

# Global Lead-free Perovskite Solar Cell Market 2023 by Manufacturers, Regions, Type and Application, Forecast to 2029

<https://marketpublishers.com/r/G58FAC9F0A02EN.html>

Date: June 2023

Pages: 115

Price: US\$ 3,480.00 (Single User License)

ID: G58FAC9F0A02EN

## Abstracts

According to our (Global Info Research) latest study, the global Lead-free Perovskite Solar Cell market size was valued at USD million in 2022 and is forecast to a readjusted size of USD million by 2029 with a CAGR of % during review period. The influence of COVID-19 and the Russia-Ukraine War were considered while estimating market sizes.

Lead-free Perovskite Solar Cell, refers to a perovskite solar cell, a method that allows the synthesis of a cap layer without the use of lead. The cell, capped with a zinc-based compound, is said to have a conversion efficiency of 24.1 percent.

This report is a detailed and comprehensive analysis for global Lead-free Perovskite Solar Cell market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Type and by Application. As the market is constantly changing, this report explores the competition, supply and demand trends, as well as key factors that contribute to its changing demands across many markets. Company profiles and product examples of selected competitors, along with market share estimates of some of the selected leaders for the year 2023, are provided.

### Key Features:

Global Lead-free Perovskite Solar Cell market size and forecasts, in consumption value (\$ Million), sales quantity (K Units), and average selling prices (US\$/Unit), 2018-2029

Global Lead-free Perovskite Solar Cell market size and forecasts by region and country, in consumption value (\$ Million), sales quantity (K Units), and average selling prices (US\$/Unit), 2018-2029

Global Lead-free Perovskite Solar Cell market size and forecasts, by Type and by Application, in consumption value (\$ Million), sales quantity (K Units), and average selling prices (US\$/Unit), 2018-2029

Global Lead-free Perovskite Solar Cell market shares of main players, shipments in revenue (\$ Million), sales quantity (K Units), and ASP (US\$/Unit), 2018-2023

The Primary Objectives in This Report Are:

To determine the size of the total market opportunity of global and key countries

To assess the growth potential for Lead-free Perovskite Solar Cell

To forecast future growth in each product and end-use market

To assess competitive factors affecting the marketplace

This report profiles key players in the global Lead-free Perovskite Solar Cell market based on the following parameters - company overview, production, value, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Panasonic, Oxford PV, Ricoh, Fujikura and 3GSolar, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals, COVID-19 and Russia-Ukraine War Influence.

## Market Segmentation

Lead-free Perovskite Solar Cell market is split by Type and by Application. For the period 2018-2029, the growth among segments provides accurate calculations and forecasts for consumption value by Type, and by Application in terms of volume and value. This analysis can help you expand your business by targeting qualified niche markets.

## Market segment by Type

### Formal Structured Cells

Trans Structured Cells

### Market segment by Application

Consumer Electronics

IOT

Smart Workplace

Other

### Major players covered

Panasonic

Oxford PV

Ricoh

Fujikura

3GSolar

Greatcell Energy (Dyesol)

Exeger (Fortum)

Sharp Corporation

Pecell

Solaronix

G24 Power

Kaneka

Shenzhen Topraysolar Co., Ltd.

Dazheng (Jiangsu) Micro Nano Technology Co., Ltd.

Guangdong Mailuo Energy Technology Co., Ltd.

Market segment by region, regional analysis covers

North America (United States, Canada and Mexico)

Europe (Germany, France, United Kingdom, Russia, Italy, and Rest of Europe)

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

South America (Brazil, Argentina, Colombia, and Rest of South America)

Middle East & Africa (Saudi Arabia, UAE, Egypt, South Africa, and Rest of Middle East & Africa)

The content of the study subjects, includes a total of 15 chapters:

Chapter 1, to describe Lead-free Perovskite Solar Cell product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of Lead-free Perovskite Solar Cell, with price, sales, revenue and global market share of Lead-free Perovskite Solar Cell from 2018 to 2023.

Chapter 3, the Lead-free Perovskite Solar Cell competitive situation, sales quantity, revenue and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the Lead-free Perovskite Solar Cell breakdown data are shown at the regional level, to show the sales quantity, consumption value and growth by regions, from 2018 to 2029.

Chapter 5 and 6, to segment the sales by Type and application, with sales market share and growth rate by type, application, from 2018 to 2029.

Chapter 7, 8, 9, 10 and 11, to break the sales data at the country level, with sales quantity, consumption value and market share for key countries in the world, from 2017 to 2022. and Lead-free Perovskite Solar Cell market forecast, by regions, type and application, with sales and revenue, from 2024 to 2029.

Chapter 12, market dynamics, drivers, restraints, trends, Porters Five Forces analysis, and Influence of COVID-19 and Russia-Ukraine War.

Chapter 13, the key raw materials and key suppliers, and industry chain of Lead-free Perovskite Solar Cell.

Chapter 14 and 15, to describe Lead-free Perovskite Solar Cell sales channel, distributors, customers, research findings and conclusion.

## Contents

### 1 MARKET OVERVIEW

- 1.1 Product Overview and Scope of Lead-free Perovskite Solar Cell
- 1.2 Market Estimation Caveats and Base Year
- 1.3 Market Analysis by Type
  - 1.3.1 Overview: Global Lead-free Perovskite Solar Cell Consumption Value by Type: 2018 Versus 2022 Versus 2029
  - 1.3.2 Formal Structured Cells
  - 1.3.3 Trans Structured Cells
- 1.4 Market Analysis by Application
  - 1.4.1 Overview: Global Lead-free Perovskite Solar Cell Consumption Value by Application: 2018 Versus 2022 Versus 2029
  - 1.4.2 Consumer Electronics
  - 1.4.3 IOT
  - 1.4.4 Smart Workplace
  - 1.4.5 Other
- 1.5 Global Lead-free Perovskite Solar Cell Market Size & Forecast
  - 1.5.1 Global Lead-free Perovskite Solar Cell Consumption Value (2018 & 2022 & 2029)
  - 1.5.2 Global Lead-free Perovskite Solar Cell Sales Quantity (2018-2029)
  - 1.5.3 Global Lead-free Perovskite Solar Cell Average Price (2018-2029)

### 2 MANUFACTURERS PROFILES

- 2.1 Panasonic
  - 2.1.1 Panasonic Details
  - 2.1.2 Panasonic Major Business
  - 2.1.3 Panasonic Lead-free Perovskite Solar Cell Product and Services
  - 2.1.4 Panasonic Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.1.5 Panasonic Recent Developments/Updates
- 2.2 Oxford PV
  - 2.2.1 Oxford PV Details
  - 2.2.2 Oxford PV Major Business
  - 2.2.3 Oxford PV Lead-free Perovskite Solar Cell Product and Services
  - 2.2.4 Oxford PV Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)

- 2.2.5 Oxford PV Recent Developments/Updates
- 2.3 Ricoh
  - 2.3.1 Ricoh Details
  - 2.3.2 Ricoh Major Business
  - 2.3.3 Ricoh Lead-free Perovskite Solar Cell Product and Services
  - 2.3.4 Ricoh Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.3.5 Ricoh Recent Developments/Updates
- 2.4 Fujikura
  - 2.4.1 Fujikura Details
  - 2.4.2 Fujikura Major Business
  - 2.4.3 Fujikura Lead-free Perovskite Solar Cell Product and Services
  - 2.4.4 Fujikura Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.4.5 Fujikura Recent Developments/Updates
- 2.5 3GSolar
  - 2.5.1 3GSolar Details
  - 2.5.2 3GSolar Major Business
  - 2.5.3 3GSolar Lead-free Perovskite Solar Cell Product and Services
  - 2.5.4 3GSolar Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.5.5 3GSolar Recent Developments/Updates
- 2.6 Greatcell Energy (Dyesol)
  - 2.6.1 Greatcell Energy (Dyesol) Details
  - 2.6.2 Greatcell Energy (Dyesol) Major Business
  - 2.6.3 Greatcell Energy (Dyesol) Lead-free Perovskite Solar Cell Product and Services
  - 2.6.4 Greatcell Energy (Dyesol) Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.6.5 Greatcell Energy (Dyesol) Recent Developments/Updates
- 2.7 Exeger (Fortum)
  - 2.7.1 Exeger (Fortum) Details
  - 2.7.2 Exeger (Fortum) Major Business
  - 2.7.3 Exeger (Fortum) Lead-free Perovskite Solar Cell Product and Services
  - 2.7.4 Exeger (Fortum) Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.7.5 Exeger (Fortum) Recent Developments/Updates
- 2.8 Sharp Corporation
  - 2.8.1 Sharp Corporation Details
  - 2.8.2 Sharp Corporation Major Business

- 2.8.3 Sharp Corporation Lead-free Perovskite Solar Cell Product and Services
- 2.8.4 Sharp Corporation Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
- 2.8.5 Sharp Corporation Recent Developments/Updates
- 2.9 Peccell
  - 2.9.1 Peccell Details
  - 2.9.2 Peccell Major Business
  - 2.9.3 Peccell Lead-free Perovskite Solar Cell Product and Services
  - 2.9.4 Peccell Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.9.5 Peccell Recent Developments/Updates
- 2.10 Solaronix
  - 2.10.1 Solaronix Details
  - 2.10.2 Solaronix Major Business
  - 2.10.3 Solaronix Lead-free Perovskite Solar Cell Product and Services
  - 2.10.4 Solaronix Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.10.5 Solaronix Recent Developments/Updates
- 2.11 G24 Power
  - 2.11.1 G24 Power Details
  - 2.11.2 G24 Power Major Business
  - 2.11.3 G24 Power Lead-free Perovskite Solar Cell Product and Services
  - 2.11.4 G24 Power Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.11.5 G24 Power Recent Developments/Updates
- 2.12 Kaneka
  - 2.12.1 Kaneka Details
  - 2.12.2 Kaneka Major Business
  - 2.12.3 Kaneka Lead-free Perovskite Solar Cell Product and Services
  - 2.12.4 Kaneka Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.12.5 Kaneka Recent Developments/Updates
- 2.13 Shenzhen Topraysolar Co., Ltd.
  - 2.13.1 Shenzhen Topraysolar Co., Ltd. Details
  - 2.13.2 Shenzhen Topraysolar Co., Ltd. Major Business
  - 2.13.3 Shenzhen Topraysolar Co., Ltd. Lead-free Perovskite Solar Cell Product and Services
  - 2.13.4 Shenzhen Topraysolar Co., Ltd. Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)



- 2.13.5 Shenzhen Topraysolar Co., Ltd. Recent Developments/Updates
- 2.14 Dazheng (Jiangsu) Micro Nano Technology Co., Ltd.
  - 2.14.1 Dazheng (Jiangsu) Micro Nano Technology Co., Ltd. Details
  - 2.14.2 Dazheng (Jiangsu) Micro Nano Technology Co., Ltd. Major Business
  - 2.14.3 Dazheng (Jiangsu) Micro Nano Technology Co., Ltd. Lead-free Perovskite Solar Cell Product and Services
  - 2.14.4 Dazheng (Jiangsu) Micro Nano Technology Co., Ltd. Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.14.5 Dazheng (Jiangsu) Micro Nano Technology Co., Ltd. Recent Developments/Updates
- 2.15 Guangdong Mailuo Energy Technology Co., Ltd.
  - 2.15.1 Guangdong Mailuo Energy Technology Co., Ltd. Details
  - 2.15.2 Guangdong Mailuo Energy Technology Co., Ltd. Major Business
  - 2.15.3 Guangdong Mailuo Energy Technology Co., Ltd. Lead-free Perovskite Solar Cell Product and Services
  - 2.15.4 Guangdong Mailuo Energy Technology Co., Ltd. Lead-free Perovskite Solar Cell Sales Quantity, Average Price, Revenue, Gross Margin and Market Share (2018-2023)
  - 2.15.5 Guangdong Mailuo Energy Technology Co., Ltd. Recent Developments/Updates

### **3 COMPETITIVE ENVIRONMENT: LEAD-FREE PEROVSKITE SOLAR CELL BY MANUFACTURER**

- 3.1 Global Lead-free Perovskite Solar Cell Sales Quantity by Manufacturer (2018-2023)
- 3.2 Global Lead-free Perovskite Solar Cell Revenue by Manufacturer (2018-2023)
- 3.3 Global Lead-free Perovskite Solar Cell Average Price by Manufacturer (2018-2023)
- 3.4 Market Share Analysis (2022)
  - 3.4.1 Producer Shipments of Lead-free Perovskite Solar Cell by Manufacturer Revenue (\$MM) and Market Share (%): 2022
  - 3.4.2 Top 3 Lead-free Perovskite Solar Cell Manufacturer Market Share in 2022
  - 3.4.2 Top 6 Lead-free Perovskite Solar Cell Manufacturer Market Share in 2022
- 3.5 Lead-free Perovskite Solar Cell Market: Overall Company Footprint Analysis
  - 3.5.1 Lead-free Perovskite Solar Cell Market: Region Footprint
  - 3.5.2 Lead-free Perovskite Solar Cell Market: Company Product Type Footprint
  - 3.5.3 Lead-free Perovskite Solar Cell Market: Company Product Application Footprint
- 3.6 New Market Entrants and Barriers to Market Entry
- 3.7 Mergers, Acquisition, Agreements, and Collaborations

## **4 CONSUMPTION ANALYSIS BY REGION**

### 4.1 Global Lead-free Perovskite Solar Cell Market Size by Region

4.1.1 Global Lead-free Perovskite Solar Cell Sales Quantity by Region (2018-2029)

4.1.2 Global Lead-free Perovskite Solar Cell Consumption Value by Region (2018-2029)

4.1.3 Global Lead-free Perovskite Solar Cell Average Price by Region (2018-2029)

4.2 North America Lead-free Perovskite Solar Cell Consumption Value (2018-2029)

4.3 Europe Lead-free Perovskite Solar Cell Consumption Value (2018-2029)

4.4 Asia-Pacific Lead-free Perovskite Solar Cell Consumption Value (2018-2029)

4.5 South America Lead-free Perovskite Solar Cell Consumption Value (2018-2029)

4.6 Middle East and Africa Lead-free Perovskite Solar Cell Consumption Value (2018-2029)

## **5 MARKET SEGMENT BY TYPE**

5.1 Global Lead-free Perovskite Solar Cell Sales Quantity by Type (2018-2029)

5.2 Global Lead-free Perovskite Solar Cell Consumption Value by Type (2018-2029)

5.3 Global Lead-free Perovskite Solar Cell Average Price by Type (2018-2029)

## **6 MARKET SEGMENT BY APPLICATION**

6.1 Global Lead-free Perovskite Solar Cell Sales Quantity by Application (2018-2029)

6.2 Global Lead-free Perovskite Solar Cell Consumption Value by Application (2018-2029)

6.3 Global Lead-free Perovskite Solar Cell Average Price by Application (2018-2029)

## **7 NORTH AMERICA**

7.1 North America Lead-free Perovskite Solar Cell Sales Quantity by Type (2018-2029)

7.2 North America Lead-free Perovskite Solar Cell Sales Quantity by Application (2018-2029)

7.3 North America Lead-free Perovskite Solar Cell Market Size by Country

7.3.1 North America Lead-free Perovskite Solar Cell Sales Quantity by Country (2018-2029)

7.3.2 North America Lead-free Perovskite Solar Cell Consumption Value by Country (2018-2029)

7.3.3 United States Market Size and Forecast (2018-2029)

7.3.4 Canada Market Size and Forecast (2018-2029)

7.3.5 Mexico Market Size and Forecast (2018-2029)

## **8 EUROPE**

8.1 Europe Lead-free Perovskite Solar Cell Sales Quantity by Type (2018-2029)

8.2 Europe Lead-free Perovskite Solar Cell Sales Quantity by Application (2018-2029)

8.3 Europe Lead-free Perovskite Solar Cell Market Size by Country

8.3.1 Europe Lead-free Perovskite Solar Cell Sales Quantity by Country (2018-2029)

8.3.2 Europe Lead-free Perovskite Solar Cell Consumption Value by Country  
(2018-2029)

8.3.3 Germany Market Size and Forecast (2018-2029)

8.3.4 France Market Size and Forecast (2018-2029)

8.3.5 United Kingdom Market Size and Forecast (2018-2029)

8.3.6 Russia Market Size and Forecast (2018-2029)

8.3.7 Italy Market Size and Forecast (2018-2029)

## **9 ASIA-PACIFIC**

9.1 Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity by Type (2018-2029)

9.2 Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity by Application  
(2018-2029)

9.3 Asia-Pacific Lead-free Perovskite Solar Cell Market Size by Region

9.3.1 Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity by Region  
(2018-2029)

9.3.2 Asia-Pacific Lead-free Perovskite Solar Cell Consumption Value by Region  
(2018-2029)

9.3.3 China Market Size and Forecast (2018-2029)

9.3.4 Japan Market Size and Forecast (2018-2029)

9.3.5 Korea Market Size and Forecast (2018-2029)

9.3.6 India Market Size and Forecast (2018-2029)

9.3.7 Southeast Asia Market Size and Forecast (2018-2029)

9.3.8 Australia Market Size and Forecast (2018-2029)

## **10 SOUTH AMERICA**

10.1 South America Lead-free Perovskite Solar Cell Sales Quantity by Type  
(2018-2029)

10.2 South America Lead-free Perovskite Solar Cell Sales Quantity by Application

(2018-2029)

10.3 South America Lead-free Perovskite Solar Cell Market Size by Country

10.3.1 South America Lead-free Perovskite Solar Cell Sales Quantity by Country

(2018-2029)

10.3.2 South America Lead-free Perovskite Solar Cell Consumption Value by Country

(2018-2029)

10.3.3 Brazil Market Size and Forecast (2018-2029)

10.3.4 Argentina Market Size and Forecast (2018-2029)

## **11 MIDDLE EAST & AFRICA**

11.1 Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity by Type

(2018-2029)

11.2 Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity by Application

(2018-2029)

11.3 Middle East & Africa Lead-free Perovskite Solar Cell Market Size by Country

11.3.1 Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity by Country

(2018-2029)

11.3.2 Middle East & Africa Lead-free Perovskite Solar Cell Consumption Value by Country (2018-2029)

11.3.3 Turkey Market Size and Forecast (2018-2029)

11.3.4 Egypt Market Size and Forecast (2018-2029)

11.3.5 Saudi Arabia Market Size and Forecast (2018-2029)

11.3.6 South Africa Market Size and Forecast (2018-2029)

## **12 MARKET DYNAMICS**

12.1 Lead-free Perovskite Solar Cell Market Drivers

12.2 Lead-free Perovskite Solar Cell Market Restraints

12.3 Lead-free Perovskite Solar Cell Trends Analysis

12.4 Porters Five Forces Analysis

12.4.1 Threat of New Entrants

12.4.2 Bargaining Power of Suppliers

12.4.3 Bargaining Power of Buyers

12.4.4 Threat of Substitutes

12.4.5 Competitive Rivalry

12.5 Influence of COVID-19 and Russia-Ukraine War

12.5.1 Influence of COVID-19

12.5.2 Influence of Russia-Ukraine War

## **13 RAW MATERIAL AND INDUSTRY CHAIN**

13.1 Raw Material of Lead-free Perovskite Solar Cell and Key Manufacturers

13.2 Manufacturing Costs Percentage of Lead-free Perovskite Solar Cell

13.3 Lead-free Perovskite Solar Cell Production Process

13.4 Lead-free Perovskite Solar Cell Industrial Chain

## **14 SHIPMENTS BY DISTRIBUTION CHANNEL**

14.1 Sales Channel

14.1.1 Direct to End-User

14.1.2 Distributors

14.2 Lead-free Perovskite Solar Cell Typical Distributors

14.3 Lead-free Perovskite Solar Cell Typical Customers

## **15 RESEARCH FINDINGS AND CONCLUSION**

## **16 APPENDIX**

16.1 Methodology

16.2 Research Process and Data Source

16.3 Disclaimer

## List Of Tables

### LIST OF TABLES

Table 1. Global Lead-free Perovskite Solar Cell Consumption Value by Type, (USD Million), 2018 & 2022 & 2029

Table 2. Global Lead-free Perovskite Solar Cell Consumption Value by Application, (USD Million), 2018 & 2022 & 2029

Table 3. Panasonic Basic Information, Manufacturing Base and Competitors

Table 4. Panasonic Major Business

Table 5. Panasonic Lead-free Perovskite Solar Cell Product and Services

Table 6. Panasonic Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)

Table 7. Panasonic Recent Developments/Updates

Table 8. Oxford PV Basic Information, Manufacturing Base and Competitors

Table 9. Oxford PV Major Business

Table 10. Oxford PV Lead-free Perovskite Solar Cell Product and Services

Table 11. Oxford PV Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)

Table 12. Oxford PV Recent Developments/Updates

Table 13. Ricoh Basic Information, Manufacturing Base and Competitors

Table 14. Ricoh Major Business

Table 15. Ricoh Lead-free Perovskite Solar Cell Product and Services

Table 16. Ricoh Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)

Table 17. Ricoh Recent Developments/Updates

Table 18. Fujikura Basic Information, Manufacturing Base and Competitors

Table 19. Fujikura Major Business

Table 20. Fujikura Lead-free Perovskite Solar Cell Product and Services

Table 21. Fujikura Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)

Table 22. Fujikura Recent Developments/Updates

Table 23. 3GSolar Basic Information, Manufacturing Base and Competitors

Table 24. 3GSolar Major Business

Table 25. 3GSolar Lead-free Perovskite Solar Cell Product and Services

Table 26. 3GSolar Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)

Table 27. 3GSolar Recent Developments/Updates

Table 28. Greatcell Energy (Dyesol) Basic Information, Manufacturing Base and



## Competitors

Table 29. Greatcell Energy (Dyesol) Major Business

Table 30. Greatcell Energy (Dyesol) Lead-free Perovskite Solar Cell Product and Services

Table 31. Greatcell Energy (Dyesol) Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)

Table 32. Greatcell Energy (Dyesol) Recent Developments/Updates

Table 33. Exeger (Fortum) Basic Information, Manufacturing Base and Competitors

Table 34. Exeger (Fortum) Major Business

Table 35. Exeger (Fortum) Lead-free Perovskite Solar Cell Product and Services

Table 36. Exeger (Fortum) Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)

Table 37. Exeger (Fortum) Recent Developments/Updates

Table 38. Sharp Corporation Basic Information, Manufacturing Base and Competitors

Table 39. Sharp Corporation Major Business

Table 40. Sharp Corporation Lead-free Perovskite Solar Cell Product and Services

Table 41. Sharp Corporation Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)

Table 42. Sharp Corporation Recent Developments/Updates

Table 43. Peccell Basic Information, Manufacturing Base and Competitors

Table 44. Peccell Major Business

Table 45. Peccell Lead-free Perovskite Solar Cell Product and Services

Table 46. Peccell Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)

Table 47. Peccell Recent Developments/Updates

Table 48. Solaronix Basic Information, Manufacturing Base and Competitors

Table 49. Solaronix Major Business

Table 50. Solaronix Lead-free Perovskite Solar Cell Product and Services

Table 51. Solaronix Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)

Table 52. Solaronix Recent Developments/Updates

Table 53. G24 Power Basic Information, Manufacturing Base and Competitors

Table 54. G24 Power Major Business

Table 55. G24 Power Lead-free Perovskite Solar Cell Product and Services

Table 56. G24 Power Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)

- Table 57. G24 Power Recent Developments/Updates
- Table 58. Kaneka Basic Information, Manufacturing Base and Competitors
- Table 59. Kaneka Major Business
- Table 60. Kaneka Lead-free Perovskite Solar Cell Product and Services
- Table 61. Kaneka Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)
- Table 62. Kaneka Recent Developments/Updates
- Table 63. Shenzhen Topraysolar Co., Ltd. Basic Information, Manufacturing Base and Competitors
- Table 64. Shenzhen Topraysolar Co., Ltd. Major Business
- Table 65. Shenzhen Topraysolar Co., Ltd. Lead-free Perovskite Solar Cell Product and Services
- Table 66. Shenzhen Topraysolar Co., Ltd. Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)
- Table 67. Shenzhen Topraysolar Co., Ltd. Recent Developments/Updates
- Table 68. Dazheng (Jiangsu) Micro Nano Technology Co., Ltd. Basic Information, Manufacturing Base and Competitors
- Table 69. Dazheng (Jiangsu) Micro Nano Technology Co., Ltd. Major Business
- Table 70. Dazheng (Jiangsu) Micro Nano Technology Co., Ltd. Lead-free Perovskite Solar Cell Product and Services
- Table 71. Dazheng (Jiangsu) Micro Nano Technology Co., Ltd. Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)
- Table 72. Dazheng (Jiangsu) Micro Nano Technology Co., Ltd. Recent Developments/Updates
- Table 73. Guangdong Mailuo Energy Technology Co., Ltd. Basic Information, Manufacturing Base and Competitors
- Table 74. Guangdong Mailuo Energy Technology Co., Ltd. Major Business
- Table 75. Guangdong Mailuo Energy Technology Co., Ltd. Lead-free Perovskite Solar Cell Product and Services
- Table 76. Guangdong Mailuo Energy Technology Co., Ltd. Lead-free Perovskite Solar Cell Sales Quantity (K Units), Average Price (US\$/Unit), Revenue (USD Million), Gross Margin and Market Share (2018-2023)
- Table 77. Guangdong Mailuo Energy Technology Co., Ltd. Recent Developments/Updates
- Table 78. Global Lead-free Perovskite Solar Cell Sales Quantity by Manufacturer (2018-2023) & (K Units)
- Table 79. Global Lead-free Perovskite Solar Cell Revenue by Manufacturer (2018-2023)



& (USD Million)

Table 80. Global Lead-free Perovskite Solar Cell Average Price by Manufacturer (2018-2023) & (US\$/Unit)

Table 81. Market Position of Manufacturers in Lead-free Perovskite Solar Cell, (Tier 1, Tier 2, and Tier 3), Based on Consumption Value in 2022

Table 82. Head Office and Lead-free Perovskite Solar Cell Production Site of Key Manufacturer

Table 83. Lead-free Perovskite Solar Cell Market: Company Product Type Footprint

Table 84. Lead-free Perovskite Solar Cell Market: Company Product Application Footprint

Table 85. Lead-free Perovskite Solar Cell New Market Entrants and Barriers to Market Entry

Table 86. Lead-free Perovskite Solar Cell Mergers, Acquisition, Agreements, and Collaborations

Table 87. Global Lead-free Perovskite Solar Cell Sales Quantity by Region (2018-2023) & (K Units)

Table 88. Global Lead-free Perovskite Solar Cell Sales Quantity by Region (2024-2029) & (K Units)

Table 89. Global Lead-free Perovskite Solar Cell Consumption Value by Region (2018-2023) & (USD Million)

Table 90. Global Lead-free Perovskite Solar Cell Consumption Value by Region (2024-2029) & (USD Million)

Table 91. Global Lead-free Perovskite Solar Cell Average Price by Region (2018-2023) & (US\$/Unit)

Table 92. Global Lead-free Perovskite Solar Cell Average Price by Region (2024-2029) & (US\$/Unit)

Table 93. Global Lead-free Perovskite Solar Cell Sales Quantity by Type (2018-2023) & (K Units)

Table 94. Global Lead-free Perovskite Solar Cell Sales Quantity by Type (2024-2029) & (K Units)

Table 95. Global Lead-free Perovskite Solar Cell Consumption Value by Type (2018-2023) & (USD Million)

Table 96. Global Lead-free Perovskite Solar Cell Consumption Value by Type (2024-2029) & (USD Million)

Table 97. Global Lead-free Perovskite Solar Cell Average Price by Type (2018-2023) & (US\$/Unit)

Table 98. Global Lead-free Perovskite Solar Cell Average Price by Type (2024-2029) & (US\$/Unit)

Table 99. Global Lead-free Perovskite Solar Cell Sales Quantity by Application

(2018-2023) & (K Units)

Table 100. Global Lead-free Perovskite Solar Cell Sales Quantity by Application

(2024-2029) & (K Units)

Table 101. Global Lead-free Perovskite Solar Cell Consumption Value by Application

(2018-2023) & (USD Million)

Table 102. Global Lead-free Perovskite Solar Cell Consumption Value by Application

(2024-2029) & (USD Million)

Table 103. Global Lead-free Perovskite Solar Cell Average Price by Application

(2018-2023) & (US\$/Unit)

Table 104. Global Lead-free Perovskite Solar Cell Average Price by Application

(2024-2029) & (US\$/Unit)

Table 105. North America Lead-free Perovskite Solar Cell Sales Quantity by Type

(2018-2023) & (K Units)

Table 106. North America Lead-free Perovskite Solar Cell Sales Quantity by Type

(2024-2029) & (K Units)

Table 107. North America Lead-free Perovskite Solar Cell Sales Quantity by Application

(2018-2023) & (K Units)

Table 108. North America Lead-free Perovskite Solar Cell Sales Quantity by Application

(2024-2029) & (K Units)

Table 109. North America Lead-free Perovskite Solar Cell Sales Quantity by Country

(2018-2023) & (K Units)

Table 110. North America Lead-free Perovskite Solar Cell Sales Quantity by Country

(2024-2029) & (K Units)

Table 111. North America Lead-free Perovskite Solar Cell Consumption Value by Country (2018-2023) & (USD Million)

Table 112. North America Lead-free Perovskite Solar Cell Consumption Value by Country (2024-2029) & (USD Million)

Table 113. Europe Lead-free Perovskite Solar Cell Sales Quantity by Type (2018-2023) & (K Units)

Table 114. Europe Lead-free Perovskite Solar Cell Sales Quantity by Type (2024-2029) & (K Units)

Table 115. Europe Lead-free Perovskite Solar Cell Sales Quantity by Application (2018-2023) & (K Units)

Table 116. Europe Lead-free Perovskite Solar Cell Sales Quantity by Application (2024-2029) & (K Units)

Table 117. Europe Lead-free Perovskite Solar Cell Sales Quantity by Country (2018-2023) & (K Units)

Table 118. Europe Lead-free Perovskite Solar Cell Sales Quantity by Country (2024-2029) & (K Units)

Table 119. Europe Lead-free Perovskite Solar Cell Consumption Value by Country (2018-2023) & (USD Million)

Table 120. Europe Lead-free Perovskite Solar Cell Consumption Value by Country (2024-2029) & (USD Million)

Table 121. Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity by Type (2018-2023) & (K Units)

Table 122. Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity by Type (2024-2029) & (K Units)

Table 123. Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity by Application (2018-2023) & (K Units)

Table 124. Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity by Application (2024-2029) & (K Units)

Table 125. Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity by Region (2018-2023) & (K Units)

Table 126. Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity by Region (2024-2029) & (K Units)

Table 127. Asia-Pacific Lead-free Perovskite Solar Cell Consumption Value by Region (2018-2023) & (USD Million)

Table 128. Asia-Pacific Lead-free Perovskite Solar Cell Consumption Value by Region (2024-2029) & (USD Million)

Table 129. South America Lead-free Perovskite Solar Cell Sales Quantity by Type (2018-2023) & (K Units)

Table 130. South America Lead-free Perovskite Solar Cell Sales Quantity by Type (2024-2029) & (K Units)

Table 131. South America Lead-free Perovskite Solar Cell Sales Quantity by Application (2018-2023) & (K Units)

Table 132. South America Lead-free Perovskite Solar Cell Sales Quantity by Application (2024-2029) & (K Units)

Table 133. South America Lead-free Perovskite Solar Cell Sales Quantity by Country (2018-2023) & (K Units)

Table 134. South America Lead-free Perovskite Solar Cell Sales Quantity by Country (2024-2029) & (K Units)

Table 135. South America Lead-free Perovskite Solar Cell Consumption Value by Country (2018-2023) & (USD Million)

Table 136. South America Lead-free Perovskite Solar Cell Consumption Value by Country (2024-2029) & (USD Million)

Table 137. Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity by Type (2018-2023) & (K Units)

Table 138. Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity by Type

(2024-2029) & (K Units)

Table 139. Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity by Application (2018-2023) & (K Units)

Table 140. Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity by Application (2024-2029) & (K Units)

Table 141. Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity by Region (2018-2023) & (K Units)

Table 142. Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity by Region (2024-2029) & (K Units)

Table 143. Middle East & Africa Lead-free Perovskite Solar Cell Consumption Value by Region (2018-2023) & (USD Million)

Table 144. Middle East & Africa Lead-free Perovskite Solar Cell Consumption Value by Region (2024-2029) & (USD Million)

Table 145. Lead-free Perovskite Solar Cell Raw Material

Table 146. Key Manufacturers of Lead-free Perovskite Solar Cell Raw Materials

Table 147. Lead-free Perovskite Solar Cell Typical Distributors

Table 148. Lead-free Perovskite Solar Cell Typical Customers

## List Of Figures

### LIST OF FIGURES

- Figure 1. Lead-free Perovskite Solar Cell Picture
- Figure 2. Global Lead-free Perovskite Solar Cell Consumption Value by Type, (USD Million), 2018 & 2022 & 2029
- Figure 3. Global Lead-free Perovskite Solar Cell Consumption Value Market Share by Type in 2022
- Figure 4. Formal Structured Cells Examples
- Figure 5. Trans Structured Cells Examples
- Figure 6. Global Lead-free Perovskite Solar Cell Consumption Value by Application, (USD Million), 2018 & 2022 & 2029
- Figure 7. Global Lead-free Perovskite Solar Cell Consumption Value Market Share by Application in 2022
- Figure 8. Consumer Electronics Examples
- Figure 9. IOT Examples
- Figure 10. Smart Workplace Examples
- Figure 11. Other Examples
- Figure 12. Global Lead-free Perovskite Solar Cell Consumption Value, (USD Million): 2018 & 2022 & 2029
- Figure 13. Global Lead-free Perovskite Solar Cell Consumption Value and Forecast (2018-2029) & (USD Million)
- Figure 14. Global Lead-free Perovskite Solar Cell Sales Quantity (2018-2029) & (K Units)
- Figure 15. Global Lead-free Perovskite Solar Cell Average Price (2018-2029) & (US\$/Unit)
- Figure 16. Global Lead-free Perovskite Solar Cell Sales Quantity Market Share by Manufacturer in 2022
- Figure 17. Global Lead-free Perovskite Solar Cell Consumption Value Market Share by Manufacturer in 2022
- Figure 18. Producer Shipments of Lead-free Perovskite Solar Cell by Manufacturer Sales Quantity (\$MM) and Market Share (%): 2021
- Figure 19. Top 3 Lead-free Perovskite Solar Cell Manufacturer (Consumption Value) Market Share in 2022
- Figure 20. Top 6 Lead-free Perovskite Solar Cell Manufacturer (Consumption Value) Market Share in 2022
- Figure 21. Global Lead-free Perovskite Solar Cell Sales Quantity Market Share by Region (2018-2029)

Figure 22. Global Lead-free Perovskite Solar Cell Consumption Value Market Share by Region (2018-2029)

Figure 23. North America Lead-free Perovskite Solar Cell Consumption Value (2018-2029) & (USD Million)

Figure 24. Europe Lead-free Perovskite Solar Cell Consumption Value (2018-2029) & (USD Million)

Figure 25. Asia-Pacific Lead-free Perovskite Solar Cell Consumption Value (2018-2029) & (USD Million)

Figure 26. South America Lead-free Perovskite Solar Cell Consumption Value (2018-2029) & (USD Million)

Figure 27. Middle East & Africa Lead-free Perovskite Solar Cell Consumption Value (2018-2029) & (USD Million)

Figure 28. Global Lead-free Perovskite Solar Cell Sales Quantity Market Share by Type (2018-2029)

Figure 29. Global Lead-free Perovskite Solar Cell Consumption Value Market Share by Type (2018-2029)

Figure 30. Global Lead-free Perovskite Solar Cell Average Price by Type (2018-2029) & (US\$/Unit)

Figure 31. Global Lead-free Perovskite Solar Cell Sales Quantity Market Share by Application (2018-2029)

Figure 32. Global Lead-free Perovskite Solar Cell Consumption Value Market Share by Application (2018-2029)

Figure 33. Global Lead-free Perovskite Solar Cell Average Price by Application (2018-2029) & (US\$/Unit)

Figure 34. North America Lead-free Perovskite Solar Cell Sales Quantity Market Share by Type (2018-2029)

Figure 35. North America Lead-free Perovskite Solar Cell Sales Quantity Market Share by Application (2018-2029)

Figure 36. North America Lead-free Perovskite Solar Cell Sales Quantity Market Share by Country (2018-2029)

Figure 37. North America Lead-free Perovskite Solar Cell Consumption Value Market Share by Country (2018-2029)

Figure 38. United States Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 39. Canada Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 40. Mexico Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 41. Europe Lead-free Perovskite Solar Cell Sales Quantity Market Share by



Type (2018-2029)

Figure 42. Europe Lead-free Perovskite Solar Cell Sales Quantity Market Share by Application (2018-2029)

Figure 43. Europe Lead-free Perovskite Solar Cell Sales Quantity Market Share by Country (2018-2029)

Figure 44. Europe Lead-free Perovskite Solar Cell Consumption Value Market Share by Country (2018-2029)

Figure 45. Germany Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 46. France Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 47. United Kingdom Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 48. Russia Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 49. Italy Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 50. Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity Market Share by Type (2018-2029)

Figure 51. Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity Market Share by Application (2018-2029)

Figure 52. Asia-Pacific Lead-free Perovskite Solar Cell Sales Quantity Market Share by Region (2018-2029)

Figure 53. Asia-Pacific Lead-free Perovskite Solar Cell Consumption Value Market Share by Region (2018-2029)

Figure 54. China Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 55. Japan Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 56. Korea Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 57. India Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 58. Southeast Asia Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 59. Australia Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 60. South America Lead-free Perovskite Solar Cell Sales Quantity Market Share by Type (2018-2029)

Figure 61. South America Lead-free Perovskite Solar Cell Sales Quantity Market Share by Application (2018-2029)

Figure 62. South America Lead-free Perovskite Solar Cell Sales Quantity Market Share by Country (2018-2029)

Figure 63. South America Lead-free Perovskite Solar Cell Consumption Value Market Share by Country (2018-2029)

Figure 64. Brazil Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 65. Argentina Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 66. Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity Market Share by Type (2018-2029)

Figure 67. Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity Market Share by Application (2018-2029)

Figure 68. Middle East & Africa Lead-free Perovskite Solar Cell Sales Quantity Market Share by Region (2018-2029)

Figure 69. Middle East & Africa Lead-free Perovskite Solar Cell Consumption Value Market Share by Region (2018-2029)

Figure 70. Turkey Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 71. Egypt Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 72. Saudi Arabia Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 73. South Africa Lead-free Perovskite Solar Cell Consumption Value and Growth Rate (2018-2029) & (USD Million)

Figure 74. Lead-free Perovskite Solar Cell Market Drivers

Figure 75. Lead-free Perovskite Solar Cell Market Restraints

Figure 76. Lead-free Perovskite Solar Cell Market Trends

Figure 77. Porters Five Forces Analysis

Figure 78. Manufacturing Cost Structure Analysis of Lead-free Perovskite Solar Cell in 2022

Figure 79. Manufacturing Process Analysis of Lead-free Perovskite Solar Cell

Figure 80. Lead-free Perovskite Solar Cell Industrial Chain

Figure 81. Sales Quantity Channel: Direct to End-User vs Distributors

Figure 82. Direct Channel Pros & Cons

Figure 83. Indirect Channel Pros & Cons

Figure 84. Methodology

Figure 85. Research Process and Data Source



## I would like to order

Product name: Global Lead-free Perovskite Solar Cell Market 2023 by Manufacturers, Regions, Type and Application, Forecast to 2029

Product link: <https://marketpublishers.com/r/G58FAC9F0A02EN.html>

Price: US\$ 3,480.00 (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/G58FAC9F0A02EN.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

