

**MITSUBISHI ELECTRIC  
HYDRONICS & IT COOLING SYSTEMS S.p.A.**

IT COOLING

AIR CONDITIONERS FOR HIGH DENSITY RACKS AND BLADE SERVERS

# COOLSIDE LEGACY



**RACK COOLING  
SOLUTIONS FOR  
HIGH DENSITY RACK  
MANAGEMENT,  
FROM 4 TO 75 kW**



# COOLSIDE LEGACY

**YOUR  
TARGETED  
COOLING,  
EXACTLY WHERE  
IT IS NEEDED.**

In data centers with high thermal loads, close-coupled cooling is the best way to eliminate hot spots.

**COOLSIDE LEGACY** range provides highly efficient targeted cooling, low operating costs and a flexible layout.





## EFFICIENT HOT SPOT MANAGEMENT



COOLSIDE LEGACY solutions have been designed for managing high density servers (blade servers), better known as hot-spots. By means of dedicated technologies, these rack cooling units deliver targeted cooling exactly where it is required.

- ✓ Direct Expansion or chilled water versions available
- ✓ Modulating Air flow, thanks to EC high efficiency fans. The fans adapt to the thermal load detected by sensors positioned in the hot and cold aisles
- ✓ Perfectly compatible with most of racks and ready for future expansion of the cooling system

## SCALABILITY AND MODULARITY



COOLSIDE LEGACY joins the best technologies of the RC and Climaveneta brands in order to give customers a top quality solution for high density data centers. Thanks to their highly flexible design and a reduced footprint, COOLSIDE units can be easily installed in environments with small space available.

- ✓ Suitable for 42U and 47U racks
- ✓ Great scalability of the cooling system.  
The unit easily adapts to the real thermal load of the server
- ✓ Easy-to-install solution for modular cooling systems and rapid upgrade of the data center capacity

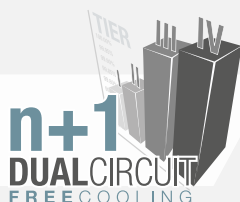
## ACTIVE FREE COOLING



High density COOLSIDE LEGACY solutions with single or dual circuit allow the use of warm water with a temperature above 15°C. This contributes to harness the full free cooling potential even in places that are normally considered too hot for such efficient systems.

In the COOLSIDE Dual Circuit version, while the primary circuit (circuit 1) could be water cooled via an external dry cooler in order to maximize the free cooling benefits, the secondary backup circuit (circuit 2) can be easily combined with a free cooling chiller for a perfect redundancy and unbeatable values in terms of efficiency.

## REDUNDANCY AND RELIABILITY



In IT environments any cooling disruption could cause great damages to the server racks. High reliability standards are key for this kind of applications, in order to eliminate any risk of equipment failure.

The COOLSIDE Dual Coil version features a redundant cooling system consisting of a double cooling coil and a double regulation valve which are completely independent.

The reliability of the system is also increased by the use of automatic switch for the dual power supply feed for a continuous power supply.



## VERSIONS

Five cooling technologies to ensure superior efficiency in less space.

### RACK COOLING UNITS FOR INDOOR INSTALLATION

#### COOLSIDE DX Direct Expansion Version

**SAVINGS UP TO 30%**  
COMPARED TO  
TRADITIONAL SYSTEMS



**SHR=1** ❄️

The COOLSIDE DX rack cooler joins the efficiency of a new Direct Expansion system with the use of the latest DC inverter driven motor installed in the condensing unit. Good performance and high efficiency are the result of the adoption of advanced technologies:

- ✓ Inverter DC technology on the scroll compressor with new generation brushless motor
- ✓ Electronic expansion valve for better inverter compressor performance, and optimised refrigerant cycle

- ✓ New generation EC brushless fans made of ultralight material
- ✓ Completely sensible load (SHR=1)
- ✓ "HOT SWAPPABLE" EC fans from the front side
- ✓ Easy handling due to integrated wheels depends on several factors:

Environment dimensions, layout, loads trend, kind of air cooling system, redundancy.

#### COOLSIDE CW Chilled water version

**25% BIGGER SAVINGS**  
THANKS TO THE ADAPTIVE  
SET POINT ACCORDING  
TO THE REAL THERMAL LOAD



**VvAIR**  
VARIABLE AIR FLOW

In the hydronic version the cooling is provided by external chillers and dry coolers. The chilled water version is ideal for systems that aims at making extensive use of the free cooling technology in order to increase energy savings.

- ✓ New generation EC brushless fans made of ultralight material
- ✓ 3-way or 2-way (optional) modulating valves

- ✓ Cooling capacity from 16 to 74 kW
- ✓ Optimal integration with free cooling chillers
- ✓ "HOT SWAPPABLE" EC fans from the front side
- ✓ Easy handling due to integrated wheels



# COOLSIDE LEGACY

## COOLSIDE DF Dual Fluid Version



The Dual Fluid Rack Cooler features two separate circuits for the highest redundancy of the cooling capacity. Thanks to a system ensuring 100% back-up, the total system reliability is always guaranteed, also in emergency situations.

- ✓ DC Scroll compressor with inverter technology installed in the condensing unit
- ✓ Electronic expansion valve to ensure superior performance of the inverter compressor and refrigerant cycle optimisation

**100% BACKUP  
RELIABILITY  
ALL YEAR LONG**

- ✓ New generation ultralight fans, with EC brushless motor
- ✓ Complete sensible load (SHR=1)
- ✓ Easy handling due to integrated wheels
- ✓ Hot swappable EC fans from the front side

## RACK COOLING UNITS FOR INDOOR INSTALLATION WITH INTEGRATED COMPRESSOR

### COOLSIDE ROW DX Direct expansion version



**INTEGRATED  
COMPRESSOR**

**EER 5,78**

**INVERTER**

Suitable for in-row cooling systems, the COOLSIDE ROW DX version features the latest DC brushless compressor directly installed inside the room unit. The unit has been designed to be coupled with a remote condenser.

- ✓ Inverter DC technology on the scroll compressor with new generation brushless motor
- ✓ EER values up to 5,78
- ✓ Availability of extra-circuit coil
- ✓ Easy handling due to integrated wheels

## CONFIGURATIONS

From large to small IT environments, from high to low density areas, **COOLSIDE** solutions are available in both In-row and Enclosure configurations to provide customers the best data center adaptability.

### IN-ROW

#### Ideal for hot/cold aisles



COOLSIDE CW-I: Chilled Water  
COOLSIDE DX-I: Direct Expansion  
COOLSIDE DF-I: Dual Fluid  
COOLSIDE ROW DX-I: Direct Expansion

In the In-row configuration the treated air coming from the hot aisle of the data center (35°C) is sucked in the back of the unit, with great advantages in terms of energy efficiency and increased cooling capacity. The air is then cooled and delivered to the cold aisle (18-20°C) from the front side of the rack.



### FEATURES AND BENEFITS

#### DESIGN

- ✓ Back-up system for power and cooling
- ✓ Hot swappable EC fans from the front
- ✓ Scalability and modularity
- ✓ Ideal for data center expansion

#### ENERGY SAVINGS

- ✓ Cooling only where it is needed
- ✓ Optimized management of the system
- ✓ Extreme flexibility (applicability to 42U & 47U racks)

#### HIGHLY EFFICIENT OPERATION

- ✓ Reduced space occupancy (0,39 m2)
- ✓ Plug & Play connections for a quick and easy installation
- ✓ User-friendly Cascade System for electrical panel maintenance
- ✓ Humidification System (optional)

### AIR DELIVERY OPTIONS



Left-side frontal air delivery.  
Back air suction.



Frontal air delivery from both  
sides. Back air suction.



Right-side frontal air delivery.  
Back air suction.



Frontal air delivery.  
Back air suction.



# COOLSIDE LEGACY

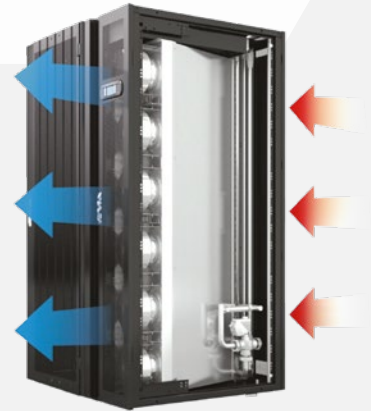
## ENCLOSURE

### Ideal for removing hot spots in stand alone systems



COOLSIDE CW-E: Chilled Water  
COOLSIDE DX-E: Direct Expansion  
COOLSIDE DF-E: Dual Fluid

In the Enclosure configuration both the servers and the conditioners are coupled on the same structure, avoiding the mixing of indoor and outdoor air and the consequent efficiency reduction. The air is directly treated inside the rack; sucked at 46°C, cooled down to 25- 30°C and then delivered back to the servers. This increases energy saving thanks to the low amount of treated air.



## FEATURES AND BENEFITS

### DESIGN

- ✓ Back-up system for Power and Cooling
- ✓ Hot swappable EC fans from the front
- ✓ Scalability and modularity
- ✓ Ideal for data center expansion

### ENERGY SAVINGS

- ✓ Increased energy savings thanks to the low amount of treated air
- ✓ Optimized blade management
- ✓ Extreme flexibility (applicability to 42U & 47U racks)

### HIGHLY EFFICIENT OPERATION

- ✓ Reduced space occupancy (1,8 m2)
- ✓ Plug & Play connections for a quick and easy installation
- ✓ User-friendly Cascade System for electrical panel maintenance
- ✓ Humidification System (optional)

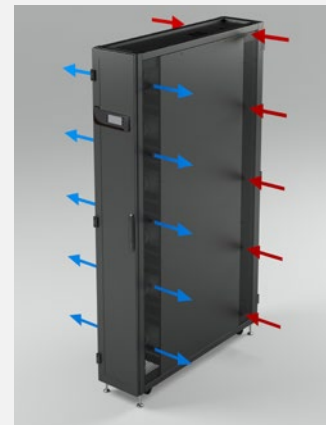
## AIR DELIVERY OPTIONS



Right-side frontal air delivery.  
Right- side air suction from the rear.



Left-side frontal air delivery.  
Left-side air suction from the rear.



Frontal air delivery from both sides.  
Back air suction from both sides.

## TECHNOLOGICAL CHOICES

### DC Inverter compressor for the direct expansion versions



The inverter driven compressor, through the variable frequency, modulates the power capacity provided, optimizing the performances at part load and increasing the overall efficiency of the system in any condition.

Compared to the traditional On/Off compressors the Inverter compressor ensures:

- ✓ Quick achievement of the desired temperature thanks to the BOOSTER function
- ✓ Starting current & pick removal due to compressor speed and air flow modulation
- ✓ Reduced vibrations and low noise levels
- ✓ Efficient working performance at partial loads

### EC-PUL fans for all indoor units

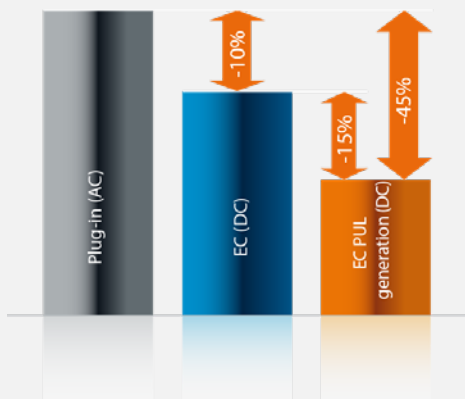


The high efficiency EC PUL (Polymeric Ultralight) brushless fan reduces both noise levels as well as energy consumption, and assures a variable air flow at part loads, optimizing the operating costs of the unit.

Main features:

- ✓ Further noise level reduction 4-5 dB
- ✓ Further absorbed power reduction by 15%

### EC-PUL FANS also for outdoor units



The use of EC brushless technology even on the remote condenser (optional) fan assures a further average reduction of noise levels by 10%, together with a strong reduction of energy consumption by 45% compared to traditional condensers with AC technology.



# COOLSIDE LEGACY

## Electronic Expansion Valve



The Direct Expansion COOLSIDE units with DC Inverter compressor make use of electronic expansion valve as standard.

These valves have a much wider modulation capacity. It stands out for its quality of control and its capacity to quickly reach and maintain the operating stability of the unit. Joined with the INVERTER compressor technology, the valve ensures a quick fluctuation-free regulation, and therefore a highly accurate adjustment to the swings of load and ambient conditions.

## Eco-friendly Refrigerant



R-410A refrigerant represents the most modern and cutting-edge choice in refrigerant technology: it clearly contributes to make the IT spaces greener since it complies with environmental friendly policies and provide enhanced cooling efficiency.

R-410A refrigerant represents the most efficient long-term solution; it contributes to increase the energy efficiency up to 5-6% compared to the R-407c refrigerant, limiting ozone depletion effect to the minimum.

## Advanced control



The units are provided with a new algorithm called IDM-INTEGRAL DYNAMIC MANAGEMENT, which allows to avoid any stratification of the air temperature inside the rack through the use of 4 independent sensors (2 for aspiring and 2 for leaving). On the basis of the real load in each single blade, the sensors contribute to improve the ventilation efficiency, working where it is required.

This helps to maximize the energy efficiency. The IDM algorithm also ensures the optimal air temperature and humidity management via a dynamic system able to avoid local condensation thus maintaining SHR = 1.



# COOLSIDE LEGACY

## COOLSIDE DX Direct Expansion

### IN-ROW configuration

COOLSIDE DX-I			0021	0051	0071	0121	0151	0251
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50
<b>PERFORMANCE</b>								
Total cooling capacity gross	(1)	kW	8,81	10,6	16,6	28,6	37,2	57,5
Sensible cooling capacity gross	(1)	kW	8,81	9,61	15,7	27,4	37,2	57,5
Total power input (Comp.+fans)	(1)	kW	2,87	3,05	5,47	9,25	11,9	18,9
EER (Indoor unit)	(1)	kW/kW						
SHR	(2)		1,00	0,91	0,95	0,96	1,00	1,00
<b>FANS</b>								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	4	5	2	3
Air flow	(3)	m³/h	1500	1500	2700	4200	7000	12000
<b>NOISE LEVEL</b>								
Sound Power		dB(A)	79	79	80	86	78	82
Sound Pressure	(4)	dB(A)	59	59	60	66	58	62
<b>SIZE AND WEIGHT</b>								
Length	(3)	mm	300	300	300	300	600	600
Width	(3)	mm	1000	1000	1000	1000	1000	1000
Height	(3)	mm	2085	2085	2085	2085	2085	2085
Weight	(3)	kg	185	175	190	193	220	232
<b>OUTDOOR UNIT</b>								
Power supply		V/ph/Hz	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.		N°	1	1	1	1	1	1
Compressors power absorption		kW	2,58	2,63	4,56	7,19	9,50	14,4
Refrigerant charge		kg	3,00	3,00	6,00	11,0		
<b>FANS</b>								
Quantity		N°	1	2	1	2	4	6
Air flow for fan		m³/h	3200	6400	8640	15768	13932	20920
Fans power input		W	130	130	600	600	300	300
<b>SIZE AND WEIGHT</b>								
Length		mm	900	900	1450	1450	1825	2395
Width		mm	370	420	550	550	1195	1195
Height		mm	990	1240	1200	1700	1865	1865
Weight		kg	100	108	182	247	440	500

**Notes:**

- Indoor conditions (in) 35°C - R.H. 27%; Outdoor air temperature 35°C; ESP= 0Pa.
- SHR = Sensible cooling capacity gross / Total cooling capacity gross.
- Unit in standard configuration/execution, without optional accessories.

- Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.





## COOLSIDE DX Direct Expansion

### ENCLOSURE configuration

COOLSIDE DX-E			0021	0051	0071	0121	0151	0251
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50
<b>PERFORMANCE</b>								
Total cooling capacity gross	(1)	kW	10,7	11,8	18,7	33,0	44,1	68,4
Sensible cooling capacity gross	(1)	kW	10,7	11,8	18,7	33,0	44,1	68,4
Total power input (Comp.+fans)	(1)	kW	3,04	3,11	5,56	9,47	12,2	19,4
EER (Indoor unit)	(1)	kW/kW						
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00
<b>FANS</b>								
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	2	2	4	5	2	3
Air flow	(3)	m³/h	1500	1500	2700	4200	7000	12000
<b>NOISE LEVEL</b>								
Sound Power		dB(A)	79	79	80	86	78	82
Sound Pressure	(4)	dB(A)	59	59	60	66	58	62
<b>SIZE AND WEIGHT</b>								
Length	(3)	mm	300	300	300	300	600	600
Width	(3)	mm	1200	1200	1200	1200	1200	1200
Height	(3)	mm	2085	2085	2085	2085	2085	2085
Weight	(3)	kg	185	185	200	203	245	257
<b>OUTDOOR UNIT</b>								
Power supply		V/ph/Hz	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>REFRIGERANT CIRCUIT</b>								
Compressors nr.		N°	1	1	1	1	1	1
Compressors power absorption		kW	2,75	2,68	4,65	7,40	9,80	14,9
Refrigerant charge		kg	3,00	3,00	6,00	11,0		
<b>FANS</b>								
Quantity		N°	1	2	1	2	4	6
Air flow for fan		m³/h	3200	6400	8640	15768	13832	20920
Fans power input		W	130	130	600	600	300	300
<b>SIZE AND WEIGHT</b>								
Length		mm	900	900	1450	1450	1825	2395
Width		mm	370	420	550	550	1195	1195
Height		mm	990	1240	1200	1700	1865	1865
Weight		kg	100	108	182	247	440	500

#### Notes:

- Indoor conditions (in) 35°C - R.H. 27%; Outdoor air temperature 35°C; ESP= 0Pa.
- SHR = Sensible cooling capacity gross / Total cooling capacity gross.
- Unit in standard configuration/execution, without optional accessories.

- Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface.  
The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.  
The units highlighted in this publication contain R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.



# COOLSIDE LEGACY

## COOLSIDE CW Chilled Water

### IN-ROW configuration

COOLSIDE CW-I			0020	0025	0035	0038	0036	0040	0050	0060	0055
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>PERFORMANCE</b>											
Total cooling capacity gross	(1)	kW	16,1	20,5	24,6	38,5	21,0	43,4	46,9	58,2	47,1
Sensible cooling capacity gross	(1)	kW	16,1	20,5	24,6	38,5	21,0	43,4	46,9	58,2	47,1
Fans power input	(1)	kW	0,52	0,69	0,86	1,70	0,86	2,85	2,17	2,66	2,66
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	0,77	0,98	1,18	1,84	1,00	2,08	2,24	2,79	2,25
Total pressure drop (Coil + Valve)	(1)	kPa	13,5	20,9	29,1	93,4	55,2	85,3	37,7	56,4	60,7
<b>FANS</b>											
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	3	4	5	5	5	2	2	3	3
Air flow	(3)	m³/h	2520	3360	4200	6500	4200	9500	8800	12000	10500
<b>NOISE LEVEL</b>											
Sound Power		dB(A)	84	85	86	82	86	88	84	82	82
Sound Pressure	(4)	dB(A)	64	65	66	62	66	68	64	62	62
<b>SIZE AND WEIGHT</b>											
Length	(3)	mm	300	300	300	300	300	600	600	600	600
Width	(3)	mm	1000	1000	1000	1000	1000	1000	1000	1000	1000
Height	(3)	mm	2085	2085	2085	2085	2085	2085	2085	2085	2085
Weight	(3)	kg	190	192	195	195	205	235	240	247	255

**Notes:**

- Indoor conditions (in) 35°C - R.H. 27%; Water temperature (in/out) 10°C/15°C; ESP= 0Pa.
- SHR = Sensible cooling capacity gross / Total cooling capacity gross.
- Unit in standard configuration/execution, without optional accessories.

- Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.





## COOLSIDE CW Chilled Water

### ENCLOSURE configuration

COOLSIDE CW-E			0020	0025	0035	0038	0036	0040	0050	0060	0055
Power supply		V/ph/Hz	230/1/50	230/1/50	230/1/50	230/1/50	230/1/50	400/3+N/50	400/3+N/50	400/3+N/50	400/3+N/50
<b>PERFORMANCE</b>											
Total cooling capacity gross	(1)	kW	20,4	26,1	31,2	48,8	26,8	55,7	60,0	74,7	60,7
Sensible cooling capacity gross	(1)	kW	20,4	26,1	31,2	48,8	26,8	55,7	60,0	74,7	60,7
Fans power input	(1)	kW	0,53	0,69	0,87	1,70	0,87	2,87	2,18	2,68	2,67
SHR	(2)		1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00	1,00
Fluid flow	(1)	l/s	0,82	1,04	1,25	1,95	1,07	2,22	2,40	2,98	2,42
Total pressure drop (Coil + Valve)	(1)	kPa	14,3	22,5	31,5	101	60,4	94,4	41,5	62,5	69,0
<b>FANS</b>											
Fans type			EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN	EC FAN
Quantity		N°	3	4	5	5	5	2	2	3	3
Air flow	(3)	m³/h	2520	3360	4200	6500	4200	9500	8800	12000	10500
<b>NOISE LEVEL</b>											
Sound Power		dB(A)	84	85	86	82	86	87	84	82	82
Sound Pressure	(4)	dB(A)	64	65	66	62	66	67	64	62	62
<b>SIZE AND WEIGHT</b>											
Length	(3)	mm	300	300	300	300	300	600	600	600	600
Width	(3)	mm	1200	1200	1200	1200	1200	1200	1200	1200	1200
Height	(3)	mm	2085	2085	2085	2085	2085	2085	2085	2085	2085
Weight	(3)	kg	200	202	205	205	215	260	265	272	280

#### Notes:

- Indoor conditions (in) 46°C - R.H. 16%; Water temperature (in/out) 14°C/20°C; ESP= 0Pa.
- SHR = Sensible cooling capacity gross / Total cooling capacity gross.
- Unit in standard configuration/execution, without optional accessories.

- Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.



# COOLSIDE LEGACY

## COOLSIDE DF Dual Fluid

### IN-ROW configuration

COOLSIDE DF-I		0051	0071
Power supply	V/ph/Hz	230/1/50	230/1/50
Refrigerant			
No. Circuits	N°		
<b>PERFORMANCE</b>			
Total cooling capacity gross	(1) kW	10,9	14,0
Sensible cooling capacity gross	(1) kW	10,2	14,0
SHR		0,94	1,00
EER (total)	kW/kW	4,13	3,91
<b>PERFORMANCE (CW)</b>			
Total cooling capacity gross	(2) kW	9,53	17,7
Sensible cooling capacity gross	(2) kW	9,53	17,7
Condenser fluid flow	l/s		
Pressure drop	kPa		
<b>FANS</b>			
Air flow	m³/h	1500	3360
Power Input	kW	0,32	0,69
Quantity	N°	2	4
Sound Pressure	(3) dB(A)	58	64
<b>SIZE AND WEIGHT</b>			
Length	(4) mm	300	300
Width	(4) mm	1000	1000
Height	(4) mm	2085	2085
<b>OUTDOOR UNIT</b>			
Power supply	V/ph/Hz	230/1/50	400/3+N/50
Power input (OI)	W	2900	4180
<b>REFRIGERANT CIRCUIT</b>			
Compressors nr.	N°		
Compressors power absorption	kW		
Refrigerant charge	kg		
<b>FANS</b>			
Air flow for fan	m³/h	6400	8640
Fans power input	W	130	600
Quantity	N°	2	1
Sound Pressure	(3) dB(A)		
<b>SIZE AND WEIGHT</b>			
Length	(4) mm	900	1450
Width	(4) mm	420	550
Height	(4) mm	1240	1200

**Notes:**

1 Indoor conditions (in) 35 °C U.R. 27%; Outdoor air temperature 35 °C.

2 Indoor conditions (in) 35 °C U.R. 27%; Water temperature (in/out) 10/15 °C.

3 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface.

The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

4 Unit in standard configuration/execution, without optional accessories.

 The units highlighted in this publication contain HFC R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.



## COOLSIDE DF Dual Fluid

### ENCLOSURE configuration

COOLSIDE DF-E			0051	0071
Power supply		V/ph/Hz	230/1/50	230/1/50
Refrigerant				
No. Circuits		N°		
<b>PERFORMANCE</b>				
Total cooling capacity gross	(1)	kW	12,7	16,7
Sensible cooling capacity gross	(1)	kW	12,7	16,7
SHR			1,00	1,00
EER (total)		kW/kW	4,69	4,58
<b>PERFORMANCE (CW)</b>				
Total cooling capacity gross	(2)	kW	12,1	22,6
Sensible cooling capacity gross	(2)	kW	12,1	22,6
Condenser fluid flow		l/s		
Pressure drop		kPa		
<b>FANS</b>				
Air flow		m³/h	1500	3360
Power Input		kW	0,33	0,69
Quantity		N°	2	4
Sound Pressure	(3)	dB(A)	58	64
<b>SIZE AND WEIGHT</b>				
Length	(4)	mm	300	300
Width	(4)	mm	1200	1200
Height	(4)	mm	2085	2085
<b>OUTDOOR UNIT</b>				
Power supply		V/ph/Hz	230/1/50	400/3+N/50
Power input (OI)		W	2970	4250
<b>REFRIGERANT CIRCUIT</b>				
Compressors nr.		N°		
Compressors power absorption		kW		
Refrigerant charge		kg		
<b>FANS</b>				
Air flow for fan		m³/h	6400	8640
Fans power input		W	130	600
Quantity		N°	2	1
Sound Pressure	(3)	dB(A)		
<b>SIZE AND WEIGHT</b>				
Length	(4)	mm	900	1450
Width	(4)	mm	420	550
Height	(4)	mm	1240	1200

#### Notes:

- Indoor conditions (in) 35°C - R.H. 27%; Condensing temperature 45°C; ESP= 0Pa.
- SHR = Sensible cooling capacity gross / Total cooling capacity gross.
- Unit in standard configuration/execution, without optional accessories.

- Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

The units highlighted in this publication contain R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.



# COOLSIDE LEGACY

## COOLSIDE ROW DX Direct Expansion

COOLSIDE ROW DX			25 B6	40 B6
Frame				
Power supply		V/ph/Hz	400/3+N/50	400/3+N/50
<b>PERFORMANCE</b>				
Total cooling capacity gross	(1)	kW	19,2	30,0
Sensible cooling capacity gross	(1)	kW	19,2	30,0
Total power input (Comp.+fans)	(1)	kW	7,24	15,0
EER (Indoor unit)	(1)	kW/kW	2,65	2,00
SHR	(2)		1,00	1,00
<b>REFRIGERANT CIRCUIT</b>				
Compressors nr.		N°	1	1
No. Circuits		N°	1	1
Refrigerant charge		kg	4,50	4,60
<b>FANS</b>				
Fans type			EC RADIAL	EC RADIAL
Quantity		N°	4	4
Air flow	(3)	m³/h	5800	9400
<b>NOISE LEVEL</b>				
Sound Power		dB(A)	64	76
Sound Pressure	(4)	dB(A)	44	56
<b>SIZE AND WEIGHT</b>				
Length	(3)	mm	1200	1200
Width	(3)	mm	600	600
Height	(3)	mm	2000	2000
Weight	(3)	kg	290	290

**Notes:**

1 Indoor conditions (in) 35°C - R.H. 27%; Condensing temperature 45°C; ESP= 0Pa.

2 SHR = Sensible cooling capacity gross / Total cooling capacity gross.

3 Unit in standard configuration/execution, without optional accessories.

4 Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface. The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.

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## COOLSIDE ROW DF DX Direct Expansion Dual Fluid

COOLSIDE ROW DF DX			25 B6	40 B6
Frame				
Power supply	V/ph/Hz		400/3+N/50	400/3+N/50
<b>PERFORMANCE</b>				
<b>DIRECT EXPANSION</b>				
Total cooling capacity gross	(1)	kW	19,2	30,0
Sensible cooling capacity gross	(1)	kW	19,2	30,0
Total power input (Comp.+fans)	(1)	kW	7,34	15,2
EER (Indoor unit)	(1)	kW/kW	2,62	1,97
SHR	(2)		1,00	1,00
<b>CHILLED WATER</b>				
Total cooling capacity gross	(3)	kW	29,9	28,3
Sensible cooling capacity gross	(3)	kW	29,3	28,3
SHR	(2)		0,98	1,00
Fluid flow	(3)	l/s	1,43	1,36
Total pressure drop (Coil + Valve)	(3)	kPa	9,32	8,64
<b>REFRIGERANT CIRCUIT</b>				
Compressors nr.	N°		1	1
No. Circuits	N°		1	1
Refrigerant charge	kg			
<b>FANS</b>				
Fans type			EC RADIAL	EC RADIAL
Quantity	N°		4	4
Air flow	(4)	m³/h	5800	9400
<b>NOISE LEVEL</b>				
Sound Power		dB(A)	64	75
Sound Pressure	(5)	dB(A)	44	55
<b>SIZE AND WEIGHT</b>				
Length	(4)	mm	1200	1200
Width	(4)	mm	600	600
Height	(4)	mm	2000	2000
Weight	(4)	kg	290	290
<b>OUTDOOR UNIT</b>				
Standard remote condenser linked			T-MATE DX-A /STD /M 35	T-MATE DX-A /STD /M 45
Voltage			230/1/50	230/1/50
Quantity	N°		1	1

### Notes:

- Indoor conditions (in) 35°C - R.H. 27%; Condensing temperature 45°C; ESP= 20Pa.
- SHR = Sensible cooling capacity gross / Total cooling capacity gross.
- Indoor conditions (in) 35°C - R.H. 27%; Water temperature (in/out) 10°C/15°C; ESP= 20Pa.
- Unit in standard configuration/execution, without optional accessories.

- Average sound pressure level, at a distance of 2m, for units in a free field on a reflecting surface.  
The average sound pressure level is calculated based on the sound power level measured in accordance with ISO 3744.  
The units highlighted in this publication contain R410A [GWP<sub>100</sub> 2088] fluorinated greenhouse gases.

**“BY FAR THE BEST PROOF  
IS EXPERIENCE”** Sir Francis Bacon



**2014 Riga - Latvia**  
*State Police Headquarters*

**Cooling capacity:** 370 kW  
**Installed machines:** 5x Free cooling chillers, 6x Chilled water rack cooler units



**2012 Saint Denis - France**  
*CNES – Centre National d'Etudes Spatiales*

**Cooling capacity:** 432 kW  
**Installed machines:** 12x Chilled water rack cooler units, 1x Water cooled chiller, 4x Chilled water close control units



**2018 Kuwait City - Kuwait**  
*Kna Data Centre*

**Cooling capacity:** 258 kW  
**Installed machines:** 9x Direct expansion rack cooler units with condensing units, 20x Rack cabinets



**RC IT Cooling solutions for data center cooling, with their unbeatable advantages in terms of efficiency, quality, and reliability, are today the preferred choice in the most challenging and prestigious projects, all around the world and with many major brands.**

**2016 Glasglow – Great Britain**  
*SLD Hillington*

**Air flow:** 12000 m<sup>3</sup>

**Installed machines:** 1x Chilled water air conditioner, 1x Free cooling chiller, 1x Chilled water rack cooler



**2017 Paris - France**  
*Numericable SFR*

**Cooling capacity:** 668 kW

**Installed machines:** 4x air cooled direct expansion units with inverter technology. 12x COOLROW DX INV rack cooling units



**2013 Cartagena - Colombia**  
*Claro Datacenter - Cartagena*

**Cooling capacity:** 215,4 kW

**Installed machines:** 4x Chilled water rack cooler units, 1x scroll compressor chiller





for a greener tomorrow

Eco Changes is the Mitsubishi Electric Group's environmental statement, and expresses the Group's stance on environmental management. Through a wide range of businesses, we are helping contribute to the realization of a sustainable society.



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