VENUSLAB
OPTOELECTRONICS

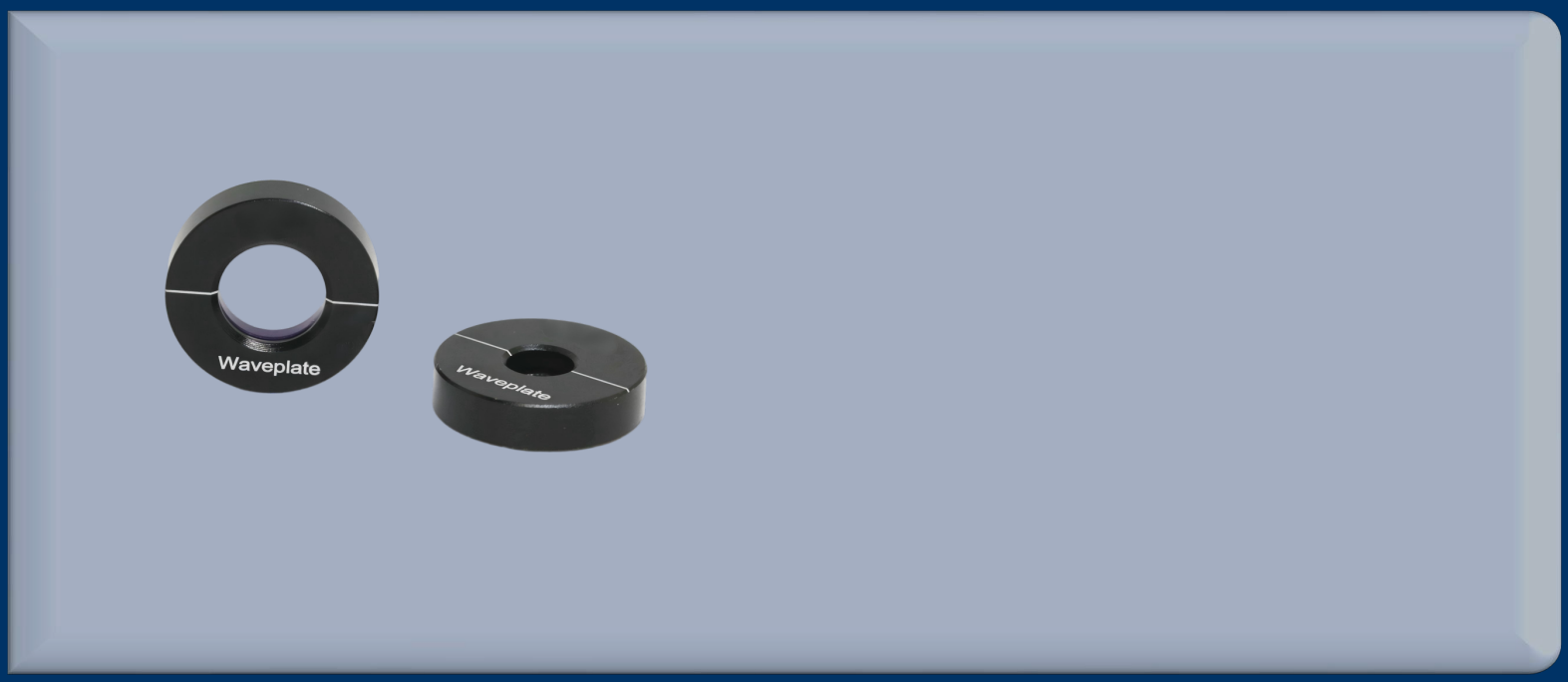
Precision
Meets
Simplicity

Polarizer

Quartz Low Order Waveplate

The Cost-Effective Workhorse for High-Energy Lasers

- High Damage Threshold
- Robust Single-Plate Construction
- Superior Stability vs. Multi-Order
- Exceptional Cost-Performance Ratio



One Platform Many Possibilities

Contact Us sales@venuslabtech.com

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+65 8099 5547

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Quartz Low Order Waveplate

Overview

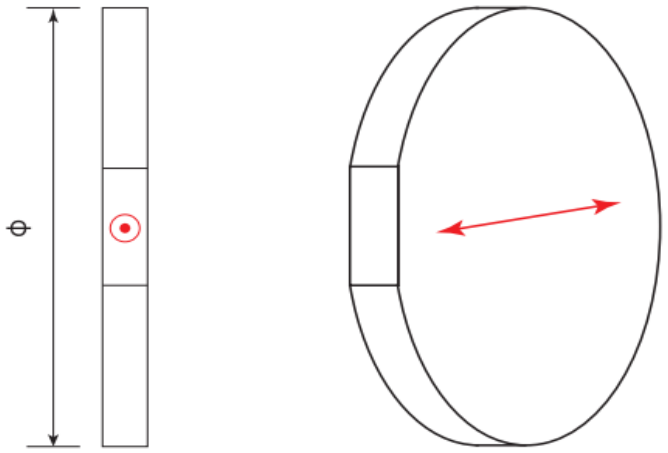
Unmatched Stability & Precision

The Venuslab **VLZW Series** Zero Order Waveplates are designed for applications requiring superior stability against temperature fluctuations and wavelength shifts. Unlike standard multi-order plates, these components are constructed by stacking two quartz plates with their fast axes aligned perpendicular to each other.

This compound design effectively cancels out the thermal dependence, resulting in a highly stable phase retardation over a broader spectral bandwidth. They are the preferred solution for tunable lasers, diverse temperature environments, and precision instrumentation.

Mechanical Drawing & Orientation

"The white line indicates the fast axis. For unmounted components, the notch indicates the fast axis."



Specifications

Key Performance Data

Specification	Value / Description
Material	Crystalline Quartz
Wavelength Range	200 - 2300 nm
Retardation Accuracy	< λ/300
Surface Quality	20-10 Scratch-Dig (High Precision)
Parallelism	< 1 arc sec
Damage Threshold	> 500 MW/cm²
Surface Flatness	λ/10 @ 632.8nm
Coating	AR Coated, R < 0.2% per surface
Clear Aperture	> 9mm (for Ø12.7mm); > 18mm (for Ø25.4mm)
Housing	Black Anodized Aluminum

Selection Chart

Standard Model Selection Guide

Wavelength	Size (Ø)	Half-Wave Model (λ/2)	Quarter-Wave Model (λ/4)
355 nm	12.7 mm	VLLW-12.7-355-H	VLLW-12.7-355-Q
	25.4 mm	VLLW-25.4-355-H	VLLW-25.4-355-Q
488 nm	12.7 mm	VLLW-12.7-488-H	VLLW-12.7-488-Q
	25.4 mm	VLLW-25.4-488-H	VLLW-25.4-488-Q
532 nm	12.7 mm	VLLW-12.7-532-H	VLLW-12.7-532-Q
	25.4 mm	VLLW-25.4-532-H	VLLW-25.4-532-Q
632.8 nm	12.7 mm	VLLW-12.7-633-H	VLLW-12.7-633-Q
	25.4 mm	VLLW-25.4-633-H	VLLW-25.4-633-Q
780 nm	12.7 mm	VLLW-12.7-780-H	VLLW-12.7-780-Q
	25.4 mm	VLLW-25.4-780-H	VLLW-25.4-780-Q
808 nm	12.7 mm	VLLW-12.7-808-H	VLLW-12.7-808-Q
	25.4 mm	VLLW-25.4-808-H	VLLW-25.4-808-Q
980 nm	12.7 mm	VLLW-12.7-980-H	VLLW-12.7-980-Q
	25.4 mm	VLLW-25.4-980-H	VLLW-25.4-980-Q
1064 nm	12.7 mm	VLLW-12.7-1064-H	VLLW-12.7-1064-Q
	25.4 mm	VLLW-25.4-1064-H	VLLW-25.4-1064-Q
1550 nm	12.7 mm	VLLW-12.7-1550-H	VLLW-12.7-1550-Q
	25.4 mm	VLLW-25.4-1550-H	VLLW-25.4-1550-Q

Explore Series

Model	Retardation	Size (Ø)	Wavelength
VLLW-25.4-1064-H	Half Wave (λ/2)	25.4 mm	1064 nm
VLLW-25.4-532-Q	Quarter Wave(λ/4)	25.4 mm	532 nm
VLLW-12.7-355-H	Half Wave(λ/2)	12.7 mm	355 nm

📩 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 moves cience forward—faster ands marter.