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Quantum Dot LED Market Opportunity, Growth Drivers, Industry Trend Analysis, and Forecast 2024 – 2032

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Abstracts

The Global Quantum Dot LED Market was valued at USD 6.98 billion in 2023 and is expected to experience remarkable growth at a CAGR of 29.7% from 2024 to 2032. This surge in Quantum Dot LED (QLED) technology is primarily driven by its superior color accuracy, brightness, and energy efficiency. QLEDs are becoming increasingly popular across various consumer electronics, offering exceptional color reproduction and higher peak brightness compared to traditional LED and OLED technologies. This makes them the preferred option for high-end displays, catering to the rising consumer demand for immersive viewing experiences. The technology's precise light emission results in vibrant, lifelike colors, enhancing the overall visual experience.

As the market for premium displays expands, QLEDs are increasingly being adopted, particularly in televisions and monitors, where color performance is a key factor. Additionally, the versatility of QLED technology is fostering growth across a wider range of consumer electronics, extending beyond televisions and monitors to smartphones, tablets, and laptops. The rising demand for ultra-high-definition displays, such as 4K and 8K, positions QLEDs as a leading choice for consumers seeking high-quality visual experiences. The market is segmented by product type, including QLED displays, quantum dot lighting, and other products.

The QLED displays segment is projected to reach USD 24.1 billion by 2032. This segment dominates the Quantum Dot LED market, driven by its superior attributes, which lead to widespread adoption in premium televisions, monitors, and smartphones. Ongoing innovations in QLED technology, such as enhanced quantum dot materials and improved manufacturing processes, are anticipated to further increase the segment’s market share. The quantum dot lighting segment is gaining traction due to

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its energy-efficient illumination potential across various applications, including commercial and residential settings. Quantum dot LEDs are attractive for their superior color rendering and longevity, although this segment is currently smaller than QLED displays.

The focus on sustainability and energy efficiency is likely to accelerate its adoption, particularly in regions with strict energy regulations. In terms of end-users, the market is divided into residential, commercial, and industrial segments, with the commercial segment witnessing the fastest growth at CAGR of 27.3% between 2024 and 2032. The residential segment is experiencing growth driven by increasing consumer demand for advanced display technologies in home entertainment. Conversely, the commercial segment is expanding rapidly due to the growing use of Quantum Dot LEDs in applications like digital signage and professional monitors. In North America, the U.S. held a significant share of 67.9% in the Quantum Dot LED market in 2023. The country's demand for advanced display technologies in consumer electronics fuels growth.Meanwhile, China's quantum dot LED market is flourishing, supported by rapid technological advancements and investments in consumer electronics. The combination of a robust manufacturing infrastructure and increasing consumer demand for high-resolution displays positions China as a key player in the QLED sector.

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Contents

Report Content

CHAPTER 1 METHODOLOGY & SCOPE

1.1 Market scope & definition
1.2 Base estimates & calculations
1.3 Forecast calculation
1.4 Data sources
  1.4.1 Primary
  1.4.2 Secondary
    1.4.2.1 Paid sources
    1.4.2.2 Public sources

CHAPTER 2 EXECUTIVE SUMMARY

2.1 Industry 360° synopsis, 2021 - 2032

CHAPTER 3 INDUSTRY INSIGHTS

3.1 Industry ecosystem analysis
3.2 Vendor matrix
3.3 Profit margin analysis
3.4 Technology & innovation landscape
3.5 Patent analysis
3.6 Key news and initiatives
3.7 Regulatory landscape
3.8 Impact forces
  3.8.1 Growth drivers
    3.8.1.1 Enhanced color accuracy and brightness
    3.8.1.2 Energy efficiency and longevity
    3.8.1.3 Expanding applications in consumer electronics
    3.8.1.4 Advancements in quantum dot technology
    3.8.1.5 Rising demand for 4K and 8K displays
  3.8.2 Industry pitfalls & challenges
    3.8.2.1 Complex manufacturing processes
    3.8.2.2 Intense competition
3.9 Growth potential analysis

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3.10 Porter’s analysis
3.10.1 Supplier power
3.10.2 Buyer power
3.10.3 Threat of new entrants
3.10.4 Threat of substitutes
3.10.5 Industry rivalry
3.11 PESTEL analysis

CHAPTER 4 COMPETITIVE LANDSCAPE, 2023

4.1 Introduction
4.2 Company market share analysis
4.3 Competitive positioning matrix
4.4 Strategic outlook matrix

CHAPTER 5 MARKET ESTIMATES & FORECAST, BY PRODUCT TYPE, 2021 - 2032 (USD MILLION & UNITS)

5.1 Key trends
5.2 QLED displays
5.2.1 QLED televisions
5.2.2 QLED monitors
5.2.3 QLED smartphones
5.2.4 QLED tablets
5.3 Quantum dot lighting
5.4 Other

CHAPTER 6 MARKET ESTIMATES & FORECAST, BY MATERIAL TYPE, 2021 - 2032 (USD MILLION & UNITS)

6.1 Key trends
6.1.1 Cadmium-Based Quantum Dots
6.1.2 Cadmium Selenide (CdSe)
6.1.3 Cadmium Sulfide (CdS)
6.1.4 Cadmium Telluride (CdTe)
6.2 Cadmium-Free Quantum Dots
6.2.1 Indium Phosphide (InP)
6.2.2 Zinc Sulfide (ZnS)
6.2.3 Silicon-based Quantum Dots

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6.3 Graphene Quantum Dots

CHAPTER 7 MARKET ESTIMATES & FORECAST, BY TECHNOLOGY, 2021 - 2032 (USD MILLION & UNITS)

7.1 Key trends
7.2 Electro-Emissive QLED
7.3 Photoluminescent QLED
7.4 Quantum Dot Enhancement Film (QDEF)

CHAPTER 8 MARKET ESTIMATES & FORECAST, BY DISTRIBUTION CHANNEL, 2021 - 2032 (USD MILLION & UNITS)

8.1 Key trends
8.2 Online retail
  8.2.1 E-commerce platforms
  8.2.2 Company websites
8.3 Offline retail
  8.3.1 Supermarkets and hypermarkets
  8.3.2 Specialty stores
  8.3.3 Brand stores

CHAPTER 9 MARKET ESTIMATES & FORECAST, BY APPLICATION, 2021 - 2032 (USD MILLION & UNITS)

9.1 Key trends
9.2 Consumer electronics
  9.2.1 Televisions
  9.2.2 Smartphones
  9.2.3 Tablets
  9.2.4 Monitors
9.3 Healthcare
  9.3.1 Medical imaging devices
  9.3.2 Photodynamic therapy
  9.3.3 Drug delivery
9.4 Optoelectronics
9.5 Solar cells
9.6 Others

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CHAPTER 10 MARKET ESTIMATES & FORECAST, BY END USE, 2021 - 2032 (USD MILLION & UNITS)

10.1 Key trends
10.2 Residential
10.3 Commercial
10.4 Industrial

CHAPTER 11 MARKET ESTIMATES & FORECAST, BY REGION, 2021 - 2032 (USD MILLION & UNITS)

11.1 Key trends
11.2 North America
  11.2.1 U.S.
  11.2.2 Canada
11.3 Europe
  11.3.1 UK
  11.3.2 Germany
  11.3.3 France
  11.3.4 Italy
  11.3.5 Spain
  11.3.6 Rest of Europe
11.4 Asia Pacific
  11.4.1 China
  11.4.2 India
  11.4.3 Japan
  11.4.4 South Korea
  11.4.5 ANZ
  11.4.6 Rest of Asia Pacific
11.5 Latin America
  11.5.1 Brazil
  11.5.2 Mexico
  11.5.3 Rest of Latin America
11.6 MEA
  11.6.1 UAE
  11.6.2 South Africa
  11.6.3 Saudi Arabia
  11.6.4 Rest of MEA

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CHAPTER 12 COMPANY PROFILES

12.1 3M Company
12.2 Amorphyx, Inc.
12.3 AU Optronics
12.4 BOE Technology Group
12.5 DuPont de Nemours, Inc.
12.6 Evident Technologies
12.7 Hansol Chemical Co., Ltd.
12.8 Hisense Group
12.9 Kyulux, Inc.
12.10 LG Display
12.11 Nanoco Group
12.12 Nanosys, Inc.
12.13 OSRAM Licht AG
12.14 PPG Industries, Inc.
12.15 QD Vision
12.16 Quantum Materials Corp.
12.17 Samsung Electronics
12.18 Sharp Corporation
12.19 Sony Corporation
12.20 TCL Corporation
12.21 UbiQD, Inc.
12.22 Vizio, Inc.

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