Whenever natural gas is available, the direct-fired double-effect 16DN absorption liquid chillers offer a high-performance solution, compared with traditional machines using mechanical compression.

Carrier absorption chillers/heaters permit a considerable reduction in the power consumption required to produce chilled water - and this with an efficiency that is comparable to traditional systems.

Further savings are possible, as these machines also operate in heating mode, making the installation of an additional boiler unnecessary. With the intrinsic benefits of absorption systems, air conditioning using gas will become a long-term choice of the future.

Carrier has always been a strong force in the absorption sector and has invested heavily in research and development of a new machine base, launched with the 16DN product range.

This is proof of Carrier’s desire to continually improve in order to satisfy market demands. Better control of the operating costs is a significant factor, as shown by the increased demand for absorption chillers.

With the 16DN “Absolute” absorption chillers Carrier becomes the only manufacturer to offer a complete range that is globally available and supported by dedicated teams from the unit selection right through to unit maintenance.

The 16DN “Absolute” absorption units require very little electrical energy.

The installation costs for the electrical system can be significantly reduced, especially in cases where additional transformer capacity would otherwise be required. The most important energy cost reduction factor is the high-efficiency double-effect system - no matter what energy source is used: natural gas or fuel oil (option). This results in very low operating costs and further reduces system costs.

With the 16DN units you can forget additional boilers that would complicate the installation, increase initial costs and require extra floor space. Thanks to the centralised hot and chilled water production of direct-fired machines such as the 16DN “Absolute” unit users can easily change over from cooling to heating mode.
With the 16DN “Absolute” range Carrier challenges many preconceived ideas. Air conditioning using absorption is very competitive: it offers easy installation, is ideal for cooling and heating and provides quiet, economical operation.

The 16DN “Absolute” range lets you discover a true alternative for the air conditioning of commercial buildings, airports and hospitals.

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**A CAPACITY RANGE TO MEET ALL YOUR REQUIREMENTS**

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**A CREATIVE DESIGN FOR COMPACT MACHINES**

For the 16DN “Absolute” Carrier has created a unique concept that permits locating the evaporator/absorber and low-temperature generator/condenser sub-assemblies in a single shell. The reduced machine size also results from the novel arrangement of the internal components. As a result the footprint is reduced by an average of 23%, compared to other absorption machines on the market. Another plus!

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**A BLE-EFFECT ALTERNATIVE**

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**MORE ENVIRONMENTAL CONSTRAINTS**

In the light of planned, more stringent refrigerant legislation absorption technology offers a major advantage. No more worries about refrigerant leaks, replacement and bans.

Primary energy consumption: Depending on the country, air conditioning using natural gas can be comparable to “electrical” air conditioning, both in terms of overall COP and CO₂ emissions. This is particularly likely to be true in countries that rely heavily on fossil fuels in the production of electricity.

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**A CONCEPT THAT OPTIMISES RELIABILITY AND QUIET OPERATION**

With a minimum of moving parts 16DN units maximise vibration reduction and thus the risk of damage. Noise levels are very low, making expensive acoustical treatment unnecessary. Due to the unique casing concept the risk of leaks is also significantly reduced.

The 16DN units are reliable and simple to operate. The variable-speed control of the solution pump permits optimised flow rate in all conditions (no manual control) and improved efficiency at part load. The automatic non-condensable purge system, together with the vacuum pump, complete the 16DN machines, and ensure optimised operation of the absorption cycle.

The units are easy to install, simple to maintain and exceptionally reliable, and offer a solution that is ideally suited for commercial applications.
ARI 560 PERFORMANCE GUARANTEE

Thanks to regular tests Carrier guarantees conformity with published performance, based on the compliance with ARI standard 560, applicable for absorption liquid chillers.

Carrier’s choice of ARI 560 as reference standard, the strictest in terms of tolerance, and Carrier’s voluntary commitment to publish performance data in accordance with this standard are important guarantees for system designers and installers.

16DN TECHNICAL DATA

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<tbody>
<tr>
<td>Nominal cooling capacity kW</td>
<td>352</td>
<td>422</td>
<td>528</td>
<td>633</td>
<td>739</td>
<td>844</td>
<td>985</td>
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<td>1266</td>
<td>1407</td>
<td>1583</td>
<td>1758</td>
<td>2110</td>
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<tr>
<td>Nominal heating capacity kW</td>
<td>294</td>
<td>352</td>
<td>440</td>
<td>528</td>
<td>616</td>
<td>704</td>
<td>821</td>
<td>968</td>
<td>1055</td>
<td>1173</td>
<td>1319</td>
<td>1466</td>
<td>1762</td>
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<tr>
<td>Operating weight kg</td>
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<td>5700</td>
<td>6680</td>
<td>7120</td>
<td>8270</td>
<td>9390</td>
<td>10810</td>
<td>11470</td>
<td>12510</td>
<td>13500</td>
<td>16550</td>
<td>17520</td>
<td>24460</td>
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<td>Overall length mm</td>
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<td>2966</td>
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<td>3638</td>
<td>3679</td>
<td>3679</td>
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<td>Overall width mm</td>
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<td>1797</td>
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<td>1830</td>
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</table>

Note: Ratings are based on ARI* 560, latest edition, 12.2/6.7°C (0.043 l/s-kW) chilled water, 29.4°C (0.072 l/s-kW) cooling water, 54.4/60°C hot water, fouling factor 0.044 m² K/kW for absorber and condenser, 0.0176 m² K/W for the evaporator, natural gas calorific value 37260 kJ/m³ (HCV**), No. 2 oil heating value 39020 kJ/l.

* ARI - Air Conditioning and Refrigeration Institute (US)
** HCV - Higher Calorific Value

OPTIONS AND ACCESSORIES

- 1724 kPa/2068 kPa water boxes (option)
- Special tubing (option)
- Unit voltage 208, 230, 400, 460 or 575:3-50/60 (option)
- Dual-fuel burner (option)
- Low Nox (accessory)
- Shipping configuration (one- or two-piece) (option)
- Isolation package (option/accessory)
- Condenser water flow switch (option)
ABSOLUTE™
GAS-FIRED ABSORPTION LIQUID CHILLERS/HEATERS

OPTIMISED ENERGY MANAGEMENT