

Global UV-IR Biolighting Module Market 2026 by Manufacturers, Regions, Type and Application, Forecast to 2032

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Abstracts

According to our (Global Info Research) latest study, the global UV-IR Biolighting Module market size was valued at US\$ 5640 million in 2025 and is forecast to a readjusted size of US\$ 13540 million by 2032 with a CAGR of 13.3% during review period.

A UV-IR Biolighting Module is an optical-electronic lighting system that integrates ultraviolet (UV) and infrared (IR) light sources to regulate biological processes in plants, microorganisms, or biomedical applications. It is typically designed to provide wavelength-specific irradiation for functions such as plant growth regulation, sterilization, photomorphogenesis control, or therapeutic stimulation. The module often combines LED or laser-based UV (e.g., UVA/UVB/UVC) and IR (near-IR or far-IR) emitters with optical diffusion, thermal management, and intelligent control systems. In 2025, global UV-IR Biolighting Module production reached approximately 29.63 M units, with an average global market price of around US\$ 185 per unit. Annual production capacity is 35 M units. Gross Profit Margin: 37%. The UV-IR Biolighting Module industry chain is structured across upstream LED chip and optical material suppliers, midstream module and fixture manufacturers, and downstream application sectors such as controlled-environment agriculture, vertical farming, greenhouse cultivation, and biophotonic research. Upstream players provide UV, IR, and full-spectrum LED chips along with drivers and thermal components, while midstream manufacturers integrate spectrum control systems, PPFD calibration, and thermal management into standardized lighting modules. Downstream demand is driven by high-value crop production and precision agriculture systems that require stable spectral control and energy efficiency. The market development of UV-IR Biolighting Modules is increasingly shaped by spectrum precision, energy efficiency, and intelligent control integration.

Product evolution is shifting from basic horticulture lighting toward multi-band spectral regulation systems combining UV stress control, IR thermal modulation, and real-time adaptive PPFD management. From a commercial standpoint, competitive advantage is concentrated in companies capable of vertical integration across LED manufacturing, optical design, and smart agricultural control systems, enabling scalable deployment in industrial farming environments.

This report is a detailed and comprehensive analysis for global UV-IR Biolighting Module market. Both quantitative and qualitative analyses are presented by manufacturers, by region & country, by Spectrum Composition 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 2025, are provided.

Key Features:

Global UV-IR Biolighting Module market size and forecasts, in consumption value (\$ Million), sales quantity (Units), and average selling prices (US\$/Unit), 2021-2032

Global UV-IR Biolighting Module market size and forecasts by region and country, in consumption value (\$ Million), sales quantity (Units), and average selling prices (US\$/Unit), 2021-2032

Global UV-IR Biolighting Module market size and forecasts, by Spectrum Composition and by Application, in consumption value (\$ Million), sales quantity (Units), and average selling prices (US\$/Unit), 2021-2032

Global UV-IR Biolighting Module market shares of main players, shipments in revenue (\$ Million), sales quantity (Units), and ASP (US\$/Unit), 2021-2026

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 UV-IR Biolighting Module

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 UV-IR Biolighting Module market based on the following parameters - company overview, sales quantity, revenue, price, gross margin, product portfolio, geographical presence, and key developments. Key companies covered as a part of this study include Signify, Ams Osram, Fluence By Signify, Heliospectra Ab, Valoya Oy, Gavita International B.V., Hortilux Schröder B.V., Current Lighting Solutions Llc, Illumitex Inc., California Lightworks Inc., etc.

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

Market Segmentation

UV-IR Biolighting Module market is split by Spectrum Composition and by Application. For the period 2021-2032, the growth among segments provides accurate calculations and forecasts for consumption value by Spectrum Composition, 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 Spectrum Composition

UV-Dominant Module

Balanced UV-IR Module

IR-Assisted Module

Market segment by Power Density

Low Intensity Module(? 1 ? 10 W/m?)

Medium Intensity Module(? 10 ? 100 W/m?)

High Intensity Module(? 100 ? 500 W/m?)

Market segment by Photon Flux

Low PPFD Module: 50 ? 150 ?mol/m²/s

Medium PPFD Module: 150 ? 400 ?mol/m²/s

High PPFD Module: 400 ? 800 ?mol/m²/s

Ultra-High PPFD Module: 800 ? 1500 ?mol/m²/s

Market segment by Application

Greenhouse

Vertical Farming

Indoor Plant

Research / Lab

Others

Major players covered

Signify

Ams Osram

Fluence By Signify

Heliospectra Ab

Valoya Oy

Gavita International B.V.

Hortilux Schröder B.V.

Current Lighting Solutions Llc

Illumitex Inc.

California Lightworks Inc.

Lumigrow Inc.

Kessil Lighting

Senmatic A/S

Fionia Lighting A/S

Agrolux Nederland B.V.

Sananbio Co., Ltd.

Ohmax Optoelectronic

Cidly Technology Co., Ltd.

Nanolux Technology Inc.

Yaham Lighting 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 UV-IR Biolighting Module product scope, market overview, market estimation caveats and base year.

Chapter 2, to profile the top manufacturers of UV-IR Biolighting Module, with price, sales quantity, revenue, and global market share of UV-IR Biolighting Module from 2021 to 2026.

Chapter 3, the UV-IR Biolighting Module competitive situation, sales quantity, revenue, and global market share of top manufacturers are analyzed emphatically by landscape contrast.

Chapter 4, the UV-IR Biolighting Module breakdown data are shown at the regional level, to show the sales quantity, consumption value, and growth by regions, from 2021 to 2032.

Chapter 5 and 6, to segment the sales by Spectrum Composition and by Application, with sales market share and growth rate by Spectrum Composition, by Application, from 2021 to 2032.

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 2021 to 2026. and UV-IR Biolighting Module market forecast, by regions, by Spectrum Composition, and by Application, with sales and revenue, from 2027 to 2032.

Chapter 12, market dynamics, drivers, restraints, trends, and Porters Five Forces analysis.

Chapter 13, the key raw materials and key suppliers, and industry chain of UV-IR Biolighting Module.

Chapter 14 and 15, to describe UV-IR Biolighting Module sales channel, distributors, customers, research findings and conclusion.

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