

Grow Lights - Market Share Analysis, Industry Trends & Statistics, Growth Forecasts (2025 - 2030)

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Report description:

Grow Lights Market Analysis

The grow lights market size is USD 5.56 billion in 2025 and is on track to reach USD 12.38 billion by 2030, advancing at a 17.36% CAGR. Growth is propelled by rapid LED adoption, expanding controlled-environment agriculture, and rising demand from both commercial greenhouses and vertically stacked urban farms. Hardware still captures most spending, yet the swift uptake of software-driven spectrum controls points to deeper integration of sensors, IoT connectivity, and data analytics. Retrofit activity outpaces new builds as greenhouse operators swap legacy HID fixtures for high-efficacy LEDs, helped by utility rebates that shorten payback periods. Cannabis legalization in North America, tighter energy regulations in Europe, and aggressive food-security programs in the Gulf are further stimulating the grow lights market across applications and regions.

Global Grow Lights Market Trends and Insights

Off-season High-Value Crop Production Surge in Nordic Vertical Farms

Nordic growers mitigate extreme winter darkness by installing dense vertical-farm stacks that run solely on LEDs delivering up to 350-fold higher yield per square meter than field cultivation. Operators tune LEDs to crop-specific spectra, trimming growth cycles by 25% and boosting nutrient density. Energy efficiency is decisive, as electricity is the chief operating cost. Success in this harsh-light region is turning Finland and Sweden into technology exporters, with local firms licensing turnkey farm modules across Europe. This trajectory adds sustained momentum to the grow lights market as demand shifts from proofs of concept toward

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multi-megawatt food factories that need reliable, high-PPE fixtures and adaptive controls.

Adult-Use Cannabis Legalization Accelerating Controlled-Environment Capacity in Germany & the United States

Germany's federal law permitting adult-use cannabis and additional US state approvals are unlocking capital for new, highly controlled facilities. Cannabis flowers need photon densities up to $1,500 \mu\text{mol m}^{-2} \text{s}^{-1}$, driving fixture counts and electrical loads far above those for leafy greens. Cultivators favor premium LEDs that enhance cannabinoid and terpene profiles, paying for high PPE and spectrum flexibility. Utility rebates lower operating costs, while efficiency mandates such as California Title 24 effectively prohibit low-efficacy lamps. These factors collectively push the grow lights market toward performance-led differentiation.

Tariffs on China-Origin LED Chips Elevating Fixture Costs in North America

United States trade measures add up to 25% duty on key semiconductors, squeezing domestic lighting manufacturers. Companies must either absorb reduced margins or raise list prices, lengthening ROI for growers. Some firms shift sourcing to countries with friendlier tariffs, but tool requalification and certification slow that pivot. Cost pressure arrives just as many cultivators weigh LED upgrades, making financing more complex and slightly tempering grow lights market momentum.

Other drivers and restraints analyzed in the detailed report include:

GCC Urban Agriculture Grants and Subsidised Electricity for Indoor Farms / Mega-city Warehouse Conversions in APAC Addressing Arable-Land Scarcity / Energy Price Volatility Undermining Payback Periods in European Greenhouses /

For complete list of drivers and restraints, kindly check the Table Of Contents.

Segment Analysis

LEDs captured 65% of grow lights market share in 2024 and are growing at 18.2% CAGR to 2030. Their photosynthetic photon efficacy now tops $3.1 \mu\text{mol J}^{-1}$, a 90% leap over legacy HPS. LEDs' falling price and spectrum accuracy make them the default choice for new installs and retrofits, reinforcing scale advantages that keep R&D flowing. HID lamps still play a role where radiant heat aids crop physiology, but their niche narrows yearly. Fluorescent tubes remain popular with hobbyists because of low purchase costs, yet declining prices for entry-level LEDs steadily erode that segment. Plasma and induction stay research-focused, adding minimal revenue to the grow lights market.

Developers now exploit multi-channel diodes that let growers dial spectra from propagation to flowering. This functionality reduces the need for fixture swaps between growth stages and supports experimentation with photomorphogenic triggers. Such versatility drives adoption in vertical farms and cannabis rooms, pushing the grow lights market toward intelligent lighting packages rather than commodity luminaires.

Retrofit projects accounted for 58% of grow lights market size in 2024, reflecting millions of square meters of greenhouse area still lit by HPS. Swapping these fixtures trims energy bills by 30-50%, and many North American utilities fund up to half the hardware cost when luminaires meet Design Lights Consortium rules. Payback periods in well-incentivized states fall below two years, ensuring steady retrofit demand.

New-build activity is rising at 20% CAGR as greenfield vertical farms and cannabis campuses proliferate. Fresh facilities integrate lighting layouts with HVAC, fertigation, and data networks from day one. This system-level design improves photon uniformity and simplifies future upgrades, helping the grow lights market capture incremental dollars for mounting gear, network gateways, and commissioning services.

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The Grow Lights Market Report is Segmented by Offering (Hardware, Software, and Services), Light Source Technology (High-Intensity Discharge Lights, and More), Spectrum (Full/Broad Spectrum, and More), Power Rating (Below 300 W, 300 - 1000 W, and More), Installation Type (New Installations, and Retrofit Installations), Application (Indoor Farming, and More), and Geography. The Market Forecasts are Provided in Terms of Value (USD).

Geography Analysis

North America led the grow lights market with 40% share in 2024. US and Canadian greenhouses benefit from utility incentives, while cannabis cultivation drives premium fixture demand. State rules like California Title 24 lock out low-efficacy lamps, entrenched LEDs, and boost control-system uptake. Universities and ag-tech incubators further spread best practices, reinforcing regional leadership and seeding export know-how.

Asia Pacific is the fastest-growing territory at a 19% CAGR through 2030. Megacity land scarcity pushes indoor farming, and government food-security mandates subsidize vertical farms from Singapore to Seoul. Local diode supply shortens lead times, partially offsetting tariff effects seen elsewhere. China's modernization programs target energy-efficient agriculture, steering grants to LED upgrades. These factors enlarge the grow lights market footprint across APAC's varied climates.

Europe maintains a robust position anchored by sophisticated greenhouse sectors in the Netherlands and Spain and cutting-edge vertical farms in the Nordics. Strict Ecodesign regulations accelerate LED turnover, while carbon pricing forces operators to scrutinize every kilowatt. Research comparing Danish and Canadian sites underlined that financial viability hinges on local energy rates, nudging European growers toward dynamic lighting that only runs when photons are profitable. This regulatory-science interplay sustains steady grow lights market adoption despite energy volatility.

List of Companies Covered in this Report:

Signify Holding / OSRAM GmbH (Fluence) / Savant Systems (GE Current) / Heliospectra AB / Lumileds Holding B.V. / Bridgelux Inc. / Cree LED / Samsung Electronics Co., Ltd. / Everlight Electronics Co., Ltd. / Valoya Oy / California LightWorks / Gavita International B.V. (Hawthorne) / LumiGrow Inc. / AB Lighting / Kind LED Grow Lights / ViparSpectra / Iwasaki Electric Co., Ltd. / Lemnis Oreon B.V. / Hortilux Schreder / BML Horticulture / ProGrowTech / Illumitex Inc. /

Additional Benefits:

The market estimate (ME) sheet in Excel format /
3 months of analyst support /

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