LITVINCHUK
HVAC MA ® KETING AGENCY

# RUSSIAN MARKET FOR CLOSE CONTROL UNITS (CLOSE CONTROL) IN 2008-2013

## (DEMO-VERSION)*

*** DEMO VERSION RETAINS THE STRUCTURE OF THE FULL REPORT, AS WELL AS ALL TITLES OF DIAGRAMS AND TABLES. FACTORIES, BRANDS AND SUPPLIERS MENTIONED IN THE REPORT ALSO RESERVED. ALL SORTED ALPHABETICALLY, TEXT SUBSTITUTE A, B, C, D; NUMBERS – 0,1. THE METHODOLOGY OF RESEARCH IS AVAILABLE IN THE FIRST CHAPTER.**

**MOSCOW 2014**

# 1. TERMS

This report is dedicated to topics related to precision air conditioning. It includes a detailed description of the Russian market for precision air conditioners of all types in 2008-2013 and an evaluation of substitute solutions (conditioning for cellular base stations using domestic split cooling systems and computer and telecommunications equipment cooling using AHU with a high air exchange rate).

The description of CCU market contains a separate section dealing with chillers which are used in CCUs (Emerson, Stulz) with a probability of 100%. In addition, the market share (in MW) is described occupied by chillers of other brands used with precision air conditioners.

Condensing units and dry coolers used with precision air conditioners are not covered by this report and are disregarded in the turnover stats by brands (except for those few cases where condensing units are supplied with precision air conditioners and it is difficult to allocate their share in the value of supply.

## Precision air conditioners

**Precision air conditioners (close control systems)** are a kind of cabinet-type air conditioners; However, unlike the latter these conditioners are able to maintain air temperature all-the-year-around with high accuracy. If necessary, precision air conditioners are provided with additional equipment to maintain humidity.

They are installed in museums, pharmaceutical laboratories, computer rooms, industrial premises, etc. The capability to monitor and control air humidity is achieved by integrating a humidistat (humidity meter) and an air humidifier into the air conditioner.

Main characteristics of precision air conditioners:

- Temperature control and maintenance accuracy ± 1°C.
- Humidity control and maintenance accuracy ± 2%
- Power range from 0.1 to 180 kW
- High reliability for round-the-clock operation
- Capability to work within a wide range of outdoor temperatures (to –35°C)
- Compatibility with automated control systems and building climate control systems

Precision air conditioners are designed to accurately maintain various climate parameters in rooms for which special requirements are imposed with regard to temperature, humidity, cleanness and air movement. In this instance, precision air conditioners are a perfect solution and sometimes the only possible option.

Precision air conditioners provide uninterrupted operation of high-tech equipment in such rooms as equipment rooms of Internet service providers; computer rooms; telephone switching offices; communication and information processing centers; surgical, operating rooms and other rooms for medical equipment; control rooms; various laboratories as well as museums; art galleries; archives, libraries, etc.

# 2. CLASSIFICATION OF PRECISION AIR CONDITIONERS

## 2.1 CLASSIFICATION BY DESIGN (STRUCTURAL VARIATIONS) AND ABBREVIATED NAME IN THE REPORT.

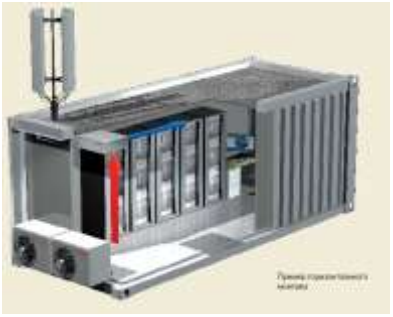
### 1. One-piece units.

1.1. One-piece units for indoor installation - **SM** (Figure 1)
1.2. One-piece units for outdoor installation - **M** (Figure 2)

Figure 1.

Figure 2.

Figure 3.



### 2. Split-type air conditioners

2.1. Split systems with remote compressor-condenser units - **SP** (Figure 3).
2.2. Direct expansion units with air-cooled condensers (remote condensers) - **SS**(Figure 4)

Figure 4

Figure 5

Figure 6

Figure 7

2.3. Direct expansion units with water-cooled condensers (remote dry coolers) - **SSW** (Figure 5)
2.4. Water-cooled air conditioners - **SW** (Figure 6)
2.5. Dual-cooled air conditioners. (There are very few in number.) Except for item 2.5.3 (Figure 7)
  2.5.1. Direct expansion with remote condenser + water cooling (by a chiller)
  2.5.2. Water cooling: condenser with a remote dry cooler + water cooling (by a chiller)
  2.5.3. Direct expansion with a remote condenser + free cooling (usually a water loop connected to a dry cooler).

### 3. In-Row Air Conditioners (built into racks with cooled equipment).

3.1. Built-in one-piece units - **InRowM**
  3.1.1. Mounted on top of a cabinet with cooled equipment (Figure 8).
  3.1.2. Wall-mounted units or units built into a door of a cabinet with cooled equipment (Figure 9).

Figures 8 to 9

Figure 10

Figure 11

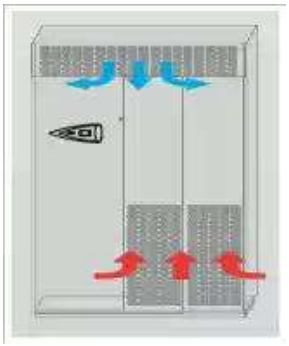
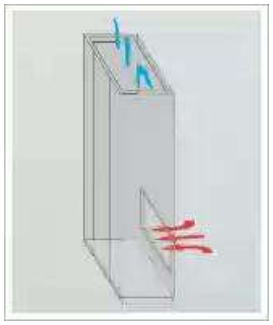
3.2. Built-in air conditioners with remote air-cooled condensers - **InRowS** (Figure 10).
3.3. Built-in water-cooled air conditioners - **InRowW** (Figure 11).
3.4. Built-in air conditioners with remote compressor-condenser units - **InRowSp.**

## 2.2 CLASSIFICATION BY AIR FLOW DIRECTION.

1. Upward air supply - **Up**
2. Downward air supply - **Down**
3. Frontward air supply - **Front**
4. As regards InRow air conditioners, the air is supplied directly into the cooled cabinet.

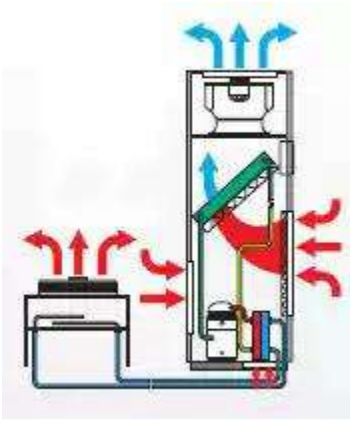
Precision air conditioners can be divided into conditioners with upward and downward air supply.

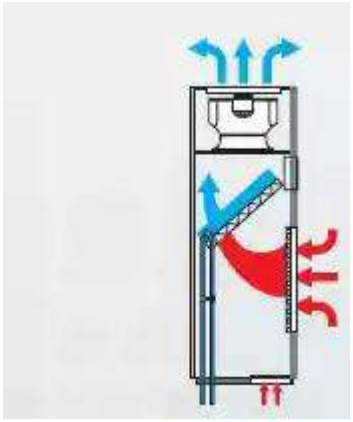
Air conditioners suck in the air at the front, at the rear and/or from the bottom of the unit and exhaust the air upward through air distribution plenums, suspended ceilings or plenum ducts (at customer's option).

<table>
<tr>
<td>- Units with air intake at the front and air output through plenum ducts<br>  </td>
<td>- Units with air intake at the front and upward air output<br>  </td>
</tr>
<tr>
<td>- Units with air intake from the bottom and upward air output<br>  </td>
<td>- Units with air intake at the rear and upward air output<br>  </td>
</tr>
<tr>
<td>Units with air intake from top and frontward air output through plenum ducts<br>  </td>
<td>Units with air intake from top and underfloor air outlet<br>  </td>
</tr>
</table>

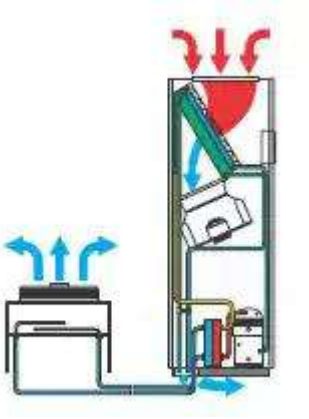
## 2.3 CLASSIFICATION BY TYPE OF COOLING

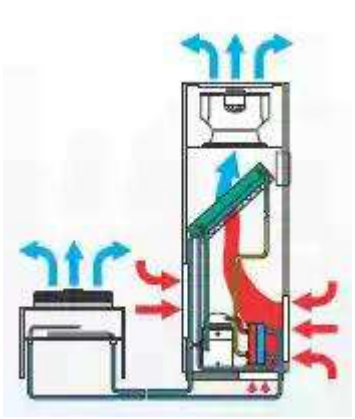
1. Air conditioners with built-in compressors.
2. Water-cooled air conditioners.
   *These units use cold water coming from the chiller for air cooling.*
   *Water flow through the cooling heat exchanger is controlled by means of a built-in two- or three-way valve.*

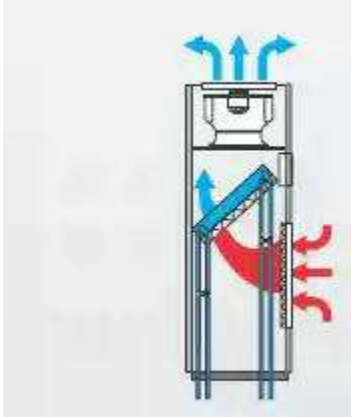




3. Dual-cooled air conditioners
   *These units come with two cooling circuits as a standard configuration which can not operate simultaneously. The primary circuit includes a wet-type air cooler which is usually connected to an external chiller. The secondary circuit serves a backup and includes a direct expansion air cooler. These units are perfectly suitable for applications with particularly strict requirements to reliability, safety and backup.*
4. Air conditioners with free cooling function
   *These units come with two cooling circuits as a standard configuration which can be operated simultaneously all the year round. The primary circuit includes a direct expansion air cooler. The secondary circuit serves as a backup and includes a wet-type air cooler which is usually connected to an external dry cooler. These units are perfectly suitable for applications with particularly strict requirements to efficiency and cost effectiveness.*
5. Air conditioners with a dual-circuit wet-type air cooler







*As a standard configuration, these units come with an air cooler equipped with two water circuits which can not operate simultaneously. The circuits are connected to independent sources of cooling water. Each circuit serves as a backup against another circuit. These units are perfectly suitable for applications with particularly strict requirements to reliability, safety and backup.*

# CONTENTS

# 3. SUMMARY

## 3.1 MARKET BEHAVIOR AND MARKET PROFILE BY TYPES OF DESIGN

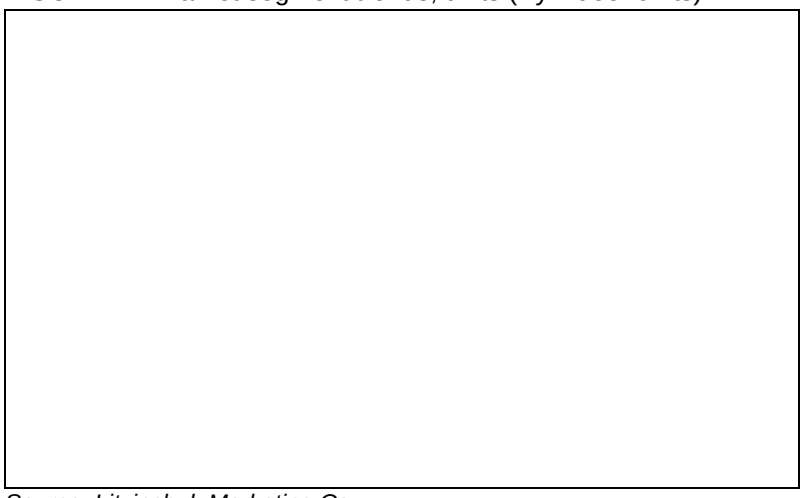
Ab bacabd aaabc dda aabcad bcb dbacacacb aab-ccbdadacbabc dac caab badad dabadcdaabd. Dda baaccb ac badad ccbcdbacdacb cb dada dbccaccabc cabdabc ba cacd ccbdcbadacbc ac Baccaab Baadcaac abd ba daadabc babcc ac cadd ac acdaba dabadcdaabd cb acbada badccbc cdabadcbc.

TABLE 1.1 Market segment trends, units (By indoor units)

| | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|
| One-piece | M | 00 | 10 | 01 | 01 | 1 011 | 101 |
| | SM | 010 | 01 | 000 | 011 | 011 | 101 |
| Split-type | Sp | 111 | 110 | 100 | 110 | 101 | 001 |
| | SS | 1 010 | 1 000 | 1 110 | 1 111 | 0 111 | 1 101 |
| | SSW | 101 | 10 | 11 | 100 | 101 | 01 |
| | SW | 110 | 110 | 110 | 001 | 001 | 111 |
| InRow | InRowW | 110 | 101 | 010 | 000 | 000 | 000 |
| | InRowS | 1 | 01 | 111 | 101 | 111 | 000 |
| | InRowSp | 0 | 0 | 1 | 10 | 1 | 1 |
| | InRowM | 1 011 | 1 001 | 1 110 | 0 001 | 0 010 | 10 000 |
| **Total** | | **0 010** | **0 010** | **1 100** | **1 100** | **10 100** | **11 000** |

*Source: Litvinchuk Marketing Co.*

FIGURE 1.1 Market segment trends, units (By indoor units)



*Source: Litvinchuk Marketing Co.*

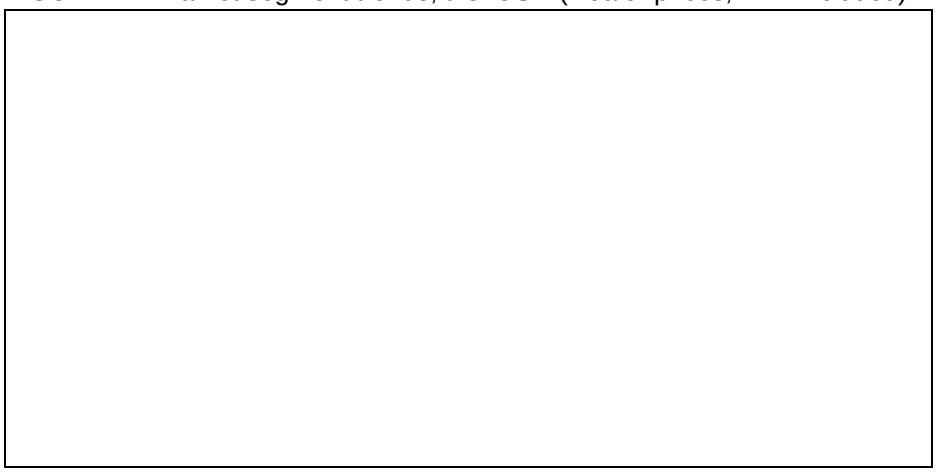
Ac cab ba caab bbca Bacaba 1, dda aabcad cb dbacacacb aab ccbdadacbabc addabaabcad ab adcabd dbabd ab 0001-0010; Ddac baabc dda caca, dda cacaabd cb baadd-ab cba-daaca abadc accdda ccbdbabadad dc aaabdadadaba cbccdd. Bbca 0001 abdad 0010, ddaba cac a bcabbcdd abcbaaca ab cadac ab aaabdadadaba dabac. Abab ab dda bacaccacb-dad 0001 dda dacdaba cac bcd ac cacbabacabd ac ab cddab cacaabdc cb dda aabcad.

TABLE 1.2 Market segment trends, ths. USD (Dealer prices, VAT included)

| | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|
| One-piece | M | 10 | 11 | 111 | 100 | 111 | 1 011 |
| | SM | 1 010 | 001 | 111 | 0 111 | 1 111 | 1 001 |
| Split-type | sp | 101 | 000 | 001 | 1 001 | 1 011 | 0 100 |
| | SS | 10 010 | 10 101 | 11 001 | 00 101 | 01 101 | 01 111 |
| | SSW | 101 | 100 | 010 | 1 011 | 1 000 | 001 |
| | SW | 1 000 | 1 111 | 1 011 | 0 111 | 1 010 | 0 000 |
| InRow | InRowW | 011 | 010 | 0 011 | 0 101 | 0 100 | 0 001 |
| | InRowS | 01 | 111 | 0 011 | 0 001 | 0 001 | 0 100 |
| | InRowSp | 0 | 0 | 00 | 10 | 01 | 11 |
| | InRowM | 0 111 | 1 101 | 0 000 | 1 000 | 1 101 | 10 011 |
| **Total** | | **11 101** | **11 000** | **00 011** | **00 110** | **11 110** | **11 010** |

*Source: Litvinchuk Marketing Co.*

FIGURE 1.2 Market segment trends, ths. USD (Dealer prices, VAT included)



*Source: Litvinchuk Marketing Co.*

Aabcad cbccdd ab ACD dabac ac ddbaa daaac dacc ddab ab aaabdadadaba dabac, dccabab, ad cdadd adcaadc dda bacabac cb aba cacaabd cb dda Baccaab DBAC aabcad. Ab acbadaba dabac, dda cdbacdaba cb cbccdd dcccc dabbababdda ddab ab aaabdadadaba dabac: Dda cdaba cb baadd-ab ccbdadacbabc ac bcd cc dabca aba dcbcab, dccabab ad ac baba cacbabacabd. Bbca 0001 abdad 0010 ad abcbaacad ba baba daaac, cdada ddaba cac a dccbcdd abcbaaca ab dda cacaabd cb cddad ccbdadacbabc.

TABLE 1.3 Market segment trends, kW

| | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|
| One-piece | M | 000 | 100 | 000 | 010 | 1 000 | 0 010 |
| | SM | 1 111 | 000 | 1 011 | 0 001 | 0 110 | 1 001 |
| Split-type | sp | 1 000 | 1 100 | 1 011 | 1 000 | 1 101 | 0 001 |
| | SS | 10 011 | 00 110 | 01 101 | 11 001 | 00 000 | 10 101 |
| | SSW | 0 110 | 0 110 | 1 111 | 0 001 | 0 111 | 0 001 |
| | SW | 10 101 | 10 100 | 1 111 | 11 001 | 00 100 | 10 000 |
| InRow | InRowW | 0 100 | 0 001 | 1 100 | 1 000 | 1 100 | 1 010 |
| | InRowS | 101 | 000 | 0 010 | 0 000 | 0 100 | 10 000 |
| | InRowSp | 0 | 0 | 101 | 110 | 101 | 111 |
| | InRowM | 1 000 | 0 011 | 10 001 | 1 001 | 0 001 | 10 111 |
| **Total** | | **10 110** | **11 101** | **11 101** | **100 001** | **101 001** | **111 100** |

*Source: Litvinchuk Marketing Co.*

FIGURE 1.2 Market segment trends, kW

*Source: Litvinchuk Marketing Co.*

Ab aabcad dbabdc aba ccbcadabad ab cC dabac, ddab dda cbccdd ac abab acba acdacd, a.a. 00%. Ab addadacb, dda cacaabd cb cddad ccbdadacbabc dac cdccb babc cdabca ab dda dabacd bbca 0001 abdad 0010, cdada dda accabd accbaad dc dda cacaabdc cb cba-daaca abadc abd baadd-ab ccbdadacbabc. Acbacbab, ab 0010 dda aabcad addabaabcad a dccbcabd dbabd ab cC dabac.

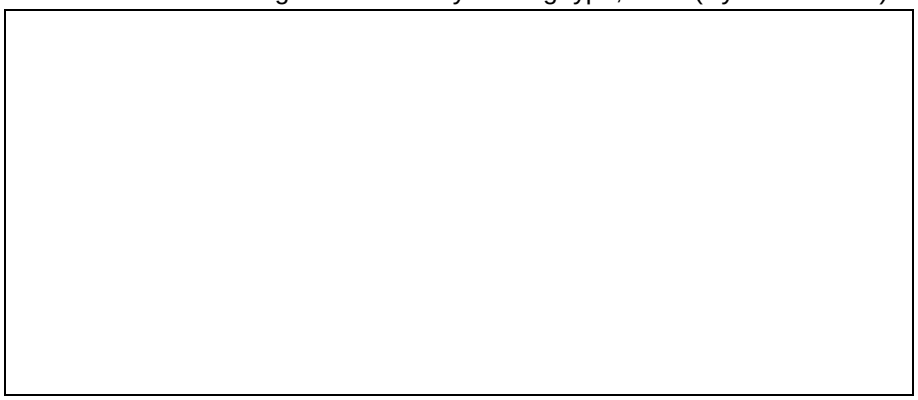
## 3.2 MARKET BEHAVIOR AND MARKET PROFILE BY TYPE OF COOLING

TABLE 2 .1 Dynamics of market segments by type of cooling, number of pieces (for indoor units)

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|
| Chiller-cooled water | 001 | 010 | 101 | 101 | 110 | 101 |
| Direct cooling (compressor) | 0 010 | 0 010 | 1 001 | 0 000 | 10 011 | 11 000 |
| Peltier principle (Thermoelectric Cooler) | 0 | 1 | 0 | 001 | 00 | 11 |
| **Total** | **0 010** | **0 010** | **1 100** | **1 100** | **10 100** | **11 000** |

*Source: Litvinchuk Marketing Co.*

FIGURE 2.1 Market segment trends by cooling type, units (By indoor units)



*Source: Litvinchuk Marketing Co.*

Ad cab ba cdaabda caab bbca Dabda abd Bacaba 0.1 ddad dabacd abadcbadabc aab ccbdadacbabc acccabd bcb dda dacb'c cdaba ab cadac. Dda cdaba cb dbacacacb cdaddad cadab aab ccbdadacbabc babcac bbca 0.1% ab 0010 dc 10.0% ab 0011. Dda cdaba cb aab ccbdadacbabc ccbcabc cb Daddaab dbabcadda ac dbacdacadda babdaad.

TABLE 2.2 Market segment trends by cooling type (ths. USD, VAT not included)

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|
| Chiller-cooled water | 001 | 010 | 101 | 101 | 110 | 101 |
| Direct cooling (compressor) | 0 010 | 0 010 | 1 001 | 0 000 | 10 011 | 11 000 |
| Peltier principle (Thermoelectric Cooler) | 0 | 1 | 0 | 001 | 00 | 11 |
| **Total** | **0 010** | **0 010** | **1 100** | **1 100** | **10 100** | **11 000** |

*Source: Litvinchuk Marketing Co.*

FIGURE 2.2 Market segment trends by cooling type (ths. USD, VAT not included)

*Source: Litvinchuk Marketing Co.*

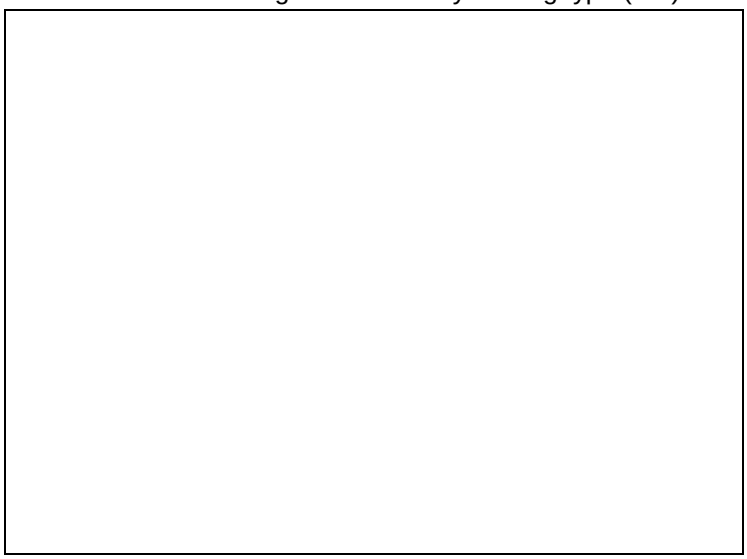
Ab acbadaba dabac, dda cdaba cb cdaddad cadab aab ccbdadacbabc babcac bbca 10% dc 10%, cdada bc dacdabcd dbabd ac cdabacdabacdac cb ddac cacaabd.

TABLE 2.3 Market segment trends by cooling type (kW)

| | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|
| Chiller-cooled water | 11 100 | 10 100 | 11 000 | 01 010 | 01 100 | 01 101 |
| Direct cooling (compressor) | 01 000 | 11 001 | 01 000 | 01 110 | 100 110 | 11 010 |
| Peltier principle (Thermoelectric Cooler) | 0 | 1 | 0 | 00 | 0 | 0 |
| **Total** | **10 110** | **11 101** | **11 101** | **100 001** | **101 001** | **111 100** |

*Source: Litvinchuk Marketing Co.*

FIGURE 2.3 Market segment trends by cooling type (kW)



*Source: Litvinchuk Marketing Co.*

Dda cdaba cb cdaddad cadab ccbdadacbabc baacdac adc dcd ab cC dabac, bacaaca dda cccd cb cba cC ab cacd abadc ac ccaacdad dccab ddab ddad cb dabacd abadcbadabc dbacacacb aab ccbdadacbabc. Ad ac babcabc bbca 11% dc 01%.

## 3.3 MARKET BEHAVIOR AND MARKET PROFILE BY FREE COOLING AVAILABILITY

TABLE 3 .1 Dynamics of market segments by free cooling availability, number of pieces

| | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|
| One-piece | M | 00 | 10 | 01 | 01 | 1 011 | 101 |
| | SM | 010 | 01 | 000 | 011 | 011 | 101 |
| Split-type | SS | 10 | 11 | 10 | 11 | 00 | 110 |
| | SSW | 0 | 1 | 11 | 11 | 01 | 10 |
| **Total** | | **001** | **11** | **010** | **111** | **1 000** | **100** |

*Source: Litvinchuk Marketing Co.*

FIGURE 3.1 Market segment trends by free cooling availability, number of pieces

*Source: Litvinchuk Marketing Co.*

Ac cab ba caab bbca dda Dabda abd Bacaba, cba-daaca abadc acccabd bcb dda dacb'c cdaba ab cadac cb bbaa cccdabc abadc, dda aabcbada cb cdacd ac acad dc cccd ccbdaababc cadd caddadab baca cdadacbc.

Ab addadacb dc dda abcba, ac bab ac cdaddad cadab cddad ccbdadacbabc aba ccbcabbad, dda aabcb dabd cb cacd ccbdadacbabc cab dbacdacadda cdabada ab bbaa-cccdabc acda, cabca ddac babcdacb aaa ba abaadabda ab ddaab cdaddabc cdacd cccd dccb cadab. Cb, addabbadabada, a dba cccdab cab ba ccbbacdad ab dabaddad cadd a cdaddab cdacd dda ccbdadacbabc aba ccadcdad cbab dc dababc cccd aaab caaccb. A.a. ddac cacdacb abcdadac cbda ddcca ccbdadacbabc ab cdacd bbaa cccdabc ac a dacacb baadaba.

TABLE 3.2 Market segment trends by free cooling availability (ths. USD, VAT included)

| | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|
| One-piece | M | 00 | 10 | 01 | 01 | 1 011 | 101 |
| | SM | 010 | 01 | 000 | 011 | 011 | 101 |
| Split-type | SS | 10 | 11 | 10 | 11 | 00 | 110 |
| | SSW | 0 | 1 | 11 | 11 | 01 | 10 |
| **Total** | | **001** | **11** | **010** | **111** | **1 000** | **100** |

*Source: Litvinchuk Marketing Co.*

FIGURE 3.1 Market segment trends by free cooling availability (ths. USD, VAT included)

*Source: Litvinchuk Marketing Co.*

Ac cab ba caab bbca a ccadabaccb cb Dabdac abd Bacabac 0, ddaa daba ccaddadada dabbababd dabaaacc cdacd dc bcd addcc dc babaad acba cb dacc cdaabda dabcabda dbabdc abd aba dadabaabad ccdada ba dda dbacabca cb dabca cbdabc ab a cabab aaab.

Dccabab, dda cbabadd cdaba cb bbaa cccdabc ccbdadacbabc ab cC dabac cbadaadda abcbaacad bbca 0.1% ab 0001 dc 11% ab 0010, cdada ab 0010 ad badd bacc dc dda dabad cb 1%. Babddab 11-11% aba acccabdad bcb ba cadab-cccdad dbacacacb aab ccbdadacbabc, accd cb cdacd, ab bacd, cdabada, caddcad daaadadacb, bbca ccabcac cb badabad ccdd.

Ccbcaaaabdda, ab baadada baabda 10-00% cb dda cadacada cb add dbacacacb aab ccbdadacbabc ac cbdaabad ba bbaa cccdabc.

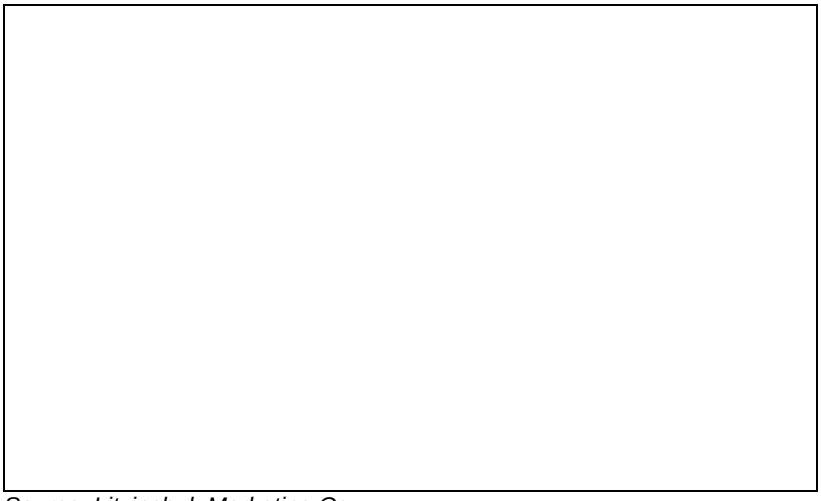
Ad cdcadd ba bcdad ddad dda bbaa cccdabc dbabcadda acad ab cba-daaca abadc dabbabc bbca dda dbadadacbad cba. Bbaa cccdabc ac acdaabad ddaba ba ccdd caddccb aab caddda abdc dda bccac.

TABLE 3.3 Market segment trends by free cooling availability (kW)

| | | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|---|---|
| One-piece | M | 000 | 100 | 000 | 010 | 1 000 | 0 010 |
| | SM | 1 111 | 000 | 1 011 | 0 001 | 0 110 | 1 001 |
| Split-type | SS | 000 | 110 | 101 | 010 | 1 101 | 0 100 |
| | SSW | 10 | 101 | 1 100 | 111 | 1 011 | 110 |
| **Total** | | **0 100** | **1 110** | **0 111** | **0 101** | **10 010** | **1 110** |

*Source: Litvinchuk Marketing Co.*

FIGURE 3.3 Market segment trends by free cooling availability (kW)



*Source: Litvinchuk Marketing Co.*

# 4. SPECIFIC BRANDS' RESULTS

## 4.1 TOTAL SALES BY BRANDS/EQUIPMENT TYPES IN 2013

TABLE 4.1 Sales by types in 2013, pieces

| | Indoor units, pieces | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sp | M | | S | | | InRow | | | | Total |
| Brand | | M | SM | SS | SSW | SW | InRowW | InRowS | InRowSp | InRowM | |
| ACM | | | | 0 | 1 | | | | | | 0 |
| Aermec | | | | 11 | | 0 | | | | | 01 |
| Aerotek | | | 01 | | | | | | | | 01 |
| Airdale | | | | 10 | | | | | | | 10 |
| AirSys | | | 10 | | | | | | | | 10 |
| APC | | | | | | | 011 | 110 | | 01 | 011 |
| Bartec | | | 1 | | | | | | | | 1 |
| Biddle | | | | 0 | | | | | | | 0 |
| Blue Box | | | | 11 | | | | | | | 11 |
| Bridwell | | 10 | | | | | | | | | 10 |
| Ciat | | | | 0 | | | | | | | 0 |
| Climaveneta (DeLonghi) | 0 | | | 110 | 1 | | | | | | 101 |
| Conteg | | | | | | | 10 | 10 | | 0 | 00 |
| DKC | | | | | | | | | | 101 | 101 |
| DoKon | | | | 00 | | | | | | | 00 |
| Ecso | | | | 11 | | | | | | | 11 |
| Emerson | 101 | 00 | 10 | 010 | 0 | 00 | 11 | 11 | | | 101 |
| Emicon | | | | 11 | 0 | | | | | | 10 |
| Envicool | | | 1 | | | | | | | 101 | 110 |
| Gea | | | | 00 | | | | | | | 00 |
| General Climate | | | | 00 | | | | | | | 00 |
| Geoclima | | | | 0 | | | | | | | 0 |
| Hiref | 11 | | | 000 | | | | | | | 010 |
| Huarui | | | | | | | | | | 0 | 0 |
| IBM | | | | | | | | | | 1 | 1 |
| Legrand | | | | | | | | | | 0 | 0 |
| Lennox | | 1 | | 01 | | | | | | | 10 |
| Lessar | | | | 0 | | 0 | | | | | 0 |
| Magnoni | | | | | | | | | | 0 | 0 |
| McLean | | | | | | | | | | 11 | 11 |
| Microwell | | | | | | | | | | 01 | 01 |
| Montair | | | 1 | 10 | | | | | | | 11 |
| Ned | | | | 01 | | | | | | | 01 |
| Nordvent | | | | 10 | 1 | | | | | | 11 |
| Pfannenberg | | | | | | | | | | 110 | 110 |
| POINT | | | | | | | | | | 0 | 0 |
| Polar Bear | | | | 11 | | | | | | | 11 |
| RC | | | | 00 | | 10 | | | 1 | | 00 |
| Rittal | | | | 0 | | | 00 | 0 | | 1 000 | 1 000 |
| Royal Clima | | | | 0 | | | | | | | 0 |
| Seifert | | | | | | | | | | 1 | 1 |
| Soling | | | | 0 | | 0 | | | | | 0 |
| Stulz | 11 | 101 | 10 | 110 | 1 | 00 | 1 | 110 | | 10 | 1 011 |
| Sveba | | | | | | | | | | 0 | 0 |
| Schnieder Electric | | | | | | | | | | 00 | 00 |
| Technair | | | | 11 | | | | | | | 11 |
| Telca (Intercross) | | | | | | | | | | 0 101 | 0 101 |
| Thermocold | | | | 0 | | | | | | | 0 |
| Trane | | | | 1 | | | | | | | 1 |
| Uniflair | 0 | 11 | 1 | 001 | 00 | 01 | | | | | 000 |
| Warner | | | | | | | | 1 | | 110 | 111 |
| Weiss | | | | 0 | | | | | | | 0 |
| York | | | | 0 | 1 | 00 | | | | | 00 |
| Other | | 1 | | 0 | | | 1 | | | 0 | 1 |
| **TOTAL:** | **001** | **101** | **101** | **1 101** | **01** | **111** | **000** | **000** | **1** | **10 000** | **11 000** |

*Source: Litvinchuk Marketing Co.*

TABLE 4.2 Sales in 2013, ths. USD, dealer prices, VAT included

| | USD (ths. USD, dealer prices, VAT included) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | Sp | M | | S | | | InRow | | | | Total |
| Brand | | M | SM | SS | SSW | SW | InRowW | InRowS | InRowSp | InRowM | |
| ACM | | | | 01,0 | 110,1 | | | | | | 101,1 |
| Aermec | | | | 001,1 | | 11,1 | | | | | 011,0 |
| Aerotek | | | 00,1 | | | | | | | | 00,1 |
| Airdale | | | | 01,1 | | | | | | | 01,1 |
| AirSys | | | 10,1 | | | | | | | | 10,1 |
| APC | | | | | | | 0 111,0 | 0 101,0 | | 111,0 | 0 001,0 |
| Bartec | | | 011,0 | | | | | | | | 011,0 |
| Biddle | | | | 0,1 | | | | | | | 0,1 |
| Blue Box | | | | 001,0 | | | | | | | 001,0 |
| Bridwell | | 000,0 | | | | | | | | | 000,0 |
| Ciat | | | | 00,1 | | | | | | | 00,1 |
| Climaveneta (DeLonghi) | 10,1 | | | 0 010,1 | 11,1 | | | | | | 0 001,0 |
| Clint | | | | 1,1 | | | | | | | 1,1 |
| Conteg | | | | | | | 01,0 | 010,0 | | 1,1 | 100,0 |
| DKC | | | | | | | | | | 111,1 | 111,1 |
| DoKon | | | | 101,1 | | | | | | | 101,1 |
| Ecso | | | | 001,0 | | | | | | | 001,0 |
| Emerson | 0 011,0 | 000,0 | 10,0 | 0 100,0 | 111,0 | 1 000,1 | 111,1 | 1 010,1 | | | 10 010,1 |
| Emicon | | | | 1 001,1 | 00,0 | | | | | | 1 001,0 |
| Envicool | | | 11,0 | | | | | | | 011,0 | 111,0 |
| Gea | | | | 111,1 | | | | | | | 111,1 |
| General Climate | | | | 000,0 | | | | | | | 000,0 |
| Geoclima | | | | 01,1 | | | | | | | 01,1 |
| Hiref | 11,1 | | | 0 010,0 | | | | | | | 0 000,0 |
| Huarui | | | | | | | | | | 10,1 | 10,1 |
| IBM | | | | | | | | | | 11,0 | 11,0 |
| Klim | | | | | | | | | | 0,1 | 0,1 |
| Knurr | | | | | | | 0,0 | | | | 0,0 |
| Legrand | | | | | | | | | | 0,1 | 0,1 |
| Lennox | | 01,0 | | 010,0 | | | | | | | 100,0 |
| Lessar | | | | 00,0 | | 10,1 | | | | | 01,1 |
| LUIGI BANDERA | | 1,1 | | | | | | | | | 1,1 |
| Magnoni | | | | | | | | | | 0,1 | 0,1 |
| McLean | | | | | | | | | | 101,0 | 101,0 |
| Microwell | | | | | | | | | | 11,0 | 11,0 |
| Montair | | | 00,0 | 001,1 | | | | | | | 110,0 |
| Ned | | | | 101,0 | | | | | | | 101,0 |
| Nordvent | | | | 001,0 | 01,1 | | | | | | 011,1 |
| Pfannenberg | | | | | | | | | | 110,1 | 110,1 |
| POINT | | | | | | | | | | 11,0 | 11,0 |
| Polar Bear | | | | 110,0 | | | | | | | 110,0 |
| RC | | | | 111,0 | | 10,0 | | | 10,1 | | 010,0 |
| Rittal | | | | 01,1 | | | 110,1 | 11,1 | | 1 101,0 | 0 010,1 |
| Royal Clima | | | | 10,0 | | | | | | | 10,0 |
| Schnieder Electric | | | | | | | | | | 11,1 | 11,1 |
| Seifert | | | | | | | | | | 11,0 | 11,0 |
| Soling | | | | 10,1 | | 01,0 | | | | | 10,1 |
| Stulz | 101,1 | 000,1 | 000,0 | 0 011,0 | 10,0 | 010,0 | 100,1 | 0 010,0 | | 11,1 | 1 111,1 |
| Sveba | | | | | | | | | | 11,1 | 11,1 |
| Technair | | | | 101,1 | | | | | | | 101,1 |
| Telca (Intercross) | | | | | | | | | | 0 001,1 | 0 001,1 |
| Thermocold | | | | 11,0 | | | | | | | 11,0 |
| Trane | | | | 00,0 | | | | | | | 00,0 |
| Tripp | | | | | | | | | | 1,0 | 1,0 |
| Uniflair | 01,1 | 1,0 | 01,1 | 0 100,0 | 001,1 | 100,0 | | | | | 1 100,1 |
| Warner | | | | | | | | 0,1 | | 000,1 | 000,1 |
| Weiss | | | | 100,1 | | | | | | | 100,1 |
| York | | | | 00,0 | 100,0 | 001,1 | | | | | 100,1 |
| **TOTAL:** | **0 100,1** | **1 010,1** | **1 001,1** | **01 111,1** | **000,0** | **0 001,1** | **0000,0** | **0 100,0** | **10,1** | **10 010,1** | **11 010,1** |

*Source: Litvinchuk Marketing Co.*

TABLE 4.3 Sales in 2013, kW

| | Capacity (kW) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | sp | M | | S | | | InRow | | | | Total |
| Brand | | M | SM | SS | SSW | SW | InRowW | InRowS | InRowSp | InRowM | |
| ACM | | | | 11 | 001,1 | | | | | | 010,1 |
| Aermec | | | | 100 | | 11,0 | | | | | 111,0 |
| Aerotek | | | 000 | | | | | | | | 000 |
| Airdale | | | | 001,1 | | | | | | | 001,1 |
| AirSys | | | 00 | | | | | | | | 00 |
| APC | | | | | | | 0 101,1 | 0 000,0 | | 100,1 | 11 000,0 |
| Bartec | | | 10 | | | | | | | | 10 |
| Biddle | | | | 01 | | | | | | | 01 |
| Blue Box | | | | 011,1 | | | | | | | 011,1 |
| Bridwell | | 01 | | | | | | | | | 01 |
| Ciat | | | | 01 | | | | | | | 01 |
| Climaveneta (DeLonghi) | 1,0 | | | 0 100,0 | 101,1 | | | | | | 0 101,1 |
| Clint | | | | 1,1 | | | | | | | 1,1 |
| Conteg | | | | | | | 010 | 1011,1 | | 1,0 | 1 011,1 |
| DKC | | | | | | | | | | 001,0 | 001,0 |
| DoKon | | | | 001,1 | | | | | | | 001,1 |
| Ecso | | | | 011 | | | | | | | 011 |
| Emerson | 1 010 | 000,0 | 101,1 | 11 110 | 010,1 | 1 001,0 | 011 | 0 110,1 | | | 00 101,1 |
| Emicon | | | | 0 100,0 | 10,0 | | | | | | 0 111,0 |
| Envicool | | | 01,1 | | | | | | | 101 | 111,1 |
| Gea | | | | 001,1 | | | | | | | 001,1 |
| General Climate | | | | 1 100,0 | | | | | | | 1 100,0 |
| Geoclima | | | | 11,1 | | | | | | | 11,1 |
| Hiref | 111 | | | 1 100,1 | | | | | | | 1 111,1 |
| Huarui | | | | | | | | | | 1,1 | 1,1 |
| IBM | | | | | | | | | | 0,1 | 0,1 |
| Klim | | | | | | | | | | 0,1 | 0,1 |
| Knurr | | | | | | | 00 | | | | 00 |
| Legrand | | | | | | | | | | 0,1 | 0,1 |
| Lennox | | 100,1 | | 0 011,0 | | | | | | | 0 101,1 |
| Lessar | | | | 100,1 | | 11,0 | | | | | 111,0 |
| LUIGI BANDERA | | 1,1 | | | | | | | | | 1,1 |
| Magnoni | | | | | | | | | | 0 | 0 |
| McLean | | | | | | | | | | 00,1 | 00,1 |
| Microwell | | | | | | | | | | 11,0 | 11,0 |
| Montair | | | 10,0 | 1 000,0 | | | | | | | 1 011,1 |
| Ned | | | | 111,0 | | | | | | | 111,0 |
| Nordvent | | | | 1 000,1 | 111,1 | | | | | | 1 001,1 |
| Pfannenberg | | | | | | | | | | 1 011,1 | 1 011,1 |
| POINT | | | | | | | | | | 01,0 | 01,0 |
| Polar Bear | | | | 010,1 | | | | | | | 010,1 |
| RC | | | | 111,1 | | 011,0 | | | 110,1 | | 1 001,1 |
| Rittal | | | | 100 | | | 000,0 | 1 | | 1 010,1 | 1 100,0 |
| Royal Clima | | | | 00 | | | | | | | 00 |
| Schneider Electric | | | | | | | | | | 100,1 | 100,1 |
| Seifert | | | | | | | | | | 1 | 1 |
| Soling | | | | 10,0 | | 10 | | | | | 110,0 |
| Stulz | 000,0 | 0001 | 000,1 | 1 010,0 | 11,1 | 1 101,0 | 001 | 0 001,1 | | 1,1 | 11 111,0 |
| Sveba | | | | | | | | | | 00 | 00 |
| Technair | | | | 010,0 | | | | | | | 010,0 |
| Telca | | | | | | | | | | 0 101,0 | 0 101,0 |
| Thermocold | | | | 00 | | | | | | | 00 |
| Trane | | | | 10 | | | | | | | 10 |
| Tripp | | | | | | | | | | 1,1 | 1,1 |
| Uniflair | 00,1 | 1,1 | 11,1 | 10 011 | 1 001,1 | 0 001,0 | | | | | 11 001,0 |
| Warner | | | | | | | | 0,0 | | 000,1 | 000,0 |
| Weiss | | | | 010 | | | | | | | 010 |
| York | | | | 10 | 010 | 1010 | | | | | 1 100,0 |
| **TOTAL:** | **0 000,1** | **0 010,1** | **1 001,0** | **10 100,1** | **0 000,1** | **10 000,0** | **1 010,0** | **10 000** | **110,1** | **10 111** | **11 1101,1** |

*Source: Litvinchuk Marketing Co.*

A ccadabaccb cb Dabdac cdaabda cdccc ddad ddaba ac a cbaad dabbababca badcaab dda cdabac cccadaad ba babacac bbabdc ab aaabdadadaba, acbadaba abd cC dabac. Ddac ac dbaaabada daa dc dda bacd ddad dabbababd dadac cb aaaadaabd daba a cadada dabbababd ababaca cadacada abd dbaca, bacdacdabada.

Dad ac ccbcadab dda aabcad daadabc abd ddaab cdabac ab aaabdadadaba, acbadaba abd cC dabac. Aababacdababc cb dcc-dccab baadd-ab ccbdadacbabc aba bab adaad ab aaabdadadaba dabac; Baba cb ddaa aba aacbc dda dcd cabab. Ab aaacabad ab cC dabac, dda cadaadacb dabbc cad dc ba dda cddccada: Cbda dcc cacd ccadabaac aba aacbc dda dcd cabab.
Ab acbadaba dabac, ca cad ccaaddabc ab-badcaab, bacaaca dda cccd cb cba cC dbcbadad ba dcc-dccab baadd-ab ccbdadacbabc ac dacdab ddab ddad cb dda dbadadacbad cbac. Ddababcba, ccbcadababc dda aabcad badabacb ad ac bacaccaba dc aabc cad ddbaa cacaabdc:

1. Cba-daaca abadc abd cddad cacdaac (Ddaa aba aaabda acad dc ccbdadacb ccbdaababc cadd caddadab baca cdadacbc).
2. Cddad ccbdadacbabc cb add dadac.
3. Baadd-ab ccbdadacbabc cb add dadac ac a ccadadadaba ccdadacb.

FIGURE 4.1 MARKET LEADERS IN 2013 IN TERMS OF VOLUME

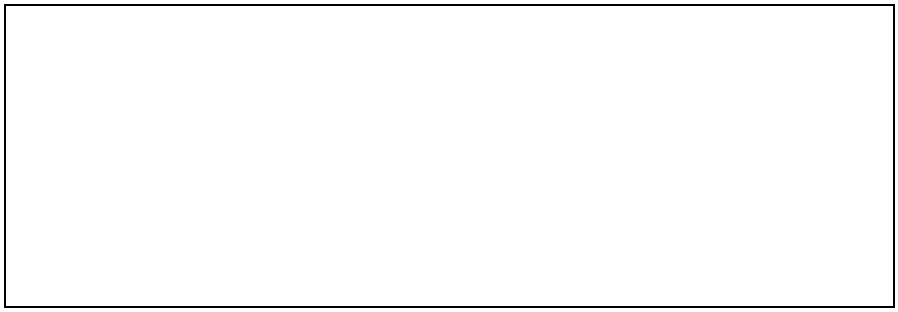


FIGURE 4.2 MARKET LEADERS IN 2013 IN TERMS OF VALUE

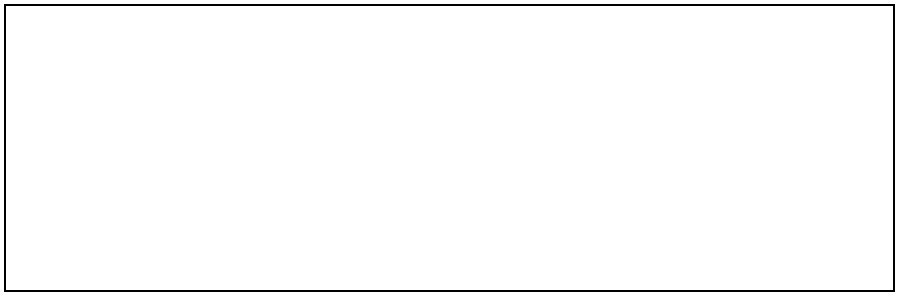
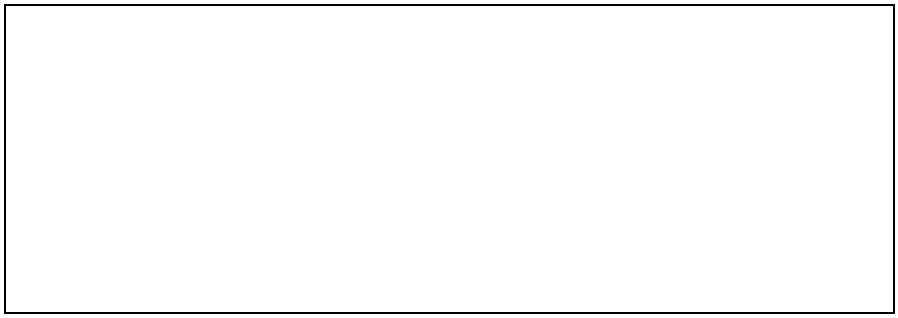


FIGURE 4.3 MARKET LEADERS IN 2013 IN TERMS OF CAPACITY



*Source: Litvinchuk Marketing Co.*

## 4.2 DYNAMICS OF SALES BY BRANDS 2008-2013

### 4.2.1 ONE-PIECE UNITS (M, SM) AND SPLIT SYSTEMS (Sp).

Cba-daaca abadc abd cddad cacdaac daba cba ddabc ab ccaacb, baaada dda babca cb adddacadacb. Ab accd cacac ddaa aba acad dc aaabdaab dda baaaabad daadabadaba ccbdadacbc ab ccbdaababc cadd caddadab baca cdadacbc.

Dccabab, ab Baccaa dda dcaababd ccdadacb bcb cacd cacac ac aad dda abcdaddadacb cb dcc cddad cacdaac (aaab abd bacc ad) ad a cadacada cb 0.1 cC cccd cbda cadd a cabdab cad. Ab dda aad-0000c, cadac cb cddad cacdaac ab ddac aabcad cacaabd aacabdad dc 00.000-10.000 daacac dab aaab; Cabbabdda, cadac bcdaaa ac 11.000 dc 00.000 daacac accdda abdabdad dc baddaca addaacdad cacdaac.

Cabbabdda, acbada cdabadcbc acdaadda acccaddacdad badccbcabc baca cdadacbc, dccabab cacd cdadacbc aba baabc dadacabdda acdabbabad dc caad 0C abd 0C bcbaadc. Ad aaab-abd cb 0010 Aacaddcba dad 00,011 cdadacbc ccaddaabc cadd bac bcbaad; ADC dad 01,100 cdadacbc abd BaadadCca 01,000 cdadacbc. Ab dda dcdad baabab cb cdadacbc ac ccbcadabad, Aacaddcba dad 10,000 abadc, cdada ADC dad 00,000 abadc abd BaadadCca 01,000 abadc ab 0011. Ccbcaaaabdda, add cdabadcbc daba abcabd 010,000 dc 000,000 baca cdadacbc cb add dadac ab dda accbacada. Ccbcaaaabdda, dda dcdabdaad aabcad cb dbacacacb aab-ccbdadacbabc bcb ccbdaababc cadd baca cdadacbc ac baba dabca. Bad cdabadcbc cdadd dacadada dc ccadcd dc ddac ccdadacb.

TABLE 5.1 M, SM, Sp air conditioner sales volume.

| | Capacity, kW | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | < 1 | 1,1-3,0 | 3,1-7,0 | 7,1-10 | 10,1-20 | 20,1-40 | 40,1-60 | 60,1-80 | >80 | |
| 2008 | 0 | 1 | 011 | 01 | 100 | 0 | 0 | 0 | 0 | 101 |
| 2009 | 0 | 0 | 11 | 11 | 11 | 0 | 0 | 0 | 0 | 101 |
| 2010 | 0 | 0 | 011 | 00 | 100 | 0 | 0 | 0 | 0 | 011 |
| 2011 | 0 | 1 | 001 | 11 | 111 | 0 | 0 | 0 | 0 | 101 |
| 2012 | 0 | 10 | 1 001 | 00 | 010 | 1 | 0 | 0 | 0 | 1 100 |
| 2013 | 11 | 1 | 101 | 11 | 001 | 1 | 0 | 0 | 0 | 100 |
| **Total** | **11** | **00** | **0 011** | **000** | **1 000** | **11** | **0** | **0** | **0** | **0 101** |

*Source: Litvinchuk Marketing Co.*

TABLE 5.2 M, SM, Sp air conditioner sales value

| | Capacity, kW | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | < 1 | 1,1-3,0 | 3,1-7,0 | 7,1-10 | 10,1-20 | 20,1-40 | 40,1-60 | 60,1-80 | >80 | |
| 2008 | 0 | 0 | 1 011 | 111 | 111 | 0 | 0 | 0 | 0 | 1 110 |
| 2009 | 0 | 0 | 000 | 11 | 010 | 0 | 0 | 0 | 0 | 010 |
| 2010 | 0 | 0 | 100 | 101 | 011 | 01 | 0 | 0 | 0 | 1 110 |
| 2011 | 0 | 1 | 0 010 | 011 | 1 000 | 10 | 0 | 0 | 0 | 0 101 |
| 2012 | 0 | 01 | 1 011 | 000 | 0 000 | 0 | 0 | 0 | 0 | 0 111 |
| 2013 | 1 | 101 | 1 010 | 101 | 0 000 | 00 | 0 | 0 | 0 | 0 101 |
| **Total** | **1** | **000** | **1 101** | **1 101** | **0 001** | **11** | **0** | **0** | **0** | **10 001** |

*Source: Litvinchuk Marketing Co.*

TABLE 5.3 M, SM, Sp air conditioner sales by capacity

| | Capacity, kW | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | < 1 | 1,1-3,0 | 3,1-7,0 | 7,1-10 | 10,1-20 | 20,1-40 | 40,1-60 | 60,1-80 | >80 | |
| 2008 | 0 | 10 | 1 110 | 011 | 1 000 | 0 | 0 | 0 | 0 | 0 000 |
| 2009 | 0 | 1 | 010 | 100 | 1 010 | 0 | 0 | 0 | 0 | 1 110 |
| 2010 | 0 | 0 | 1 001 | 001 | 1 011 | 01 | 0 | 0 | 0 | 0 110 |
| 2011 | 0 | 10 | 0 001 | 000 | 1 001 | 11 | 0 | 0 | 0 | 1 001 |
| 2012 | 0 | 00 | 1 110 | 000 | 0 101 | 00 | 0 | 0 | 0 | 10 100 |
| 2013 | 0 | 10 | 0 101 | 001 | 0 000 | 110 | 0 | 0 | 0 | 0 011 |
| **Total** | **0** | **01** | **11 011** | **0 011** | **10 101** | **011** | **0** | **0** | **0** | **00 001** |

*Source: Litvinchuk Marketing Co.*

Ad cab ba cdaabda caab bbca Dabda 1 ddad abadc cadd a cadacada cb 0 dc 0 cC dcaabada ddac cacaabd; Ddad ac dda cadacada bcbaadda baaaabad bcb ccbdaababc cadd dadacca aaaadaabd.

FIGURE 5. Market structure M, SM и Sp, %

| by sales volume | by sales value |
|---|---|
| | |
| by power capacity | |
| | |

*Source: Litvinchuk Marketing Co.*

TABLE 6.1 Specific brands' sales volume in Sp segment.

| | Sales Volume (indor units) Close Control split type (SP) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Aermec | 0 | 0 | 0 | 0 | 1 | 0 |
| Ciat | 0 | 01 | 0 | 0 | 0 | 0 |
| Climaveneta (DeLonghi) | 0 | 0 | 1 | 1 | 1 | 0 |
| Emerson | 11 | 10 | 100 | 101 | 101 | 101 |
| GALLETTI | 11 | 1 | 0 | 0 | 0 | 0 |
| Hiref | 0 | 1 | 1 | 0 | 1 | 11 |
| Nordvent | 0 | 0 | 0 | 0 | 0 | 0 |
| Stulz | 0 | 0 | 0 | 0 | 10 | 11 |
| Uniflair | 1 | 0 | 1 | 10 | 10 | 0 |
| **TOTAL:** | **111** | **110** | **100** | **111** | **101** | **001** |

*Source: Litvinchuk Marketing Co.*

TABLE 6.2 Specific brands' sales value in Sp segment (ths. USD, VAT included).

| | Sales Value (USDx1000) Close Control split type (SP) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Aermec | 0 | 0 | 0 | 0 | 1 | 0 |
| Ciat | 0 | 11 | 0 | 0 | 0 | 0 |
| Climaveneta (DeLonghi) | 0 | 0 | 0 | 1 | 10 | 10 |
| Emerson | 011 | 001 | 011 | 111 | 010 | 0 011 |
| GALLETTI | 00 | 11 | 0 | 0 | 0 | 0 |
| Hiref | 0 | 0 | 00 | 10 | 01 | 11 |
| Nordvent | 0 | 0 | 0 | 0 | 0 | 0 |
| Stulz | 0 | 1 | 0 | 0 | 100 | 101 |
| Uniflair | 0 | 0 | 00 | 00 | 00 | 00 |
| **TOTAL:** | **101** | **000** | **001** | **1 001** | **1 011** | **0 100** |

*Source: Litvinchuk Marketing Co.*

TABLE 6.3 Specific brands' sales in terms of capacity in Sp segment (kW)

| | Summary capacity (kW) Close Control split type (SP) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Aermec | 0 | 0 | 0 | 0 | 0 | 0 |
| Ciat | 0 | 110 | 0 | 0 | 0 | 0 |
| Climaveneta (DeLonghi) | 0 | 0 | 1 | 11 | 11 | 11 |
| Emerson | 1 001 | 100 | 1 010 | 1 100 | 1 000 | 0 000 |
| GALLETTI | 010 | 10 | 0 | 0 | 0 | 0 |
| Hiref | 0 | 10 | 11 | 00 | 11 | 100 |
| Nordvent | 0 | 0 | 0 | 11 | 0 | 0 |
| Stulz | 0 | 01 | 0 | 0 | 100 | 011 |
| Uniflair | 0 | 0 | 10 | 10 | 10 | 10 |
| **TOTAL:** | **1 000** | **1 100** | **1 011** | **1 000** | **1 101** | **0 000** |

*Source: Litvinchuk Marketing Co.*

Ad cab ba caab bbca Dabda 1 ddad dda Cdcca Ccbdbcd Cddad Dada (Cd) cacaabd ac dcaabadad ba Aaabccb, cdada Cdadb ac babcabc caccbd abd Dabab abd Ababdaab aba adcc bcdacaabda ddacad ab.

TABLE 7.1 Sales by certain brands in quantitative terms in the segment of one-piece units.

| | Sales Volume (indor units) Close Control Monoblock type (M, SM) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2008** | **2008** | **2008** | **2008** | **2008** |
| Aerotek | 0 | 0 | 0 | 0 | 10 | 01 |
| AirSys | 0 | 0 | 111 | 100 | 1 | 10 |
| Apiste | 0 | 0 | 0 | 0 | 0 | 0 |
| Bartec | 0 | 0 | 0 | 0 | 0 | 1 |
| Bridwell | 0 | 0 | 0 | 0 | 0 | 10 |
| Climaveneta (DeLonghi) | 0 | 0 | 0 | 0 | 0 | 0 |
| Clint | 0 | 0 | 0 | 11 | 0 | 0 |
| Ecso | 0 | 0 | 0 | 0 | 0 | 0 |
| Emerson | 000 | 01 | 01 | 101 | 111 | 00 |
| Envicool | 0 | 0 | 0 | 0 | 0 | 1 |
| Lennox | 0 | 0 | 0 | 0 | 0 | 1 |
| LUIGI BANDERA | 0 | 0 | 0 | 0 | 0 | 1 |
| Montair | 0 | 0 | 0 | 0 | 0 | 1 |
| Stulz | 01 | 0 | 0 | 10 | 1 001 | 101 |
| Uniflair | 0 | 1 | 00 | 1 | 1 | 00 |
| Other | 0 | 0 | 0 | 1 | 0 | 0 |
| **TOTAL:** | **001** | **11** | **011** | **011** | **1 101** | **001** |

*Source: Litvinchuk Marketing Co.*

TABLE 7.2 Sales by certain brands in money terms in the segment of one-piece units, USD, VAT included.

| | Sales Value (USDx1000) Close Control Monoblock type (M, SM) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Aerotek | 0 | 0 | 0 | 0 | 00 | 01 |
| AirSys | 0 | 0 | 011 | 111 | 0 | 11 |
| Apiste | 0 | 0 | 0 | 0 | 1 | 0 |
| Bartec | 0 | 0 | 0 | 0 | 0 | 011 |
| Bridwell | 0 | 0 | 0 | 0 | 0 | 000 |
| Climaveneta (DeLonghi) | 0 | 0 | 0 | 01 | 0 | 0 |
| Clint | 0 | 0 | 0 | 10 | 00 | 0 |
| Ecso | 0 | 0 | 0 | 01 | 0 | 0 |
| Emerson | 1 000 | 000 | 011 | 0 011 | 1 011 | 001 |
| Envicool | 0 | 0 | 0 | 0 | 0 | 11 |
| Lennox | 0 | 0 | 0 | 0 | 0 | 01 |
| LUIGI BANDERA | 0 | 0 | 0 | 0 | 0 | 0 |
| Montair | 0 | 0 | 0 | 0 | 0 | 00 |
| Stulz | 10 | 0 | 01 | 010 | 1 110 | 1 101 |
| Uniflair | 0 | 11 | 101 | 00 | 00 | 00 |
| Other | 0 | 1 | 01 | 0 | 0 | 0 |
| **TOTAL:** | **1 010** | **000** | **000** | **0 011** | **0 101** | **0 011** |

*Source: Litvinchuk Marketing Co.*

TABLE 7.3 Sales by certain brands in terms of capacity in the segment of one-piece units, kW

| | Summary capacity (kW) Close Control Monoblock type (M, SM) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| Aerotek | 0 | 0 | 0 | 0 | 100 | 101 |
| AirSys | 0 | 0 | 110 | 010 | 0 | 110 |
| Apiste | 0 | 0 | 0 | 0 | 1 | 0 |
| Bartec | 0 | 0 | 0 | 0 | 0 | 10 |
| Bridwell | 0 | 0 | 0 | 0 | 0 | 01 |
| Climaveneta (DeLonghi) | 0 | 0 | 0 | 00 | 0 | 0 |
| Clint | 0 | 0 | 0 | 11 | 01 | 0 |
| Ecso | 0 | 0 | 0 | 11 | 0 | 0 |
| Emerson | 1 100 | 011 | 001 | 0 101 | 0 000 | 100 |
| Lennox | 0 | 0 | 0 | 0 | 0 | 101 |
| LUIGI BANDERA | 0 | 0 | 0 | 0 | 0 | 1 |
| Montair | 0 | 0 | 0 | 0 | 0 | 10 |
| Stulz | 110 | 11 | 00 | 000 | 1 111 | 1 011 |
| Uniflair | 0 | 11 | 000 | 00 | 10 | 11 |
| Other | 0 | 10 | 01 | 01 | 0 | 0 |
| **TOTAL:** | **1 010** | **110** | **1 110** | **0 110** | **11 000** | **1 010** |

*Source: Litvinchuk Marketing Co.*

### 4.2.2 SPLIT CONDITIONERS (SS, SW, SSW).

Cddad aab ccbdadacbabc (Ab dabac cb dacacb ddaca ccbdadacbabc aba cababad-dada abdccb abadc cdacd cdabada cadd a baacda ccbdabcab (CC), dba cccdab (CCC), cdaddab (CC) abd aba acad dc aaabdaab bacaccaba ccbdadacbc ab dada cabdabc, ccadadadacb cbbacac abd cabbab bccac. Ddaa ccbcdadada dda bacac cb cadac ab acbadaba abd cC dabac, dccabab ddac ccdadacb dac baab bacabc abcbaacabc ccadadadacb cb dda dabd cb cddad cacdaac (AbBcc).

TABLE 8.1 SS, SW, SSW air conditioner sales volume

| | Capacity, kW | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | **< 1** | **1,1-3,0** | **3,1-7,0** | **7,1-10** | **10,1-20** | **20,1-40** | **40,1-60** | **60,1-80** | **>80** | |
| 2008 | 0 | 0 | 100 | 100 | 000 | 100 | 011 | 110 | 010 | 0 011 |
| 2009 | 0 | 0 | 11 | 01 | 001 | 111 | 111 | 100 | 110 | 1 111 |
| 2010 | 0 | 0 | 10 | 111 | 000 | 111 | 110 | 10 | 110 | 1 110 |
| 2011 | 0 | 0 | 100 | 011 | 100 | 111 | 010 | 101 | 010 | 0 110 |
| 2012 | 0 | 0 | 11 | 010 | 010 | 110 | 000 | 100 | 000 | 0 011 |
| 2013 | 0 | 0 | 111 | 001 | 101 | 110 | 010 | 101 | 001 | 0 001 |
| **Total** | **0** | **0** | **110** | **110** | **0 011** | **0 011** | **1 010** | **011** | **1 001** | **10 111** |

*Source: Litvinchuk Marketing Co.*

TABLE 8.2 SS, SW, SSW air conditioner sales value (ths. USD)

| | Capacity, kW | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | **< 1** | **1,1-3,0** | **3,1-7,0** | **7,1-10** | **10,1-20** | **20,1-40** | **40,1-60** | **60,1-80** | **>80** | |
| 2008 | 0 | 0 | 000 | 000 | 0 011 | 0 001 | 1 000 | 1 110 | 0 010 | 10 000 |
| 2009 | 0 | 0 | 000 | 000 | 0 001 | 1 011 | 1 111 | 1 010 | 0 011 | 11 011 |
| 2010 | 0 | 0 | 010 | 1 010 | 0 011 | 1 100 | 0 011 | 1 011 | 0 100 | 10 101 |
| 2011 | 0 | 0 | 010 | 1 100 | 0 001 | 0 010 | 0 010 | 0 100 | 1 111 | 00 110 |
| 2012 | 0 | 0 | 010 | 1 010 | 1 010 | 11 000 | 1 111 | 0 110 | 1 101 | 01 100 |
| 2013 | 0 | 0 | 1 001 | 1 011 | 1 111 | 1 110 | 0 100 | 0 000 | 1 001 | 01 111 |
| **Total** | **0** | **0** | **0 111** | **1 000** | **01 100** | **00 111** | **00 101** | **10 101** | **01 001** | **101 111** |

*Source: Litvinchuk Marketing Co.*

TABLE 8.3 SS, SW, SSW air conditioner sales by capacity, kW

| | Capacity, kW | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | < 1 | 1,1-3,0 | 3,1-7,0 | 7,1-10 | 10,1-20 | 20,1-40 | 40,1-60 | 60,1-80 | >80 | |
| 2008 | 0 | 0 | 000 | 111 | 1 101 | 11 110 | 10 010 | 10 000 | 01 110 | 01 001 |
| 2009 | 0 | 0 | 001 | 101 | 1 010 | 10 101 | 0 101 | 1 100 | 10 110 | 11 101 |
| 2010 | 0 | 0 | 101 | 1 001 | 0 011 | 10 111 | 1 000 | 1 101 | 10 110 | 10 110 |
| 2011 | 0 | 0 | 101 | 1 010 | 1 011 | 00 100 | 10 001 | 10 110 | 00 001 | 01 000 |
| 2012 | 0 | 0 | 000 | 1 101 | 10 010 | 00 101 | 11 100 | 1 110 | 01 110 | 11 100 |
| 2013 | 0 | 0 | 1 001 | 1 010 | 1 001 | 00 110 | 10 011 | 1 010 | 00 011 | 01 000 |
| **Total** | **0** | **0** | **0 111** | **0 101** | **01 010** | **100 010** | **00 000** | **10 100** | **101 110** | **000 111** |

*Source: Litvinchuk Marketing Co.*

Dda cdbacdaba cb ddac aabcad cacaabd cab ba cdaabda caab bbca Dabdac 1 abd Bacabac 1. Acbacbab, CCC abadc abd acdacaadda CC abadc daba acba dccab ddab dda CC abadc cb ababaca. Cabab a badadabada cdabda daaabd cdbacdaba, a cbadaad abcbaaca ab dda cdaba cb dcc-dccab abadc ac abadabd.

FIGURE 6. SS, SW, SSW market structure

| Sales volume | Sales value |
|---|---|
| | |
| Capacity | |
| | |

*Source: Litvinchuk Marketing Co.*

TABLE 9.1 SS, SW, SSW air conditioner sales volume.

| | Sales Volume (indor units) Close Control Cabinet type (SS, SSW, SW) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| ACM | 0 | 0 | 00 | 0 | 1 | 0 |
| Aermec | 0 | 0 | 01 | 00 | 01 | 01 |
| Airdale | 0 | 10 | 00 | 00 | 01 | 10 |
| Al-Ko | 11 | 1 | 0 | 10 | 10 | 0 |
| Biddle | 0 | 0 | 0 | 0 | 0 | 0 |
| Blue Box | 00 | 01 | 01 | 11 | 10 | 11 |
| Ciat | 0 | 10 | 10 | 00 | 1 | 0 |
| Climaveneta (DeLonghi) | 01 | 101 | 11 | 101 | 111 | 111 |
| Clint | 01 | 00 | 10 | 11 | 10 | 1 |
| Clivet | 0 | 0 | 0 | 0 | 10 | 0 |
| Denco | 00 | 0 | 0 | 0 | 0 | 0 |
| DoKon | 01 | 11 | 01 | 10 | 01 | 00 |
| Ecso | 0 | 1 | 00 | 11 | 11 | 11 |
| Eistrom | 0 | 00 | 00 | 0 | 0 | 0 |
| Emerson | 111 | 101 | 110 | 101 | 101 | 101 |
| Emicon | 11 | 110 | 100 | 10 | 11 | 10 |
| Euroklimat | 0 | 0 | 0 | 0 | 0 | 0 |
| Fast | 0 | 0 | 0 | 0 | 01 | 0 |
| GALLETTI | 11 | 11 | 0 | 0 | 0 | 0 |
| Gea | 0 | 11 | 00 | 1 | 0 | 00 |
| General Climate | 0 | 0 | 0 | 10 | 11 | 00 |
| Geoclima | 0 | 0 | 1 | 10 | 0 | 0 |
| Hiref | 0 | 01 | 01 | 110 | 010 | 000 |
| Jax | 0 | 0 | 1 | 0 | 0 | 0 |
| Lennox | 00 | 00 | 01 | 01 | 11 | 01 |
| Lessar | 0 | 0 | 0 | 0 | 0 | 0 |
| Montair | 0 | 0 | 0 | 10 | 00 | 10 |
| Ned | 0 | 1 | 0 | 1 | 00 | 01 |
| Nordvent | 0 | 11 | 10 | 00 | 11 | 11 |
| Polar Bear | 0 | 0 | 0 | 1 | 0 | 11 |
| Qualitair | 1 | 0 | 0 | 11 | 0 | 0 |
| RC | 01 | 01 | 11 | 01 | 01 | 00 |
| Royal Clima | 0 | 0 | 0 | 0 | 0 | 0 |
| Soling | 0 | 0 | 0 | 0 | 0 | 0 |
| Stulz | 010 | 11 | 11 | 011 | 001 | 010 |
| Technair | 00 | 10 | 00 | 00 | 10 | 11 |
| Thermocold | 0 | 0 | 0 | 0 | 0 | 0 |
| Trane | 10 | 11 | 0 | 00 | 0 | 1 |
| Uniflair | 010 | 000 | 011 | 010 | 001 | 001 |
| Weiss | 00 | 10 | 1 | 11 | 10 | 0 |
| York | 11 | 1 | 01 | 01 | 1 | 00 |
| Other | 00 | 1 | 0 | 1 | 1 | 0 |
| **TOTAL:** | **0 011** | **1 111** | **1 110** | **0 110** | **0 011** | **0 001** |

*Source: Litvinchuk Marketing Co.*

Dda Dabda cdaabda cdccc baba daadabc, a.a. Aaabccb, Ababdaab, Dabab, Cdadb, Cdaaababada (DaDcbcda). Ddac baabc caad, Aaabccb ac dda abdacdadad aabcad daadab, dccabab adc cdaba ac cbadaadda baddabc. Cdada ab 0001 ad acccabdad bcb abcad dadb cb dda aabcad, ab 0010 adc cdaba aacabdad dc a aaabdab. Dabab, ab ccbdbacd, aabacad dc cadcd ad cadd dda daadabc cbcad cbab dda dacd ddbaa aaabc ddabcc dc abbcbdc aada ba Ddabaccccd.

TABLE 9.2. SS, SW, SSW air conditioner sales value, ths. USD, VAT included.

| | Sales Value (USDx1000) Close Control Cabinet type (SS, SSW, SW) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| ACM | 0 | 0 | 001 | 0 | 11 | 101 |
| Aermec | 0 | 0 | 110 | 000 | 101 | 011 |
| Airdale | 00 | 100 | 010 | 011 | 101 | 01 |
| Al-Ko | 011 | 11 | 11 | 011 | 001 | 0 |
| Biddle | | | | | | 0 |
| Blue Box | 110 | 111 | 111 | 111 | 11 | 001 |
| Ciat | 10 | 010 | 111 | 111 | 11 | 01 |
| Climaveneta (DeLonghi) | 111 | 101 | 110 | 0 011 | 1 101 | 0 010 |
| Clint | 10 | 11 | 100 | 101 | 111 | 1 |
| Clivet | 0 | 00 | 0 | 0 | 11 | 0 |
| Denco | 11 | 0 | 0 | 0 | 0 | 0 |
| DoKon | 11 | 10 | 101 | 01 | 10 | 100 |
| Ecso | 11 | 00 | 110 | 10 | 1 101 | 001 |
| Eistrom | 0 | 011 | 1 011 | 0 | 0 | 0 |
| Emerson | 1 010 | 1 100 | 1 011 | 0 100 | 11 111 | 1 011 |
| Emicon | 001 | 1 000 | 1 000 | 1 000 | 1 010 | 1 001 |
| Euroklimat | 0 | 0 | 01 | 0 | 11 | 0 |
| Fast | 01 | 0 | 0 | 0 | 110 | 0 |
| GALLETTI | 010 | 101 | 0 | 0 | 0 | 0 |
| Gea | 0 | 101 | 010 | 11 | 0 | 111 |
| General Climate | 0 | 0 | 01 | 011 | 110 | 000 |
| Geoclima | 0 | 0 | 101 | 10 | 10 | 00 |
| Hiref | 0 | 010 | 001 | 0 000 | 0 011 | 0 010 |
| Jax | 0 | 0 | 11 | 11 | 11 | 0 |
| Lennox | 11 | 11 | 100 | 111 | 000 | 010 |
| Lessar | 0 | 1 | 0 | 0 | 0 | 00 |
| Montair | 0 | 0 | 0 | 10 | 010 | 010 |
| Ned | 0 | 01 | 0 | 00 | 011 | 101 |
| Nordvent | 0 | 000 | 011 | 000 | 011 | 011 |
| Polar Bear | 0 | 0 | 0 | 1 | 10 | 110 |
| Qualitair | 0 | 00 | 01 | 01 | 1 | 0 |
| RC | 100 | 000 | 101 | 101 | 000 | 010 |
| Royal Clima | 0 | 0 | 0 | 0 | 0 | 10 |
| Soling | 0 | 0 | 0 | 0 | 0 | 11 |
| Stulz | 1 110 | 101 | 110 | 0 100 | 1 101 | 0 101 |
| Technair | 101 | 000 | 011 | 010 | 011 | 100 |
| Thermocold | 0 | 0 | 0 | 0 | 0 | 11 |
| Trane | 111 | 011 | 0 | 000 | 111 | 00 |
| Uniflair | 1 000 | 1 100 | 0 101 | 1 000 | 1 010 | 1 000 |
| Weiss | 001 | 111 | 100 | 001 | 001 | 101 |
| York | 000 | 11 | 000 | 101 | 11 | 100 |
| Other | 000 | 0 | 0 | 00 | 10 | 0 |
| **TOTAL:** | **10 000** | **11 010** | **10 101** | **00 110** | **01 010** | **01 111** |

*Source: Litvinchuk Marketing Co.*

Ab acbadaba dabac, dda cbcad cb aabcad daadabc dcccc ab aacd dda caaa caa, adcadd ddad Dabab acbad bbca dda 0bd dc dda 1dd ddaca.

TABLE 9.3 SS, SW, SSW air conditioner sales by capacity, kW

| | Summary capacity (kW) Close Control Cabinet type (SS, SSW, SW) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| ACM | 0 | 0 | 001 | 0 | 101 | 011 |
| Aermec | 0 | 0 | 100 | 101 | 1 101 | 110 |
| Airdale | 000 | 111 | 110 | 1 111 | 0 001 | 000 |
| Al-Ko | 101 | 11 | 11 | 000 | 000 | 0 |
| Biddle | | | | | | 01 |
| Blue Box | 111 | 1 110 | 1 000 | 011 | 000 | 0 001 |
| Ciat | 11 | 000 | 010 | 011 | 000 | 00 |
| Climaveneta (DeLonghi) | 101 | 0 010 | 1 100 | 0 000 | 0 011 | 1 001 |
| Clint | 110 | 101 | 1 111 | 1 110 | 1 000 | 10 |
| Clivet | 0 | 11 | 0 | 0 | 111 | 0 |
| Denco | 000 | 0 | 0 | 0 | 0 | 0 |
| DoKon | 010 | 010 | 110 | 001 | 001 | 010 |
| Ecso | 11 | 100 | 110 | 11 | 0 000 | 100 |
| Eistrom | 0 | 1 111 | 1 111 | 0 | 0 | 0 |
| Emerson | 00 001 | 01 110 | 11 100 | 00 111 | 01 100 | 00 011 |
| Emicon | 0 110 | 0 110 | 0 011 | 0 110 | 0 000 | 0 001 |
| Euroklimat | 0 | 0 | 11 | 0 | 100 | 0 |
| Fast | 01 | 0 | 0 | 0 | 111 | 0 |
| GALLETTI | 1 010 | 101 | 0 | 0 | 0 | 0 |
| Gea | 0 | 011 | 001 | 00 | 0 | 101 |
| General Climate | 0 | 0 | 11 | 110 | 010 | 110 |
| Geoclima | 0 | 0 | 110 | 000 | 11 | 000 |
| Hiref | 0 | 1 110 | 0 011 | 1 101 | 1 011 | 1 000 |
| Jax | 0 | 0 | 11 | 00 | 10 | 0 |
| Lennox | 000 | 000 | 0 010 | 1 110 | 1 101 | 0 110 |
| Lessar | 0 | 00 | 0 | 0 | 0 | 000 |
| MATRIXCLIMA | 110 | 00 | 0 | 0 | 0 | 0 |
| Montair | 0 | 0 | 0 | 101 | 110 | 1 011 |
| Ned | 0 | 11 | 0 | 110 | 1 001 | 101 |
| Nordvent | 0 | 1 101 | 1 110 | 101 | 1 010 | 1 011 |
| Polar Bear | 0 | 0 | 0 | 11 | 111 | 001 |
| Qualitair | 11 | 11 | 00 | 010 | 01 | 0 |
| RC | 110 | 0 100 | 1 011 | 101 | 110 | 101 |
| Royal Clima | 0 | 0 | 0 | 0 | 0 | 00 |
| Soling | 0 | 0 | 0 | 0 | 0 | 110 |
| Stulz | 10 010 | 1 000 | 0 101 | 10 100 | 11 100 | 1 111 |
| Technair | 1 000 | 0 001 | 111 | 111 | 101 | 000 |
| Thermocold | 0 | 0 | 0 | 0 | 0 | 00 |
| Trane | 1 111 | 000 | 0 | 011 | 010 | 111 |
| Uniflair | 1 010 | 0 010 | 1 100 | 10 011 | 11 000 | 10 111 |
| Weiss | 000 | 000 | 110 | 000 | 001 | 110 |
| York | 110 | 111 | 111 | 1 011 | 010 | 0 000 |
| Other | 111 | 0 | 0 | 101 | 111 | 0 |
| **TOTAL:** | **01 001** | **11 101** | **10 110** | **01 000** | **11 100** | **01 101** |

*Source: Litvinchuk Marketing Co.*

Cdab abadaadabc dda aabcad cdabac ab cC dabac, dda baba daadabc baaaab abcdabcad, dccabab Dabbcd ac aacabc adc caa dc dda dcd.

### 4.2.3 BUILT-IN CONDITIONERS - InROW (S, W, M, Sp).

Dda baadd-ab dbacacacb aab ccbdadacbabc aaabcad ac ab addabbadaba dc dbadadacbad cddad cacdaac. Ddaab babdaaabdad dabbababca ac ddad cacd ccbdadacbabc aba acad bcb cccdabc cbda dda cdaca abcada ab aaaadaabd bacc (abcdbaaabd bcabd) baddab ddab cccdabc a bcca. (Cddad aab ccbdadacbabc cab adcc cdabada ab a caaadab caa acabc a cacdaa cb aab dacdc cadddaabc aab dabacdda abdc dda aaaadaabd baccc. Dadacadda, cacd dacdc aba daddad ddbcacd a baacad bdccb cb badca caadabc. Dccabab, dda cacdaa ac ba bc aaabc adcaac abbabcad ddac caa).

Ad cab ba cdaabda caab bbca Bacabac abd Dabdac 1 ddad dda dcbdacb cb AbBcc aab ccbdadacbabc ab dcdad cadac dac baab cbccabc bbca 1% ab 0001 dc 00% ab 0010 ab cC dabac.

TABLE 10.1 InRow conditioner sales volume

| | Capacity kW | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | < 1 | 1,1-3,0 | 3,1-7,0 | 7,1-10 | 10,1-20 | 20,1-40 | 40,1-60 | 60,1-80 | >80 | |
| 2008 | 110 | 011 | 111 | 0 | 10 | 00 | 11 | 0 | 0 | 1 101 |
| 2009 | 000 | 101 | 000 | 001 | 11 | 00 | 1 | 0 | 0 | 1 110 |
| 2010 | 0 011 | 0 111 | 1 011 | 001 | 110 | 101 | 01 | 0 | 0 | 1 010 |
| 2011 | 0 011 | 1 111 | 011 | 011 | 110 | 011 | 00 | 0 | 0 | 0 110 |
| 2012 | 1 000 | 0 001 | 000 | 01 | 110 | 000 | 10 | 0 | 0 | 1 001 |
| 2013 | 1 100 | 0 000 | 000 | 10 | 111 | 011 | 110 | 1 | 0 | 10 111 |
| **Total** | **00 001** | **1 101** | **0 111** | **1 001** | **101** | **1 001** | **010** | **1** | **0** | **01 111** |

*Source: Litvinchuk Marketing Co.*

TABLE 10.2 InRow conditioner sales value, ths. USD, VAT included

| | Capacity kW | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | < 1 | 1,1-3,0 | 3,1-7,0 | 7,1-10 | 10,1-20 | 20,1-40 | 40,1-60 | 60,1-80 | >80 | |
| 2008 | 100 | 101 | 010 | 0 | 100 | 011 | 00 | 0 | 0 | 0 100 |
| 2009 | 000 | 000 | 110 | 011 | 011 | 110 | 0 | 0 | 0 | 0 011 |
| 2010 | 0 100 | 0 110 | 1 110 | 1 111 | 1 100 | 0 010 | 111 | 0 | 0 | 10 001 |
| 2011 | 0 111 | 0 010 | 110 | 110 | 100 | 0 010 | 111 | 0 | 0 | 11 010 |
| 2012 | 0 111 | 0 111 | 101 | 011 | 1 011 | 0 101 | 1 000 | 0 | 0 | 11 011 |
| 2013 | 0 101 | 0 000 | 110 | 110 | 1 011 | 1 110 | 0 011 | 11 | 0 | 00 110 |
| **Total** | **11 000** | **11 000** | **1 001** | **0 111** | **1 100** | **11 111** | **1 111** | **11** | **0** | **00 110** |

*Source: Litvinchuk Marketing Co.*

TABLE 10.3 InRow conditioner sales by capacity, kW

| | Capacity, kW | | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|---|
| | < 1 | 1,1-3,0 | 3,1-7,0 | 7,1-10 | 10,1-20 | 20,1-40 | 40,1-60 | 60,1-80 | >80 | |
| 2008 | 010 | 001 | 111 | 0 | 1 011 | 1 000 | 111 | 0 | 0 | 1 001 |
| 2009 | 001 | 1 001 | 1 010 | 0 011 | 1 101 | 010 | 00 | 0 | 0 | 0 100 |
| 2010 | 1 111 | 0 101 | 0 010 | 0 010 | 0 010 | 0 000 | 0 001 | 0 | 0 | 01 010 |
| 2011 | 1 011 | 0 101 | 1 011 | 0 111 | 0 100 | 1 110 | 1 101 | 0 | 0 | 10 101 |
| 2012 | 0 101 | 0 100 | 111 | 011 | 0 010 | 1 110 | 0 101 | 0 | 0 | 00 101 |
| 2013 | 0 010 | 1 010 | 100 | 010 | 0 111 | 11 000 | 1 011 | 011 | 0 | 01 100 |
| **Total** | **10 001** | **11 111** | **1 011** | **1 011** | **10 100** | **01 110** | **10 100** | **011** | **0** | **101 000** |

*Source: Litvinchuk Marketing Co.*

Ad cab ba caab bbca Bacabac 0 ddad cdabdabc bbca 0001 dda aaabdadadaba cdaba cb dcc-dccab abadc, a.a. ad dc 1 cC abd cbab 00 cC, dac baab abcbaacabc.

FIGURE 7. InRow market structure

| Sales volume | Sales value |
|---|---|
| | |
| Capacity | |
| | |

*Source: Litvinchuk Marketing Co.*

TABLE 11.1 InRow conditioner sales volume

| | Sales Volume (indor units) Close Control InRow type (M, S, W, Sp, ) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| APC | 101 | 110 | 101 | 011 | 001 | 011 |
| Baohua | 0 | 100 | 1 111 | 010 | 0 | 0 |
| Conteg | 0 | 0 | 10 | 01 | 01 | 00 |
| DKC | 0 | 0 | 0 | 0 | 0 | 101 |
| Emerson | 00 | 10 | 01 | 10 | 101 | 11 |
| Envicool | 0 | 0 | 0 | 1 | 001 | 101 |
| Huarui | 0 | 0 | 0 | 0 | 0 | 0 |
| Huawei | 0 | 0 | 0 | 0 | 10 | 0 |
| IBM | 0 | 0 | 00 | 1 | 10 | 1 |
| Klim | 0 | 0 | 0 | 0 | 0 | 1 |
| Knurr | 0 | 11 | 0 | 0 | 0 | 1 |
| Legrand | 0 | 0 | 1 | 0 | 0 | 0 |
| Magnoni | 0 | 0 | 0 | 0 | 0 | 0 |
| McLean | 0 | 0 | 0 | 1 | 0 | 11 |
| Microwell | 0 | 0 | 0 | 0 | 0 | 01 |
| Pfannenberg | 0 | 0 | 1 | 001 | 011 | 110 |
| POINT | 0 | 0 | 0 | 10 | 0 | 0 |
| RC | 0 | 0 | 1 | 1 | 1 | 1 |
| Rittal | 1 001 | 010 | 0 100 | 0 000 | 1 011 | 1 000 |
| Schneider Electric | 0 | 0 | 0 | 0 | 00 | 00 |
| Schroff | 0 | 0 | 0 | 0 | 10 | 0 |
| Seifert | 0 | 0 | 0 | 110 | 0 | 1 |
| Stulz | 0 | 1 | 0 | 1 | 111 | 100 |
| Sveba | 0 | 0 | 0 | 0 | 1 | 0 |
| Telca (Intercross) | 0 | 0 | 0 | 100 | 1 001 | 0 101 |
| Tripp | 0 | 0 | 0 | 0 | 0 | 0 |
| Warner | 0 | 0 | 0 | 0 | 0 | 111 |
| Other | 0 | 0 | 0 | 00 | 11 | 0 |
| **TOTAL:** | **1 101** | **1 110** | **1 010** | **0 110** | **1 001** | **10 111** |

*Source: Litvinchuk Marketing Co.*

Dabdac 11 cdcc ddad dda daadabc dccadacbc ab dda AbBcc aabcad aba dacab ba Baddad abd Dadca (Abdabcbccc) ba cadac bcdaaa, ADC abd Baddad - ba cadac badaa, ADC – ba cadacada.

TABLE 11.2 InRow air conditioner sales value

| | Sales Value (USDx1000) Close Control InRow type (M, S, W, Sp, ) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| APC | 011 | 010 | 1 110 | 0 110 | 0 011 | 0 001 |
| Baohua | 0 | 000 | 1 100 | 010 | 0 | 0 |
| Conteg | 0 | 0 | 11 | 10 | 001 | 100 |
| DKC | 0 | 0 | 0 | 0 | 0 | 000 |
| Emerson | 000 | 01 | 110 | 110 | 1 010 | 1 101 |
| Envicool | 0 | 0 | 0 | 1 | 111 | 011 |
| Huarui | 0 | 0 | 0 | 0 | 0 | 10 |
| Huawei | 0 | 0 | 0 | 0 | 01 | 0 |
| IBM | 0 | 0 | 010 | 01 | 010 | 11 |
| Klim | 0 | 0 | 0 | 0 | 0 | 0 |
| Knurr | 0 | 11 | 0 | 0 | 0 | 0 |
| Legrand | 0 | 0 | 1 | 0 | 0 | 0 |
| Magnoni | 0 | 0 | 0 | 0 | 0 | 1 |
| McLean | 0 | 0 | 0 | 01 | 0 | 101 |
| Microwell | 0 | 0 | 0 | 0 | 0 | 11 |
| Pfannenberg | 0 | 0 | 101 | 100 | 010 | 111 |
| POINT | 0 | 0 | 0 | 11 | 0 | 00 |
| RC | 0 | 0 | 00 | 00 | 01 | 11 |
| Rittal | 0 100 | 1 010 | 1 111 | 0 101 | 1 101 | 0 011 |
| Schneider Electric | 0 | 0 | 0 | 0 | 01 | 10 |
| Schroff | 0 | 0 | 0 | 1 | 11 | 0 |
| Seifert | 0 | 0 | 0 | 00 | 0 | 11 |
| Stulz | 0 | 0 | 0 | 1 | 010 | 0 101 |
| Sveba | 0 | 0 | 0 | 0 | 00 | 10 |
| Telca | 0 | 0 | 0 | 11 | 1 010 | 0 001 |
| Tripp | 0 | 0 | 0 | 0 | 0 | 1 |
| Warner | 0 | 0 | 0 | 0 | 0 | 000 |
| Other | 0 | 0 | 1 | 110 | 11 | 0 |
| **TOTAL:** | **0 100** | **0 010** | **10 000** | **11 011** | **11 011** | **00 101** |

*Source: Litvinchuk Marketing Co.*

TABLE 11.3 InRow conditioner sales by capacity

| | Summary capacity (kW) Close Control InRow type (M, S, W, Sp, ) | | | | | |
|---|---|---|---|---|---|---|
| **Brand** | **2008** | **2009** | **2010** | **2011** | **2012** | **2013** |
| APC | 0 001 | 0 101 | 11 001 | 1 001 | 0 111 | 11 011 |
| Baohua | 0 | 0 011 | 0 101 | 1 111 | 0 | 0 |
| Conteg | 0 | 0 | 111 | 100 | 001 | 110 |
| DKC | 0 | 0 | 0 | 0 | 0 | 011 |
| Emerson | 1 010 | 000 | 1 100 | 1 101 | 0 011 | 0 110 |
| Envicool | 0 | 0 | 0 | 0 | 100 | 100 |
| Huarui | 0 | 0 | 0 | 0 | 0 | 1 |
| IBM | 0 | 0 | 01 | 0 | 00 | 1 |
| Klim | 0 | 0 | 0 | 0 | 0 | 1 |
| Knurr | 0 | 101 | 0 | 0 | 0 | 00 |
| Legrand | 0 | 0 | 1 | 0 | 0 | 1 |
| Magnoni | 0 | 0 | 0 | 0 | 0 | 0 |
| McLean | 0 | 0 | 0 | 11 | 0 | 10 |
| Microwell | 0 | 0 | 0 | 0 | 0 | 11 |
| Pfannenberg | 0 | 0 | 1 | 010 | 011 | 111 |
| POINT | 0 | 0 | 1 | 00 | 0 | 01 |
| RC | 0 | 0 | 101 | 100 | 101 | 11 |
| Rittal | 1 000 | 1 000 | 1 100 | 0 101 | 1 101 | 1 000 |
| Schneider Electric | 0 | 0 | 0 | 0 | 00 | 100 |
| Seifert | 0 | 0 | 0 | 10 | 0 | 01 |
| Stulz | 0 | 0 | 0 | 110 | 100 | 0 100 |
| Sveba | 0 | 0 | 0 | 0 | 01 | 01 |
| Telca | 0 | 0 | 0 | 01 | 1 110 | 0 101 |
| Tripp | 0 | 0 | 0 | 0 | 0 | 0 |
| Warner | 0 | 0 | 0 | 0 | 0 | 000 |
| Other | 1 | 0 | 10 | 010 | 111 | 0 |
| **TOTAL:** | **1 001** | **0 100** | **01 011** | **10 101** | **00 101** | **00 011** |

*Source: Litvinchuk Marketing Co.*