

Selecting One of Our Optical Tables

Selecting the appropriate optical table for your application is important. These guidelines are designed to assist you in making a proper selection.

Standard Series



Performance Series



Ultra Series



When choosing among the three series of optical tables (Standard, Performance, and Ultra), it is necessary to determine the desired dimensions, isolation performance specifications, and options (some custom) required to meet your needs. In addition, each series comes in a Plus version (i.e., StandardPlus, PerformancePlus, and UltraPlus), which has a greater thickness of 12.2" (310 mm) as opposed to 8.3" (210 mm). This leads to a more ideal compliance curve.

Standard Series

The Standard Series (pages 52 - 53) of tabletops feature a double-skin design with a single-honeycomb layer. These tables provide a cost-effective choice for general surface applications that require a stable working platform such as multimode fiber optic setups. The StandardPlus Series (see our website) offers all of the same design techniques and materials as the Standard Series presented here but offers increased stiffness due to the increased thickness.

Performance/PerformancePlus Series

The Performance Series of optical tables (page 54) features a triple-skin design with two honeycomb layers, resulting in increased dynamic stiffness when compared to the Standard

Series. This series is ideal for micron-level imaging or positioning. The PerformancePlus Series (page 55) offers all of the same design features and materials as the Performance Series but with increased stiffness due to the increased thickness.

UltraPlus Series

The Ultra Series of optical tables (see our website), like the Performance Series, features a triple-skin design with two honeycomb layers. However, this series has additional damping cells inside the honeycomb structure, thus leading to a superior interior structure that maximizes the tuned and broadband damping features of the tabletop. The Ultra Series is well suited for demanding experiments such as nanopositioning and interferometric applications. The UltraPlus Series (see pages 56 - 57) presented here offers all of the same design techniques and materials as the Ultra Series but with increased stiffness due to the increased thickness.

Custom Tables

Although Thorlabs ships many of its optical tables from stock, our manufacturing facilities can produce custom optical tables if our stocked tables do not meet your needs.

TYPICAL APPLICATIONS	NOISE ENVIRONMENT (PSD)	STANDARD SERIES (Page 52)	PERFORMANCE SERIES (Page 54)	ULTRA SERIES (Page 56)	VIBRATION-ISOLATION OPTIONS		
					RIGID (Page 65)	PASSIVE (Page 66)	ACTIVE (Page 67)
Demanding Applications • Nanopositioning • Submicron Precision • Phase Related • Interferometry • Holography • Single Mode Fiber Alignment	Quiet ($<10^{-10}$ g ² /Hz)		■	■		□	■
	Typical ($\sim 10^{-8}$ to 10^{-9} g ² /Hz)		■	■			■
	Noisy ($<10^{-7}$ g ² /Hz)		□	■			■
General Photonics • Bioimaging • Raman Spectroscopy • Micropositioning • Micromachining • Non-Interferometric • Laser Chemistry	Quiet ($<10^{-10}$ g ² /Hz)	□	■			■	
	Typical ($\sim 10^{-8}$ to 10^{-9} g ² /Hz)	□	■			□	■
	Noisy ($<10^{-7}$ g ² /Hz)		□	■			■
Less Demanding Applications • Pulse Laser • General Spectroscopy • Velocimetry • Multimode Fiber Alignment	Quiet ($<10^{-10}$ g ² /Hz)	■			■		
	Typical ($\sim 10^{-8}$ to 10^{-9} g ² /Hz)	□	■		□	■	
	Noisy ($<10^{-7}$ g ² /Hz)		■	■		□	■

Recommended ■ Suitable □

SPECIFICATIONS	STANDARD SERIES	PERFORMANCE SERIES	ULTRA SERIES
Dynamic Deflection Coefficient	$<1.3 \times 10^{-3}^*$	$<0.7 \times 10^{-3}^*$	$<0.5 \times 10^{-3}^*$
Deflection Under Load 250 lbs (113 kg)	$<1.65 \mu\text{m}$ (6.5×10^{-5} in)*	$<1.5 \mu\text{m}$ (5.9×10^{-5} in)*	$<1.5 \mu\text{m}$ (5.9×10^{-5} in)*
Relative Tabletop Motion (Max)	$<0.27 \text{ nm}$ (10.5×10^{-9} in)*	$<0.14 \text{ nm}$ (5.5×10^{-9} in)*	$<0.10 \text{ nm}$ (4×10^{-9} in)*

*Measured on a 4' x 8' x 12.2" table with isolator transmissibility $T < 0.01$ above 10 Hz, environmental vibrations PSD $< 10^{-9}$ g²/Hz.