

Global InP Solar Cells Supply, Demand and Key Producers, 2026-2032

<https://marketpublishers.com/r/G67E0DC009ADEN.html>

Date: August 2026

Pages: 88

Price: US\$ 4,480.00 (Single User License)

ID: G67E0DC009ADEN

Abstracts

The global InP Solar Cells market size is expected to reach \$ 90.97 million by 2032, rising at a market growth of 15.6% CAGR during the forecast period (2026-2032).

InP solar cells are III-V compound semiconductor solar cells that utilize indium phosphide (InP) as the primary light-absorbing material or substrate. Characterized by a direct bandgap, high absorption coefficient, high carrier mobility, and excellent resistance to radiation and high temperatures, they maintain high photoelectric conversion efficiency even in environments involving intense radiation, space vacuums, and high-energy particles. Consequently, they have long been regarded as a key technological pathway for space-based solar cells and high-efficiency multi-junction solar cells. While InP solar cells can be configured as single-junction devices or serve as platforms for InP-based multi-junction devices, they currently remain largely in the stages of scientific research and prototype validation, without yet establishing a mature commercial market.

The upstream segment of the InP solar cell industry chain primarily encompasses raw materials such as high-purity indium and red phosphorus, as well as components like InP single-crystal substrates, epitaxial wafers, metal electrodes, anti-reflective coatings, encapsulation glass, and space-grade packaging materials. The midstream segment involves InP epitaxial growth, device design, chip processing, photolithography, metallization, electrode fabrication, packaging, and testing. The downstream segment targets high-end applications, including spacecraft, satellites, deep-space probes, power sources for high-radiation environments, high-efficiency concentrating photovoltaics (CPV), laser energy conversion, and thermophotovoltaics (TPV). At present, the industry chain lacks a large-scale manufacturing system, with most products still in the laboratory, small-batch sampling, or engineering validation phases.

Future development of InP solar cells will be driven primarily by deep-space exploration, high-orbit satellites, high-efficiency III-V multi-junction solar cells, and novel photovoltaic devices. Compared to traditional GaAs-based systems, InP offers superior resistance to electron and proton radiation, presenting potential advantages for extreme environments such as Jupiter exploration and deep-space missions. Furthermore, InP serves as a crucial substrate platform for high-efficiency four-junction and five-junction solar cells and holds promise for expansion into emerging fields such as thermophotovoltaics (TPV) and laser power conversion (LPC). However, due to factors such as the high cost of InP substrates, small wafer sizes, complex manufacturing processes, and the high level of maturity already achieved by GaInP/GaAs/Ge triple-junction solar cells, InP solar cells will remain primarily focused on scientific research and small-batch engineering applications over the next 5 to 10 years; it is unlikely that they will reach an industrial scale comparable to that of silicon or GaAs space solar cells in the near term.

This report studies the global InP Solar Cells demand, key companies, and key regions.

This report is a detailed and comprehensive analysis of the world market for InP Solar Cells, and provides market size (US\$ million) and Year-over-Year (YoY) growth, considering 2025 as the base year. This report explores demand trends and competition, as well as details the characteristics of InP Solar Cells that contribute to its increasing demand across many markets.

Highlights and key features of the study

Global InP Solar Cells total market, 2021-2032, (USD Million)

Global InP Solar Cells total market by region & country, CAGR, 2021-2032, (USD Million)

U.S. VS China: InP Solar Cells total market, key domestic companies, and share, (USD Million)

Global InP Solar Cells revenue by player, revenue and market share 2021-2026, (USD Million)

Global InP Solar Cells total market by Type, CAGR, 2021-2032, (USD Million)

Global InP Solar Cells total market by Application, CAGR, 2021-2032, (USD Million)

This report profiles major players in the global InP Solar Cells market based on the following parameters - company overview, revenue, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include National Renewable Energy Laboratory, MicroLink Devices,

Spectrolab, CEA-Leti, etc.

This report also provides key insights about market drivers, restraints, opportunities, new product launches or approvals.

Stakeholders would have ease in decision-making through various strategy matrices used in analyzing the world InP Solar Cells market

Detailed Segmentation:

Each section contains quantitative market data including market by value (US\$ Millions), by player, by regions, by Type, and by Application. Data is given for the years 2021-2032 by year with 2025 as the base year, 2026 as the estimate year, and 2027-2032 as the forecast year.

Global InP Solar Cells Market, By Region:

United States

China

Europe

Japan

South Korea

ASEAN

India

Rest of World

Global InP Solar Cells Market, Segmentation by Type:

Single-junction Cell

Dual-junction Cell

Triple-junction Cell

Quadruple-junction Cell

Global InP Solar Cells Market, Segmentation by Semiconductor Heterostructures:

Homojunction InP Solar Cells

Heterojunction InP Solar Cells

Global InP Solar Cells Market, Segmentation by Application:

Space Solar Cells

Deep-space Exploration Power Sources

Scientific Research

Others

Companies Profiled:

National Renewable Energy Laboratory

MicroLink Devices

Spectrolab

CEA-Leti

Key Questions Answered

1. How big is the global InP Solar Cells market?
2. What is the demand of the global InP Solar Cells market?
3. What is the year over year growth of the global InP Solar Cells market?

4. What is the total value of the global InP Solar Cells market?
5. Who are the Major Players in the global InP Solar Cells market?
6. What are the growth factors driving the market demand?

Contents

1 SUPPLY SUMMARY

- 1.1 InP Solar Cells Introduction
- 1.2 World InP Solar Cells Market Size & Forecast (2021 & 2025 & 2032)
- 1.3 World InP Solar Cells Total Market by Region (by Headquarter Location)
 - 1.3.1 World InP Solar Cells Market Size by Region (2021-2032), (by Headquarter Location)
 - 1.3.2 United States Based Company InP Solar Cells Revenue (2021-2032)
 - 1.3.3 China Based Company InP Solar Cells Revenue (2021-2032)
 - 1.3.4 Europe Based Company InP Solar Cells Revenue (2021-2032)
 - 1.3.5 Japan Based Company InP Solar Cells Revenue (2021-2032)
 - 1.3.6 South Korea Based Company InP Solar Cells Revenue (2021-2032)
 - 1.3.7 ASEAN Based Company InP Solar Cells Revenue (2021-2032)
 - 1.3.8 India Based Company InP Solar Cells Revenue (2021-2032)
- 1.4 Market Drivers, Restraints and Trends
 - 1.4.1 InP Solar Cells Market Drivers
 - 1.4.2 Factors Affecting Demand
 - 1.4.3 Major Market Trends

2 DEMAND SUMMARY

- 2.1 World InP Solar Cells Consumption Value (2021-2032)
- 2.2 World InP Solar Cells Consumption Value by Region
 - 2.2.1 World InP Solar Cells Consumption Value by Region (2021-2026)
 - 2.2.2 World InP Solar Cells Consumption Value Forecast by Region (2027-2032)
- 2.3 United States InP Solar Cells Consumption Value (2021-2032)
- 2.4 China InP Solar Cells Consumption Value (2021-2032)
- 2.5 Europe InP Solar Cells Consumption Value (2021-2032)
- 2.6 Japan InP Solar Cells Consumption Value (2021-2032)
- 2.7 South Korea InP Solar Cells Consumption Value (2021-2032)
- 2.8 ASEAN InP Solar Cells Consumption Value (2021-2032)
- 2.9 India InP Solar Cells Consumption Value (2021-2032)

3 WORLD INP SOLAR CELLS COMPANIES COMPETITIVE ANALYSIS

- 3.1 World InP Solar Cells Revenue by Player (2021-2026)
- 3.2 Industry Rank and Concentration Rate (CR)

- 3.2.1 Global InP Solar Cells Industry Rank of Major Players
- 3.2.2 Global Concentration Ratios (CR4) for InP Solar Cells in 2025
- 3.2.3 Global Concentration Ratios (CR8) for InP Solar Cells in 2025
- 3.3 InP Solar Cells Company Evaluation Quadrant
- 3.4 InP Solar Cells Market: Overall Company Footprint Analysis
 - 3.4.1 InP Solar Cells Market: Region Footprint
 - 3.4.2 InP Solar Cells Market: Company Product Type Footprint
 - 3.4.3 InP Solar Cells Market: Company Product Application Footprint
- 3.5 Competitive Environment
 - 3.5.1 Historical Structure of the Industry
 - 3.5.2 Barriers of Market Entry
 - 3.5.3 Factors of Competition
- 3.6 Mergers & Acquisitions Activity

4 UNITED STATES VS CHINA VS REST OF WORLD (BY HEADQUARTER LOCATION)

- 4.1 United States VS China: InP Solar Cells Revenue Comparison (by Headquarter Location)
 - 4.1.1 United States VS China: InP Solar Cells Revenue Comparison (2021 & 2025 & 2032) (by Headquarter Location)
 - 4.1.2 United States VS China: InP Solar Cells Revenue Market Share Comparison (2021 & 2025 & 2032)
- 4.2 United States Based Companies VS China Based Companies: InP Solar Cells Consumption Value Comparison
 - 4.2.1 United States VS China: InP Solar Cells Consumption Value Comparison (2021 & 2025 & 2032)
 - 4.2.2 United States VS China: InP Solar Cells Consumption Value Market Share Comparison (2021 & 2025 & 2032)
- 4.3 United States Based InP Solar Cells Companies and Market Share, 2021-2026
 - 4.3.1 United States Based InP Solar Cells Companies, Headquarters (States, Country)
 - 4.3.2 United States Based Companies InP Solar Cells Revenue, (2021-2026)
- 4.4 China Based Companies InP Solar Cells Revenue and Market Share, 2021-2026
 - 4.4.1 China Based InP Solar Cells Companies, Company Headquarters (Province, Country)
 - 4.4.2 China Based Companies InP Solar Cells Revenue, (2021-2026)
- 4.5 Rest of World Based InP Solar Cells Companies and Market Share, 2021-2026
 - 4.5.1 Rest of World Based InP Solar Cells Companies, Headquarters (Province, Country)

4.5.2 Rest of World Based Companies InP Solar Cells Revenue (2021-2026)

5 MARKET ANALYSIS BY TYPE

5.1 World InP Solar Cells Market Size Overview by Type: 2021 VS 2025 VS 2032

5.2 Segment Introduction by Type

5.2.1 Single-junction Cell

5.2.2 Dual-junction Cell

5.2.3 Triple-junction Cell

5.2.4 Quadruple-junction Cell

5.3 Market Segment by Type

5.3.1 World InP Solar Cells Market Size by Type (2021-2026)

5.3.2 World InP Solar Cells Market Size by Type (2027-2032)

5.3.3 World InP Solar Cells Market Size Market Share by Type (2027-2032)

6 MARKET ANALYSIS BY SEMICONDUCTOR HETEROSTRUCTURES

6.1 World InP Solar Cells Market Size Overview by Semiconductor Heterostructures: 2021 VS 2025 VS 2032

6.2 Segment Introduction by Semiconductor Heterostructures

6.2.1 Homojunction InP Solar Cells

6.2.2 Heterojunction InP Solar Cells

6.3 Market Segment by Semiconductor Heterostructures

6.3.1 World InP Solar Cells Market Size by Semiconductor Heterostructures (2021-2026)

6.3.2 World InP Solar Cells Market Size by Semiconductor Heterostructures (2027-2032)

6.3.3 World InP Solar Cells Market Size Market Share by Semiconductor Heterostructures (2027-2032)

7 MARKET ANALYSIS BY APPLICATION

7.1 World InP Solar Cells Market Size Overview by Application: 2021 VS 2025 VS 2032

7.2 Segment Introduction by Application

7.2.1 Space Solar Cells

7.2.2 Deep-space Exploration Power Sources

7.2.3 Scientific Research

7.2.4 Others

7.3 Market Segment by Application

- 7.3.1 World InP Solar Cells Market Size by Application (2021-2026)
- 7.3.2 World InP Solar Cells Market Size by Application (2027-2032)
- 7.3.3 World InP Solar Cells Market Size Market Share by Application (2021-2032)

8 COMPANY PROFILES

8.1 National Renewable Energy Laboratory

- 8.1.1 National Renewable Energy Laboratory Details
- 8.1.2 National Renewable Energy Laboratory Major Business
- 8.1.3 National Renewable Energy Laboratory InP Solar Cells Product and Services
- 8.1.4 National Renewable Energy Laboratory InP Solar Cells Revenue, Gross Margin and Market Share (2021-2026)
- 8.1.5 National Renewable Energy Laboratory Recent Developments/Updates
- 8.1.6 National Renewable Energy Laboratory Competitive Strengths & Weaknesses

8.2 MicroLink Devices

- 8.2.1 MicroLink Devices Details
- 8.2.2 MicroLink Devices Major Business
- 8.2.3 MicroLink Devices InP Solar Cells Product and Services
- 8.2.4 MicroLink Devices InP Solar Cells Revenue, Gross Margin and Market Share (2021-2026)
- 8.2.5 MicroLink Devices Recent Developments/Updates
- 8.2.6 MicroLink Devices Competitive Strengths & Weaknesses

8.3 Spectrolab

- 8.3.1 Spectrolab Details
- 8.3.2 Spectrolab Major Business
- 8.3.3 Spectrolab InP Solar Cells Product and Services
- 8.3.4 Spectrolab InP Solar Cells Revenue, Gross Margin and Market Share (2021-2026)
- 8.3.5 Spectrolab Recent Developments/Updates
- 8.3.6 Spectrolab Competitive Strengths & Weaknesses

8.4 CEA-Leti

- 8.4.1 CEA-Leti Details
- 8.4.2 CEA-Leti Major Business
- 8.4.3 CEA-Leti InP Solar Cells Product and Services
- 8.4.4 CEA-Leti InP Solar Cells Revenue, Gross Margin and Market Share (2021-2026)
- 8.4.5 CEA-Leti Recent Developments/Updates
- 8.4.6 CEA-Leti Competitive Strengths & Weaknesses

9 INDUSTRY CHAIN ANALYSIS

9.1 InP Solar Cells Industry Chain

9.2 InP Solar Cells Upstream Analysis

9.3 InP Solar Cells Midstream Analysis

9.4 InP Solar Cells Downstream Analysis

10 RESEARCH FINDINGS AND CONCLUSION

11 APPENDIX

11.1 Methodology

11.2 Research Process and Data Source

11.3 Disclaimer

List Of Tables

LIST OF TABLES

Table 1. World InP Solar Cells Revenue by Region (2021, 2025 and 2032) & (USD Million), (by Headquarter Location)

Table 2. World InP Solar Cells Revenue by Region (2021-2026) & (USD Million), (by Headquarter Location)

Table 3. World InP Solar Cells Revenue by Region (2027-2032) & (USD Million), (by Headquarter Location)

Table 4. World InP Solar Cells Revenue Market Share by Region (2021-2026), (by Headquarter Location)

Table 5. World InP Solar Cells Revenue Market Share by Region (2027-2032), (by Headquarter Location)

Table 6. Major Market Trends

Table 7. World InP Solar Cells Consumption Value Growth Rate Forecast by Region (2021 & 2025 & 2032) & (USD Million)

Table 8. World InP Solar Cells Consumption Value by Region (2021-2026) & (USD Million)

Table 9. World InP Solar Cells Consumption Value Forecast by Region (2027-2032) & (USD Million)

Table 10. World InP Solar Cells Revenue by Player (2021-2026) & (USD Million)

Table 11. Revenue Market Share of Key InP Solar Cells Players in 2025

Table 12. World InP Solar Cells Industry Rank of Major Player, Based on Revenue in 2025

Table 13. Global InP Solar Cells Company Evaluation Quadrant

Table 14. Head Office of Key InP Solar Cells Players

Table 15. InP Solar Cells Market: Company Product Type Footprint

Table 16. InP Solar Cells Market: Company Product Application Footprint

Table 17. InP Solar Cells Mergers & Acquisitions Activity

Table 18. United States VS China InP Solar Cells Revenue Comparison, (2021 & 2025 & 2032) & (USD Million)

Table 19. United States VS China InP Solar Cells Consumption Value Comparison, (2021 & 2025 & 2032) & (USD Million)

Table 20. United States Based InP Solar Cells Companies, Headquarters (States, Country)

Table 21. United States Based Companies InP Solar Cells Revenue, (2021-2026) & (USD Million)

Table 22. United States Based Companies InP Solar Cells Revenue Market Share

(2021-2026)

Table 23. China Based InP Solar Cells Companies, Headquarters (Province, Country)

Table 24. China Based Companies InP Solar Cells Revenue, (2021-2026) & (USD Million)

Table 25. China Based Companies InP Solar Cells Revenue Market Share (2021-2026)

Table 26. Rest of World Based InP Solar Cells Companies, Headquarters (Province, Country)

Table 27. Rest of World Based Companies InP Solar Cells Revenue (2021-2026) & (USD Million)

Table 28. Rest of World Based Companies InP Solar Cells Revenue Market Share (2021-2026)

Table 29. World InP Solar Cells Market Size by Type, (USD Million), 2021 & 2025 & 2032

Table 30. World InP Solar Cells Market Size Value by Type (2021-2026) & (USD Million)

Table 31. World InP Solar Cells Market Size by Type (2027-2032) & (USD Million)

Table 32. World InP Solar Cells Market Size by Semiconductor Heterostructures, (USD Million), 2021 & 2025 & 2032

Table 33. World InP Solar Cells Market Size Value by Semiconductor Heterostructures (2021-2026) & (USD Million)

Table 34. World InP Solar Cells Market Size by Semiconductor Heterostructures (2027-2032) & (USD Million)

Table 35. World InP Solar Cells Market Size by Application, (USD Million), 2021 & 2025 & 2032

Table 36. World InP Solar Cells Market Size by Application (2021-2026) & (USD Million)

Table 37. World InP Solar Cells Market Size by Application (2027-2032) & (USD Million)

Table 38. National Renewable Energy Laboratory Basic Information, Manufacturing Base and Competitors

Table 39. National Renewable Energy Laboratory Major Business

Table 40. National Renewable Energy Laboratory InP Solar Cells Product and Services

Table 41. National Renewable Energy Laboratory InP Solar Cells Revenue, Gross Margin and Market Share (2021-2026) & (USD Million)

Table 42. National Renewable Energy Laboratory Recent Developments/Updates

Table 43. National Renewable Energy Laboratory Competitive Strengths & Weaknesses

Table 44. MicroLink Devices Basic Information, Manufacturing Base and Competitors

Table 45. MicroLink Devices Major Business

Table 46. MicroLink Devices InP Solar Cells Product and Services

Table 47. MicroLink Devices InP Solar Cells Revenue, Gross Margin and Market Share (2021-2026) & (USD Million)

Table 48. MicroLink Devices Recent Developments/Updates
Table 49. MicroLink Devices Competitive Strengths & Weaknesses
Table 50. Spectrolab Basic Information, Manufacturing Base and Competitors
Table 51. Spectrolab Major Business
Table 52. Spectrolab InP Solar Cells Product and Services
Table 53. Spectrolab InP Solar Cells Revenue, Gross Margin and Market Share (2021-2026) & (USD Million)
Table 54. Spectrolab Recent Developments/Updates
Table 55. Spectrolab Competitive Strengths & Weaknesses
Table 56. CEA-Leti Basic Information, Manufacturing Base and Competitors
Table 57. CEA-Leti Major Business
Table 58. CEA-Leti InP Solar Cells Product and Services
Table 59. CEA-Leti InP Solar Cells Revenue, Gross Margin and Market Share (2021-2026) & (USD Million)
Table 60. CEA-Leti Recent Developments/Updates
Table 61. CEA-Leti Competitive Strengths & Weaknesses
Table 62. Global Key Players of InP Solar Cells Upstream (Raw Materials)
Table 63. Global InP Solar Cells Typical Customers

List Of Figures

LIST OF FIGURES

Figure 1. InP Solar Cells Picture

Figure 2. World InP Solar Cells Total Revenue: 2021 & 2025 & 2032, (USD Million)

Figure 3. World InP Solar Cells Total Revenue (2021-2032) & (USD Million)

Figure 4. World InP Solar Cells Revenue by Region (2021, 2025 and 2032) & (USD Million), (by Headquarter Location)

Figure 5. World InP Solar Cells Revenue Market Share by Region (2021-2032), (by Headquarter Location)

Figure 6. United States Based Company InP Solar Cells Revenue (2021-2032) & (USD Million)

Figure 7. China Based Company InP Solar Cells Revenue (2021-2032) & (USD Million)

Figure 8. Europe Based Company InP Solar Cells Revenue (2021-2032) & (USD Million)

Figure 9. Japan Based Company InP Solar Cells Revenue (2021-2032) & (USD Million)

Figure 10. South Korea Based Company InP Solar Cells Revenue (2021-2032) & (USD Million)

Figure 11. ASEAN Based Company InP Solar Cells Revenue (2021-2032) & (USD Million)

Figure 12. India Based Company InP Solar Cells Revenue (2021-2032) & (USD Million)

Figure 13. InP Solar Cells Market Drivers

Figure 14. Factors Affecting Demand

Figure 15. World InP Solar Cells Consumption Value (2021-2032) & (USD Million)

Figure 16. World InP Solar Cells Consumption Value Market Share by Region (2021-2032)

Figure 17. United States InP Solar Cells Consumption Value (2021-2032) & (USD Million)

Figure 18. China InP Solar Cells Consumption Value (2021-2032) & (USD Million)

Figure 19. Europe InP Solar Cells Consumption Value (2021-2032) & (USD Million)

Figure 20. Japan InP Solar Cells Consumption Value (2021-2032) & (USD Million)

Figure 21. South Korea InP Solar Cells Consumption Value (2021-2032) & (USD Million)

Figure 22. ASEAN InP Solar Cells Consumption Value (2021-2032) & (USD Million)

Figure 23. India InP Solar Cells Consumption Value (2021-2032) & (USD Million)

Figure 24. Producer Shipments of InP Solar Cells by Player Revenue (\$MM) and Market Share (%): 2025

Figure 25. Global Four-firm Concentration Ratios (CR4) for InP Solar Cells Markets in

2025

Figure 26. Global Four-firm Concentration Ratios (CR8) for InP Solar Cells Markets in 2025

Figure 27. United States VS China: InP Solar Cells Revenue Market Share Comparison (2021 & 2025 & 2032)

Figure 28. United States VS China: InP Solar Cells Consumption Value Market Share Comparison (2021 & 2025 & 2032)

Figure 29. World InP Solar Cells Market Size by Type, (USD Million), 2021 & 2025 & 2032

Figure 30. World InP Solar Cells Market Size Market Share by Type in 2025

Figure 31. Single-junction Cell

Figure 32. Dual-junction Cell

Figure 33. Triple-junction Cell

Figure 34. Quadruple-junction Cell

Figure 35. World InP Solar Cells Market Size Market Share by Type (2021-2032)

Figure 36. World InP Solar Cells Market Size by Semiconductor Heterostructures, (USD Million), 2021 & 2025 & 2032

Figure 37. World InP Solar Cells Market Size Market Share by Semiconductor Heterostructures in 2025

Figure 38. Homojunction InP Solar Cells

Figure 39. Heterojunction InP Solar Cells

Figure 40. World InP Solar Cells Market Size Market Share by Semiconductor Heterostructures (2021-2032)

Figure 41. World InP Solar Cells Market Size by Application, (USD Million), 2021 & 2025 & 2032

Figure 42. World InP Solar Cells Market Size Market Share by Application in 2025

Figure 43. Space Solar Cells

Figure 44. Deep-space Exploration Power Sources

Figure 45. Scientific Research

Figure 46. Others

Figure 47. World InP Solar Cells Market Size Market Share by Application (2021-2032)

Figure 48. InP Solar Cells Industrial Chain

Figure 49. Methodology

Figure 50. Research Process and Data Source

I would like to order

Product name: Global InP Solar Cells Supply, Demand and Key Producers, 2026-2032

Product link: <https://marketpublishers.com/r/G67E0DC009ADEN.html>

Price: US\$ 4,480.00 (Single User License / Electronic Delivery)

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

info@marketpublishers.com

Payment

To pay by Credit Card (Visa, MasterCard, American Express, PayPal), please, click button on product page <https://marketpublishers.com/r/G67E0DC009ADEN.html>