

How much do optical module structural components cost

Article Overview

Optical module structural components, such as precision die-cast housings, can be quoted based on material, complexity, and production volume, with suppliers offering custom solutions from prototyping to mass production.

Key Factors Affecting Price

- o **Material Selection** Components are typically made from aluminum or magnesium alloys, chosen for lightweight strength, thermal management, and EMI/RFI shielding. Material choice directly impacts cost, with high-performance alloys being more expensive .
- o **Manufacturing Process** Advanced high-pressure die-casting (HPDC) ensures micron-level tolerances, complex geometries, and ultra-thin walls. Additional processes like CNC machining, stamping, plastic molding, and surface treatments (plating, spraying) add to the overall cost .
- o **Design Complexity** The more intricate the housing or enclosure, the higher the cost. Precision fit for lenses, connectors, and PCBs is critical for signal integrity and automated assembly, which may require additional engineering and prototyping .
- o **Production Volume** Suppliers typically support small-batch prototyping (100 units) up to mass production (1M+ units). Unit cost decreases with higher volumes due to economies of scale .
- o **Quality Standards** Compliance with ISO9001:2015 and IATF16949:2016 ensures reliability and consistency. Components for high-speed optical modules in data centers or telecom applications often require strict quality control, which can influence pricing .

Obtaining a Quote

- o **Direct Supplier Inquiry:** Companies like Dongguan Guangwei Communication Technology Co., Ltd. provide custom quotes. You can request a free sample or detailed pricing by contacting them through their inquiry portal .
- o **Consider Total Cost:** Beyond unit price, factor in lead times, compatibility validation, and operational reliability, as failures or delays can significantly increase total cost .
- o **Compare Multiple Suppliers:** Use platforms like Octopart to compare part specifications, pricing, and availability across distributors .

Recommendation

To get an accurate price quote, provide the supplier with:

- o Desired material and alloy type
- o Dimensions and tolerances

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- o Production volume
- o Any surface treatment or plating requirements
- o Target application (e.g., 100G optical transceivers, telecom, data center) This ensures the quote reflects both manufacturing complexity and performance requirements, helping you balance cost and quality effectively.

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

Explore the working principles, structures, and performance metrics of optical modules, essential components of

The overall cost of an optical module chip depends on material choices, design complexity, manufacturing processes,

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Unlike conventional PCBs, those designed for optical modules operate at the intersection of extreme electrical performance, stringent

High-speed optical module chips (100G, 400G, 800G) are the most expensive components of optical networks due to

Optical modules are key components in fiber optic communication systems, responsible for electro-optical conversion,

The optical module is one of the core devices of the optical communication system, and its development has a vital

Although optical modules are high-tech products, raw material costs account for as much as 60%-70% of the total cost,

Fiber-life specializes in producing and selling enterprise SONiC-based open network

Discover the key factors that drive 400G optical transceiver pricing--from form-factor and component costs to market dynamics and

Optical modules come in various types, and their external structures are not exactly the same. However, their basic compositional

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Optical modules are electronic devices used in communication systems to transmit optical signals. These modules

Discover 100G QSFP28 module pricing. Learn key cost factors, considerations, and real examples to make informed

Summary: This article analyzes the cost components of optical transceivers, including material costs, manufacturing costs, R&D

One of these components is the aluminum frame, which on the one hand is an important structural component of the

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