



Monobloc for indoor use

TELECOMMUNICATIONS

HTD/U/X

INDOOR MONOBLOC UNITS FOR SHELTERS DESIGNED FOR IT EQUIPMENT

4-29 kW



HTD

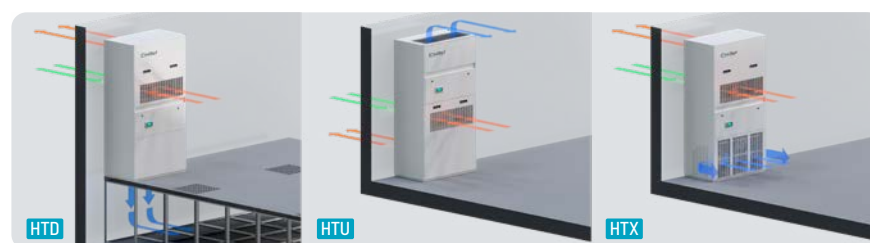
HTU

HTX

Our HTD, HTU and HTX series conditioners are indoor monobloc units designed for equipment rooms and low power telecom shelters. Thanks to their three different air flow configurations, they are suitable for installation in multiple ways. Thanks to the various configurations available, the range is **very versatile and thus suited to many system set-ups**, plus the **accurate thermodynamic and air distribution design enhances energy efficiency**.

Simple and fast installation

The monobloc construction ensures **fast unit installation** with no need to provide on-site refrigeration piping. Thanks to the **Plug&Play** configuration, wall mounting and electrical connection of the unit are **considerably simplified**. Rain shields are available on request for installation on the external wall.



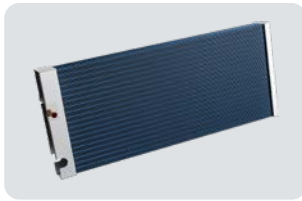
Unit suitable for any kind of climate and environment

Different configurations and layouts are available, suitable for the setting in which the unit is to be installed.

- The **high temperature version with R134a refrigerant and specific condensing fan** is suitable for facilities with outside air temperature above 45°C. The unit is capable of starting even in extreme conditions (60°C indoors and 60°C outdoors).
- In the case of exposure to aggressive atmospheric agents such as sand, **an epoxy powder painted condensing coil is available**.
- In the case of extremely cold climates (down to -40°C) **a version for low external**

temperatures is available. In this option, the unit is equipped with special condensing fans to be able to operate at low temperatures, an electrically heated switchboard, double compressor casing heaters, and condenser coil flooding system."

- R410A refrigerant, also available with R134a and R513a
- Version available with dual power supply for emergencies: 230/400V network and 24/48VDC backup supply
- Evaporating side fans with EC motor available on request
- Stainless steel condensate drain pan
- Dehumidification function (on request)
- Optional electronically controlled electric lamination valve
- Evaporating coils with hydrophilic coating supplied as standard equipment
- Epoxy powder painted structural metalwork supplied as standard
- Electric heating function (on request)
- Temperature control through heating and post-heating systems with electric heaters (on request)



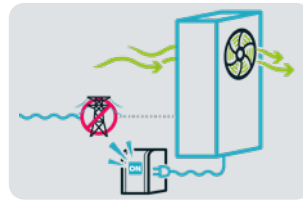
Shelter safety

All models in the monobloc indoor range feature evaporating coils with hydrophilic coating. This special coating - together with adequate adjustment of air through-flow speeds - **helps condensate collection during the dehumidification process, preventing any dripping on the inside and outside of the unit.**



Easier scheduled maintenance

The unit has been accurately designed to ensure **frontal access to components** even with the unit running. This aspect, combined with full extractability of filters and Free-Cooling damper (if any), **facilitates routine maintenance operations.**

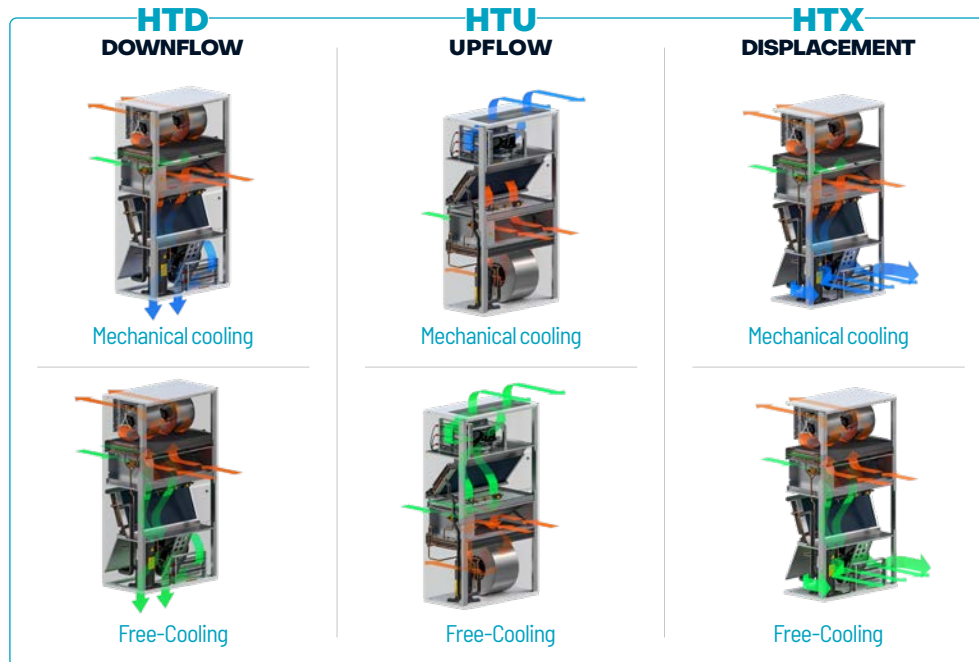


Maximised Redundancy

If **dual power supply** (mains + DC UPS) is provided, unit control and ventilation always remain active, **even in the event of a mains failure.** If the unit is configured as a Free-Cooling version (upon request), the damper will continue to operate, too, and this guarantees **operational continuity for the conditioning system.**

Maximised energy saving with direct Free-Cooling

The units can, on request, be equipped with a **direct Free-Cooling** module. This system, which can also be retrofitted on site to a unit already in operation, reduces compressor work requirements and, under full Free-Cooling conditions, allows the compressor to be turned off, **with major benefits for the system's PUE (Power Usage Effectiveness).**



HTD-HTU-HTX		0451	0561	0731	0901	1051	1201	1501	1701	1801	2001	2201	2501
		Air temperature 27°C - Relative humidity 40% / Outdoor Air Temperature 35°C											
Cooling capacity	kW	4.4	6	7	10.7	10.9	12.7	15	16.4	18.4	22.1	24.9	27.6
Total absorbed power	kW	1.9	2.5	3.2	4.8	4.4	6	6.4	7.6	7.1	9	10	11.4
SHR		1	0.9	0.95	0.99	0.98	0.92	0.98	0.94	1	0.99	0.99	0.95
EER		4.26	3.54	3.26	3.28	3.71	2.81	3.39	2.93	4.71	3.79	3.84	3.5
		Air temperature 30°C - Relative humidity 35% / Outdoor air Temperature 35°C											
Cooling capacity	kW	4.6	6.2	7.4	11.4	11.6	13.3	15.9	17.2	19.6	23.5	26.3	28.9
Total absorbed power	kW	1.9	2.5	3.2	4.8	4.5	6	6.5	7.7	7.1	9.1	10	11.4
SHR		1	0.95	1	1	1	0.96	1	0.99	1	1	1	0.99
EER		4.47	3.61	3.38	3.45	3.88	2.91	3.54	3.02	4.99	3.99	4.03	3.63
Rated air flow	m³/h	1450	1450	2100	3020	3020	3020	3800	3800	5500	5500	6500	6500
Power supply		230/1/50						400/3+N/50					
Sound pressure at 2 m in free field	dB	55	55	55	58	58	58	58	58	66	66	67	68
Dimensions [LxHxD]	mm	800x1850x550			1000x1850x550			1160x1850x550		1500x2050x800			

Performance data relating to Downflow versions with R410A refrigerant. | Also available with 60 Hz power supply.



TELECOMMUNICATIONS

NTD/U/X

INDOOR MONOBLOC MODULATING UNITS FOR SHELTERS DESIGNED FOR IT EQUIPMENT

9-27 kW



NTD



NTU



NTX

Our NTD, NTU and NTX series conditioners are indoor monobloc units designed for small equipment rooms and low power telecom shelters. Thanks to their three different air flow configurations, they are suitable for installation in multiple ways. Thanks to the various configurations available, the range is **very versatile and thus suited to many system set-ups, plus the accurate thermodynamic and air distribution design enhances energy efficiency.**

Simple and fast installation

The monobloc construction ensures **fast unit installation** with no need to provide on-site refrigeration piping. Thanks to the **Plug&Play** configuration, wall mounting and electrical connection of the unit are **considerably simplified**. Rain shields are available on request for installation on the external wall.



Unit suitable for any kind of climate and environment

Different configurations and layouts are available, suitable for the setting in which the unit is to be installed.

- In the case of extremely cold climates (down to -40°C) **a version for low external temperatures is available**. In this option, the unit is equipped with special condensing fans to be able to operate at low temperatures, an electrically heated

switchboard, double compressor casing heaters, and condenser coil flooding system.

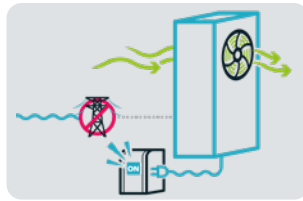
- In the case of **exposure to aggressive atmospheric agents** such as sand, an epoxy powder painted condensing coil is available.

- Refrigerant R410A
- Version available with dual power supply for emergencies: 230/400V network and 24/48VDC backup supply
- Fans on evaporating side with standard EC motor
- Modulating brushless DC compressors
- Evaporating coils with hydrophilic coating supplied as standard equipment
- Stainless steel condensate drain pan
- Dehumidification function (on request)
- Electric lamination valve with optional electronic control
- Epoxy powder painted structural metalwork supplied as standard
- Electric heating function (on request)
- Temperature control through heating and post-heating systems with electric heaters (on request)



Easier scheduled maintenance

The unit has been accurately designed to ensure **frontal access to components** even with the unit running. This aspect, combined with full extractability of filters and Free-Cooling damper (if any), **facilitates routine maintenance operations**.

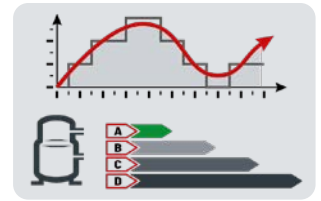


Maximised Redundancy

If **dual power supply** (mains + DC UPS) is provided, unit control and ventilation always remain active, **even in the event of a mains failure**. If the unit is configured as a Free-Cooling version (upon request), the damper will continue to operate, too, and this guarantees **operational continuity for the conditioning system**.

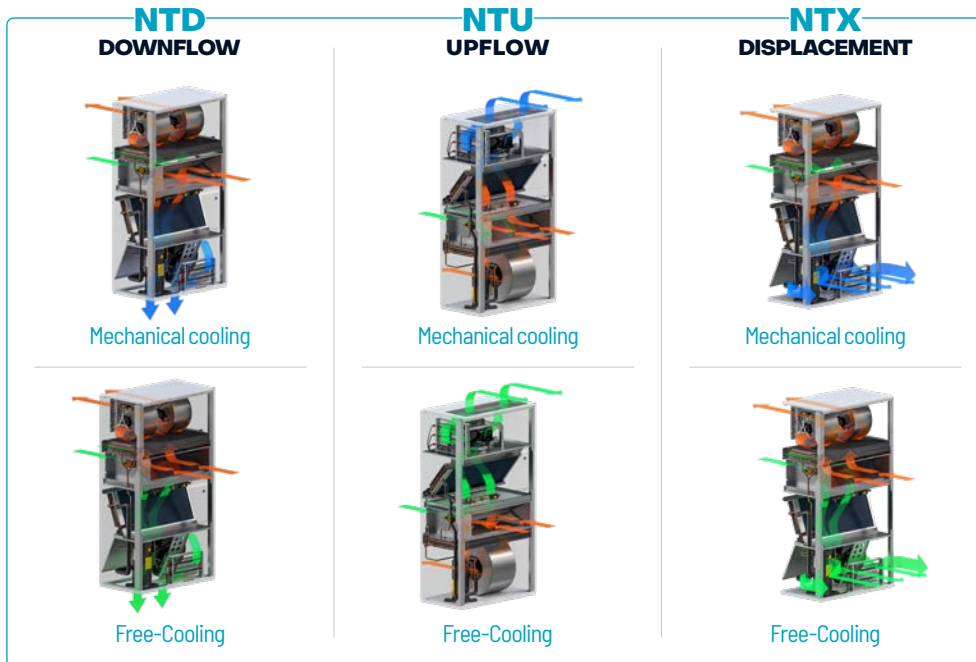
Maximised energy saving with direct Free-Cooling

The units can, on request, be equipped with a **direct Free-Cooling** module. This system, which can also be retrofitted on site to a unit already in operation, reduces compressor work requirements and, under full Free-Cooling conditions, allows the compressor to be turned off, **with major benefits for the system's PUE (Power Usage Effectiveness)**.



Efficiency and precision

The range includes compressors with Brushless DC motors. As the thermal load changes, the integrated microprocessor allows combined modulation of air flow - via control of the EC fans and cooling capacity, by managing the speed of the DC inverter compressors (supplied as standard). This ensures **not only accurate adjustment of environmental hygrothermal parameters, but also maximised energy savings at partial loads, particularly if in combination with direct Free-Cooling**.



NTD-NTU-NTX		0851	1101	1701	2501
		Air temperature 27°C - Relative humidity 40% / Outdoor Air Temperature 35°C			
Cooling capacity	kW	8.5	11.2	16.1	26.4
Total absorbed power	kW	3.2	4.5	6.2	9
SHR		0.92	1	1	1
EER		3.1	3.15	3.23	3.66
		Air temperature 30°C - Relative humidity 35% / Outdoor air Temperature 35°C			
Cooling capacity	kW	8.9	11.8	17.1	27.9
Total absorbed power	kW	3.2	4.6	6.2	9.1
SHR		0.99	1	1	1
EER		3.17	3.28	3.38	3.81
Rated air flow	m³/h	1800	3020	4000	6500
Power supply		230/1/50		400/3+N/50	
Sound pressure at 2 m in free field	dB	61	62	63	69
Dimensions [LxHxD]	mm	598x1850x550	1008x1850x550	1158x1850x551	1500x2050x805

Performance data relating to Downflow versions. | Also available with 60 Hz power supply. | Units also available in Upflow models except sizes 0851-1701.



TELECOMMUNICATIONS

NTG

INDOOR MONOBLOC UNIT WITH MODULATING COMPRESSORS FOR SHELTERS DESIGNED FOR IT EQUIPMENT - DISPLACEMENT VERSION

7-9 kW



MULTI-PROTOCOL
COMMUNICATION
INTERFACE



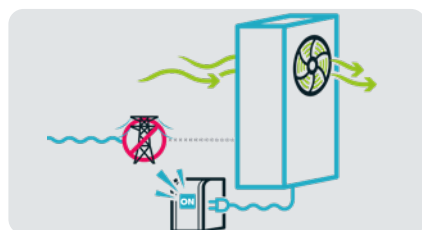
EC RADIAL FANS



INVERTER DRIVEN
COMPRESSORS

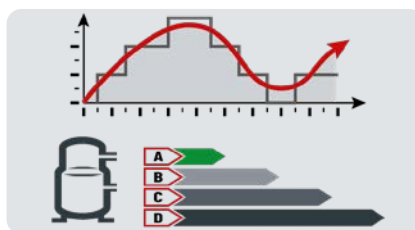
Our NTG series conditioners with inverter compressor are indoor monobloc units designed for small equipment rooms and telecom shelters. Their special configuration with **displacement air delivery** makes these units ideal **for spaces without double flooring**. Thanks to the various configurations available, the range is **very versatile and thus suited to many system set-ups**; additionally, the **accurate thermodynamic and aeraulic distribution design enhances energy efficiency**.

- Refrigerant R410A
- Version available with dual power supply for emergencies: 230/400V network and 24/48VDC backup supply
- Electric lamination valve with optional electronic control
- Condensing side fans available with EC motor
- Evaporating coils with hydrophilic coating supplied as standard equipment
- Control panel in separate enclosure
- Electric heating function (on request)
- Fans on evaporating side with standard EC motor
- Temperature control through heating and post-heating systems with electric heaters (on request)



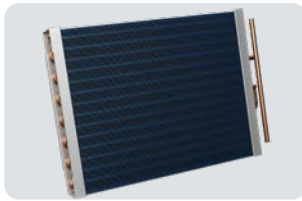
Maximised Redundancy

If **dual power supply** (mains + DC UPS) is provided, unit control and ventilation always remain active, **even in the event of a mains failure**. If the unit is configured as a Free-Cooling version (upon request), the damper will continue to operate, too, and this guarantees **operational continuity for the conditioning system**.



Efficiency and precision

As the thermal load changes, the integrated microprocessor allows for combined modulation of the air flow - via standard EC fans and cooling capacity control, by adjusting the speed of the DC inverter compressors supplied as standard. This ensures **accurate adjustment of environmental hygrothermal parameters and maximised energy savings at partial loads**.



Shelter safety

All models in the NTG range feature evaporating coils with hydrophilic coating. This special coating - together with adequate adjustment of air through-flow speeds - **helps condensate collection during the dehumidification process, preventing any dripping on the inside and outside of the unit.**



Simple and fast installation

The monobloc construction ensures **fast installation** with no need to provide on-site refrigeration connecting piping. Thanks to the **Plug&Play** configuration, wall mounting and electrical connection of the unit are **considerably simplified**. The unit has been designed to be installed directly on the door or on the wall of the shelter. The special internal design **facilitates front access to the components, even with the unit running**. This aspect, combined with full extractability of filters and Free-Cooling damper (if any), **facilitates routine maintenance operations**.

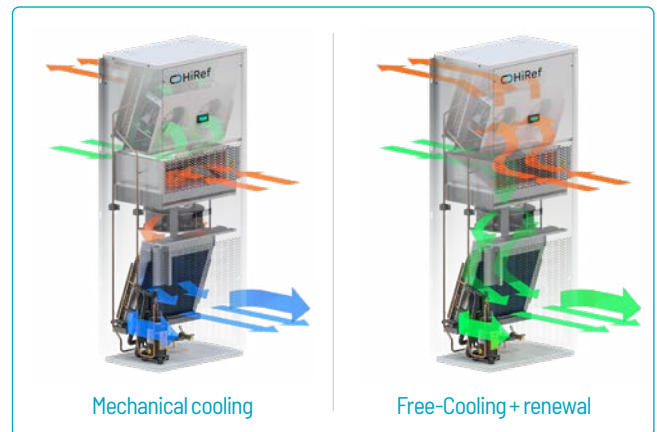
Unit suitable for any kind of climate and environment

Different configurations and layouts are available, according to the setting in which the unit is to be installed:

- In the case of extremely cold climates (down to -40°C) **a version for low external temperatures is available**. In this option, the unit is equipped with special condensing fans to be able to operate at low temperatures, an electrically heated switchboard, double compressor casing heaters, and condenser coil flooding system.
- In the case of **exposure to aggressive atmospheric agents** such as sand, an epoxy powder painted condensing coil is available.

Maximised energy saving with direct Free-Cooling

The units can, on request, be equipped with a **direct Free-Cooling** module. This system, which can also be retrofitted on site to a unit already in operation, reduces compressor work requirements and, under full Free-Cooling conditions, allows the compressor to be turned off, **with major benefits for the system's PUE (Power Usage Effectiveness).**



NTG		0060	0085
Air temperature 27°C - Relative humidity 40% / Outdoor Air Temperature 35°C			
Cooling capacity	kW	6.6	8.3
Total absorbed power	kW	2.5	3.4
SHR		0.9	0.89
EER		3.45	3.03
Air temperature 30°C - Relative humidity 35% / Outdoor air Temperature 35°C			
Cooling capacity	kW	6.9	8.6
Total absorbed power	kW	2.5	3.4
SHR		0.95	0.95
EER		3.54	3.09
Rated air flow	m ³ /h	1500	1800
Power supply		230/1/50	
Sound pressure at 2 m in free field	dB	63	64
Dimensions [LxHxD]	mm	730x1640x400	930x1640x400

Also available with 60 Hz power supply.



Monobloc for outdoor use

TELECOMMUNICATIONS

HTW-HTWD

OUTDOOR MONOBLOC UNITS FOR SHELTERS DESIGNED FOR TECHNOLOGICAL EQUIPMENT

4-40 kW



HTW



HTWD

The conditioners of the HTW-HTWD series are monobloc units designed for the air conditioning of small- and medium-sized telephone exchange centres. Designed for **external wall mounting**, they are suitable for conditioning control centres with limited internal space or space entirely taken up by technological equipment. The rational layout of the components, combined with the wide range of accessories available, make the units **easy to install** and **suitable for different shelter configurations**; the **accurate thermodynamic and aerodynamic design enhances energy efficiency**.

- R410A refrigerant, alternatively available with R513A and R134a
- Version available with dual power supply for emergencies: 230/400V network and 24/48VDC backup supply
- Stainless steel condensate drain pan
- Evaporating and condensing side fans available with EC motor
- Evaporating coils with hydrophilic coating supplied as standard equipment
- Epoxy powder painted structural metalwork supplied as standard on HTWD. Peraluman 5005 aluminium alloy metalwork supplied as standard with HTW
- Dehumidification function (on request)
- Electric lamination valve with optional electronic control
- Electric heating function (on request)
- Temperature control through heating and post-heating systems with electric heaters (on request)



Maximised shelter internal space

The HTW-HTWD series units are designed to be installed **outside the shelter**. In this way it is possible to make **the most of the internal space** which can thus be used entirely for IT equipment installation.

Simple and fast installation

The monobloc construction ensures **fast installation** with no need to provide on-site refrigeration connecting piping. Thanks to the **Plug&Play** configuration, wall mounting and electrical connection of the unit are **considerably simplified**. Rain shields are available on request for installation on the external wall.



Easier scheduled maintenance

The unit has been accurately designed to ensure **frontal access to components- even with the units running**. This aspect, combined with full extractability of filters and Free-Cooling damper (if any), **facilitates routine maintenance operations**.

Maximised energy saving with direct Free-Cooling

The units can, on request, be equipped with a **direct Free-Cooling** module. This system, which can also be retrofitted on site to a unit already in operation, reduces compressor work requirements and, under full Free-Cooling conditions, allows the compressor to be turned off, **with major benefits for the system's PUE (Power Usage Effectiveness)**.

Unit suitable for any kind of climate and environment

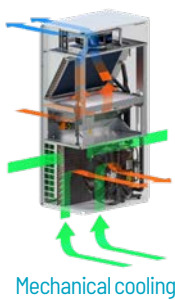
Different configurations and layouts are available, suitable for the setting in which the unit is to be installed.

- **The high temperature version with R134a refrigerant and specific condensing fan** is suitable for facilities with outside air temperature above 45°C. The unit is capable of starting even in extreme conditions (60°C indoors and 60°C outdoors).
- In the case of extremely cold climates (down to -40°C) **a version for low external temperatures is available**. In this option, the unit is equipped with special condensing fans to be able to operate at low temperatures, an electrically heated switchboard, double compressor casing heaters, and condenser coil flooding system. The Free-Cooling damper heated

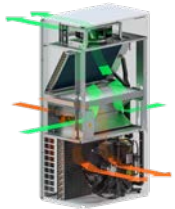
by electric heaters and equipped with a specific servomotor is also available.

- In case of exposure to aggressive atmospheric agents such as sand or sunlight, dedicated **external metalwork can be ordered with double 160 µm paint finishing layer or in AISI 304 stainless steel alloy**. An epoxy powder painted condensing coil is also available.

HTW UPFLOW



Mechanical cooling



Free-Cooling

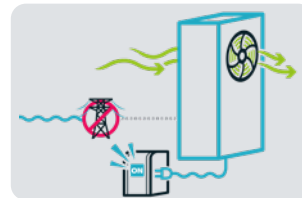
HTWD DOWNFLOW



Mechanical cooling

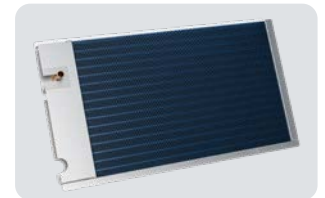


Free-Cooling



Maximised Redundancy

If **dual power supply** (mains + DC UPS) is provided, unit control and ventilation always remain active, **even in the event of a mains failure**. If the unit is configured as a Free-Cooling version (upon request), the damper will continue to operate, too, and this guarantees **operational continuity for the conditioning system**.



Shelter safety

All models in the monobloc outdoor range feature standard evaporating coils with hydrophilic coating. This special coating - together with adequate adjustment of air through-flow speeds - **helps condensate collection during the dehumidification process, preventing any dripping on the inside and outside of the unit**.

HTW-HTWD		0451	0561	0731	0901	1051	1201	1451	0902	1102	1302	2302	2902	3201
		Air temperature 27°C - Relative humidity 40% / Outdoor Air Temperature 35°C												
Cooling capacity	kW	4.3	5.9	7.1	10.1	10.8	12.7	14.4	8	11.1	14.2	22.8	28.2	37.8
Total absorbed power	kW	1.3	1.9	2.4	3.2	3.9	5.2	5.1	2.4	4.2	5.1	7.4	10.3	10.3
SHR		1	0.88	0.92	0.92	0.98	0.91	0.92	1	0.86	0.89	1	0.95	1
EER		4.18	3.52	3.55	3.54	3.4	2.84	3.28	3.84	3.2	3.28	3.44	2.95	4.7
		Air temperature 30°C - Relative humidity 35% / Outdoor air Temperature 35°C												
Cooling capacity	kW	4.6	6.1	7.5	10.5	11.5	13.3	15	8.6	11.5	14.8	24.5	29.5	40.1
Total absorbed power	kW	1.3	2	2.4	3.2	3.9	5.3	5.2	2.5	4.2	5.1	7.4	10.4	10.4
SHR		1	0.93	0.98	0.97	1	0.96	0.96	1	0.9	0.94	1	0.99	1
EER		4.39	3.59	3.68	3.7	3.61	2.91	3.37	4.06	3.28	3.38	3.66	3.03	4.98
Rated air flow	m³/h	1450	1450	2150	3020	3020	3020	3020	2800	2800	2800	6500	6500	10000
Power supply		230/1/50			400/3+N/50			230/1/50			400/3+N/50			
Sound pressure at 2 m in free field	dB	55	56	56	57	57	57	60	58	58	60	68	68	69
Dimensions [LxHxD]	mm	804x1580x498			999x1630x596			999x1790x596			1600x2100x600			2530x2260x975

Performance data relating to Upflow versions with R410A refrigerant. | Also available with 60 Hz power supply. | Units also available in Downflow models except sizes 0902-1102-1302-2302-2902-3201.



TELECOMMUNICATIONS

NTW-NTWD

OUTDOOR MONOBLOC UNIT WITH
MODULATING COMPRESSORS FOR
SHELTERS DESIGNED FOR IT EQUIPMENT

9-22 kW



NTW



NTWD

The conditioners of the NTW-NTWD series are monobloc units designed for the air conditioning of small- and medium-sized telephone exchange centres. Designed for **external wall mounting**, they are suitable for conditioning control centres with limited internal space or space entirely taken up by technological equipment. The rational layout of the components, combined with the wide range of accessories available, make the units **easy to install** and **suitable for different shelter configurations**; the **accurate thermodynamic and aeraulic design enhances energy efficiency**.

- Refrigerant R410A.
- Version available with dual power supply for emergencies: 230/400V network and 24/48VDC backup supply
- Stainless steel condensate drain pan
- Condensing side fans available with EC motor
- Modulating brushless DC compressors
- Fans on evaporating side with standard EC motor
- Evaporating coils with hydrophilic coating supplied as standard equipment
- Epoxy powder painted structural metalwork supplied as standard on NTWD. Peraluman 5005 aluminium alloy metalwork supplied as standard with NTW
- Dehumidification function on request
- Electric lamination valve with optional electronic control
- Electric heating function (on request)
- Temperature control through heating and post-heating systems with electric heaters (on request)



Maximised shelter internal space

The NTW-NTWD series units are designed to be installed **outside the shelter**. In this way it is possible to make **the most of the internal space** which can thus be used entirely for IT equipment installation.

Simple and fast installation

The monobloc construction ensures **fast installation** with no need to provide on-site refrigeration connecting piping. Thanks to the **Plug&Play** configuration, wall mounting and electrical connection of the unit **are considerably simplified**. Rain shields are available on request for installation on the external wall.



Easier scheduled maintenance

The unit has been accurately designed to ensure **frontal access to components- even with the units running**. This aspect, combined with full extractability of filters and Free-Cooling damper (if any), **facilitates routine maintenance operations**.

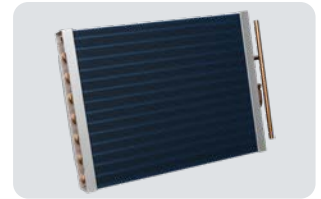
Maximised energy saving with direct Free-Cooling

The units can, on request, be equipped with a **direct Free-Cooling** module. This system, which can also be retrofitted on site to a unit already in operation, reduces compressor work requirements (partial Free-Cooling) and, under full Free-Cooling conditions, allows the compressor to be turned off, **with major benefits for the system's PUE (Power Usage Effectiveness)**.

Unit suitable for any kind of climate and environment

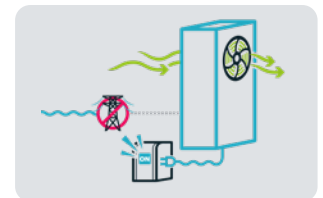
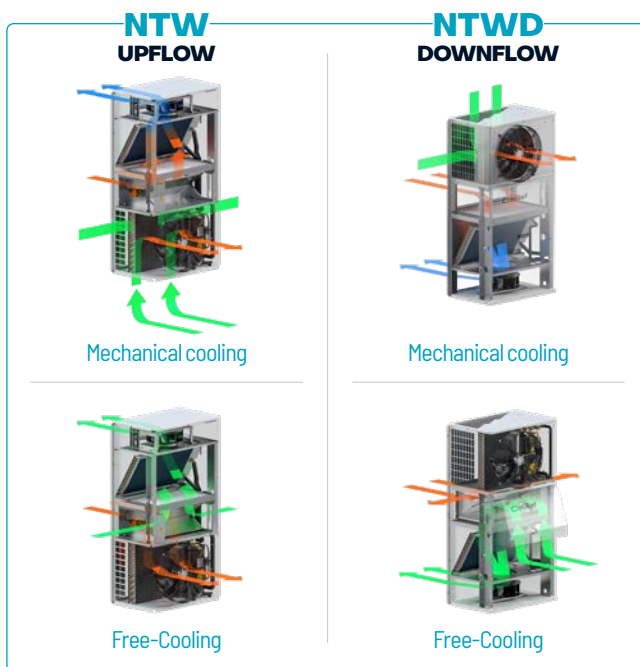
Different configurations and layouts are available, suitable for the setting in which the unit is to be installed.

- In the case of extremely cold climates (down to -40°C) **a version for low external temperatures is available**. In this option, the unit is equipped with special condensing fans to be able to operate at low temperatures, an electrically heated switchboard, double compressor casing heaters, and condenser coil flooding system. The Free-Cooling damper heated by electric heaters and equipped with a specific servomotor is also available.
- In case of exposure to aggressive atmospheric agents such as sand or sunlight, dedicated **external metalwork can be ordered with double 160 μm paint finishing layer or in AISI 304 stainless steel alloy**. An epoxy powder painted condensing coil is also available.



Shelter safety

All models in the NTG range feature evaporating coils with hydrophilic coating. This special coating - together with adequate adjustment of air through-flow speeds - **helps condensate collection during the dehumidification process, preventing any dripping on the inside and outside of the unit**.

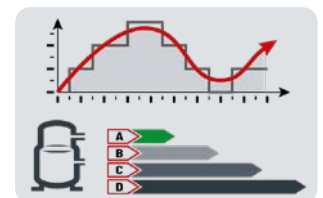


Maximised Redundancy

If **dual power supply** (mains + DC UPS) is provided, unit control and ventilation always remain active, **even in the event of a mains failure**. If the unit is configured as a Free-Cooling version (upon request), the damper will continue to operate, too, and this guarantees **operational continuity for the conditioning system**.

NTW-NTWD		0851	1101	1451	2001
Air temperature 27°C - Relative humidity 40% / Outdoor Air Temperature 35°C					
Cooling capacity	kW	8.2	9.4	15.2	19.4
Total absorbed power	kW	2.8	3.4	5.8	7.1
SHR		1	0.94	0.96	0.99
EER		4.17	3.63	3.08	3.24
Air temperature 30°C - Relative humidity 35% / Outdoor air Temperature 35°C					
Cooling capacity	kW	8.8	9.8	15.8	20.4
Total absorbed power	kW	2.8	3.4	5.9	7.2
SHR		1	1	0.99	1
EER		4.41	3.76	3.17	3.36
Rated air flow	m ³ /h	2300	2300	3020	4400
Power supply		230/1/50		400/3+N/50	
Sound pressure at 2 m in free field	dB	66	66	66	65
Dimensions [LxHxD]	mm	847x1580x500		1047x1840x605	1150x2250x655

Performance data relating to Upflow versions. | Also available with 60 Hz power supply. | Units also available in Downflow models except size 2001.



Efficiency and precision

As the thermal load changes, the integrated microprocessor allows for combined modulation of the air flow - via standard EC fans and cooling capacity control, by adjusting the speed of the DC inverter compressors supplied as standard. This ensures **accurate adjustment of environmental hygrothermal parameters and maximised energy savings at partial loads**.

 HiRef

Rooftop

TELECOMMUNICATIONS

HTR

ROOFTOP
FOR PRECISION
AIR CONDITIONING

7-63 kW



HTR rooftops are direct expansion air-cooled units developed and designed for container air conditioning. They represent the simplest solution for the air conditioning of CEDs inside containers; this is thanks to the **external positioning** of the shelter and the **easy installation** typical of single-block versions. The internal design and the careful choice of components are designed to provide the unit with **maximum energy efficiency**, to obtain **the highest savings in terms of operating costs of the cooling system**.

Unit suitable for any kind of climate and environment

Different configurations and layouts are available, suitable for the setting in which the unit is to be installed.

- **The high temperature version with R134a refrigerant and specific condensing fan** is suitable for facilities or systems with outside air temperature above 45°C. The unit is capable of starting even in extreme conditions (60°C indoors and 60°C outdoors).
- In the case of extremely cold climates (down to -40°C) **a version for low external temperatures is available**. In this option, the outdoor unit is equipped with special condensing fans to be able to operate at low temperatures, an electrically heated switchboard, double compressor casing heaters, and condenser coil flooding system.
- In case of exposure to aggressive atmospheric agents such as sand or sunlight, **the outdoor unit metalwork can be ordered with double 160 µm paint finishing layer or in AISI 304 stainless steel alloy**. An epoxy powder painted condensing coil is also available.

- R410A refrigerant, alternatively available with R513A and R134a
- Temperature control through heating and post-heating systems with electric heaters (on request)
- Evaporating coils with hydrophilic coating supplied as standard equipment
- Electrical panel in overpressure for the utmost safety
- Configurable with side intake and delivery
- Epoxy powder painted structural metalwork supplied as standard
- Condensing side fans available with EC motor
- Fans on evaporating side with standard EC motor
- Dehumidification function (on request)
- Electric lamination valve with optional electronic control
- Evaporating side fans with EC motor as standard



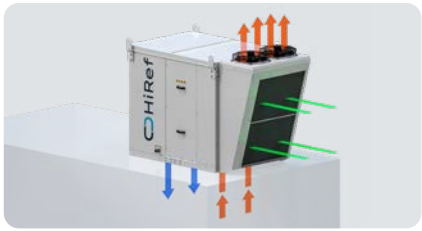
Maximum efficiency

The use of EC electronic switching fans (as part of the standard equipment) in the evaporating section **minimises ventilation costs, helping boost the unit energy efficiency.**



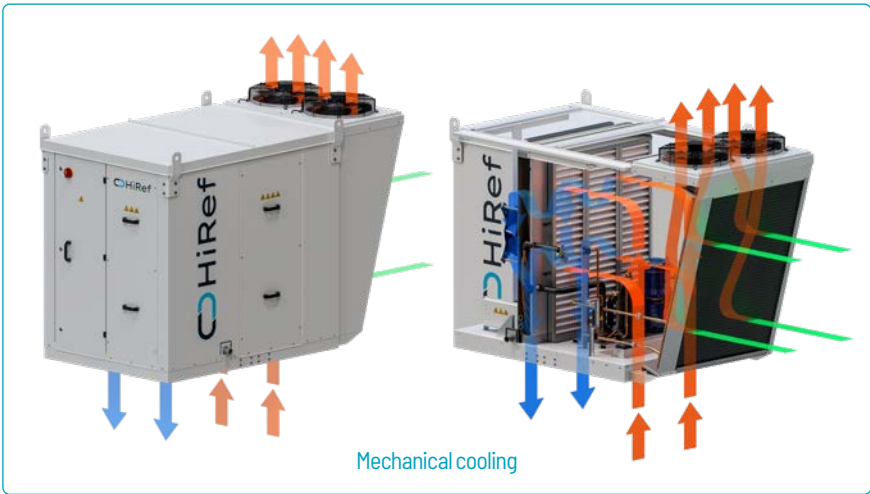
Complete accessibility

All Rooftop HTR components are easily accessible by removing the unit's removable side panels. This solution greatly **facilitates all scheduled and unscheduled maintenance operations.**



Maximised shelter internal space

HTR Rooftop units are designed to be installed **outside shelters**. This translates into **optimisation of internal space** that can be used exclusively for installation of the server racks.



HTR		0701	1201	1601	1801	2501	3201	5602
Air temperature 27°C - Relative humidity 40% / Outdoor Air Temperature 35°C								
Cooling capacity	kW	6.8	11.6	15.2	17.6	24.8	33	59.8
Total absorbed power	kW	2.5	4.2	5.5	5.5	8.5	11.1	20.6
SHR		1	1	1	1	1	0.99	1
EER		4.24	3.54	3.48	4.25	3.73	3.73	3.97
Air temperature 30°C - Relative humidity 35% / Outdoor air Temperature 35°C								
Cooling capacity	kW	7.3	12.4	16.1	18.8	26.3	34.9	63.4
Total absorbed power	kW	2.6	4.2	5.5	5.6	8.5	11.2	20.7
SHR		1	1	1	1	1	1	1
EER		4.4	3.77	3.64	4.48	3.9	3.89	4.16
Rated air flow	m ³ /h	2500	4000	4800	6000	8000	9000	17000
Power supply		400/3+N/50						
Sound pressure at 2 m in free field	dB	59	67	73	64	72	74	74
Dimensions [LxDxH]	mm	910x1630x2300			1200x1630x2300			2060x1630x2300

Performance data relating to versions with R410A refrigerant. | Also available with 60 Hz power supply.

TELECOMMUNICATIONS

NTR

ROOFTOP AIR CONDITIONING UNIT WITH MODULATING COMPRESSORS FOR CONTAINERS

31-41 kW



NTR rooftops are direct expansion air-cooled units developed and designed for container air conditioning. **They represent the simplest solution for the air conditioning of CEDs inside containers;** this is thanks to the **external positioning of the shelter and the easy installation typical of single-block versions.** The internal design and the careful choice of components are designed to provide the unit with **maximum energy efficiency, so as to obtain the highest savings in terms of operating costs of the cooling system.**

Unit suitable for any kind of climate and environment

- Different configurations and layouts are available, suitable for the setting in which the unit is to be installed.
- In the case of extremely cold climates (down to -40°C) **a version for low external temperatures is available.** In this option, the unit is equipped with special condensing fans to be able to operate at low temperatures, an electrically heated switchboard, double compressor casing heaters, and condenser coil flooding system.
- In case of exposure to aggressive atmospheric agents such as sand or sunlight, **the outdoor unit metalwork can be ordered with double 160 µm paint finishing layer or in AISI 304 stainless steel alloy.** An epoxy powder painted condensing coil is also available.

- Refrigerant R410A
- Configurable with side intake and delivery
- Version for low outdoor temperatures (-40°C) available
- Modulating brushless DC compressors
- Temperature control through heating and post-heating systems with electric heaters (on request)
- Evaporating coils with hydrophilic coating supplied as standard equipment
- Fans on evaporating side with standard EC motor
- Electrical panel in overpressure for the utmost safety
- Epoxy powder painted structural metalwork supplied as standard
- Condensing side fans available with EC motor
- Dehumidification function (on request)
- Electric lamination valve with optional electronic control



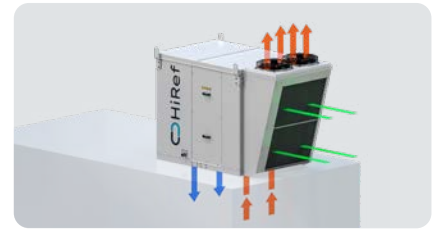
Maximum efficiency at partial loads

The use of EC electronic switching fans (as part of the standard equipment) in the evaporating section **minimises ventilation costs, helping boost the unit energy efficiency, particularly at partial loads.**



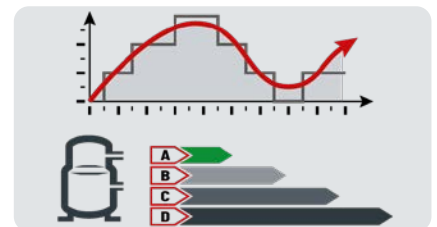
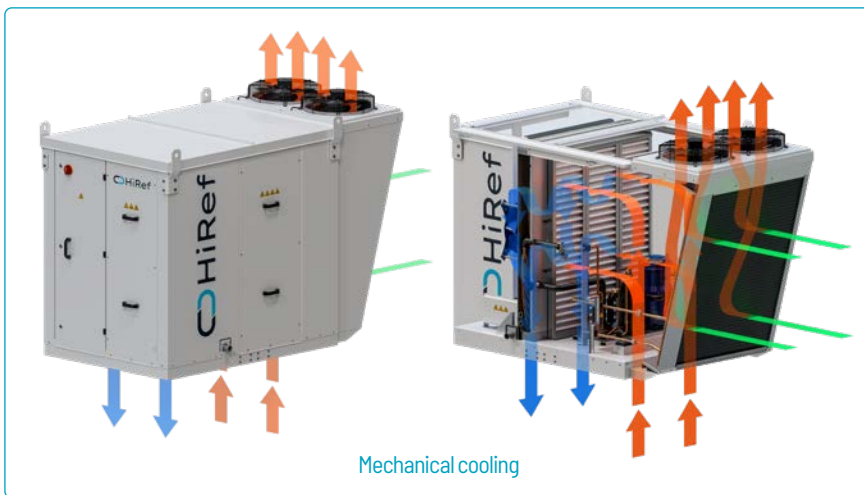
Complete accessibility

All Rooftop NTR components are easily accessible by removing the unit's removable side panels. This solution greatly **facilitates all scheduled and unscheduled maintenance operations.**



Maximised shelter internal space

NTR Rooftop units are designed to be installed **outside shelters**. This translates into **optimisation of internal space** that can be used exclusively for installation of the server racks.



Efficiency and precision

As the thermal load changes, the integrated microprocessor allows for combined modulation of the air flow - via standard EC fans and cooling capacity control, by adjusting the speed of the DC inverter compressors supplied as standard. This ensures **accurate adjustment of environmental hygrothermal parameters and maximised energy savings at partial loads.**



NTR		2501	3201
		Air temperature 27°C - Relative humidity 40% / Outdoor Air Temperature 35°C	
Cooling capacity	kW	31.2	39.6
Total absorbed power	kW	12.7	15.6
SHR		0.94	0.95
EER		2.86	2.95
		Air temperature 30°C - Relative humidity 35% / Outdoor air Temperature 35°C	
Cooling capacity	kW	32.9	41.3
Total absorbed power	kW	12.9	15.8
SHR		1	1
EER		2.97	3.03
Rated air flow	m ³ /h	8000	9000
Power supply		400/3+N/50	
Sound pressure at 2 m in free field	dB	77	77
Dimensions [LxHxD]	mm	1200x1630x2300	

Also available with 60 Hz power supply.