

B6090AE - OCT 11, 2017

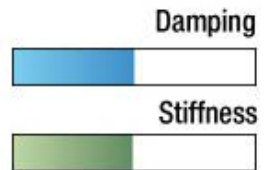
Item # B6090AE was discontinued on October 11, 2017. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

OPTICAL BREADBOARDS, INTRINSICALLY DAMPED, 58 MM (2.28") THICK

- ▶ 58 mm (2.28") Thick
- ▶ Stainless Steel Top and Bottom Skins
- ▶ Lightweight Design
- ▶ Plated Steel Honeycomb Core Construction



B6090AE
 600 mm x 900 mm



OVERVIEW

Features

- Thickness: 58 mm (2.28")
- Sizes from 300 mm x 450 mm (12" x 18") to 900 mm x 1800 mm (36" x 72") are Available
- ± 0.15 mm (± 0.006 ") Surface Flatness over any 1 m² (11 ft²) Area
- Stainless Steel Top and Bottom Skins with Moisture-Resistant MDF Side Panels
- Approximately 25% Lighter than our Honeycomb Core Nexus Breadboards



Thorlabs' 58 mm (2.28") thick optical breadboards are offered in a variety of lengths and widths from 300 mm x 450 mm (12" x 18") to 900 mm x 1800 mm (36" x 72"). The stainless steel top and bottom skins are 5 mm and 3 mm thick, respectively, and have a precision-machined matte finish with a surface flatness of ± 0.15 mm over any 1 m² area. Metric breadboards have M6 mounting holes on 25 mm centers with a 37.5 mm border at the edges, while imperial breadboards have 1/4"-20 mounting holes on 1" centers with a 1.5" border at the edges. The maximum screw depth of these mounting holes is 54 mm and is unimpeded by the honeycomb structure.

| Specifications ^a | | |
|-----------------------------------|--|--------------------------------------|
| Construction | | |
| Breadboard Thickness | 58 mm (2.28") | |
| Flatness | ± 0.15 mm (± 0.006 ") Over Any 1 m ² | |
| Working Surface | 430 Grade Stainless Steel Top Plate | |
| Core Construction | High-Density Plated Steel Honeycomb 0.26 mm Thick | |
| Damping ^b | Intrinsic | |
| Compatible Mounting Legs | Breadboard Frames and Feet ScienceDesk Frames | |
| Mounting Holes | Imperial | Metric |
| Threads and Spacing | 1/4"-20 Tapped Holes on 1" Centers | M6 Tapped Holes on 25 mm Centers |
| Distance from Edge to First Holes | 1.5" from Table Edge on all Sides | 37.5 mm from Table Edge on all Sides |
| Maximum Screw Depth | 54 mm | |

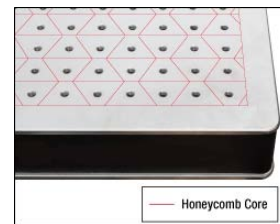
• Please See the Specs Tab for More Detailed Specifications

These breadboards are intrinsically damped and are an ideal solution for applications requiring minimal vibration damping. The 0.26 mm thick precision-formed honeycomb core (shown to the bottom right) extends from the top to bottom skin without intermediate layers, leading to a stiff and stable board as large as 900 x 1800 x 58 mm (36" x 72" x 2.28"). When paired with the 5 mm thick top skin these breadboards offer good rigidity and damping performance.

As the size of any breadboard is increased the chance for static deflection will rise, especially when high loads are being used. To increase the rigidity of the system and minimize static deflection, we recommend using a thicker breadboard, such as our 110 mm (4.3") thick Nexus Breadboard. Static deflection is a factor when slight variations of the optical axis height are detrimental. A thicker breadboard will help maintain the optical axis height throughout the system and simplify long-distance alignments. For more information regarding breadboard design and vibration damping please see our Vibration Isolation Tutorial.

For a comparison of our breadboard options please see our *BB Selection Guide* Tab. Custom sizes and options are also available, contact Tech Support for more information.

- Intrinsic Damping Provided by Steel Honeycomb Core, Precision-Machined Steel Working Surface, and MDF Side Panel Construction.



Click to Enlarge
Outline of the honeycomb core location on an optical breadboard. The core does not intersect with any screw holes, allowing for a maximum screw depth of 54 mm.

Support Options

Isolation Feet

We offer passive and active self-leveling isolator feet for mounting a breadboard on top of a table. They can support a variety of breadboard sizes and loads and can be easily attached to any breadboard.

ScienceDesks™

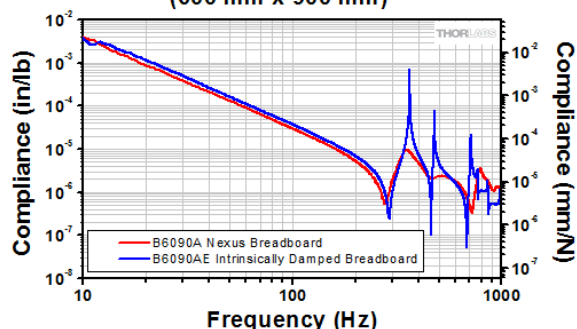
Our ScienceDesk line of breadboard frames are high-quality ergonomic supports optimized for applications where the user will be seated. They are available with rigid, passive, or active vibration isolators, and feature a modular system of accessories. ScienceDesk frames are available to fit many of our breadboards sized from 600 mm x 900 mm (24" x 36") to 900 mm x 1200 mm (36" x 48").

Breadboard Frames

We also offer Breadboard Frames available with rigid supports, or with passive or self-leveling active vibration isolation.

SPECS

B6090A/B6090AE Compliance Comparison (600 mm x 900 mm)



Click to Enlarge

Comparison of the compliance curves for both the B6090A Nexus and B6090AE Optical Breadboards. Our intrinsically damped breadboards are ideal for applications requiring minimal damping, while our line of Nexus Breadboards is highly recommended when high-vibration damping and minimal deflection are necessary. See the Vibration Isolation Tutorial for more information on compliance.

| Specifications | |
|----------------------|---------------|
| Construction | |
| Breadboard Thickness | 58 mm (2.28") |

| | | |
|-----------------------------------|---|---|
| Flatness | ±0.15 mm (±0.006") Over Any 1 m ² | |
| Top Plate | 5 mm (0.20") Thick Stainless Steel 430 Grade Working Surface | |
| Bottom Plate | 3 mm (0.12") Thick Stainless Steel 4003 Grade | |
| Core Construction | High-Density Plated Steel Honeycomb 0.26 mm Thick | |
| Damping ^a | Intrinsic | |
| Side Panels | Moisture-Resistant Medium Density Fiberboard (MDF) | |
| Top Surface Finish | Machined Matte Finish | |
| Compatible Mounting Options | Breadboard Frames and Isolators ScienceDesk Frames | |
| Mounting Holes | Imperial | Metric |
| Threads and Spacing | 1/4"-20 Tapped Holes on 1" Centers | M6 Tapped Holes on 25 mm Centers |
| Distance from Edge to First Holes | 1.5" from Table Edge on all Sides | 37.5 mm from Table Edge on all Sides |
| Maximum Screw Depth | 54 mm | |
| Sealed Holes | No | |

- Intrinsic Damping Provided by Steel Honeycomb Core, Precision-Machined Steel Working Surface, and MDF Side Panel Construction.

Imperial Breadboard Dimensions & Weight


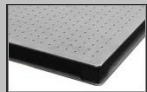
















| Item # | Dimensions (W x L x H) | # of Tapped Holes | Unpacked Weight | Packaged Shipping Weight | Packed Dimensions |
|---------|---------------------------|-------------------|--------------------|--------------------------------|----------------------|
| B1218FE | 12" x 18" x 2.28" | 160 | 22.04 lbs | 33.07 lbs | 14.6" x 20.5" x 5.1" |
| B1224FE | 12" x 24" x 2.28" | 220 | 22.88 lbs | 42.11 lbs | 14.9" x 26.7" x 5.5" |
| B1824FE | 18" x 24" x 2.28" | 352 | 43.65 lbs | 61.29 lbs | 20.5" x 26.4" x 5.5" |
| B2424FE | 24" x 24" x 2.28" | 484 | 57.98 lbs | 77.82 lbs | 26.4" x 26.4" x 5.5" |
| B2436FE | 24" x 36" x 2.28" | 748 | 88.18 lbs | 112.44 lbs | 26.4" x 37.5" x 9.1" |
| B2448FE | 24" x 48" x 2.28" | 1012 | 116.84 lbs | 145.51 lbs | 26.8" x 50.8" x 9.1" |
| B3036FE | 30" x 36" x 2.28" | 952 | 110.23 lbs | 141.10 lbs | 32.7" x 38.6" x 9.1" |
| B3048FE | 30" x 48" x 2.28" | 1288 | 145.50 lbs | 182.98 lbs | 32.7" x 50.4" x 9.1" |
| B3060FE | 30" x 60" x 2.28" | 1624 | 182.98 lbs | 224.87 lbs | 32.7" x 62.2" x 9.1" |
| B3648FE | 36" x 48" x 2.28" | 1564 | 176.37 lbs | 211.64 lbs | 38.5" x 50.4" x 9.1" |
| B3660FE | 36" x 60" x 2.28" | 1972 | 220.46 lbs | 273.37 lbs | 38.6" x 62.6" x 9.1" |
| B3672FE | 36" x 72" x 2.28" | 2380 | 264.56 lbs | 324.08 lbs | 38.6" x 74.4" x 9.1" |

Metric Breadboard Dimensions & Mass

| Item # | Dimensions (W x L x H) | # of Tapped Holes | Unpacked Mass | Packaged Shipping Mass | Packed Dimensions |
|--------|---------------------------|-------------------|------------------|------------------------------|-------------------|
|--------|---------------------------|-------------------|------------------|------------------------------|-------------------|

| | | | | | |
|----------|--------------------------|------|--------|--------|---------------------------|
| B3045AE | 300 mm x 450 mm x 58 mm | 160 | 10 kg | 15 kg | 370 mm x 520 mm x 130 mm |
| B3060AE | 300 mm x 600 mm x 58 mm | 220 | 13 kg | 19 kg | 360 mm x 660 mm x 140 mm |
| B4560AE | 450 mm x 600 mm x 58 mm | 352 | 19 kg | 28 kg | 510 mm x 660 mm x 140 mm |
| B6060AE | 600 mm x 600 mm x 58 mm | 484 | 25 kg | 36 kg | 680 mm x 680 mm x 140 mm |
| B6090AE | 600 mm x 900 mm x 58 mm | 748 | 39 kg | 50 kg | 660 mm x 960 mm x 230 mm |
| B60120AE | 600 mm x 1200 mm x 58 mm | 1012 | 51 kg | 67 kg | 660 mm x 1260 mm x 230 mm |
| B7590AE | 750 mm x 900 mm x 58 mm | 952 | 48 kg | 62 kg | 810 mm x 960 mm x 230 mm |
| B75120AE | 750 mm x 1200 mm x 58 mm | 1288 | 64 kg | 81 kg | 810 mm x 1260 mm x 230 mm |
| B75150AE | 750 mm x 1500 mm x 58 mm | 1624 | 81 kg | 100 kg | 810 mm x 1560 mm x 230 mm |
| B90120AE | 900 mm x 1200 mm x 58 mm | 1564 | 77 kg | 98 kg | 960 mm x 1260 mm x 230 mm |
| B90150AE | 900 mm x 1500 mm x 58 mm | 1972 | 97 kg | 121 kg | 960 mm x 1560 mm x 230 mm |
| B90180AE | 900 mm x 1800 mm x 58 mm | 2380 | 116 kg | 143 kg | 960 mm x 1860 mm x 230 mm |

BB SELECTION GUIDE

| |  Nexus, Optimized Damping |  Intrinsically Damped |  Aluminum Honeycomb |  Solid Aluminum |  Optically Clear Acrylic |
|-----------------------------------|---|---|---|---|--|
| Construction | | | | | |
| Breadboard Thickness | 60 mm (2.4") 110 mm (4.3") | 58 mm (2.28") | 25 mm (0.98") 55 mm (2.2") | 12.7 mm (0.5") | 12.7 mm (0.5") |
| Working Surface | 430 Grade Stainless Steel Top Plate | | Aluminum | Solid Aluminum Anodized or Unanodized | Acrylic |
| Top Skin | 5 mm (0.20") | 5 mm (0.20") | 6 mm (0.24") | N/A | N/A |
| Bottom Skin | 5 mm (0.20") | 3 mm (0.12") | 3 mm (0.12") | N/A | N/A |
| Core Design | High-Density Plated Steel Honeycomb, 0.26 mm Thick | | High-Density Plated Aluminum Honeycomb | N/A | N/A |
| Side Panels | Rigid Steel Box Section | Moisture-Resistant Medium Density Fiberboard (MDF) | Black Laminated Aluminum Sides | N/A | N/A |
| Ferromagnetism | Magnetic or Non-Magnetic Options | Magnetic | Non-Magnetic | | |
| Sealed Holes | Sealed (25 mm Depth) or Non-Sealed Options | Non-Sealed | | N/A | N/A |
| Threads and Spacing | 1/4"-20 (M6) Tapped Holes on 1" (25 mm) Centers or Untapped Top Plate | 1/4"-20 (M6) Tapped Holes on 1" (25 mm) Centers | | | 1/4"-20 Tapped Holes on 0.5" (12.7 mm) Centers |
| Distance from Edge to First Holes | 0.5" (12.5 mm) on all Sides | 1.5" (37.5 mm) on all Sides | 1.0" (25 mm) on all Sides | 0.5" (12.5 mm) on all Sides | 1.0" (25.4 mm) on all Sides |
| Performance^a | | | | | |
| Damping |  |  |  | N/A | N/A |
| Stiffness |  60 mm (2.4") Thick |  |  25 mm (0.98") Thick |  |  |
| |  |  |  |  |  |

110 mm (4.3") Thick

55 mm (2.2") Thick

- The damping and stiffness performance shown here is qualitative and does not relate to exact specifications of each breadboard.

Optical Breadboard Selection Guides

The selection guides below list every size offered for our honeycomb, solid aluminum, and acrylic breadboards. Simply locate the specific width and length needed and then select the type of breadboard. Expand each table by clicking the *More [+]* button within the header.

Imperial Optical Breadboard Size Options

| Width | Length | Honeycomb | | | | | Solid Aluminum | | | Acrylic, Transparent |
|-------|--------|----------------------------------|-----------------------------------|------------------------------------|------------------------|------------------------|--------------------|--------------------------|----------------------|----------------------|
| | | Nexus (60 mm Thick) ^a | Nexus (110 mm Thick) ^a | Intrinsically Damped (58 mm Thick) | Aluminum (25 mm Thick) | Aluminum (55 mm Thick) | Anodized, Standard | Anodized, Double Density | Unanodized, Standard | |

- Item Number Suffix:
 - F, A, B, or G: Non-Sealed Mounting Holes
 - T, L, U, or N: Sealed Mounting Holes
 - FN or AN: Nonmagnetic Mounting Holes
 - Y or Z: No Mounting Holes
- Build-to-Order

Metric Optical Breadboard Size Options

| Width | Length | Honeycomb | | | | | Solid Aluminum | | |
|-------|--------|----------------------------------|-----------------------------------|------------------------------------|------------------------|------------------------|--------------------|--------------------------|----------------------|
| | | Nexus (60 mm Thick) ^a | Nexus (110 mm Thick) ^a | Intrinsically Damped (58 mm Thick) | Aluminum (25 mm Thick) | Aluminum (55 mm Thick) | Anodized, Standard | Anodized, Double Density | Unanodized, Standard |

- Item Number Suffix:
 - F, A, B, or G: Non-Sealed Mounting Holes
 - T, L, U, or N: Sealed Mounting Holes
 - FN or AN: Nonmagnetic Mounting Holes
 - Y or Z: No Mounting Holes
- Build-to-Order

Imperial Breadboards, Stocked in US

| Part Number | Description | Price | Availability |
|-------------|---|------------|--------------|
| B1218FE | Optical Breadboard, 12" x 18" x 2.28", 1/4"-20 Mounting Holes | \$501.00 | Lead Time |
| B1224FE | Optical Breadboard, 12" x 24" x 2.28", 1/4"-20 Mounting Holes | \$542.00 | Lead Time |
| B1824FE | Optical Breadboard, 18" x 24" x 2.28", 1/4"-20 Mounting Holes | \$625.00 | Lead Time |
| B2424FE | Optical Breadboard, 24" x 24" x 2.28", 1/4"-20 Mounting Holes | \$719.00 | Lead Time |
| B2436FE | Optical Breadboard, 24" x 36" x 2.28", 1/4"-20 Mounting Holes | \$891.00 | Today |
| B2448FE | Optical Breadboard, 24" x 48" x 2.28", 1/4"-20 Mounting Holes | \$1,056.00 | Lead Time |
| B3036FE | Optical Breadboard, 30" x 36" x 2.28", 1/4"-20 Mounting Holes | \$1,014.00 | Lead Time |
| B3048FE | Optical Breadboard, 30" x 48" x 2.28", 1/4"-20 Mounting Holes | \$1,223.00 | Today |
| B3060FE | Optical Breadboard, 30" x 60" x 2.28", 1/4"-20 Mounting Holes | \$1,434.00 | Lead Time |
| B3648FE | Optical Breadboard, 36" x 48" x 2.28", 1/4"-20 Mounting Holes | \$1,388.00 | Lead Time |

| | | | |
|---------|---|------------|-----------|
| B3660FE | Optical Breadboard, 36" x 60" x 2.28", 1/4"-20 Mounting Holes | \$1,645.00 | Lead Time |
| B3672FE | Optical Breadboard, 36" x 72" x 2.28", 1/4"-20 Mounting Holes | \$1,897.00 | Lead Time |

Metric Breadboards, Stocked in UK

| Part Number | Description | Price | Availability |
|-------------|---|------------|--------------|
| B3045AE | Optical Breadboard, 300 mm x 450 mm x 58 mm, M6 x 1.0 Mounting Holes | \$501.00 | Lead Time |
| B3060AE | Optical Breadboard, 300 mm x 600 mm x 58 mm, M6 x 1.0 Mounting Holes | \$542.00 | Lead Time |
| B4560AE | Optical Breadboard, 450 mm x 600 mm x 58 mm, M6 x 1.0 Mounting Holes | \$625.00 | Lead Time |
| B6060AE | Optical Breadboard, 600 mm x 600 mm x 58 mm, M6 x 1.0 Mounting Holes | \$719.00 | Lead Time |
| B6090AE | Optical Breadboard, 600 mm x 900 mm x 58 mm, M6 x 1.0 Mounting Holes | \$891.00 | Lead Time |
| B60120AE | Optical Breadboard, 600 mm x 1200 mm x 58 mm, M6 x 1.0 Mounting Holes | \$1,056.00 | Lead Time |
| B7590AE | Optical Breadboard, 750 mm x 900 mm x 58 mm, M6 x 1.0 Mounting Holes | \$1,014.00 | Lead Time |
| B75120AE | Optical Breadboard, 750 mm x 1200 mm x 58 mm, M6 x 1.0 Mounting Holes | \$1,223.00 | Lead Time |
| B75150AE | Optical Breadboard, 750 mm x 1500 mm x 58 mm, M6 x 1.0 Mounting Holes | \$1,434.00 | Lead Time |
| B90120AE | Optical Breadboard, 900 mm x 1200 mm x 58 mm, M6 x 1.0 Mounting Holes | \$1,388.00 | Lead Time |
| B90150AE | Optical Breadboard, 900 mm x 1500 mm x 58 mm, M6 x 1.0 Mounting Holes | \$1,645.00 | Lead Time |
| B90180AE | Optical Breadboard, 900 mm x 1800 mm x 58 mm, M6 x 1.0 Mounting Holes | \$1,897.00 | Lead Time |

