMPTION	REFRIGERANT	DEFROST	DIMENSIONS	MOUNTING HOLE
MB-SZ-HBP-6PLX22/700N	700 l	+2/+8°C	342 W **	201 W **	R290, 65g	compressor off	L=615 mm, P=690 mm, H=299 mm	510x385mm
MB-SZ-MBP-6PLV22/700G	700 l	-2/+10°C	342 W **	201 W **	R290, 65g	hot gas	L=615 mm, P=690 mm, H=290 mm	510x385mm
MB-SZ-LBP-6NLV22/700G	700 l	-20/-15°C	383 W *	385 W *	R290, 70g	hot gas	L=615 mm, P=695 mm, H=330 mm	510x385mm

1400 L

SYMBOL	COOLING VOLUME	OPERATING TEMP. RANGE	COOLING CAPACITY	POWER CONSUMPTION	REFRIGERANT	DEFROST	DIMENSIONS	MOUNTING HOLE
MB-SZ-HBP-6PHX22/1400N	1400 l	+2/+10°C	513 W **	285 W **	R290, 62g	compressor off	L=615 mm, P=690 mm, H=295 mm	510x385mm
MB-SZ-MBP-6PHV22/1400G	1400 l	-2/+10°C	513 W **	285 W **	R290, 62g	hot gas	L=615 mm, P=690 mm, H=295 mm	510x385mm
MB-SZ-LBP-6NHV22/1400G	1400 l	-20/-15°C	574 W *	550 W *	R290, 95g	hot gas	L=615 mm, P=695 mm, H=330 mm	510x385mm

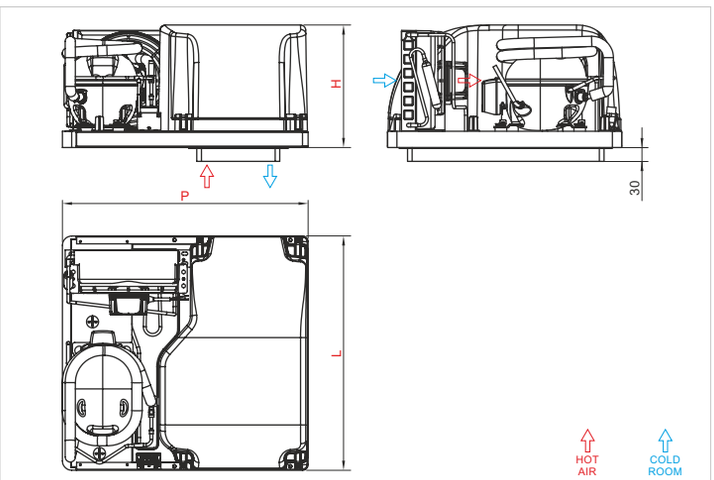
2000 L

SYMBOL	COOLING VOLUME	OPERATING TEMP. RANGE	COOLING CAPACITY	POWER CONSUMPTION	REFRIGERANT	DEFROST	DIMENSIONS	MOUNTING HOLE
MB-SZ-HBP-6PEX22/2000N	2000 l	+2/+10°C	622 W **	435 W **	R290, 125g	compressor off	L=615 mm, P=690 mm, H=295 mm	510x385mm
MB-SZ-MBP-6PEV22/2000G	2000 l	-2/+10°C	622 W **	435 W **	R290, 125g	hot gas	L=615 mm, P=690 mm, H=295 mm	510x385mm

DIMENSIONAL SPECIFICATIONS

ASHRAE CONDITIONS

* AMBIENT TEMPERATURE +32°C, EVAPORATING TEMPERATURE –30°C, CONDENSING TEMPERATURE +45°C
** AMBIENT TEMPERATURE +32°C, EVAPORATING TEMPERATURE –10°C, CONDENSING TEMPERATURE +50°C



EXAMPLE OF APPLICATION IN A REFRIGERATED CABINET

MONOBLOCKS FOR VENDING MACHINES

KEY BENEFITS

- Aesthetic, corrosion-resistant, and durable construction designed for demanding conditions
- Designed and manufactured to the customer's specifications
- Easy installation
- Durable components from European suppliers
- Short lead time – only 8 weeks from design to finished product
- High-efficiency, energy-saving inverter compressor
- Safe, energy-efficient EC fans for quiet operation and extended service life

TECHNICAL SPECIFICATIONS

- Power supply: 220–240 V ~ 50 Hz
- Operating temperature range: HBP (+5°C / +8°C)
- Refrigerant: R290
- Defrost: OFF-CYCLE DEFROST
- Cooling capacity: 750 W
- Units per pallet: 8
- Other models and capacities available on request

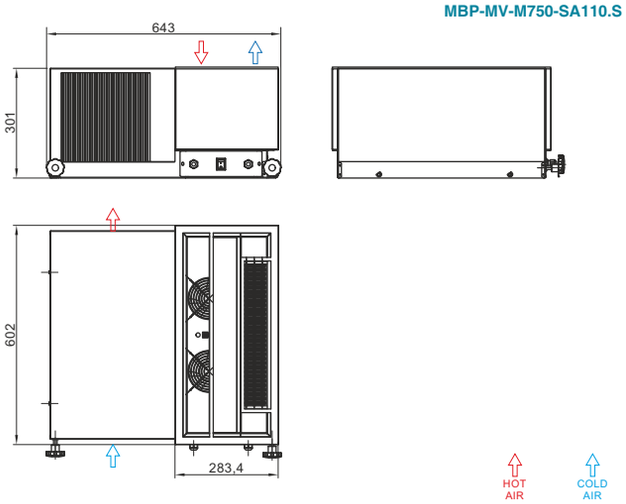
TECHNICAL SPECIFICATIONS

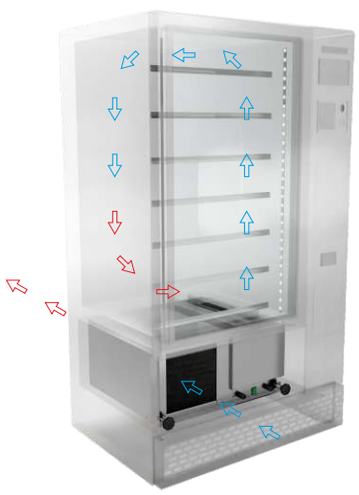
(+5°C / +8°C)						
SYMBOL	POWER SUPPLY	OPERATING TEMP. RANGE	REFRIGERANT	DEFROST	COOLING CAPACITY	UNITS PER PALLET
MBP-MV-M750-VA110.S	220-240V-50Hz	+5°C / +8°C	R290	compressor off	750 W *	8

*COMPRESSOR CAPACITY UNDER ASHRAE CONDITIONS: EVAPORATING TEMPERATURE –5°C, CONDENSING TEMPERATURE +45°C
OTHER MODELS AND CAPACITIES AVAILABLE ON REQUEST

DIMENSIONAL SPECIFICATIONS

MBP-MV-M750-SA110.S





AIRFLOW
IN THE VENDING MACHINE

MONOBLOCK APPLICATION IN A VENDING MACHINE

MONOBLOCK APPLICATION WITH SLIDING CONTROLLER MODULE TRAY

MONOBLOCKS FOR PASTRY DISPLAY CASES

KEY BENEFITS

- Ready-to-use Plug & Play refrigeration system
- Easy and quick installation
- Durable components from European suppliers
- ABS housing with high-density polyurethane foam insulation
- High-efficiency, energy-saving electrical components with EC motors
- Quiet operation

TECHNICAL SPECIFICATIONS

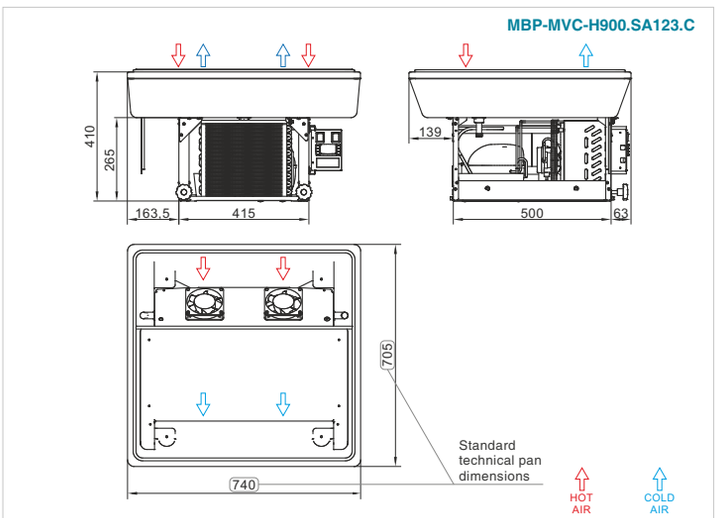
- Power supply: 220–240 V ~ 50 Hz
- Operating temperature range: HBP (+2°C / +8°C)
- Refrigerant: R290
- Defrost: OFF-CYCLE DEFROST
- Cooling capacity: 699 W
- Other models and capacities available on request

TECHNICAL SPECIFICATIONS

HBP (+2°C / +8°C)							
SYMBOL	POWER SUPPLY	OPERATING TEMP. RANGE	REFRIGERANT	DEFROST	REFRIGERATED COUNTER TYPE	COOLING CAPACITY	UNITS PER PALLET
MBP-MVC-H900.SA123.C	220-240V-50Hz	+2°C / +8°C	R290	compressor off	600-900	699 W *	4

*COMPRESSOR CAPACITY UNDER ASHRAE CONDITIONS: EVAPORATING TEMPERATURE –10°C, CONDENSING TEMPERATURE +45°C
OTHER MODELS AND CAPACITIES AVAILABLE ON REQUEST

DIMENSIONAL SPECIFICATIONS



MONOBLOCK APPLICATION IN A REFRIGERATED COUNTER

Serial and custom production

of refrigeration and freezer monoblock units

AiCool monoblock units are available in standard and custom-made versions. Each unit can be packaged according to the customer's specifications and tailored to individual requirements for cooling capacity, dimensions, and other parameters.

Every project starts with the customer’s needs

Engineering expertise turns them into reality

Through a structured implementation process, we deliver refrigeration monoblock units that meet application requirements, ensure high reliability, and are designed for safe, long-term operation.

New model implementation process

- **Customer consultation and requirements definition**
  We analyse technical and application requirements to precisely define the project specifications.
- **Concept, costing and design**
  We develop the solution concept, prepare the design, and provide an implementation cost estimate.
- **Prototype, testing, validation and pre-production testing**
  We build a prototype, conduct testing and validation, and verify all parameters before starting serial production.
- **Low-volume production and testing**
  We produce a pilot series to confirm process repeatability and product quality.
- **Serial production**
  We launch serial production, ensuring process stability and the highest quality standards.
- **Performance testing in a climatic chamber**
  We verify each solution in a climatic chamber to confirm its performance and reliability under defined operating conditions.

AiCool

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