

Zero-Order Wave Plates: Ø10 mm Clear Aperture



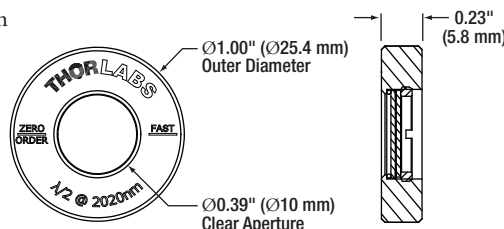
Thorlabs' Zero-Order Wave Plates are built by combining two multi-order quartz wave plates with an optical path length difference of $\lambda/4$ or $\lambda/2$. By aligning the fast axis of one plate with the slow axis of the other, the net result is a compound retarder whose exact retardance is the difference between each plate's individual retardance. Compound zero-order wave plates offer a substantially lower dependence on temperature and wavelength than their multi-order counterparts.

Specifications

- **Material:** Crystal Quartz
- **Diameter:** 25.4 mm (Mounted)
12.7 mm \pm 0.1 mm (Unmounted)
- **Retardance Accuracy:** $< \lambda/300$
- **Beam Deviation (Max):** < 10 arcsec
- **Clear Aperture:** Ø0.39" (Ø10.0 mm)
- **Transmitted Wavefront Error:**
 $\lambda/8$ @ 633 nm
- **Surface Quality:** 20-10 Scratch-Dig
- **Damage Threshold***
 - WPQ05M-1064: 10 J/cm² @ 1064 nm, Ø0.433 mm spot size
 - WPH05M-808: 10 J/cm² @ 810 nm, Ø0.055 mm spot size
- **AR Coated:** $< 0.25\%$ Per Surface

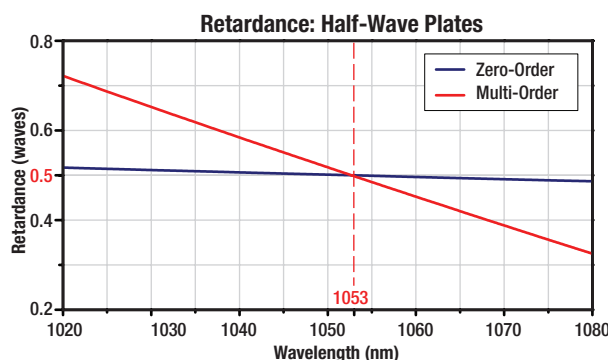
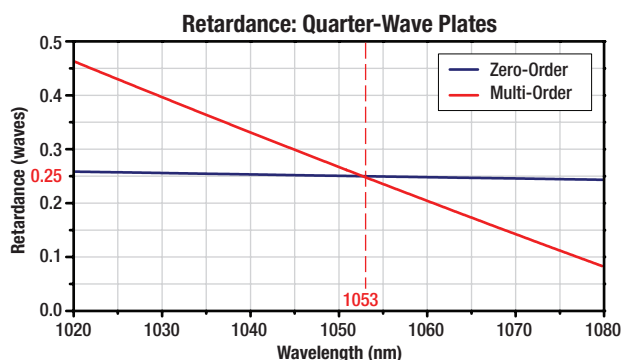
*10 ns Pulses, 10 Hz

These zero-order wave plates are constructed by placing an etched stainless steel spacing ring between the two multi-order wave plates and epoxying these three pieces together (epoxy is only applied outside of the clear aperture). The zero-order assembly is then placed into an anodized aluminum housing. The wave plate housing is engraved with text stating it is zero-order, a line indicating the orientation of the fast axis, text stating whether it is a $\lambda/4$ or $\lambda/2$ wave plate, and the design wavelength. The typical thickness of a zero-order wave plate is approximately 2 mm but can vary from part to part.



Please refer to our website for complete models and drawings.

All Wave Plate Performance Data Available
Online at www.thorlabs.com



Mounted Zero-Order Wave Plates*

QUARTER-WAVE PLATE ITEM #	HALF-WAVE PLATE ITEM #	\$	£	€	RMB	AR COATING
WPQ05M-266	WPH05M-266	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	266 nm
WPQ05M-308	WPH05M-308	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	308 nm
WPQ05M-355	WPH05M-355	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	355 nm
WPQ05M-405	WPH05M-405	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	405 nm
WPQ05M-488	WPH05M-488	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	488 nm
WPQ05M-514	WPH05M-514	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	514 nm
WPQ05M-532	WPH05M-532	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	532 nm
WPQ05M-546	WPH05M-546	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	546 nm
WPQ05M-633	WPH05M-633	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	633 nm
WPQ05M-670	WPH05M-670	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	670 nm
WPQ05M-780	WPH05M-780	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	780 nm
WPQ05M-808	WPH05M-808	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	808 nm
WPQ05M-830	WPH05M-830	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	830 nm
WPQ05M-980	WPH05M-980	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	980 nm
WPQ05M-1053	WPH05M-1053	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	1053 nm
WPQ05M-1064	WPH05M-1064	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	1064 nm
WPQ05M-1310	WPH05M-1310	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	1310 nm
WPQ05M-1550	WPH05M-1550	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	1550 nm
WPQ05M-2020	WPH05M-2020	\$ 410.00	£ 295.20	€ 356,70	¥ 3,267.70	2020 nm

*The wave plate can be removed from the Ø1" housing. The outer diameter of the unmounted wave plate is 12.7 mm.