



## LASER GRADE DUAL-WAVELENGTH WAVEPLATES: QWPD



### Specifications

Product Code: **QWPD**

**Optical Material:** Laser Grade Crystal Quartz

**Diameter:** 12.7 +0/-0.25mm (unmounted)

25.4 ±0.127mm (mounted)

**Transmitted Wavefront:**  $\leq \lambda/10$  p-v at 633nm

**Surface Quality:** 10-5 scratch-dig per MIL-PRF-13830b

**Retardation Tolerance:**

$< \lambda/100$  at both wavelengths at 23° C

**Clear Aperture:**  $\geq 85\%$  of diameter for the unmounted waveplates

**Anti-reflection Coating:** per surface, see table

**Damage Threshold:** 10 J/cm<sup>2</sup>, 20ns, 20Hz; 1 MW/cm<sup>2</sup> cw at 1064nm

Dual-wavelength waveplates are used in a number of applications to enable selective processing of particular wavelengths. One common application is separation of different wavelengths with a polarizing beamsplitter by rotating the polarization of one wavelength by 90° ( $\lambda/2$  retardation), while leaving the other unchanged. This frequently occurs in nonlinear doubling or tripling laser sources such as Nd:YAG (1064/532/355/266).

The QWPD waveplates use a multiple-order design in which the retardation specifications are met for both wavelengths. This results in a relatively high order waveplate, making them best suited for use only over narrow bandwidth and operating temperature range.

- Precise polarization control for dual wavelength sources
- Readily available for Nd:YAG and harmonics
- Best performance over a low temperature and narrow wavelength range
- Ask about OEM opportunities for other sizes and wavelength retardation combinations

### LASER GRADE DUAL-WAVELENGTH WAVEPLATES

Wavelength 1 (nm)	Wavelength 1 AR Coating	Wavelength 2 (nm)	Wavelength 2 AR Coating	PART NUMBER
355	R < 0.5%	532	R < 0.5%	<b>QWPD-355-2-532-1-05</b>
355	R < 1.3%	1064	R < 0.5%	<b>QWPD-355-2-1064-1-05</b>
532	R < 0.6%	1064	R < 0.3%	<b>QWPD-532-2-1064-1-05</b>
1064	R < 0.3%	532	R < 0.6%	<b>QWPD-1064-2-532-1-05</b>

If you need the waveplate ring mounted, please add '-R10' at the end of the Part Number. The ring mount diameter is 25.4mm. Please refer to page 87 for the dimensions of the ring mount for 12.7mm diameter waveplates.