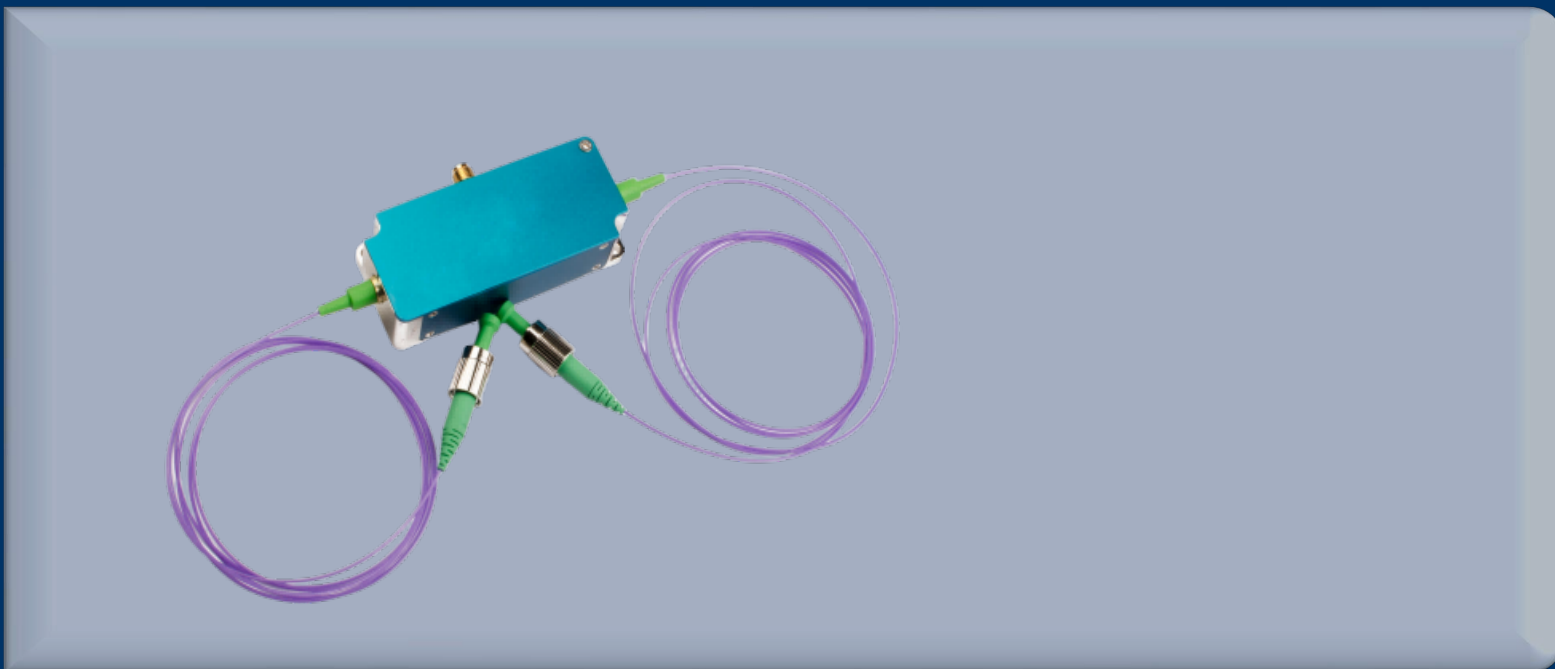


# Acousto-Optic Modulator

## Fiber-Coupled Acousto-Optic Modulator

High-Speed Control Solutions for All-Band Fiber Systems

- Full Spectrum
- High Performance
- Special Functions
- Robust Packaging



One Platform Many Possibilities

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## Overview

### Categorized Precision: Tailored Fiber Modulation for Every Wavelength

To meet diverse application needs, the VL-FCAOM is categorized into four sub-series:

1. Visible Series: Optimized for quantum computing and bio-imaging, enhancing transmission from UV to Red with modulation frequencies up to 250MHz.
2. NIR Series: Built for fiber lasers; the "High Power" version handles 5W average power, ideal for pulse shaping in MOPA architectures.
3. Telecom/Sensing Series: Serving DAS and LiDAR with low insertion loss and high SNR; select models feature ultra-low drive power (0.1W).
4. Special Function Series: Includes "Cascaded" models for ultra-high extinction ratios and "Dual-Output" models for compact beam splitting control.

### Key Applications

- **Laser Lithography & Micromachining:** Utilizing the high-speed digital modulation (TTL) to switch the laser on/off rapidly for creating precise patterns on PCBs or semiconductors.
- **Pulse Picking & Slicing:** The ultra-fast rise time (<8ns) allows for extracting single pulses from a high-repetition-rate pulse train (e.g., 80MHz or 100MHz mode-locked lasers).
- **Heterodyne Interferometry:** Driving Acousto-Optic Frequency Shifters (AOFS) to generate a stable frequency shift for laser Doppler vibrometers (LDV) and interferometers.
- **Precision Intensity Stabilization:** Using the analog modulation port (0-1V) in a closed-loop feedback system to stabilize laser power and suppress intensity noise.

## Qualification

### General Specifications

Technical Parameter	Specification Data
Interaction Material	TeO <sub>2</sub> (Tellurium Dioxide)
Fiber Connector	FC/APC (Standard)
Return Loss	> 40 dB
VSWR	< 1.2:1 to < 1.5:1 (Freq Dependent)
Input Impedance	50 (Nominal)
Fiber Length	1.0 m (Standard)

## Selection Chart

### Series A: Visible Wavelengths

Model (VenusLab)	Wave (nm)	Freq (MHz)	Rise Time (ns)	IL (dB)	Power (W)	Package	Size (mm)
VL-FCAOM-220-370	370	220	<12	<3.0	0.1	FH	70x20x12
VL-FCAOM-200-405	405	200	<12	<3.0	0.1	FH	70x20x12
VL-FCAOM-100-461	461	100	<50	<2.5	0.5	FH	70x20x12
VL-FCAOM-200-461	461	200	<12	<3.0	0.5	FH	70x20x12
VL-FCAOM-100-532	510-550	100	<50	<2.5	0.5	FH	70x20x12
VL-FCAOM-150-532	510-550	150	<30	<2.5	0.5	FH	70x20x12
VL-FCAOM-250-532	510-550	250	<12	<3.0	0.5	FH	70x20x12
VL-FCAOM-200-633	633	200	<15	<3.0	0.5	FH	70x20x12

### Series B: NIR 780nm & 1064nm

Model (VenusLab)	Wave (nm)	Freq (MHz)	Rise Time (ns)	IL (dB)	Power (W)	Package	Size (mm)
VL-FCAOM-110-780	760-800	110	<50	<3.0	0.5	FH	70x20x12
VL-FCAOM-200-780	760-800	200	<15	<3.0	0.5	FH	70x20x12
VL-FCAOM-1500-780	760-800	1500	<10	<10	0.1	FA	70x29.5x17.2

VL-FCAOM-200-1064	1030-1080	200	<12	<3.0	1.0	FH	70x20x12
VL-FCAOM-200-1064-HP	1030-1080	200	<12	<2.5	5.0	FG	100x29.5x17.2
VL-FCAOM-400-1064	1030-1080	400	<6	<3.5	1.0	FH	70x20x12

## Series C: Telecom 1550nm

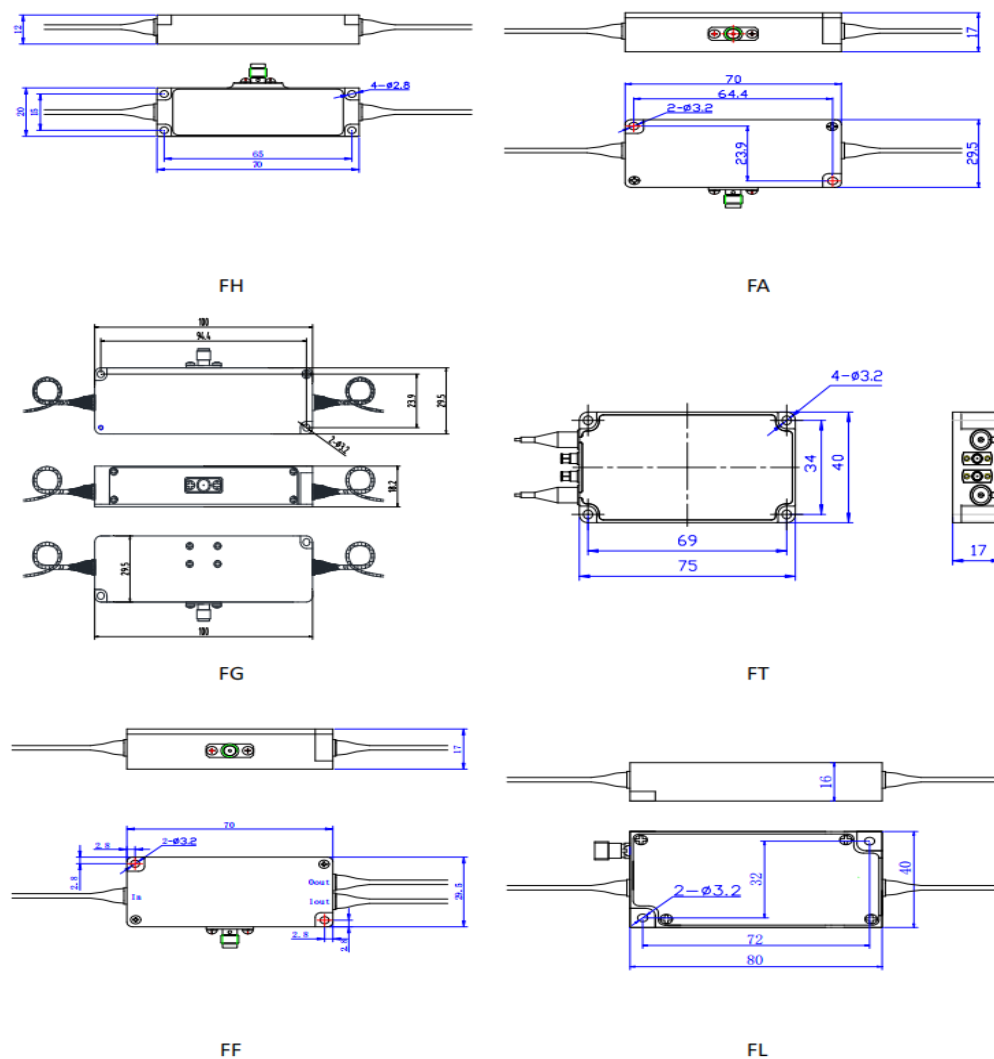
Model (VenusLab)	Feature	Freq (MHz)	Rise Time (ns)	IL (dB)	Power (W)	Package	Size (mm)
VL-FCAOM-80-1550	Standard	80	<30	<3.0	0.5	FH	70x20x12
VL-FCAOM-120-1550	Standard	120	<30	<3.0	0.5	FH	70x20x12
VL-FCAOM-200-1550	Standard	200	<12	<5.0	0.5	FH	70x20x12
VL-FCAOM-200-1550-H	High Perf	200	<10	<3.0	0.5	FH	70x20x12
VL-FCAOM-300-1550-H	High Perf	300	<8	<3.0	0.5	FH	70x20x12
VL-FCAOM-400-1550-H	High Perf	400	<6	<4.0	0.5	FH	70x20x12
VL-FCAOM-40-1550-L	Low Power	40	<70	<3.0	0.1	FH	70x20x12
VL-FCAOM-80-1550-L	Low Power	80	<40	<3.0	0.5	FH	70x20x12
VL-FCAOM-160-1550-L	Low Power	160	<40	<3.0	0.5	FH	70x20x12

## Series D: Special Functions

Model (VenusLab)	Function	Freq (MHz)	Rise Time (ns)	IL (dB)	Package	Size (mm)
VL-FCAOM-81-80-1550-CAS	Cascaded	81 & 80	<40	<5.0	FT	75x40x17
VL-FCAOM-150-150-780-CAS	Cascaded	150 & 150	<30	<5.0	FT	75x40x17
VL-FCAOM-150-1064-DUAL	Dual Out	150	<30	<3.0	FF	70x29.5x17
VL-FCAOM-120-1550-DUAL	Dual Out	150	<40	<3.0	FF	70x29.5x17

## Dimensions Diagram

Schematic diagram of the optical fiber acousto-optic modulator 's exterior structure



## Service & Support

We are dedicated to delivering exceptional optoelectronic solutions to every client. From precision manufacturing and secure delivery to full-lifecycle technical support, we are here to ensure a seamless and reliable experience at every step.

### 1. Warranty Policy

#### Quality First, Worry-Free Operation

**Warranty Period:** We offer a **two-year** warranty service for all of our core optoelectronic products, effective from the date of shipment.

**Coverage:** We provide free repair or replacement services for malfunctions caused by material defects or workmanship errors under normal operating conditions.

**Rapid Response:** Upon receiving a warranty claim, we guarantee to initiate the assessment process within **24 hours** to minimize your equipment downtime.

### 2. Technical Support

#### Expert Team, Full-Process Guidance

**Technical Consultation:** Our team of senior optical engineers provides **24/7 online support** to assist with installation, commissioning, optical path alignment, and parameter optimization.

**Scheduled Maintenance:** We offer full-lifecycle maintenance recommendations, including firmware upgrades, optical component cleaning guidelines, and precision calibration services.

**Training Services:** We provide customized remote or on-site operational and safety training to ensure your team can operate the equipment efficiently and safely.

### 3. Logistics & Delivery

#### Precision Packaging, Global Reach

**Professional Packaging:** Given the fragile nature of optical instruments, we utilize industrial-grade shockproof, anti-static, and moisture-proof vacuum packaging to ensure zero damage during transit.

**Logistics Partners:** We partner with top-tier global logistics providers (**DHL / FedEx / UPS / SF Express**) to offer reliable shipping with real-time tracking.

**Shipping Insurance:** All shipments are fully insured to eliminate logistics risks.

### 4. Compliance & Certification


#### Strict Standards, Total Compliance

**Quality Certification:** Our manufacturing process is **ISO 9001 certified**, and our products comply with international standards such as **CE** and **RoHS**.

**Export Compliance:** "Committed to environmental responsibility, all our products comply with **RoHS 2.0** and **REACH** standards, ensuring safety and global compliance."

## Explore Series

Model	Freq (MHz)	Power (W)	Fiber	Ext (dB)	Wave (nm)	IL (dB)
VL-FCAOM-200-1064-HP	200	5.0	PM980	>50	1030-1080	<2.5
VL-FCAOM-100-532	100	0.5	PM460	>50	510-550	<2.5
VL-FCAOM-80-1550-L	80	0.5	PM1550	>50	1530-1570	<3.0

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