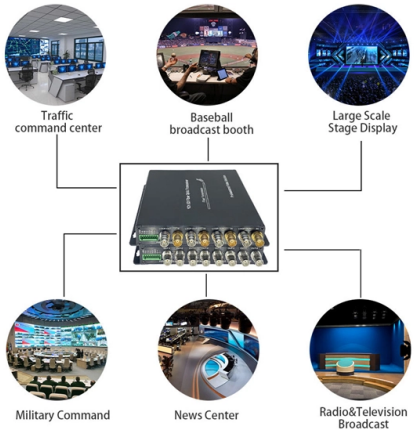
Clamp the tail fiber



Overview

Tail Fiber: Types, Functions, and Common InterfacesBy fusing the bare fibers in the optical cable with the tail fiber, a seamless connection is established.

Key Takeaways

Clamping the tail fiber refers to the stabilization or attachment of bacteriophage tail fibers to the host or viral baseplate, ensuring proper binding and infection.

Structure and Function of Tail Fibers

Bacteriophage T4 has long tail fibers (LTFs) that extend from the baseplate and are essential for host recognition and attachment.

Each LT

F is composed of multiple proteins: gp34 forms the "thigh," gp35 the "knee," gp36 the upper "lower leg," and gp37 the "foot," which directly interacts with bacterial receptors such as lipopolysaccharide (LPS) and outer membrane protein C (OmpC) on Escherichia coli. The distal tip of gp37 contains a trimeric structure that binds these receptors, allowing the phage to attach and move on the bacterial surface.

Mechanism of Clamping

The term "clamp" in this context can be understood as the mechanical stabilization of the tail fiber during host attachment. The tail fibers act like articulated legs, with flexible hinges that allow the phage to adjust its position on the bacterial surface. When the fibers engage with receptors, they form a stable attachment, preventing detachment due to Brownian motion or environmental forces.

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Biophysical studies using Atomic Force Microscopy have shown that gp37 fibers have a radial stiffness of ~0. 08 N/m and a breaking force of ~120 pN, providing sufficient mechanical strength to maintain attachment.

Assembly and Stabilization

Tail fibers are preassembled and attached to the phage baseplate through a chaperone-assisted process, ensuring correct folding and functional orientation. This assembly effectively "clamps" the fibers in place, allowing them to act as a pivot for the phage to explore the bacterial surface and locate optimal infection sites. The trimeric nature of gp37 ensures that at least three fibers are engaged during initial host interaction, providing both mechanical stability and redundancy.

Functional Implications

Clamping the tail fiber is critical for efficient infection, as it allows the phage to maintain contact with the host while the baseplate undergoes conformational changes to inject DNA. The dynamic interactions between the fiber tips and bacterial receptors also enable the phage to "walk" across the surface, optimizing the site for genome delivery. In summary, "clamping the tail fiber" involves both structural attachment to the baseplate and mechanical stabilization during receptor binding, ensuring that bacteriophages like T4 can effectively recognize, attach, and infect their bacterial hosts.

Article Content

Tail Fiber: Types, Functions, and Common Interfaces

By fusing the bare fibers in the optical cable with the tail fiber, a seamless connection is established. The tail fiber has its unique fiber optic head, connecting to the fiber optic transceiver and

Fiber tail fiber characteristics

Pigtail, also known as pigtail, has only one end with a connector, and the other end is a broken end of a fiber optic cable core. It is connected to other fiber

Fiber Optic Cable vs Patch Cord vs Pigtail – Complete Guide

When you build or upgrade a fiber network, the same four words pop up everywhere— fiber optic (bare fiber), pigtail, patch cord, optical cable. They''re related, but they are not

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Fiber Optic Cable Clamp & Bracket

MefiberOptic provide a complete solution of products for fiber optic cable deployment for FTTx network constructions. We supply various clamps and brackets for ADSS or drop cable install

FlexNAP System Cable Assembly Placing Lashed Aerial

Before transferring the lasher or releasing the lasher brake, temporarily clamp the lashing wire to the strand with a catch-off clamp. Take care to avoid overtightening the catch-off clamp to prevent

Fiber Optic Pigtail: The Complete Guide to Types,

Confused about fiber optic pigtails—which connector type, which polish, fusion or mechanical splice? Our guide covers LC vs SC, APC vs UPC,

UFO Lighting

One fiber optic tail is required per fitting. UFO 25D or UFO 26D trumpet. Custom options also available. The rod and clamp allows fibers and lenses to be

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Lashed Aerial Installation of Fiber Optic Cable

an existing lashed fiber optic or copper cable. This method of aerial cable installation, “overlashing,” is attractive because the expense of providing a separate suspens

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Compensate for Launch and Tail Cords

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Fluke Networks recommends that you use launch and tail cords when making an OTDR measurement. You should also use the launch/tail cord compensation function to remove the lengths of these fibers

Anchor Clamps for Fiber Optic Installations: A Buyer''s Guide for ...

Types of Anchor Clamps for Fiber Optic Installations Anchor clamps have different types for the optical ground wires. There are two peculiar types of anchor clamps to know. Wedge-Type

HYPOCLAMP F Slippery Fish Aerial Drop Cable Clamp for Flat

Designed to terminate fibre optic flat drop cables on poles and walls used for the roll-out of telecom networks where spans do not exceed 70m. Key features of the HYPOCLAMP F cable clamp include:

Fiber WTF moments. | My splicing trailer has no clamps on the inside ...

My splicing trailer has no clamps on the inside for holding down tails.. I have seen the one on this page that''s what 300 dollars. Any one else have a different setup?

Ares_viral_fibers_AAM

Viral fibers play a central role in many virus infection mechanisms since they recognize the corresponding host and establish a mechanical link to its surface. Specifically, bacteriophages have

Telenco Aerial Drop Cable Clamp HYPOCLAMP F Flat

The Hypoclamp aerial cable drop clamp is suitable for use with most flat cables and has often been called a slippery fish aerial cable clamp Designed for installation

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