

# Global (North America, Europe, Asia-Pacific, South America, Middle East and Africa) Pulse Tube Cryocoolers Market 2018, Forecast to 2023

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## Abstracts

The pulse tube refrigerator (PTR) or pulse tube cryocooler is a developing technology that emerged largely in the early 1980s with a series of other innovations in the broader field of thermoacoustics. In contrast with other cryocoolers (e.g. Stirling cryocooler and GM-refrigerators), this cryocooler can be made without moving parts in the low temperature part of the device, making the cooler suitable for a wide variety of applications.

Pulse tube cryocoolers are used in industrial applications such as semiconductor fabrication and in military applications such as for the cooling of infrared sensors. Pulse tubes are also being developed for cooling of astronomical detectors where liquid cryogenics are typically used, such as the Atacama Cosmology Telescope or the Qubic experiment (an interferometer for cosmology studies). PTRs are used as precoolers of dilution refrigerators. Pulse tubes will be particularly useful in space-based telescopes where it is not possible to replenish the cryogenics as they are depleted. It has also been suggested that pulse tubes could be used to liquefy oxygen on Mars.

### Scope of the Report:

This report focuses on the Pulse Tube Cryocoolers in global market, especially in North America, Europe and Asia-Pacific, South America, Middle East and Africa. This report categorizes the market based on manufacturers, regions, type and application.

The pulse tube cryocooler market based on type is segmented into single-stage and two-stage pulse tube cryocoolers. The market for two-stage pulse tube cryocoolers is expected to grow at the highest rate between 2016 and 2022 in the global pulse tube cryocooler market. The major factors contributing to the growth of this market include growing adoption of these pulse tube cryocoolers in a variety of applications such as

space, military, electronic, and commercial among others.

The key pulse tube cryocooler system providers from North America, Europe and Japan led the global pulse tube cryocooler market in 2016. These companies have been providing their offerings worldwide and are focusing on expanding their positions in the key markets in APAC and Row. Some of the major companies have adopted strategies such as mergers & acquisitions, partnerships, agreements, collaborations, new product launches, capacity expansions, and joint ventures to expand their global presence and increase their market shares.

The global pulse tube cryocooler market in the Americas held the largest share in 2016; however, the market in APAC is expected to exhibit the highest growth rate during the forecast period. The major factors contributing to the growth of this market include the increasing adoption of wide range of pulse tube cryocoolers in semiconductor fabrication, military, and space applications among others.

The worldwide market for Pulse Tube Cryocoolers is expected to grow at a CAGR of roughly 5.1% over the next five years, will reach 320 million US\$ in 2023, from 240 million US\$ in 2017, according to a new GIR (Global Info Research) study.

Market Segment by Manufacturers, this report covers

Sumitomo Heavy Industries

Chart Industries, Inc.

Cryomech, Inc

Thales cryogenics

Cobham

AIM

Lihantech

Market Segment by Regions, regional analysis covers

North America (United States, Canada and Mexico)

Europe (Germany, France, UK, Russia and Italy)

Asia-Pacific (China, Japan, Korea, India and Southeast Asia)

South America (Brazil, Argentina, Colombia etc.)

Middle East and Africa (Saudi Arabia, UAE, Egypt, Nigeria and South Africa)

Market Segment by Type, covers

Single-Stage Pulse

Two-Stage Pulse

Market Segment by Applications, can be divided into

Military

Electronics

Energy

Space

Research and Development

There are 15 Chapters to deeply display the global Pulse Tube Cryocoolers market.

Chapter 1, to describe Pulse Tube Cryocoolers Introduction, product scope, market overview, market opportunities, market risk, market driving force;

Chapter 2, to analyze the top manufacturers of Pulse Tube Cryocoolers, with sales, revenue, and price of Pulse Tube Cryocoolers, in 2016 and 2017;

Chapter 3, to display the competitive situation among the top manufacturers, with sales, revenue and market share in 2016 and 2017;

Chapter 4, to show the global market by regions, with sales, revenue and market share of Pulse Tube Cryocoolers, for each region, from 2013 to 2018;

Chapter 5, 6, 7, 8 and 9, to analyze the market by countries, by type, by application and

by manufacturers, with sales, revenue and market share by key countries in these regions;

Chapter 10 and 11, to show the market by type and application, with sales market share and growth rate by type, application, from 2013 to 2018;

Chapter 12, Pulse Tube Cryocoolers market forecast, by regions, type and application, with sales and revenue, from 2018 to 2023;

Chapter 13, 14 and 15, to describe Pulse Tube Cryocoolers sales channel, distributors, traders, dealers, Research Findings and Conclusion, appendix and data source

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