

# **Data Center Cooling Market by Solution (Air Conditioning, Chilling Unit, Cooling Tower, Economizer System, Liquid Cooling System, Control System), Service, Type of Cooling, Data Center Type, Industry, & Geography - Global Forecast to 2030**

<https://marketpublishers.com/r/D6594C87555EN.html>

Date: January 2024

Pages: 262

Price: US\$ 4,950.00 (Single User License)

ID: D6594C87555EN

## **Abstracts**

The global data center cooling market will rise from USD 12.7 billion in 2023 to USD 29.6 billion by 2030 at a CAGR of 12.8% from 2023 to 2030. The imperative drives the global data center cooling market to balance the increasing heat loads with energy-efficient and sustainable cooling technologies, driven by technological advancements, environmental considerations, and the evolving landscape of data center operations.

“Liquid cooling systems solution segment of data center cooling to grow at the highest CAGR during the forecast period.”

Liquid cooling systems have emerged as an innovative solution to address the escalating heat challenges in data centers. These systems use liquid, often water or a specialized coolant, to dissipate heat generated by IT equipment more efficiently than traditional air cooling methods. Adopting liquid cooling solutions in data centers contributes significantly to market growth.

“Maintenance & Support, in the by-service segment, is projected to grow the highest CAGR from 2023 to 2028.”

The factors driving the growth of the maintenance & support segment include the increasing demand for support and maintenance services due to the rising requirement for energy-efficient and cost-effective data center cooling solutions. This growth is also driven by the growing demand for digital technologies and data centers, escalating the

need for efficient and sustainable cooling solutions. The rising demand for cloud computing and data storage and the emergence of liquid cooling technology also contribute to the market's expansion.

“Row/Rack-based cooling, in by type of cooling segment, is projected to grow at the highest CAGR from 2023 to 2028.”

The trend toward high-density computing, driven by technologies such as blade servers and GPUs, has led to increased heat generation within racks. Rack/row-based cooling solutions are designed to address the specific cooling requirements of high-density server configurations, ensuring optimal performance and reliability. This factor leads to row/rack-based cooling adoption in the data center cooling market.

“Research & Academics, by industry segment, is projected to grow at the highest CAGR from 2023 to 2028.”

The growth of data center cooling in the research and academics industry is fueled by the sector's increasing reliance on advanced computing technologies, growing data storage needs, expanding IT infrastructure, a focus on energy efficiency, the critical nature of research operations, government funding initiatives, and the adoption of edge computing. These factors collectively drive the adoption of sophisticated and efficient cooling solutions to support the evolving demands of research and academic institutions.

“Asia Pacific data center cooling market is projected to grow at the highest CAGR from 2023 to 2028.”

Asia Pacific is expected to be the fastest-growing market for data center cooling market during the forecast period. The Asia-Pacific data center cooling market is thriving due to the region's rapid digital transformation, the expansion of cloud services, increasing internet penetration, government support, emerging markets, the presence of global technology giants, a focus on energy efficiency, and the need to address climate variability challenges. These factors collectively contribute to the dynamic growth of the data center cooling market in the Asia-Pacific region.

Profile break-up of primary participants for the report:

By Company Type: Tier 1 – 16%, Tier 2 – 36%, and Tier 3 – 48%

By Designation: C-level Executives – 16%, Directors – 24%, and Others – 60%

By Region: North America – 24%, Europe – 36%, Asia Pacific – 20%, Middle East & Africa – 12%, and Latin America – 8%

The data center cooling market report is dominated by players such as Asetek (Denmark), STULZ GmbH (Germany), Coolcentric (US), Rittal GmbH & Co. KG (Germany), Nortek Air Solutions, LLC (US), Schneider Electric SE (France), and Vertiv Holdings Co. (US).

#### Research Coverage:

The report defines, segments, and projects the data center cooling market based on industry, type of cooling, solution, component, type of data center, and region. It provides detailed information regarding the major factors influencing the market's growth, such as drivers, restraints, opportunities, and industry-specific challenges. It strategically profiles key data center cooling solution providers, comprehensively analyzes their market shares and core competencies, and tracks and analyzes competitive developments, such as expansions, agreements, contracts, partnerships, acquisitions, collaborations, and divestments, undertaken by them in the market.

#### Reasons to Buy the Report:

The report is expected to help the market leaders/new entrants by providing them with the closest approximations of revenue numbers of the data center cooling market and its segments. This report is also expected to help stakeholders understand the market's competitive landscape better, gain insights to improve the position of their businesses and make suitable go-to-market strategies. It also enables stakeholders to understand the market's pulse and provides information on key market drivers, restraints, challenges, and opportunities.

The report provides insights on the following pointers: Analysis of critical drivers (Improving efficiency in data centers), restraints (High investment cost), opportunities (Emergence of liquid cooling technology), and challenges (Cooling challenges during power outage) influencing the growth of the data center cooling market.

Product Development/Innovation: Detailed insights on upcoming technologies,

research &

development activities in the data center cooling market.

Market Development: Comprehensive information about lucrative markets – the report analyses

the data center cooling market across varied regions.

Market Diversification: Exhaustive information about new products & services, untapped

geographies, recent developments, and investments in the data center cooling market.

Competitive Assessment: In-depth assessment of market shares, growth strategies, and service

offerings of leading players like Asetek (Denmark), STULZ GmbH (Germany), Coolcentric (US), Rittal GmbH & Co. KG (Germany), Nortek Air Solutions, LLC (US), Schneider Electric SE (France), and Vertiv Holdings Co. (US), and among others in the data center cooling market.

## Contents

### 1 INTRODUCTION

#### 1.1 STUDY OBJECTIVES

#### 1.2 MARKET DEFINITION

#### 1.3 MARKET SCOPE

##### 1.3.1 MARKET SEGMENTATION

##### 1.3.2 REGIONS COVERED

#### 1.4 INCLUSIONS & EXCLUSIONS

##### 1.4.1 DATA CENTER COOLING MARKET, BY REGION: INCLUSIONS & EXCLUSIONS

##### 1.4.2 DATA CENTER COOLING MARKET, BY COMPONENT: INCLUSIONS & EXCLUSIONS

##### 1.4.3 DATA CENTER COOLING MARKET, BY SOLUTION: INCLUSIONS & EXCLUSIONS

##### 1.4.4 DATA CENTER COOLING MARKET, BY SERVICES: INCLUSIONS & EXCLUSIONS

##### 1.4.5 DATA CENTER COOLING MARKET, BY TYPE OF COOLING: INCLUSIONS & EXCLUSIONS

##### 1.4.6 DATA CENTER COOLING MARKET, BY DATA CENTER TYPE: INCLUSIONS & EXCLUSIONS

##### 1.4.7 DATA CENTER COOLING MARKET, BY END-USE INDUSTRY: INCLUSIONS & EXCLUSIONS

#### 1.5 YEARS CONSIDERED

#### 1.6 CURRENCY

#### 1.7 STAKEHOLDERS

#### 1.8 RESEARCH LIMITATIONS

#### 1.9 SUMMARY OF CHANGES

### 2 RESEARCH METHODOLOGY

#### 2.1 RESEARCH DATA

##### FIGURE 1 DATA CENTER COOLING MARKET: RESEARCH DESIGN

##### 2.1.1 SECONDARY DATA

###### 2.1.1.1 Key data from secondary sources

##### 2.1.2 PRIMARY DATA

###### 2.1.2.1 Key data from primary sources

###### 2.1.2.2 Key industry insights

2.1.2.3 Breakdown of primary interviews

2.1.2.4 List of participating companies for primary research

## 2.2 MARKET SIZE ESTIMATION

2.2.1 TOP-DOWN APPROACH

FIGURE 2 MARKET SIZE ESTIMATION: TOP-DOWN APPROACH

2.2.2 BOTTOM-UP APPROACH

FIGURE 3 MARKET SIZE ESTIMATION: BOTTOM-UP APPROACH

## 2.3 BASE NUMBER CALCULATION

FIGURE 4 BASE NUMBER CALCULATION: APPROACH 1

FIGURE 5 BASE NUMBER CALCULATION: APPROACH 2

2.3.1 FORECAST NUMBER CALCULATION

## 2.4 RECESSION IMPACT

## 2.5 DATA TRIANGULATION

FIGURE 6 DATA TRIANGULATION: DATA CENTER COOLING MARKET

## 2.6 ASSUMPTIONS & LIMITATIONS

2.6.1 RESEARCH ASSUMPTIONS

2.6.2 LIMITATIONS

# 3 EXECUTIVE SUMMARY

TABLE 1 DATA CENTER COOLING MARKET SNAPSHOT, 2023 AND 2030

FIGURE 7 DATA CENTER COOLING MARKET, BY COMPONENT (2023–2030)

FIGURE 8 ASIA PACIFIC DATA CENTER COOLING MARKET TO REGISTER HIGHEST CAGR DURING FORECAST PERIOD

# 4 PREMIUM INSIGHTS

4.1 ATTRACTIVE OPPORTUNITIES IN DATA CENTER COOLING MARKET

FIGURE 9 IT & TELECOM SECTOR TO OFFER LUCRATIVE GROWTH OPPORTUNITIES

4.2 DATA CENTER COOLING MARKET, BY DATA CENTER TYPE

FIGURE 10 MID-SIZED DATA CENTERS SEGMENT TO REGISTER HIGHEST CAGR DURING FORECAST PERIOD

4.3 NORTH AMERICA DATA CENTER COOLING MARKET, BY COMPONENT AND KEY COUNTRIES

FIGURE 11 SOLUTION SEGMENT ACCOUNTED FOR LARGER MARKET SHARE IN 2022

4.4 DATA CENTER COOLING MARKET, BY MAJOR COUNTRIES

FIGURE 12 INDIA TO REGISTER HIGHEST CAGR IN DATA CENTER COOLING

## MARKET

### 5 MARKET OVERVIEW

#### 5.1 INTRODUCTION

#### 5.2 MARKET DYNAMICS

##### FIGURE 13 DRIVERS, RESTRAINTS, OPPORTUNITIES, AND CHALLENGES IN DATA CENTER COOLING MARKET

###### 5.2.1 DRIVERS

###### 5.2.1.1 Need for improving efficiency in data centers

##### FIGURE 14 YEAR-WISE POWER USAGE EFFECTIVENESS (PUE) FOR LARGE DATA CENTERS

###### 5.2.1.2 Significant growth in number of data centers

##### FIGURE 15 WORLDWIDE NUMBER OF DATA CENTERS IN 2023

###### 5.2.2 RESTRAINTS

###### 5.2.2.1 High capital investment

###### 5.2.2.2 Requirement of specialized infrastructure

###### 5.2.3 OPPORTUNITIES

###### 5.2.3.1 Emergence of liquid cooling technology

###### 5.2.3.2 Growing requirement for modular data center cooling

###### 5.2.3.3 Development of innovative cooling techniques

###### 5.2.4 CHALLENGES

###### 5.2.4.1 Cooling challenges during power outage

###### 5.2.4.2 Necessity of reducing carbon emissions

#### 5.3 PORTER'S FIVE FORCES ANALYSIS

##### FIGURE 16 PORTER'S FIVE FORCES ANALYSIS: DATA CENTER COOLING MARKET

##### TABLE 2 PORTER'S FIVE FORCES ANALYSIS: DATA CENTER COOLING MARKET

###### 5.3.1 BARGAINING POWER OF SUPPLIERS

###### 5.3.2 THREAT OF NEW ENTRANTS

###### 5.3.3 THREAT OF SUBSTITUTES

###### 5.3.4 BARGAINING POWER OF BUYERS

###### 5.3.5 INTENSITY OF COMPETITIVE RIVALRY

#### 5.4 VALUE CHAIN ANALYSIS

##### FIGURE 17 DATA CENTER COOLING MARKET: VALUE CHAIN ANALYSIS

###### 5.4.1 DATA CENTER ORIGINAL EQUIPMENT MANUFACTURERS

###### 5.4.2 DATA CENTER ORIGINAL DESIGN MANUFACTURERS

###### 5.4.3 DATA CENTER COOLING ORIGINAL EQUIPMENT MANUFACTURERS

###### 5.4.4 SYSTEM INTEGRATORS

#### 5.4.5 VALUE-ADDED SERVICE PROVIDERS

#### 5.4.6 END USERS

### 5.5 TARIFF AND REGULATORY LANDSCAPE

#### 5.5.1 INTRODUCTION

#### 5.5.2 REGULATORY BODIES, GOVERNMENT AGENCIES, AND OTHER ORGANIZATIONS

#### 5.5.3 STANDARDS AND GUIDELINES FOR DATA CENTER COOLING

##### 5.5.3.1 American national standards institute

##### 5.5.3.2 American society of heating, refrigerating and air-conditioning engineers

##### 5.5.3.3 Institute of energy and transport of the joint research center of the european commission

##### 5.5.3.4 Distributed management task force

##### 5.5.3.5 Telecommunication industry association

##### 5.5.3.6 National electrical manufacturers association

##### 5.5.3.7 Canadian standards association group

##### 5.5.3.8 Underwriters laboratory

##### 5.5.3.9 Factory mutual (FM) approvals

##### 5.5.3.10 United states department of energy

##### 5.5.3.11 United states environmental protection agency

##### 5.5.3.12 Statement on standards for attestation engagements No. 16

##### 5.5.3.13 International standards compliance

### 5.6 PATENT ANALYSIS

#### FIGURE 18 LIST OF MAJOR PATENTS RELATED TO DATA CENTER COOLING SYSTEMS

#### 5.6.1 MAJOR PATENTS

### 5.7 CASE STUDY

#### 5.7.1 CASE STUDY 1: REDUCTION IN DATA CENTER ENERGY SPENDING BY ADOPTING IMMERSION COOLING

#### 5.7.2 CASE STUDY 2: BETTER PER RACK POWER DENSITY AND SCALABILITY

#### 5.7.3 CASE STUDY 3: IMPROVEMENT IN POWER USAGE EFFECTIVENESS

### 5.8 TRADE DATA

#### 5.8.1 IMPORT SCENARIO

#### FIGURE 19 DATA CENTER COOLING IMPORT, BY KEY COUNTRIES, 2018–2022 (USD BILLION)

#### 5.8.2 EXPORT SCENARIO

#### FIGURE 20 DATA CENTER COOLING EXPORT, BY KEY COUNTRIES, 2018–2022 (USD BILLION)

### 5.9 KEY CONFERENCES & EVENTS IN 2023 & 2024

#### TABLE 3 DATA CENTER COOLING MARKET: CONFERENCES & EVENTS

## 5.10 KEY STAKEHOLDERS & BUYING CRITERIA

### 5.10.1 KEY STAKEHOLDERS IN BUYING PROCESS

FIGURE 21 INFLUENCE OF STAKEHOLDERS ON BUYING PROCESS FOR TOP THREE END-USE INDUSTRIES

TABLE 4 INFLUENCE OF STAKEHOLDERS IN BUYING PROCESS FOR TOP THREE END-USE INDUSTRIES (%)

### 5.10.2 BUYING CRITERIA

FIGURE 22 KEY BUYING CRITERIA IN TOP END-USE INDUSTRIES

TABLE 5 KEY BUYING CRITERIA, BY END-USE INDUSTRY

## 5.11 TECHNOLOGY ANALYSIS

### 5.11.1 LIQUID COOLING

### 5.11.2 AIR COOLING

## 5.12 ECOSYSTEM ANALYSIS

FIGURE 23 DATA CENTER COOLING MARKET: ECOSYSTEM MAPPING

TABLE 6 DATA CENTER COOLING MARKET: ROLE IN ECOSYSTEM

## 5.13 TRENDS AND DISRUPTIONS IMPACTING CUSTOMER BUSINESS

FIGURE 24 REVENUE SHIFT AND NEW REVENUE POCKETS IN DATA CENTER COOLING MARKET

# 6 DATA CENTER COOLING MARKET, BY COMPONENT

## 6.1 INTRODUCTION

FIGURE 25 SERVICES SEGMENT TO REGISTER HIGHER CAGR DURING FORECAST PERIOD

TABLE 7 DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 8 DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

# 7 DATA CENTER COOLING MARKET, BY SOLUTION

## 7.1 INTRODUCTION

## 7.2 AIR CONDITIONING

7.2.1 LOW INSTALLATION & MAINTENANCE COSTS FUELING WIDE ADOPTION OF AIR CONDITIONING UNITS

## 7.3 CHILLING UNITS

7.3.1 LESS COST & BETTER PERFORMANCE CHARACTERISTICS LEADING TO WIDE ADOPTION

## 7.4 COOLING TOWERS

#### 7.4.1 COOLING TOWERS PROVIDE COST-EFFECTIVE COOLING SOLUTIONS

#### 7.5 ECONOMIZER SYSTEMS

##### 7.5.1 SIGNIFICANT ENERGY SAVING & INCREASING ADOPTION BY LARGE DATA CENTERS TO SUPPORT GROWTH

#### 7.6 LIQUID COOLING SYSTEMS

##### 7.6.1 LIQUID COOLING INCREASINGLY USED DUE TO ITS HIGH EFFICIENCY

#### 7.7 CONTROL SYSTEMS

##### 7.7.1 NECESSITY TO MONITOR & CONTROL COOLING UNITS IN DATA CENTERS LEADING TO WIDE ADOPTION OF CONTROL SYSTEMS

#### 7.8 OTHER SOLUTIONS

##### 7.8.1 RETROFIT SEGMENT TO DRIVE DEMAND FOR OTHER DATA CENTER COOLING SOLUTIONS

### **8 DATA CENTER COOLING MARKET, BY SERVICES**

#### 8.1 INTRODUCTION

#### 8.2 CONSULTING

##### 8.2.1 NEED FOR DATA CENTER USERS TO MINIMIZE RISK AND INCREASE REVENUE FUELING DEMAND FOR CONSULTING SERVICES

#### 8.3 INSTALLATION & DEPLOYMENT

##### 8.3.1 INCREASING ADOPTION OF INSTALLATION & DEPLOYMENT SERVICES WITNESSED WORLDWIDE

#### 8.4 MAINTENANCE & SUPPORT

##### 8.4.1 DOWNTIME RISK ASSOCIATED WITH DATA CENTER FAILURE DRIVING ADOPTION OF MAINTENANCE & SUPPORT SERVICES

### **9 DATA CENTER COOLING MARKET, BY DATA CENTER TYPE**

#### 9.1 INTRODUCTION

FIGURE 26 MID-SIZED DATA CENTERS SEGMENT TO REGISTER HIGHEST CAGR DURING FORECAST PERIOD

TABLE 9 DATA CENTER COOLING MARKET SIZE, BY DATA CENTER TYPE, 2018–2022 (USD MILLION)

TABLE 10 DATA CENTER COOLING MARKET SIZE, BY DATA CENTER TYPE, 2023–2030 (USD MILLION)

#### 9.2 MID-SIZED DATA CENTERS

##### 9.2.1 WIDE ADOPTION BY SMES LEADING TO INCREASING DEMAND FOR COOLING SOLUTIONS IN MID-SIZED DATA CENTERS

TABLE 11 DATA CENTER COOLING MARKET SIZE IN MID-SIZED DATA CENTERS,

BY REGION, 2018–2022 (USD MILLION)

TABLE 12 DATA CENTER COOLING MARKET SIZE IN MID-SIZED DATA CENTERS,  
BY REGION, 2023–2030 (USD MILLION)

### 9.3 ENTERPRISE DATA CENTERS

9.3.1 HIGH POWER CONSUMPTION IN ENTERPRISE DATA CENTERS  
MANDATES USING EFFICIENT COOLING SOLUTIONS

TABLE 13 DATA CENTER COOLING MARKET SIZE IN ENTERPRISE DATA  
CENTERS, BY REGION, 2018–2022 (USD MILLION)

TABLE 14 DATA CENTER COOLING MARKET SIZE IN ENTERPRISE DATA  
CENTERS, BY REGION, 2023–2030 (USD MILLION)

### 9.4 LARGE DATA CENTERS

9.4.1 LARGE DATA CENTERS CHARACTERIZED BY HIGH SERVER DENSITIES  
AND NEED FOR OPTIMUM COOLING SOLUTIONS

TABLE 15 DATA CENTER COOLING MARKET SIZE IN LARGE DATA CENTERS, BY  
REGION, 2018–2022 (USD MILLION)

TABLE 16 DATA CENTER COOLING MARKET SIZE IN LARGE DATA CENTERS, BY  
REGION, 2023–2030 (USD MILLION)

## 10 DATA CENTER COOLING MARKET, BY TYPE OF COOLING

### 10.1 INTRODUCTION

FIGURE 27 ROW/RACK-BASED COOLING SEGMENT TO REGISTER HIGHER  
DURING FORECAST PERIOD

TABLE 17 DATA CENTER COOLING MARKET SIZE, BY TYPE OF COOLING,  
2018–2022 (USD MILLION)

TABLE 18 DATA CENTER COOLING MARKET SIZE, BY TYPE OF COOLING,  
2023–2030 (USD MILLION)

### 10.2 ROOM-BASED COOLING

10.2.1 VARIOUS CONSTRAINTS WITH RESPECT TO LAYOUT DESIGN TO LIMIT  
GROWTH

TABLE 19 DATA CENTER COOLING MARKET SIZE FOR ROOM-BASED COOLING,  
BY REGION, 2018–2022 (USD MILLION)

TABLE 20 DATA CENTER COOLING MARKET SIZE FOR ROOM-BASED COOLING,  
BY REGION, 2023–2030 (USD MILLION)

### 10.3 ROW/RACK-BASED COOLING

10.3.1 ADOPTION IN LARGE DATA CENTERS TO DRIVE MARKET

TABLE 21 DATA CENTER COOLING MARKET SIZE FOR ROW/RACK-BASED  
COOLING, BY REGION, 2018–2022 (USD MILLION)

TABLE 22 DATA CENTER COOLING MARKET SIZE FOR ROW/RACK-BASED

COOLING, BY REGION, 2023–2030 (USD MILLION)

## **11 DATA CENTER COOLING MARKET, BY END-USE INDUSTRY**

### **11.1 INTRODUCTION**

FIGURE 28 GOVERNMENT & DEFENSE SEGMENT TO REGISTER HIGHEST CAGR DURING FORECAST PERIOD

TABLE 23 DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2018–2022 (USD MILLION)

TABLE 24 DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2023–2030 (USD MILLION)

### **11.2 BFSI**

11.2.1 ASIA PACIFIC TO BE FASTEST-GROWING MARKET FOR DATA CENTER COOLING IN BFSI SEGMENT

TABLE 25 DATA CENTER COOLING MARKET SIZE IN BFSI, BY REGION, 2018–2022 (USD MILLION)

TABLE 26 DATA CENTER COOLING MARKET SIZE IN BFSI, BY REGION, 2023–2030 (USD MILLION)

### **11.3 IT & TELECOM**

11.3.1 GROWING DEMAND FOR EFFICIENT AND SECURE DATA CENTERS ACROSS IT & TELECOM SECTORS TO DRIVE MARKET

TABLE 27 DATA CENTER COOLING MARKET SIZE IN IT & TELECOM, BY REGION, 2018–2022 (USD MILLION)

TABLE 28 DATA CENTER COOLING MARKET SIZE IN IT & TELECOM, BY REGION, 2023–2030 (USD MILLION)

### **11.4 RESEARCH & ACADEMIC**

11.4.1 INCREASING DEMAND FOR INNOVATIVE COOLING SOLUTIONS FROM RESEARCH & ACADEMIC INSTITUTIONS TO SUPPORT MARKET

TABLE 29 DATA CENTER COOLING MARKET SIZE IN RESEARCH & ACADEMIC, BY REGION, 2018–2022 (USD MILLION)

TABLE 30 DATA CENTER COOLING MARKET SIZE IN RESEARCH & ACADEMIC, BY REGION, 2023–2030 (USD MILLION)

### **11.5 GOVERNMENT & DEFENSE**

11.5.1 GOVERNMENT INITIATIVES TOWARD DIGITALIZATION TO INCREASE DEMAND FOR DATA CENTER COOLING SOLUTIONS

TABLE 31 DATA CENTER COOLING MARKET SIZE IN GOVERNMENT & DEFENSE, BY REGION, 2018–2022 (USD MILLION)

TABLE 32 DATA CENTER COOLING MARKET SIZE IN GOVERNMENT & DEFENSE, BY REGION, 2023–2030 (USD MILLION)

## 11.6 RETAIL

### 11.6.1 INCREASING FOCUS BY RETAIL SECTOR TO ENHANCE IT INFRASTRUCTURE TO SUPPORT MARKET GROWTH

TABLE 33 DATA CENTER COOLING MARKET SIZE IN RETAIL, BY REGION,  
2018–2022 (USD MILLION)

TABLE 34 DATA CENTER COOLING MARKET SIZE IN RETAIL, BY REGION,  
2023–2030 (USD MILLION)

## 11.7 ENERGY

### 11.7.1 INCREASING EMPHASIS ON SUSTAINABLE & ENERGY-EFFICIENT DATA CENTER COOLING SOLUTIONS TO DRIVE DEMAND

TABLE 35 DATA CENTER COOLING MARKET SIZE IN ENERGY, BY REGION,  
2018–2022 (USD MILLION)

TABLE 36 DATA CENTER COOLING MARKET SIZE IN ENERGY, BY REGION,  
2023–2030 (USD MILLION)

## 11.8 MANUFACTURING

### 11.8.1 DATA CENTER COOLING SOLUTIONS HELPING MANUFACTURING FIRMS LOWER OPERATIONAL COSTS AND CAPITAL EXPENDITURE

TABLE 37 DATA CENTER COOLING MARKET SIZE IN MANUFACTURING, BY  
REGION, 2018–2022 (USD MILLION)

TABLE 38 DATA CENTER COOLING MARKET SIZE IN MANUFACTURING, BY  
REGION, 2023–2030 (USD MILLION)

## 11.9 HEALTHCARE

### 11.9.1 GROWING DEMAND FOR CUSTOMIZED DATA SOLUTIONS IN HEALTHCARE SECTOR TO DRIVE MARKET

TABLE 39 DATA CENTER COOLING MARKET SIZE IN HEALTHCARE, BY REGION,  
2018–2022 (USD MILLION)

TABLE 40 DATA CENTER COOLING MARKET SIZE IN HEALTHCARE, BY REGION,  
2023–2030 (USD MILLION)

## 11.10 OTHER END-USE INDUSTRIES

### 11.10.1 GROWING DEMAND FOR CUSTOMIZED DATA CENTER COOLING SOLUTIONS TO SUPPORT MARKET GROWTH

TABLE 41 DATA CENTER COOLING MARKET SIZE IN OTHER END-USE  
INDUSTRIES, BY REGION, 2018–2022 (USD MILLION)

TABLE 42 DATA CENTER COOLING MARKET SIZE IN OTHER END-USE  
INDUSTRIES, BY REGION, 2023–2030 (USD MILLION)

## 12 DATA CENTER COOLING MARKET, BY REGION

### 12.1 INTRODUCTION

FIGURE 29 ASIA PACIFIC TO REGISTER HIGHEST CAGR IN DATA CENTER COOLING MARKET

TABLE 43 DATA CENTER COOLING MARKET SIZE, BY REGION, 2018–2022 (USD MILLION)

TABLE 44 DATA CENTER COOLING MARKET SIZE, BY REGION, 2023–2030 (USD MILLION)

## 12.2 ASIA PACIFIC

### 12.2.1 IMPACT OF RECESSION

FIGURE 30 ASIA PACIFIC: DATA CENTER COOLING MARKET SNAPSHOT

TABLE 45 ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY COUNTRY, 2018–2022 (USD MILLION)

TABLE 46 ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY COUNTRY, 2023–2030 (USD MILLION)

TABLE 47 ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 48 ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

TABLE 49 ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY TYPE OF COOLING, 2018–2022 (USD MILLION)

TABLE 50 ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY TYPE OF COOLING, 2023–2030 (USD MILLION)

TABLE 51 ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY DATA CENTER TYPE, 2018–2022 (USD MILLION)

TABLE 52 ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY DATA CENTER TYPE, 2023–2030 (USD MILLION)

TABLE 53 ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2018–2022 (USD MILLION)

TABLE 54 ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2023–2030 (USD MILLION)

### 12.2.2 CHINA

12.2.2.1 Digital transformation to drive data center expansion and data center cooling market

TABLE 55 CHINA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 56 CHINA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

### 12.2.3 INDIA

12.2.3.1 Increasing internet users to drive rapid adoption of data center cooling  
TABLE 57 INDIA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT,

2018–2022 (USD MILLION)

TABLE 58 INDIA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT,  
2023–2030 (USD MILLION)

#### 12.2.4 JAPAN

12.2.4.1 Presence of large service providers to drive data center cooling market

TABLE 59 JAPAN: DATA CENTER COOLING MARKET SIZE, BY COMPONENT,  
2018–2022 (USD MILLION)

TABLE 60 JAPAN: DATA CENTER COOLING MARKET SIZE, BY COMPONENT,  
2023–2030 (USD MILLION)

#### 12.2.5 SOUTH KOREA

12.2.5.1 Data center infrastructural investments and digital revolution to drive data  
center cooling market

TABLE 61 SOUTH KOREA: DATA CENTER COOLING MARKET SIZE, BY  
COMPONENT, 2018–2022 (USD MILLION)

TABLE 62 SOUTH KOREA: DATA CENTER COOLING MARKET SIZE, BY  
COMPONENT, 2023–2030 (USD MILLION)

#### 12.2.6 REST OF ASIA PACIFIC

TABLE 63 REST OF ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY  
COMPONENT, 2018–2022 (USD MILLION)

TABLE 64 REST OF ASIA PACIFIC: DATA CENTER COOLING MARKET SIZE, BY  
COMPONENT, 2023–2030 (USD MILLION)

### 12.3 NORTH AMERICA

#### 12.3.1 IMPACT OF RECESSION

FIGURE 31 NORTH AMERICA: DATA CENTER COOLING MARKET SNAPSHOT

TABLE 65 NORTH AMERICA: DATA CENTER COOLING MARKET SIZE, BY  
COUNTRY, 2018–2022 (USD MILLION)

TABLE 66 NORTH AMERICA: DATA CENTER COOLING MARKET SIZE, BY  
COUNTRY, 2023–2030 (USD MILLION)

TABLE 67 NORTH AMERICA: DATA CENTER COOLING MARKET SIZE, BY  
COMPONENT, 2018–2022 (USD MILLION)

TABLE 68 NORTH AMERICA: DATA CENTER COOLING MARKET SIZE, BY  
COMPONENT, 2023–2030 (USD MILLION)

TABLE 69 NORTH AMERICA: DATA CENTER COOLING MARKET SIZE, BY TYPE  
OF COOLING, 2018–2022 (USD MILLION)

TABLE 70 NORTH AMERICA: DATA CENTER COOLING MARKET SIZE, BY TYPE  
OF COOLING, 2023–2030 (USD MILLION)

TABLE 71 NORTH AMERICA: DATA CENTER COOLING MARKET SIZE, BY DATA  
CENTER TYPE, 2018–2022 (USD MILLION)

TABLE 72 NORTH AMERICA: DATA CENTER COOLING MARKET SIZE, BY DATA

CENTER TYPE, 2023–2030 (USD MILLION)

TABLE 73 NORTH AMERICA: DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2018–2022 (USD MILLION)

TABLE 74 NORTH AMERICA: DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2023–2030 (USD MILLION)

#### 12.3.2 US

12.3.2.1 Presence of IT and internet giants to drive data center cooling market

TABLE 75 US: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 76 US: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.3.3 CANADA

12.3.3.1 Increased digitization and huge data generation to drive adoption of data center cooling solutions

TABLE 77 CANADA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 78 CANADA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.3.4 MEXICO

12.3.4.1 Services segment to register higher CAGR during forecast period

TABLE 79 MEXICO: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 80 MEXICO: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

### 12.4 EUROPE

#### 12.4.1 IMPACT OF RECESSION

FIGURE 32 EUROPE: DATA CENTER COOLING MARKET SNAPSHOT

TABLE 81 EUROPE: DATA CENTER COOLING MARKET SIZE, BY COUNTRY, 2018–2022 (USD MILLION)

TABLE 82 EUROPE: DATA CENTER COOLING MARKET SIZE, BY COUNTRY, 2023–2030 (USD MILLION)

TABLE 83 EUROPE: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 84 EUROPE: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

TABLE 85 EUROPE: DATA CENTER COOLING MARKET SIZE, BY TYPE OF COOLING, 2018–2022 (USD MILLION)

TABLE 86 EUROPE: DATA CENTER COOLING MARKET SIZE, BY TYPE OF COOLING, 2023–2030 (USD MILLION)

TABLE 87 EUROPE: DATA CENTER COOLING MARKET SIZE, BY DATA CENTER TYPE, 2018–2022 (USD MILLION)

TABLE 88 EUROPE: DATA CENTER COOLING MARKET SIZE, BY DATA CENTER TYPE, 2023–2030 (USD MILLION)

TABLE 89 EUROPE: DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2018–2022 (USD MILLION)

TABLE 90 EUROPE: DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2023–2030 (USD MILLION)

#### 12.4.2 GERMANY

12.4.2.1 Growth of data centers in IT and technology sectors to drive data center cooling market

TABLE 91 GERMANY: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 92 GERMANY: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.4.3 UK

12.4.3.1 Surge in data consumption and presence of major hyperscale sites to fuel demand for efficient cooling solutions

TABLE 93 UK: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 94 UK: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.4.4 NETHERLANDS

12.4.4.1 Favorable factors such as tax exemption for green energy usage to drive data center cooling market

TABLE 95 NETHERLANDS: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 96 NETHERLANDS: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.4.5 FRANCE

12.4.5.1 Growth in ICT sector and focus on environmental sustainability to drive market

TABLE 97 FRANCE: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 98 FRANCE: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.4.6 ITALY

12.4.6.1 Rising demand for colocation data centers to boost data center cooling market

TABLE 99 ITALY: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 100 ITALY: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.4.7 REST OF EUROPE

TABLE 101 REST OF EUROPE: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 102 REST OF EUROPE: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

### 12.5 MIDDLE EAST & AFRICA

#### 12.5.1 IMPACT OF RECESSION

TABLE 103 MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY COUNTRY, 2018–2022 (USD MILLION)

TABLE 104 MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY COUNTRY, 2023–2030 (USD MILLION)

TABLE 105 MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 106 MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

TABLE 107 MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY TYPE OF COOLING, 2018–2022 (USD MILLION)

TABLE 108 MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY TYPE OF COOLING, 2023–2030 (USD MILLION)

TABLE 109 MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY DATA CENTER TYPE, 2018–2022 (USD MILLION)

TABLE 110 MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY DATA CENTER TYPE, 2023–2030 (USD MILLION)

TABLE 111 MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2018–2022 (USD MILLION)

TABLE 112 MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2023–2030 (USD MILLION)

#### 12.5.2 GCC COUNTRIES

##### 12.5.3 UAE

12.5.3.1 Increasing adoption of newer technologies to drive data center cooling market

TABLE 113 UAE: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 114 UAE: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.5.4 SAUDI ARABIA

12.5.4.1 Demand for rugged data center solutions and managed services and digitization to drive market

TABLE 115 SAUDI ARABIA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 116 SAUDI ARABIA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.5.5 SOUTH AFRICA

12.5.5.1 Developed telecommunication infrastructure to fuel data center cooling market

TABLE 117 SOUTH AFRICA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 118 SOUTH AFRICA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.5.6 REST OF MIDDLE EAST & AFRICA

TABLE 119 REST OF MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 120 REST OF MIDDLE EAST & AFRICA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.6 LATIN AMERICA

##### 12.6.1 IMPACT OF RECESSION

TABLE 121 LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY COUNTRY, 2018–2022 (USD MILLION)

TABLE 122 LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY COUNTRY, 2023–2030 (USD MILLION)

TABLE 123 LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 124 LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

TABLE 125 LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY TYPE OF COOLING, 2018–2022 (USD MILLION)

TABLE 126 LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY TYPE OF COOLING, 2023–2030 (USD MILLION)

TABLE 127 LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY DATA CENTER TYPE, 2018–2022 (USD MILLION)

TABLE 128 LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY DATA CENTER TYPE, 2023–2030 (USD MILLION)

TABLE 129 LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2018–2022 (USD MILLION)

TABLE 130 LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY END-USE INDUSTRY, 2023–2030 (USD MILLION)

#### 12.6.2 BRAZIL

12.6.2.1 Digital transformation to drive data center cooling market

TABLE 131 BRAZIL: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 132 BRAZIL: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

#### 12.6.3 REST OF LATIN AMERICA

TABLE 133 REST OF LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2018–2022 (USD MILLION)

TABLE 134 REST OF LATIN AMERICA: DATA CENTER COOLING MARKET SIZE, BY COMPONENT, 2023–2030 (USD MILLION)

## 13 COMPETITIVE LANDSCAPE

### 13.1 INTRODUCTION

### 13.2 STRATEGIES ADOPTED BY KEY PLAYERS

13.2.1 OVERVIEW OF STRATEGIES ADOPTED BY KEY MANUFACTURERS

### 13.3 REVENUE ANALYSIS

FIGURE 33 REVENUE ANALYSIS OF KEY COMPANIES (2018–2022)

### 13.4 MARKET SHARE ANALYSIS

13.4.1 RANKING OF KEY MARKET PLAYERS, 2022

FIGURE 34 RANKING OF TOP FIVE PLAYERS IN DATA CENTER COOLING MARKET, 2022

13.4.2 MARKET SHARE OF KEY PLAYERS

FIGURE 35 DATA CENTER COOLING MARKET SHARE ANALYSIS

TABLE 135 DATA CENTER COOLING MARKET: DEGREE OF COMPETITION

13.4.2.1 Schneider Electric (France)

13.4.2.2 Fujitsu (Japan)

13.4.2.3 Daikin Industries Ltd. (Japan)

13.4.2.4 Hitachi Energy Ltd. (Japan)

13.4.2.5 Johnson Controls, Inc. (US)

### 13.5 COMPANY EVALUATION MATRIX (TIER 1)

13.5.1 STARS

13.5.2 EMERGING LEADERS

13.5.3 PERVASIVE PLAYERS

13.5.4 PARTICIPANTS

FIGURE 36 COMPANY EVALUATION MATRIX: DATA CENTER COOLING MARKET

## (TIER 1 COMPANIES)

### 13.5.5 COMPANY FOOTPRINT

FIGURE 37 COMPANY OVERALL FOOTPRINT (15 COMPANIES)

TABLE 136 COMPANY BY TYPE OF COOLING FOOTPRINT (15 COMPANIES)

TABLE 137 COMPANY BY SOLUTION FOOTPRINT (15 COMPANIES)

TABLE 138 COMPANY REGION FOOTPRINT (15 COMPANIES)

## 13.6 STARTUP/SME EVALUATION MATRIX

### 13.6.1 PROGRESSIVE COMPANIES

### 13.6.2 RESPONSIVE COMPANIES

### 13.6.3 DYNAMIC COMPANIES

### 13.6.4 STARTING BLOCKS

FIGURE 38 STARTUP/SME EVALUATION MATRIX: DATA CENTER COOLING MARKET

### 13.6.5 COMPETITIVE BENCHMARKING

TABLE 139 DATA CENTER COOLING MARKET: DETAILED LIST OF KEY STARTUPS/SMES

TABLE 140 DATA CENTER COOLING MARKET: COMPETITIVE BENCHMARKING OF KEY STARTUPS/SMES

## 13.7 COMPETITIVE SCENARIO AND TRENDS

### 13.7.1 DEALS

TABLE 141 DATA CENTER COOLING MARKET: DEALS (2018–2023)

### 13.7.2 OTHER DEVELOPMENTS

TABLE 142 DATA CENTER COOLING MARKET: OTHER DEVELOPMENTS

(2018–2023) 168 "14 COMPANY PROFILES(Business Overview, Products Offered, Recent Developments, MnM View Right to win, Strategic choices made, Weaknesses and competitive threats) \*

## 14.1 KEY PLAYERS

### 14.1.1 VERTIV GROUP CORP.

TABLE 143 VERTIV GROUP CORP.: COMPANY OVERVIEW

FIGURE 39 VERTIV GROUP CORP.: COMPANY SNAPSHOT

TABLE 144 VERTIV GROUP CORP.: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 145 VERTIV GROUP CORP.: DEALS

### 14.1.2 FUJITSU

TABLE 146 FUJITSU: COMPANY OVERVIEW

FIGURE 40 FUJITSU: COMPANY SNAPSHOT

TABLE 147 FUJITSU: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 148 FUJITSU: DEALS

### 14.1.3 STULZ GMBH

TABLE 149 STULZ GMBH: COMPANY OVERVIEW

TABLE 150 STULZ GMBH: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 151 STULZ GMBH: PRODUCT LAUNCHES

14.1.4 BLACK BOX

TABLE 152 BLACK BOX: COMPANY OVERVIEW

TABLE 153 BLACK BOX: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 154 BLACK BOX: DEALS

14.1.5 GREEN REVOLUTION COOLING INC.

TABLE 155 GREEN REVOLUTION COOLING INC.: COMPANY OVERVIEW

TABLE 156 GREEN REVOLUTION COOLING INC.:

PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 157 GREEN REVOLUTION COOLING INC.: PRODUCT LAUNCHES

TABLE 158 GREEN REVOLUTION COOLING INC.: DEALS

14.1.6 SUBMER

TABLE 159 SUBMER: COMPANY OVERVIEW

TABLE 160 SUBMER: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 161 SUBMER: DEALS

14.1.7 ASPERITAS

TABLE 162 ASPERITAS: COMPANY OVERVIEW

TABLE 163 ASPERITAS: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 164 ASPERITAS: PRODUCT LAUNCHES

TABLE 165 ASPERITAS: DEALS

TABLE 166 ASPERITAS: OTHERS

14.1.8 MIDAS IMMERSION COOLING

TABLE 167 MIDAS IMMERSION COOLING: COMPANY OVERVIEW

TABLE 168 MIDAS IMMERSION COOLING: PRODUCTS/SOLUTIONS/SERVICES  
OFFERED

TABLE 169 MIDAS IMMERSION COOLING: DEALS

14.1.9 ICEOTOPE TECHNOLOGIES LIMITED

TABLE 170 ICEOTOPE TECHNOLOGIES LIMITED: COMPANY OVERVIEW

TABLE 171 ICEOTOPE TECHNOLOGIES LIMITED:

PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 172 ICEOTOPE TECHNOLOGIES LIMITED: PRODUCT LAUNCHES

TABLE 173 ICEOTOPE TECHNOLOGIES LIMITED: DEALS

14.1.10 DUG TECHNOLOGY

TABLE 174 DUG TECHNOLOGY: COMPANY OVERVIEW

FIGURE 41 DUG TECHNOLOGY: COMPANY SNAPSHOT

TABLE 175 DUG TECHNOLOGY: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 176 DUG TECHNOLOGY: DEALS

#### 14.1.11 DCX LIQUID COOLING SYSTEMS

TABLE 177 DCX LIQUID COOLING SYSTEMS: COMPANY OVERVIEW

TABLE 178 DCX LIQUID COOLING SYSTEMS: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 179 DCX LIQUID COOLING SYSTEMS: PRODUCT LAUNCHES

TABLE 180 DCX LIQUID COOLING SYSTEMS: OTHERS

#### 14.1.12 RITTAL GMBH & CO. KG

TABLE 181 RITTAL GMBH & CO. KG: COMPANY OVERVIEW

TABLE 182 RITTAL GMBH & CO. KG: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 183 RITTAL GMBH & CO. KG: PRODUCT LAUNCHES

TABLE 184 RITTAL GMBH & CO. KG: DEALS

#### 14.1.13 SCHNEIDER ELECTRIC

TABLE 185 SCHNEIDER ELECTRIC: COMPANY OVERVIEW

FIGURE 42 SCHNEIDER ELECTRIC: COMPANY SNAPSHOT

TABLE 186 SCHNEIDER ELECTRIC: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 187 SCHNEIDER ELECTRIC: DEALS

TABLE 188 SCHNEIDER ELECTRIC: OTHERS

#### 14.1.14 MUNTERS

TABLE 189 MUNTERS: COMPANY OVERVIEW

FIGURE 43 MUNTERS: COMPANY SNAPSHOT

TABLE 190 MUNTERS: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 191 MUNTERS: DEALS

TABLE 192 MUNTERS: OTHERS

#### 14.1.15 ASETEK, INC.

TABLE 193 ASETEK, INC.: COMPANY OVERVIEW

FIGURE 44 ASETEK, INC.: COMPANY SNAPSHOT

TABLE 194 ASETEK, INC.: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 195 ASETEK, INC.: DEALS

#### 14.1.16 ALFA LAVAL

TABLE 196 ALFA LAVAL: COMPANY OVERVIEW

FIGURE 45 ALFA LAVAL: COMPANY SNAPSHOT

TABLE 197 ALFA LAVAL: PRODUCTS/SOLUTIONS/SERVICES OFFERED

#### 14.1.17 COOLCENTRIC

TABLE 198 COOLCENTRIC: COMPANY OVERVIEW

TABLE 199 COOLCENTRIC: PRODUCTS/SOLUTIONS/SERVICES OFFERED

#### 14.1.18 AIREDALE INTERNATIONAL AIR CONDITIONING LTD.

TABLE 200 AIREDALE INTERNATIONAL AIR CONDITIONING LTD.: COMPANY

## OVERVIEW

TABLE 201 AIREDALE INTERNATIONAL AIR CONDITIONING LTD.:

PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 202 AIREDALE INTERNATIONAL AIR CONDITIONING LTD.: PRODUCT  
LAUNCHES

14.1.19 NORTEK AIR SOLUTIONS, LLC.

TABLE 203 NORTEK AIR SOLUTIONS, LLC.: COMPANY OVERVIEW

TABLE 204 NORTEK AIR SOLUTIONS, LLC.: PRODUCTS/SOLUTIONS/SERVICES  
OFFERED

14.1.20 JOHNSON CONTROLS

TABLE 205 JOHNSON CONTROLS: COMPANY OVERVIEW

FIGURE 46 JOHNSON CONTROLS: COMPANY SNAPSHOT

TABLE 206 JOHNSON CONTROLS: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 207 JOHNSON CONTROLS: DEALS

14.1.21 DAIKIN INDUSTRIES, LTD.

TABLE 208 DAIKIN INDUSTRIES, LTD.: COMPANY OVERVIEW

FIGURE 47 DAIKIN INDUSTRIES, LTD.: COMPANY SNAPSHOT

TABLE 209 DAIKIN INDUSTRIES, LTD.: PRODUCTS/SOLUTIONS/SERVICES  
OFFERED

TABLE 210 DAIKIN INDUSTRIES, LTD.: OTHERS

14.1.22 MITSUBISHI ELECTRIC CORPORATION

TABLE 211 MITSUBISHI ELECTRIC CORPORATION: COMPANY OVERVIEW

FIGURE 48 MITSUBISHI ELECTRIC CORPORATION: COMPANY SNAPSHOT

TABLE 212 MITSUBISHI ELECTRIC CORPORATION:

PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 213 MITSUBISHI ELECTRIC CORPORATION: DEALS

14.1.23 HITACHI ENERGY LTD.

TABLE 214 HITACHI ENERGY LTD.: COMPANY OVERVIEW

FIGURE 49 HITACHI ENERGY LTD.: COMPANY SNAPSHOT

TABLE 215 HITACHI ENERGY LTD.: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 216 HITACHI ENERGY LTD.: DEALS

## 14.2 OTHER PLAYERS

14.2.1 DELTA POWER SOLUTIONS

TABLE 217 DELTA POWER SOLUTIONS: COMPANY OVERVIEW

TABLE 218 DELTA POWER SOLUTIONS: PRODUCTS/SOLUTIONS/SERVICES  
OFFERED

14.2.2 LIQUIDSTACK

TABLE 219 LIQUIDSTACK: COMPANY OVERVIEW

TABLE 220 LIQUIDSTACK: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 221 LIQUIDSTACK: DEALS

14.2.3 LIQUIDCOOL SOLUTIONS INC.

TABLE 222 LIQUIDCOOL SOLUTIONS INC.: COMPANY OVERVIEW

TABLE 223 LIQUIDCOOL SOLUTIONS, INC.: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 224 LIQUIDCOOL SOLUTIONS, INC.: DEALS

14.2.4 ENGINEERED FLUIDS

TABLE 225 ENGINEERED FLUIDS: COMPANY OVERVIEW

TABLE 226 ENGINEERED FLUIDS: PRODUCTS/SOLUTIONS/SERVICES OFFERED

14.2.5 TMGCORE, INC.

TABLE 227 TMGCORE, INC.: COMPANY OVERVIEW

TABLE 228 TMGCORE, INC.: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 229 TMGCORE, INC.: DEALS

14.2.6 CHILLDYNE, INC.

TABLE 230 CHILLDYNE, INC.: COMPANY OVERVIEW

TABLE 231 CHILLDYNE, INC.: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 232 CHILLDYNE, INC.: DEALS

14.2.7 COOLIT SYSTEMS

TABLE 233 COOLIT SYSTEMS: COMPANY OVERVIEW

TABLE 234 COOLIT SYSTEMS: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 235 COOLIT SYSTEMS: PRODUCT LAUNCHES

TABLE 236 COOLIT SYSTEMS: DEALS

14.2.8 BOYD

TABLE 237 BOYD: COMPANY OVERVIEW

TABLE 238 BOYD: PRODUCTS/SOLUTIONS/SERVICES OFFERED

TABLE 239 BOYD: DEALS

TABLE 240 BOYD: OTHERS

14.2.9 CONDAIR GROUP

TABLE 241 CONDAIR GROUP: COMPANY OVERVIEW

TABLE 242 CONDAIR GROUP: PRODUCTS/SOLUTIONS/SERVICES OFFERED

14.2.10 ASPEN SYSTEMS INC.

TABLE 243 ASPEN SYSTEMS INC.: COMPANY OVERVIEW

TABLE 244 ASPEN SYSTEMS INC.: PRODUCTS/SOLUTIONS/SERVICES OFFERED

\*Details on Business Overview, Products Offered, Recent Developments, MnM View, Right to win, Strategic choices made, Weaknesses and competitive threats might not be captured in case of unlisted companies.

## 15 ADJACENT AND RELATED MARKETS

## 15.1 INTRODUCTION

## 15.2 LIMITATIONS

## 15.3 DATA CENTER COOLING INTERCONNECTED MARKETS

### 15.3.1 DATA CENTER LIQUID COOLING MARKET

#### 15.3.1.1 Market definition

#### 15.3.1.2 Market overview

#### 15.3.1.3 Data center liquid cooling market, by type of cooling

## 15.4 COLD PLATE LIQUID COOLING

### 15.4.1 HIGH-DENSITY DATA CENTER INSTALLATION TO DRIVE DEMAND

## 15.5 IMMERSED LIQUID COOLING

### 15.5.1 LOW CARBON FOOTPRINT THROUGH IMMERSION LIQUID COOLING TO DRIVE SEGMENT

TABLE 245 DATA CENTER LIQUID COOLING MARKET, BY TYPE OF COOLING, 2017–2022 (USD MILLION)

TABLE 246 DATA CENTER LIQUID COOLING MARKET, BY TYPE OF COOLING, 2023–2028 (USD MILLION)

## 16 APPENDIX

### 16.1 DISCUSSION GUIDE

### 16.2 KNOWLEDGESTORE: MARKETSANDMARKETS' SUBSCRIPTION PORTAL

### 16.3 CUSTOMIZATION OPTIONS

### 16.4 RELATED REPORTS

### 16.5 AUTHOR DETAILS

## About

As the need for data processing power and information storage proliferates, enterprises witness a rising need to increase the capacity of the existing data centers as well as to deploy new ones. Data center capacity increment requires high energy consumption and generates excessive heat, creating a need for efficient data center cooling technologies. As a result, enterprises are compelled to adopt new and innovative data center cooling solutions. Cooling solutions account for more than 40% of the total power consumption used in data centers.

Thus, enterprises have started focusing on bringing efficient power saving equipment in data centers. With continuously escalating need for storing information and data, global data center cooling market is expected to grow at a healthy rate in the coming years.

Some of the key vendors occupying the market are Emerson Network Powers. APC Corp by Schneider Electric. Rittal. Eaton. Hitachi, HP, IBM, Fujitsu, Mitsubishi, and Stulz. The data center cooling research report discusses the strategies and insights of the key vendors in the industry. The research report provides in-depth study of driving forces and challenges for the data center cooling market. The report also analyzes global adoption trends and future growth potentials across different geographical regions. MarketsandMarkets has segmented the global data center cooling market by cooling solutions, cooling services, industry verticals, user types, and geographical regions. The report also consists of MarketsandMarkets views of the key players and analyst insights on various developments that are taking place in the data center cooling market.

Data center cooling, a critical element in the efficient functioning of a data center, signifies the cooling systems and technologies for enhancing its performance. Efficient cooling technologies highly reduce the operational cost of a data center. Because of traction in data center deployment rate, requirement for data center cooling is continuously increasing, creating opportunity for various data center equipment and service companies to take a dive in this pool. For achieving efficient and cost-effective operation of a data center, it is extremely important to reduce the cost associated with it.

In the present scenario, organizations are moving from maintaining manual records to maintaining electronic records. This transition of data management from manual to electronic requires efficient data storage. Also, government has started imposing various environmental regulations on the data center operations, creating demand for

eco-friendly solutions. It is estimated that cooling contributes to 40% of total data center power consumption; thus, it is strictly required to reduce the cost associated with power consumption involved in cooling of data centers. So, with the increasing need of operational cost reduction across various industry verticals, data center managers are forced to implement cost-effective and efficient data center cooling technologies, as with efficient cooling technologies, energy consumption can be reduced by 70%.

## I would like to order

Product name: Data Center Cooling Market by Solution (Air Conditioning, Chilling Unit, Cooling Tower, Economizer System, Liquid Cooling System, Control System), Service, Type of Cooling, Data Center Type, Industry, & Geography - Global Forecast to 2030

Product link: <https://marketpublishers.com/r/D6594C87555EN.html>

Price: US\$ 4,950.00 (Single User License / Electronic Delivery)

If you want to order Corporate License or Hard Copy, please, contact our Customer Service:

[info@marketpublishers.com](mailto:info@marketpublishers.com)

## Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/D6594C87555EN.html>

To pay by Wire Transfer, please, fill in your contact details in the form below:

First name:  
Last name:  
Email:  
Company:  
Address:  
City:  
Zip code:  
Country:  
Tel:  
Fax:  
Your message:

**\*\*All fields are required**

Customer signature \_\_\_\_\_

Please, note that by ordering from marketpublishers.com you are agreeing to our Terms & Conditions at <https://marketpublishers.com/docs/terms.html>

To place an order via fax simply print this form, fill in the information below

and fax the completed form to +44 20 7900 3970