

South Korea Photonics Market Size, Share, Trends and Forecast by Type, Application, End User, and Region, 2026-2034

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Abstracts

The South Korea photonics market size reached USD 18.0 Billion in 2025. Looking forward, IMARC Group expects the market to reach USD 31.4 Billion by 2034, exhibiting a growth rate (CAGR) of 6.17% during 2026-2034. Improvements in optical communication, rising demand for high-tech manufacturing, and expanding uses in imaging systems, sensors, and medical devices are driving the industry. Strong private sector expenditures combined with government programs encouraging research and development are fostering technological advancements and increasing the South Korea photonics market share.

SOUTH KOREA PHOTONICS MARKET TRENDS:

Expansion of Optical Communication Systems

The rapid advancement of optical communication systems is one of the primary factors driving the growth of the photonics market in South Korea. The need for dependable, fast communication networks has increased due to the nation's growing digital infrastructure and 5G technology developments. A key component of this expansion is optical communication systems, which use photonics technology to transmit data quickly. In an effort to improve broadband connectivity and meet the rising demand for data-intensive applications, the South Korean government and major telecom providers are making significant investments in these technologies. As these technologies become increasingly essential for both corporate and consumer applications, the high level of investment and research in optical fibers, lasers, and related components is anticipated to propel the expansion of the South Korean photonics market. For instance, in February 2024, the University of Glasgow partnered with Sung Kyung Kwan

University (SKKU) in South Korea on a five-year project, JOSEON, focused on quantum technologies. This collaboration aims to develop superconducting photon detectors for secure quantum communication networks in optical fibers and space. With ?2.8m funding, the project will advance quantum devices and promote expertise exchange between the two institutions.

Increasing Industrial Applications

South Korea's photonics market is also benefiting from the growing demand for industrial applications, especially in the fields of manufacturing and automation. The integration of photonics technologies in industries such as automotive, semiconductor, and electronics is driving market growth. Laser cutting, welding, and 3D printing, which rely on high-precision photonic tools, are gaining widespread adoption due to their efficiency and accuracy. Additionally, advancements in machine vision and sensor technologies have allowed manufacturers to improve quality control processes and enhance productivity. The country's well-established manufacturing ecosystem, combined with a strong push towards Industry 4.0, is contributing to the demand for photonics-based solutions. This trend is expected to play a pivotal role in the sustained South Korea photonics market growth. For instance, in April 2025, South Korea's Agency for Defense Development (ADD) demonstrated an AI-based photonic radar technology capable of detecting and identifying small-scale aircraft, such as drones. The radar converts laser light into electromagnetic signals, using AI to analyze reflected signals, enabling target detection. This technology marks a significant advancement in defense surveillance and reconnaissance, demonstrating the ability to identify hard-to-detect aircraft at several kilometers. ADD continues to focus on combat experiments and further advancements in optical radar technology.

SOUTH KOREA PHOTONICS MARKET SEGMENTATION:

IMARC Group provides an analysis of the key trends in each segment of the market, along with forecasts at the country/regional level for 2026-2034. Our report has categorized the market based on type, application, and end user.

Type Insights:

LED

Lasers, Detectors, Sensors and Imaging Devices

Optical Communication Systems and Components

Others

The report has provided a detailed breakup and analysis of the market based on the type. This includes LED, lasers, detectors, sensors and imaging devices, optical communication systems and components, and others.

Application Insights:

Surveying and Detection

Production Technology

Data Communication

Image Capture and Display

Medical Technology

Lighting

Others

The report has provided a detailed breakup and analysis of the market based on the application. This includes surveying and detection, production technology, data communication, image capture and display, medical technology, lighting, and others.

End User Insights:

Building Construction

Media, Broadcasting and Telecommunication

Consumer Electronics

Medical

Safety and Defense

Industrial

The report has provided a detailed breakup and analysis of the market based on the end user. This includes building construction, media, broadcasting and telecommunication, consumer electronics, medical, safety and defense, and industrial.

Regional Insights:

Seoul Capital Area

Yeongnam (Southeastern Region)

Honam (Southwestern Region)

Hoseo (Central Region)

Others

The report has also provided a comprehensive analysis of all the major regional markets, which include Seoul Capital Area, Yeongnam (Southeastern Region), Honam (Southwestern Region), Hoseo (Central Region), and others.

COMPETITIVE LANDSCAPE:

The market research report has also provided a comprehensive analysis of the competitive landscape. Competitive analysis such as market structure, key player positioning, top winning strategies, competitive dashboard, and company evaluation quadrant has been covered in the report. Also, detailed profiles of all major companies have been provided.

KEY QUESTIONS ANSWERED IN THIS REPORT

How has the South Korea photonics market performed so far and how will it perform in the coming years?

What is the breakup of the South Korea photonics market on the basis of type?

What is the breakup of the South Korea photonics market on the basis of application?
What is the breakup of the South Korea photonics market on the basis of end user?
What is the breakup of the South Korea photonics market on the basis of region?
What are the various stages in the value chain of the South Korea photonics market?
What are the key driving factors and challenges in the South Korea photonics market?
What is the structure of the South Korea photonics market and who are the key players?
What is the degree of competition in the South Korea photonics market?

Contents

1 PREFACE

2 SCOPE AND METHODOLOGY

- 2.1 Objectives of the Study
- 2.2 Stakeholders
- 2.3 Data Sources
 - 2.3.1 Primary Sources
 - 2.3.2 Secondary Sources
- 2.4 Market Estimation
 - 2.4.1 Bottom-Up Approach
 - 2.4.2 Top-Down Approach
- 2.5 Forecasting Methodology

3 EXECUTIVE SUMMARY

4 SOUTH KOREA PHOTONICS MARKET - INTRODUCTION

- 4.1 Overview
- 4.2 Market Dynamics
- 4.3 Industry Trends
- 4.4 Competitive Intelligence

5 SOUTH KOREA PHOTONICS MARKET LANDSCAPE

- 5.1 Historical and Current Market Trends (2020-2025)
- 5.2 Market Forecast (2026-2034)

6 SOUTH KOREA PHOTONICS MARKET - BREAKUP BY TYPE

- 6.1 LED
 - 6.1.1 Overview
 - 6.1.2 Historical and Current Market Trends (2020-2025)
 - 6.1.3 Market Forecast (2026-2034)
- 6.2 Lasers, Detectors, Sensors and Imaging Devices
 - 6.2.1 Overview
 - 6.2.2 Historical and Current Market Trends (2020-2025)

- 6.2.3 Market Forecast (2026-2034)
- 6.3 Optical Communication Systems and Components
 - 6.3.1 Overview
 - 6.3.2 Historical and Current Market Trends (2020-2025)
 - 6.3.3 Market Forecast (2026-2034)
- 6.4 Others
 - 6.4.1 Historical and Current Market Trends (2020-2025)
 - 6.4.2 Market Forecast (2026-2034)

7 SOUTH KOREA PHOTONICS MARKET - BREAKUP BY APPLICATION

- 7.1 Surveying and Detection
 - 7.1.1 Overview
 - 7.1.2 Historical and Current Market Trends (2020-2025)
 - 7.1.3 Market Forecast (2026-2034)
- 7.2 Production Technology
 - 7.2.1 Overview
 - 7.2.2 Historical and Current Market Trends (2020-2025)
 - 7.2.3 Market Forecast (2026-2034)
- 7.3 Data Communication
 - 7.3.1 Overview
 - 7.3.2 Historical and Current Market Trends (2020-2025)
 - 7.3.3 Market Forecast (2026-2034)
- 7.4 Image Capture and Display
 - 7.4.1 Overview
 - 7.4.2 Historical and Current Market Trends (2020-2025)
 - 7.4.3 Market Forecast (2026-2034)
- 7.5 Medical Technology
 - 7.5.1 Overview
 - 7.5.2 Historical and Current Market Trends (2020-2025)
 - 7.5.3 Market Forecast (2026-2034)
- 7.6 Lighting
 - 7.6.1 Overview
 - 7.6.2 Historical and Current Market Trends (2020-2025)
 - 7.6.3 Market Forecast (2026-2034)
- 7.7 Others
 - 7.7.1 Historical and Current Market Trends (2020-2025)
 - 7.7.2 Market Forecast (2026-2034)

8 SOUTH KOREA PHOTONICS MARKET - BREAKUP BY END USER

8.1 Building Construction

8.1.1 Overview

8.1.2 Historical and Current Market Trends (2020-2025)

8.1.3 Market Forecast (2026-2034)

8.2 Media, Broadcasting and Telecommunication

8.2.1 Overview

8.2.2 Historical and Current Market Trends (2020-2025)

8.2.3 Market Forecast (2026-2034)

8.3 Consumer Electronics

8.3.1 Overview

8.3.2 Historical and Current Market Trends (2020-2025)

8.3.3 Market Forecast (2026-2034)

8.4 Medical

8.4.1 Overview

8.4.2 Historical and Current Market Trends (2020-2025)

8.4.3 Market Forecast (2026-2034)

8.5 Safety and Defense

8.5.1 Overview

8.5.2 Historical and Current Market Trends (2020-2025)

8.5.3 Market Forecast (2026-2034)

8.6 Industrial

8.6.1 Overview

8.6.2 Historical and Current Market Trends (2020-2025)

8.6.3 Market Forecast (2026-2034)

9 SOUTH KOREA PHOTONICS MARKET – BREAKUP BY REGION

9.1 Seoul Capital Area

9.1.1 Overview

9.1.2 Historical and Current Market Trends (2020-2025)

9.1.3 Market Breakup by Type

9.1.4 Market Breakup by Application

9.1.5 Market Breakup by End User

9.1.6 Key Players

9.1.7 Market Forecast (2026-2034)

9.2 Yeongnam (Southeastern Region)

9.2.1 Overview

- 9.2.2 Historical and Current Market Trends (2020-2025)
- 9.2.3 Market Breakup by Type
- 9.2.4 Market Breakup by Application
- 9.2.5 Market Breakup by End User
- 9.2.6 Key Players
- 9.2.7 Market Forecast (2026-2034)
- 9.3 Honam (Southwestern Region)
 - 9.3.1 Overview
 - 9.3.2 Historical and Current Market Trends (2020-2025)
 - 9.3.3 Market Breakup by Type
 - 9.3.4 Market Breakup by Application
 - 9.3.5 Market Breakup by End User
 - 9.3.6 Key Players
 - 9.3.7 Market Forecast (2026-2034)
- 9.4 Hoseo (Central Region)
 - 9.4.1 Overview
 - 9.4.2 Historical and Current Market Trends (2020-2025)
 - 9.4.3 Market Breakup by Type
 - 9.4.4 Market Breakup by Application
 - 9.4.5 Market Breakup by End User
 - 9.4.6 Key Players
 - 9.4.7 Market Forecast (2026-2034)
- 9.5 Others
 - 9.5.1 Historical and Current Market Trends (2020-2025)
 - 9.5.2 Market Forecast (2026-2034)

10 SOUTH KOREA PHOTONICS MARKET – COMPETITIVE LANDSCAPE

- 10.1 Overview
- 10.2 Market Structure
- 10.3 Market Player Positioning
- 10.4 Top Winning Strategies
- 10.5 Competitive Dashboard
- 10.6 Company Evaluation Quadrant

11 PROFILES OF KEY PLAYERS

- 11.1 Company A
 - 11.1.1 Business Overview

- 11.1.2 Services Offered
- 11.1.3 Business Strategies
- 11.1.4 SWOT Analysis
- 11.1.5 Major News and Events
- 11.2 Company B
 - 11.2.1 Business Overview
 - 11.2.2 Services Offered
 - 11.2.3 Business Strategies
 - 11.2.4 SWOT Analysis
 - 11.2.5 Major News and Events
- 11.3 Company C
 - 11.3.1 Business Overview
 - 11.3.2 Services Offered
 - 11.3.3 Business Strategies
 - 11.3.4 SWOT Analysis
 - 11.3.5 Major News and Events
- 11.4 Company D
 - 11.4.1 Business Overview
 - 11.4.2 Services Offered
 - 11.4.3 Business Strategies
 - 11.4.4 SWOT Analysis
 - 11.4.5 Major News and Events
- 11.5 Company E
 - 11.5.1 Business Overview
 - 11.5.2 Services Offered
 - 11.5.3 Business Strategies
 - 11.5.4 SWOT Analysis
 - 11.5.5 Major News and Events

12 SOUTH KOREA PHOTONICS MARKET - INDUSTRY ANALYSIS

- 12.1 Drivers, Restraints, and Opportunities
 - 12.1.1 Overview
 - 12.1.2 Drivers
 - 12.1.3 Restraints
 - 12.1.4 Opportunities
- 12.2 Porters Five Forces Analysis
 - 12.2.1 Overview
 - 12.2.2 Bargaining Power of Buyers

- 12.2.3 Bargaining Power of Suppliers
- 12.2.4 Degree of Competition
- 12.2.5 Threat of New Entrants
- 12.2.6 Threat of Substitutes
- 12.3 Value Chain Analysis

13 APPENDIX

I would like to order

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