

Quantum Dots Market Size, Share & Trends Analysis Report By Product (Core-type QDs, Core-shell QDs), By Application (Displays & Monitors, Solar Cell, Biomedical), By Region, And Segment Forecasts, 2025 - 2033

<https://marketpublishers.com/r/Q08B741277CCEN.html>

Date: October 2025

Pages: 101

Price: US\$ 5,950.00 (Single User License)

ID: Q08B741277CCEN

Abstracts

The global quantum dots market size was estimated at USD 9.9 million in 2024 and is projected to reach USD 38.9 million by 2033, growing at a CAGR of 16.4% from 2025 to 2033. Rapid advancements in display technology primarily drive market growth.

Quantum dots offer superior color purity, tunable emission wavelengths, and energy efficiency, significantly enhancing the performance of QLED displays, monitors, and televisions. Leading electronics manufacturers are increasingly integrating quantum dots into their next-generation products, advancing consumer demand for sharper, more vibrant visuals and contributing directly to market expansion.

The healthcare sector is emerging as a significant growth avenue for quantum dots. Their unique optical properties make them ideal for medical imaging, targeted drug delivery, and diagnostic applications requiring high precision and sensitivity. Increasing investments and growing awareness in the biomedical field are accelerating the adoption of quantum dots, effectively broadening their market beyond traditional display and lighting applications.

Another strong driver is the rising adoption of cadmium-free quantum dots, which respond to growing environmental and regulatory pressures, especially in regions like Europe and North America. These safer and more sustainable alternatives are gaining traction across consumer electronics, biotechnology, and healthcare sectors, where quantum dots find applications such as bio-imaging and medical diagnostics. This shift

supports broader acceptance and expanded usage in diverse industrial fields.

Global Quantum Dots Market Report Segmentation

This report forecasts revenue growth at global, regional, and country levels and provides an analysis of the latest industry trends in each of the sub-segments from 2018 to 2033. For this study, Grand View Research has segmented the global quantum dots market report based on product, application, and region:

Product Outlook (Revenue, USD Million, 2018 - 2033)

Core-type QDs

Core-shell QDs

Others

Application Outlook (Revenue, USD Million, 2018 - 2033)

Displays & Monitors

Solar Cell

Biomedical

Others

Regional Outlook (Revenue, USD Million, 2018 - 2033)

North America

U.S.

Canada

Mexico

Europe

Germany

UK

France

Italy

Spain

Asia Pacific

China

Japan

India

Central & South America

Middle East & Africa

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Contents

CHAPTER 1. METHODOLOGY AND SCOPE

- 1.1. Research Methodology
- 1.2. Research Scope & Assumption
- 1.3. Information Procurement
 - 1.3.1. Purchased Database
 - 1.3.2. GVR's Internal Database
 - 1.3.3. Secondary Sources & Third-Party Perspectives
 - 1.3.4. Primary Research
- 1.4. Information Analysis
 - 1.4.1. Data Analysis Models
- 1.5. Market Formulation & Data Visualization
- 1.6. List of Data Sources

CHAPTER 2. EXECUTIVE SUMMARY

- 2.1. Market Outlook, 2024 (USD Billion)
- 2.2. Segmental Outlook
- 2.3. Competitive Insights

CHAPTER 3. QUANTUM DOTS MARKET VARIABLES, TRENDS & SCOPE

- 3.1. Market Lineage/Ancillary Market Outlook
- 3.2. Industry Value Chain Analysis
 - 3.2.1. Sales Channel Analysis
- 3.3. Regulatory Framework
 - 3.3.1. Analyst Perspective
 - 3.3.2. Regulations & Standards
- 3.4. Market Dynamics
 - 3.4.1. Market Driver Analysis
 - 3.4.2. Market Restraint Analysis
 - 3.4.3. Industry Opportunities
 - 3.4.4. Industry Challenges
- 3.5. Business Environmental Tools Analysis: Quantum Dots Market
 - 3.5.1. Porter's Five Forces Analysis
 - 3.5.1.1. Bargaining Power of Suppliers
 - 3.5.1.2. Bargaining Power of Buyers

- 3.5.1.3. Threat of Substitution
- 3.5.1.4. Threat of New Entrants
- 3.5.1.5. Competitive Rivalry
- 3.5.2. PESTLE Analysis
 - 3.5.2.1. Political Landscape
 - 3.5.2.2. Economic Landscape
 - 3.5.2.3. Social Landscape
 - 3.5.2.4. Technology Landscape
 - 3.5.2.5. Environmental Landscape
 - 3.5.2.6. Legal Landscape
- 3.6. Market Disruption Analysis

CHAPTER 4. QUANTUM DOTS MARKET: PRODUCT ESTIMATES & TREND ANALYSIS

- 4.1. Key Takeaways
- 4.2. Product Movement Analysis & Market Share, 2024 & 2033
- 4.3. Global Quantum Dots Market By Product, 2018 - 2033 (USD Million)
- 4.4. Core-Type QDs
 - 4.4.1. Quantum Dots Market Estimates And Forecasts, by Core-Type QDs, 2018 - 2033 (USD Million)
- 4.5. Core-Shell QDs
 - 4.5.1. Quantum Dots Market Estimates And Forecasts, by Core-Shell QDs, 2018 - 2033 (USD Million)
- 4.6. Others
 - 4.6.1. Quantum Dots Market Estimates And Forecasts, by Others, 2018 - 2033 (USD Million)

CHAPTER 5. QUANTUM DOTS MARKET: APPLICATION ESTIMATES & TREND ANALYSIS

- 5.1. Key Takeaways
- 5.2. Application Movement Analysis & Market Share, 2024 & 2033
- 5.3. Global Quantum Dots Market By Application, 2018 - 2033 (USD Million)
- 5.4. Displays & Monitors
 - 5.4.1. Quantum Dots Market Estimates And Forecasts, for Displays & Monitors, 2018 - 2033 (USD Million)
- 5.5. Solar Cell
 - 5.5.1. Quantum Dots Market Estimates And Forecasts, for Solar Cell, 2018 - 2033

(USD Million)

5.6. Biomedical

5.6.1. Quantum Dots Market Estimates And Forecasts, for Biomedical, 2018 - 2033

(USD Million)

5.7. Others

5.7.1. Quantum Dots Market Estimates And Forecasts, for Others, 2018 - 2033 (USD Million)

CHAPTER 6. QUANTUM DOTS MARKET: REGIONAL ESTIMATES & TREND ANALYSIS

6.1. Key Takeaways

6.2. Regional Market Share Analysis, 2024 & 2033

6.3. North America

6.3.1. North America Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.3.2. North America Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.3.3. North America Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.3.4. U.S.

6.3.4.1. U.S. Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.3.4.2. U.S. Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.3.4.3. U.S. Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.3.5. Canada

6.3.5.1. Canada Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.3.5.2. Canada Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.3.5.3. Canada Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.3.6. Mexico

6.3.6.1. Mexico Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.3.6.2. Mexico Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.3.6.3. Mexico Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.4. Europe

6.4.1. Europe Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.4.2. Europe Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.4.3. Europe Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.4.4. Germany

6.4.4.1. Germany Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.4.4.2. Germany Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.4.4.3. Germany Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.4.5. UK

6.4.5.1. UK Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.4.5.2. UK Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.4.5.3. UK Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.4.6. France

6.4.6.1. France Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.4.6.2. France Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.4.6.3. France Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.4.7. Italy

6.4.7.1. Italy Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.4.7.2. Italy Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.4.7.3. Italy Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.4.8. Spain

6.4.8.1. Spain Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD

Million)

6.4.8.2. Spain Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.4.8.3. Spain Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.5. Asia Pacific

6.5.1. Asia Pacific Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.5.2. Asia Pacific Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.5.3. Asia Pacific Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.5.4. China

6.5.4.1. China Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.5.4.2. China Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.5.4.3. China Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.5.5. India

6.5.5.1. India Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.5.5.2. India Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.5.5.3. India Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.5.6. Japan

6.5.6.1. Japan Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.5.6.2. Japan Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.5.6.3. Japan Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

6.6. Central & South America

6.6.1. Central & South America Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.6.2. Central & South America Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.6.3. Central & South America Quantum Dots Market Estimates And Forecasts, By

Application, 2018 - 2033 (USD Million)

6.7. Middle East & Africa

6.7.1. Middle East & Africa Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

6.7.2. Middle East & Africa Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

6.7.3. Middle East & Africa Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

CHAPTER 7. SUPPLIER INTELLIGENCE

7.1.1. Kraljic Matrix

7.1.2. Engagement Model

7.1.3. Negotiation Strategies

7.1.4. Sourcing Best Practices

7.1.5. Vendor Selection Criteria

CHAPTER 8. COMPETITIVE LANDSCAPE

8.1. Key Players, their Recent Developments, and their Impact on Industry

8.2. Competition Categorization

8.3. Company Market Position Analysis

8.4. Company Heat Map Analysis

8.5. Strategy Mapping, 2024

8.6. Company Listing

8.6.1. Merck KGaA

8.6.1.1. Company Overview

8.6.1.2. Financial Performance

8.6.1.3. Product Benchmarking

8.6.1.4. Strategic Initiatives

8.6.2. Nanosys, Inc.

8.6.2.1. Company Overview

8.6.2.2. Financial Performance

8.6.2.3. Product Benchmarking

8.6.2.4. Strategic Initiatives

8.6.3. Nanoco Group plc

8.6.3.1. Company Overview

8.6.3.2. Financial Performance

8.6.3.3. Product Benchmarking

- 8.6.3.4. Strategic Initiatives
- 8.6.4. Samsung Display Co., Ltd.
 - 8.6.4.1. Company Overview
 - 8.6.4.2. Financial Performance
 - 8.6.4.3. Product Benchmarking
 - 8.6.4.4. Strategic Initiatives
- 8.6.5. LG Display Co., Ltd.
 - 8.6.5.1. Company Overview
 - 8.6.5.2. Financial Performance
 - 8.6.5.3. Product Benchmarking
 - 8.6.5.4. Strategic Initiatives
- 8.6.6. Dow Inc.
 - 8.6.6.1. Company Overview
 - 8.6.6.2. Financial Performance
 - 8.6.6.3. Product Benchmarking
 - 8.6.6.4. Strategic Initiatives
- 8.6.7. Avantama GmbH
 - 8.6.7.1. Company Overview
 - 8.6.7.2. Financial Performance
 - 8.6.7.3. Product Benchmarking
 - 8.6.7.4. Strategic Initiatives
- 8.6.8. Ocean NanoTech, LLC
 - 8.6.8.1. Company Overview
 - 8.6.8.2. Financial Performance
 - 8.6.8.3. Product Benchmarking
 - 8.6.8.4. Strategic Initiatives
- 8.6.9. Quantum Solutions LLC
 - 8.6.9.1. Company Overview
 - 8.6.9.2. Financial Performance
 - 8.6.9.3. Product Benchmarking
 - 8.6.9.4. Strategic Initiatives

List Of Tables

LIST OF TABLES

Table 1 Quantum Dots Market Estimates And Forecasts, by Core-Type QDs 2018 - 2033 (USD Million)

Table 2 Quantum Dots Market Estimates And Forecasts, by Core-Shell QDs, 2018 - 2033 (USD Million)

Table 3 Quantum Dots Market Estimates And Forecasts, by Others, 2018 - 2033 (USD Million)

Table 4 Quantum Dots Market Estimates And Forecasts, by Displays & Monitors, 2018 - 2033 (USD Million)

Table 5 Quantum Dots Market Estimates And Forecasts, by Solar Cell, 2018 - 2033 (USD Million)

Table 6 Quantum Dots Market Estimates And Forecasts, by Biomedical, 2018 - 2033 (USD Million)

Table 7 Quantum Dots Market Estimates And Forecasts, by Others, 2018 - 2033 (USD Million)

Table 8 North America Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 9 North America Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 10 North America Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 11 U.S. Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 12 U.S. Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 13 U.S. Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 14 Canada Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 15 Canada Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 16 Canada Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 17 Mexico Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 18 Mexico Quantum Dots Market Estimates And Forecasts, By Product, 2018 -

2033 (USD Million)

Table 19 Mexico Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 20 Europe Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 21 Europe Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 22 Europe Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 23 Germany Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 24 Germany Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 25 Germany Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 26 UK Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 27 UK Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 28 UK Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 29 France Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 30 France Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 31 France Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 32 Italy Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 33 Italy Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 34 Italy Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 35 Spain Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 36 Spain Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 37 Spain Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 38 Asia Pacific Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 39 Asia Pacific Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 40 Asia Pacific Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 41 China Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 42 China Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 43 China Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 44 India Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 45 India Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 46 India Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 47 Japan Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 48 Japan Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 49 Japan Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 50 Central & South America Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 51 Central & South America Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 52 Central & South America Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

Table 53 Middle East & Africa Quantum Dots Market Estimates And Forecasts, 2018 - 2033 (USD Million)

Table 54 Middle East & Africa Quantum Dots Market Estimates And Forecasts, By Product, 2018 - 2033 (USD Million)

Table 55 Middle East & Africa Quantum Dots Market Estimates And Forecasts, By Application, 2018 - 2033 (USD Million)

List Of Figures

LIST OF FIGURES

- Fig. 1 Information Procurement
- Fig. 2 Primary Research Pattern
- Fig. 3 Primary Research Process
- Fig. 4 Market Research Approaches - Bottom-Up Approach
- Fig. 5 Market Research Approaches - Top-Down Approach
- Fig. 6 Market Research Approaches - Combined Approach
- Fig. 7 Market Snapshot
- Fig. 8 Segmental Outlook
- Fig. 9 Competitive Outlook
- Fig. 10 Quantum Dots Market - Value Chain Analysis
- Fig. 11 Quantum Dots Market - Sales Channel Analysis
- Fig. 12 Market Drivers Impact Analysis
- Fig. 13 Market Restraint Impact Analysis
- Fig. 14 Industry Analysis - PORTERS
- Fig. 15 Industry Analysis - PESTEL by SWOT
- Fig. 16 Product: Key Takeaways
- Fig. 17 Product: Market Share, 2024 & 2033
- Fig. 18 Application: Key Takeaways
- Fig. 19 Application: Market Share, 2024 & 2033
- Fig. 20 Region, 2024 & 2033 (USD Million)
- Fig. 21 Regional Marketplace: Key Takeaways
- Fig. 22 Kraljic Matrix
- Fig. 23 Engagement Model
- Fig. 24 Sourcing Best Practices
- Fig. 25 Sourcing Best Practices
- Fig. 26 Competition Categorization
- Fig. 27 Company Market Positioning
- Fig. 28 Strategy Mapping, 2024

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