

Acousto-Optic Modulator

Near-Infrared Acousto-Optic Modulator

The Core Control Engine for Industrial & Ultrafast Lasers

- Ultra-High Frequency
- High Power Handling
- Broadband Options
- Versatile Cooling



One Platform Many Possibilities

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Overview

Power & Speed: Mastering the Near-Infrared Spectrum

The VL-AOM-NIR Series consists of three high-performance sub-series:

1. 780nm General & Broadband Series: Targeting Ti:Sapphire lasers and Rubidium atom cooling, offering center frequencies from 80-300MHz. Select broadband models feature 50-60MHz 3dB bandwidth for flexible frequency shifting control.
2. 780nm Ultra-High Frequency Series: Designed for applications demanding extreme speed, with frequencies covering 800MHz to 1.5GHz. The ultra-short acoustic wavelength enables a microscopic 0.1mm aperture and nanosecond-level rise times, serving as a precision switch in ultrafast optics.
3. 1064nm High Power Series: Engineered for intra-cavity or extra-cavity control of fiber and solid-state lasers (e.g., Nd:YAG). Featuring large clear apertures from 2mm to 4mm and equipped with water cooling or enhanced conduction cooling, ensuring long-term stability under high-power laser irradiation.

Key Applications

- **Ultrafast Pulse Picking** : Using 780nm/800nm high-frequency AOMs to select single pulses from mode-locked Ti:Sapphire lasers.
- **Cold Atom Physics** : Precise frequency shifting for laser cooling and trapping of Rubidium (Rb) atoms at 780nm.
- **Laser Marking & Cutting** : High-power 1064nm modulators control laser intensity and pulse timing in industrial processing.
- **LIDAR & Remote Sensing** : Generating stable frequency shifts for velocity measurement and range finding.

Qualification

General Technical Specifications

Technical Parameter	Specification Data
Interaction Material	TeO ₂ (Tellurium Dioxide) or Fused Silica
Static Transmission	95% (780nm models); 99.2% (1064nm models)
Extinction Ratio	> 1000:1
Input Impedance	50 (Nominal)
VSWR	< 1.3:1
RF Connector	SMA-Female (Standard)
Cooling Method	Conduction (Standard) or Water Cooling (High Power)

Selection Chart

Series A: 780nm General & Broadband

Model	Center Freq (MHz)	Bandwidth (MHz)	Aperture (mm)	DE (%)	Rise Time (ns/mm)	Power (W)	Package
VL-AOM-80-780-2	80	20	2.0	80	160	<2	TA
VL-AOM-110-780-1	110	30	1.0	80	160	<2	TA
VL-AOM-200-780-0.5	200	40	0.5	75	160	<2	TA
VL-AOM-300-780-0.3	300	50	0.3	70	160	<2	TA
VL-AOM-80-780-B30	80	30	1.5	80	160	<3	TA
VL-AOM-110-780-B50	110	50	1.0	80	160	<3	TA
VL-AOM-200-780-B60	200	60	0.5	80	160	<3	TA

Series B: 780nm Ultra-High Frequency

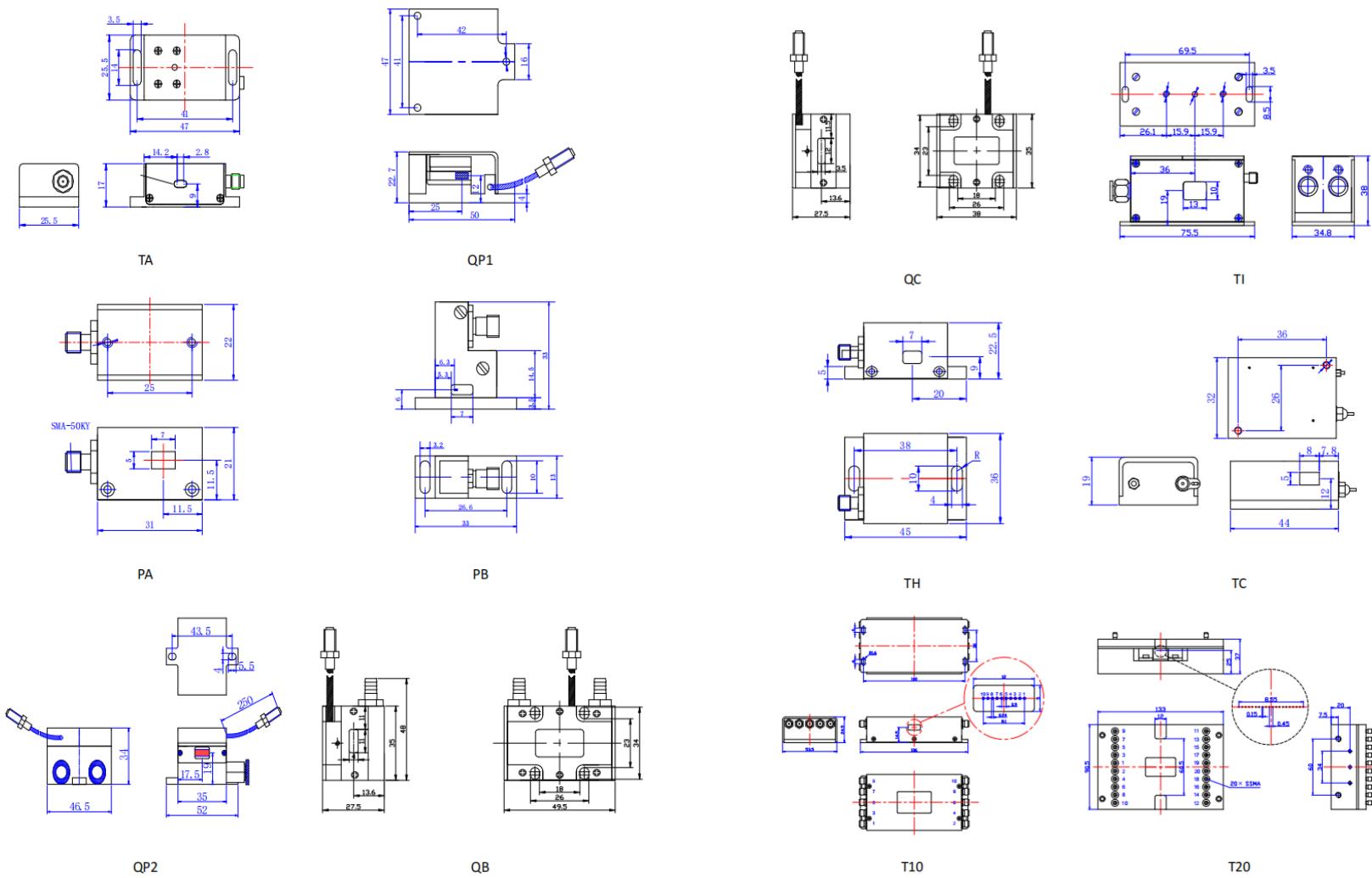
Model	Center Freq (MHz)	Aperture (mm)	DE (%)	Rise Time (ns/mm)	Separation Angle (mrad)	Power (W)	Package
VL-AOM-800-780	800	0.1	50	110	99	<1	PB
VL-AOM-1200-780	1200	0.1	40	110	148	<1	PB
VL-AOM-1500-780	1500	0.1	30	110	186	<1	PB

Series C: 1064nm High Power

Model	Center Freq (MHz)	Aperture (mm)	DE (%)	Damage Threshold	Drive Power (W)	Cooling	Package
VL-AOM-68-1064-HP	68	4.0	90	1 GW/cm ²	<35	Water	QP2
VL-AOM-80-1064-HP	80	2.0	90	1 GW/cm ²	<20	Conduct	QP1
VL-AOM-200-1064	200	0.3	70	500 MW/cm ²	<2	Conduct	TA

Dimensions Diagram

Schematic diagram of the shape and structure of the spatial acousto-optic modulator



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	Center Freq (MHz)	DE (%)	Package	Aperture (mm)
VL-AOM-68-1064-HP	68	90	QP2	4.0
VL-AOM-110-780-B50	110	80	TA	1.0

 Get in touch with our team to explore configurations, request a quote, or learn more about customized solutions tailored to your needs.

Let us help you move science forward—faster and smarter.

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