

# Price of butterfly-shaped optical cable production equipment

## Article Overview

The production cost of butterfly-shaped optical cables depends on raw materials, specialized machinery, labor, and operational expenses, with significant investment required for extrusion and assembly equipment.

## Key Cost Components

1. Raw Materials: Butterfly-shaped optical cables typically use LSZH (low-smoke, halogen-free) sheathing, optical fibers, and strength members such as steel wire or FRP rods. The cost of ultra-pure glass for fiber drawing, protective coatings, and sheathing materials forms a substantial portion of production expenses. Material quality directly affects both performance and durability, influencing overall cost efficiency ( ). 2. Machinery and Equipment: Production requires specialized equipment including:

- o Extrusion lines with extruders, dies, and cooling/drying mechanisms for shaping the butterfly profile ( ).
  - o Pay-off and tension control systems for precise fiber handling, often with AC frequency conversion motors and PID controllers to maintain consistent fiber tension ( ).
  - o Preheating and dehumidification units using far-infrared heating to ensure fiber integrity during extrusion ( ).
- The initial capital investment for a complete production line can range from hundreds of thousands to over a million USD, depending on automation level and production capacity. 3. Labor and Operational Costs: Skilled operators are required for line setup, monitoring, and quality control. Operational costs include electricity for motors and heating systems, maintenance of precision equipment, and utilities for cooling and drying processes ( ). 4. Production Process Complexity: Butterfly-shaped cables involve multiple steps: fiber drawing, coating, buffer application, strength member integration, jacketing, and optical testing. Each step adds to labor, energy, and equipment wear costs ( ). 5. Market and Tariff Considerations: Global market demand for self-supporting butterfly optical cables is growing, with a projected market size of USD 1.56 billion by 2032 ( ). Tariffs on imported raw materials or equipment can add significant costs, as seen in the fiber optic sector where tariff impacts can reach hundreds of millions USD for large-scale operations ( ).

## Cost Estimation Summary

While exact per-unit costs vary by production scale, location, and material sourcing, the main contributors to production cost are:

- o Raw materials: 40-50% of total cost
  - o Machinery depreciation and maintenance: 20-30%
  - o Labor and utilities: 15-25%
  - o Quality control and testing: 5-10%
- For a medium-scale plant producing butterfly-shaped optical cables, unit production costs can range from \$1.50 to \$3.50 per meter, depending on fiber count, sheathing type, and

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automation level.

## Conclusion

The production cost of butterfly-shaped optical cables is influenced by high-quality raw materials, specialized extrusion and pay-off machinery, skilled labor, and operational efficiency. Investment in advanced equipment and process optimization can reduce per-unit costs while maintaining high performance and reliability, which is critical for applications like Fiber-to-the-Home (FTTH) and aerial installations ( ).

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High-quality Fiber Optic Cable Extrusion Sheathing Line Making Machine for Optical Fiber Butterfly supplied by Wuxi Longterm

Bulkbuy Optic Cable Outer Sheathing Extrusion Production Line for Butterfly-Shaped Fiber Optical Cables^ price comparison, get

this production line is used for the production of butterfly optical cables with single and double optical fiber Extrusion material are

Introduction:The butterfly-shaped optical cable is a type of fiber optic cable that is widely used

Therefore, this kind of optical cable has been widely used in optical communication systems and has good development prospects.

Attributes Multifunctionalusage Jiangsu, Chinaplace of origin Krenobrand name YY-DLI SJ50 65 Butterfly (FTTH) cablemodel

Fiber Optic Cable Production Line refers to the integrated machinery and technology used to manufacture high-quality optical cables

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Machine Extrusion

PE Fiber Cable Extrusion Sheathing Line for Optical Fiber Butterfly Cables Production^, Find Details and

An indoor butterfly-shaped optical cable is a type of fiber optic cable designed for indoor use. It is named after its unique

The Self-Supporting Butterfly Optical Fibre Cable Market was valued at USD 945.5 Million in 2025 and is projected to

The invention relates to the field of optical cable production, in particular to a butterfly-shaped optical cable production device which

Pigtail Splicing Pigtail splicing is a method of connecting butterfly-shaped optical fiber cables that involves splicing a

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