

DOB Optical Module



Overview

DOB Module Application Guide-Choosing the Right Solution for 5 Key. To help lighting manufacturers, product managers, and optical engineers make informed.

Key Takeaways

A DOB (Driver-On-Board) optical module integrates the LED driver directly onto the LED PCB, creating a compact, efficient, and high-performance lighting solution. What is a DOB Module?

A DOB module combines the AC-to-DC driver circuitry with the LED array on a single printed circuit board (PCB), eliminating the need for a separate external driver. This integration reduces fixture size, simplifies assembly, lowers bill-of-material costs, and allows for ultra-slim luminaire designs (). Because the LEDs and driver share the same substrate, thermal management and electrical design are critical to ensure stable performance and long lifespan.

Key Design Considerations

- **Thermal Management:** Since the driver and LEDs share the same board, heat dissipation must be carefully engineered to prevent overheating, lumen depreciation, or premature failure ().
- **Electrical Performance:** Proper component selection ensures flicker-free operation, high power factor, and compatibility with dimming systems such as 0-10V or PWM dimming ().

- **Application Matching:** Modules must be chosen based on the intended environment—residential, commercial, industrial, or outdoor—because each has different power, temperature, and operational requirements ().

Applications

DOB modules are versatile and used in various lighting scenarios:

- **Commercial and Office Lighting:** Ensures stable light output, high color rendering, and flicker-free illumination for visual comfort ().
- **Industrial and Warehouse Lighting:** High-power modules with robust thermal management for long operational hours ().
- **Outdoor and Architectural Lighting:** Slim, low-profile modules with wide-angle illumination and weather-resistant designs ().

Supplier Selection

Choosing a reliable DOB module supplier is crucial. Factors to consider include:

- Engineering capability to optimize LED layouts and thermal solutions.
- Experience with flicker control, high power factor design, and long-term stability.
- Ability to provide technical support and customization for specific applications ().

Optical Modules in Data Communication

In addition to lighting, optical modules in high-bandwidth data communication (e.g., SFP, SFP+, XFP, CFP) require precise control of laser diodes, photodiode sensing, and low power consumption to manage temperature rise (). While these are not LED lighting DOB modules, the principle of integrating driver and optical components for compact, efficient performance is similar.

Summary

A DOB optical module is a compact, integrated solution that combines LED and driver electronics on a single board, offering efficiency, simplified assembly, and high performance. Proper design, thermal management, and supplier selection are essential to ensure reliability across residential, commercial, industrial, and outdoor applications ().

Article Content

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DOB LED Modules

Adura's Driver-on-Board (DOB) LED modules integrate high-efficiency LEDs and driver technology into

Premium 50W LED Module DOB OSRAM 7000Lm 90° IP67

50W LED optical module with DOB (Driver on Board) technology and 90° optics, designed for streetlights, floodlights or recessed

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AC DOB (driver on board) led modules

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PCB/DOB LED Light Module

Compared with traditional light sources, DOB modules lights are easier to install, have fewer failure points,

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PCB/DOB LED Light Module

PCB DOB LED light board module (Driver-on-Board) is an LED lighting solution that integrates a driver and

AC LED Module, 120V/230VAC DOB LED Module -LUXCOB

Since 2011, Luxcob developed first AC LED module, more and more client tried to use AC LED module as their light engine.

DOB (Diode on Board) technology

With the rapid development of LED lighting technology, DOB (Diode on Board) is gradually replacing the traditional

Innovative DOB LED Lens Technology for Efficient Lighting

DOB stands for "Driver on Board," and a DOB LED lens is a lighting technology that

DOBi AC Line Voltage LED Board

QLUX DOB AC Line Voltage LED boards are fully dimmable, high performance solid-state light emitters. They are optimized for

Optical Module: A Comprehensive Analysis from Source to Terminal

Optical modules are key transmission components in communication networks, and their applications, technologies,

led bulb dob circuit diagram

Here is a typical diagram of DOB LED circuit: How Does DOB LED Driver Circuit Work?
The DOB LED driver circuit

The Future of Led Lighting: DOB VS LED driver – Solux

Overall, the emergence of DOB signals a new era in LED lighting, one where simplicity, stability, and cost

Optical Module Guide: Demystifying Optical Modules and Their Uses

Optical modules are essential components in modern communication networks, enabling high-speed data

Wholesale LED Linear Lighting Manufacturer | LED Strip Light Factory

DOB Lighting is a leading LED Strip Light manufacturer in Guangdong, China, with 10 years of experience. Our 5000m² lighting

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Driver-on-Board (DOB) LED Lights | Global Lighting Forum

A DOB LED light is an LED lighting system (either an LED bulb or an LED luminaire) that incorporates a light engine

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Inspections & Violations The Department strives to ensure the safe and lawful use of approximately one million buildings and

What is DOB in LED luminaires?

In the field of LED luminaires, DOB (Driver on Board) is a technology that integrates the power driver directly onto the LED light

What Is an Optical Module and Its FAQs (V200)

What Is an Optical Module and Its FAQs (V200) Describes what an optical module is and FAQs, including the fundamentals,

ProLight Opto Launches New Driver on Board (DOB) Series

ProLight DOB (Driver on Board) series are designed to be driven directly off of AC 110V without converters. It is a

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This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

