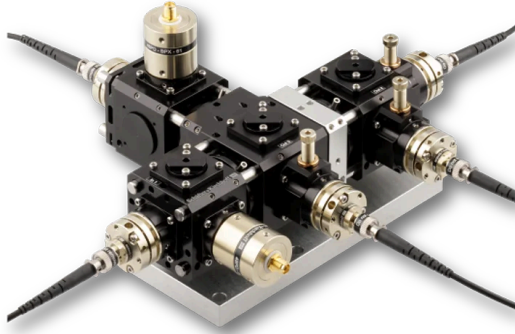## 48-FPC-2-3-xxx

Fiber Port Cluster 2 → 3

FEATURES

Fiber Port Cluster type 48-FPC-2-3-xxx for two input sources with the same wavelength.

- Configuration 2 → 3
- Highly efficient coupling into polarization-maintaining fiber cables
- Adjustable splitting ratio
- Compact, rugged, transportable and sealed opto-mechanical units
- Fully fiber-coupled
- Very high long-term stability, efficiency and reproducability

DESCRIPTION

This Fiber Port Clusters 2 → 3 is a compact opto-mechanical unit that combines two fiber-coupled sources with same wavelengths and then splits the combined radiation into 3 output fiber cables with high efficiency and variable splitting ratio.

Optical Setup

The two input ports are fiber-coupled to PM fiber cables. Polarizers define the input polarization which is necessary for a long term stable splitting ratio.

Two photo diodes right after each input port allow for a continuous monitoring of the radiation. The two input sources are superimposed by means of a polarization beam splitter.

Subsequently, the radiation splitting is achieved by using a cascade of rotary half-wave plates in combination with polarization beam splitters. By use of the rotary half-wave plates, almost any desired splitting ratio can be achieved, see the tech note FiberPortCluster_2-6_Balancing.pdf for the limitations.

At the output ports further polarizers are placed in order to define the polarization at output of the system.

An additional attenuator at each output port allows for a fine-balancing.

Please note that, at output three, the two input sources are superimposed with normal state of polarization.

As an alternative, there is the Fiber Port Cluster type 48-FPC-2-3_n with additional polarizer rotated by 45°, which transforms the two states into parallel.

Fiber Couplers

A fundamental component of a Fiber Port Cluster is the Laser Beam Coupler, which is the input into the opto-mechanical unit collimating the input radiation and, finally, couples the radiation back into the polarization-maintaining fiber cables. The stability of the total Fiber Port Cluster is determined by the stability of the laser beam coupler.

How to order

For a detailed quotation please additionally specify

- Wavelength
- Cable lengths
- Connector types
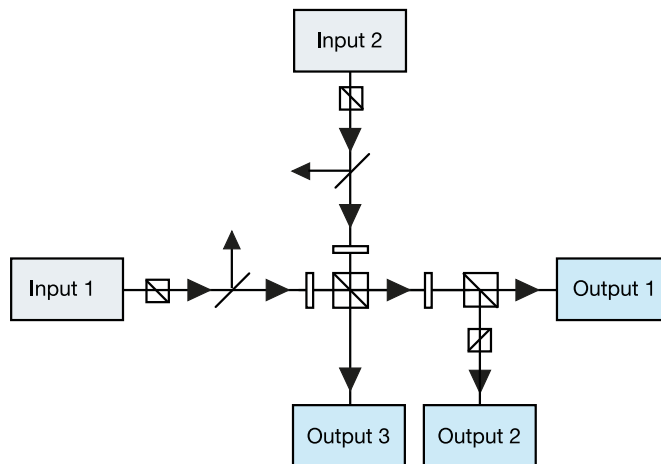
TECHNICAL DATA

48-FPC-2-3-xxx

Order Code	48-FPC-2-3-xxx
Configuration	2 → 3
Wavelengths*	589, 671, 767, 773, 780, 852 nm
Fiber type	polarization-maintaining
Connector type	FC APC (standard)
Cable lengths	Customer-specific
Wave plate type	low-order (773 nm: zero-order)
Power monitor	BPX-61 (SMA)
Transmission	≥ 70 % @ 780 nm
Polarization Extinction Ratio	≥ 21 dB @ 780 nm
Balancing	see technote
	* Different wavelength combinations on request

TECHNOTES

- Article - Fiber Port Cluster
  Rugged, modular and fiber coupled beam splitting and combining units

- Connecting multicube assemblies to a base plate
  How to connect the self-supporting multicube system

DOWNLOADS

980129090561.pdf

FiberPortCluster_2-6_Balancing.pdf (Technote)

Article_Cluster.pdf (Technote)

RELATED PRODUCTS

FIBER COLLIMATOR 60FC-Q	Fiber Collimator for collimating large beam diameters and with integrated quarter-wave plate
POLARIZATION ANALYZER SK010PA	Measurement tool for coupling into polarization-maintaining fiber cables
FIBER COLLIMATOR SERIES 60FC-SF	Fiber Collimator/Fiber Coupler with super-fine thread
48-FPC-2-3_N-XXX	Fiber Port Cluster 2 → 3 (with additional polarizer)

This is a printout of the page https://sukhamburg.com/products/details/48-FPC-2-3-xxx from 5/8/2024

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