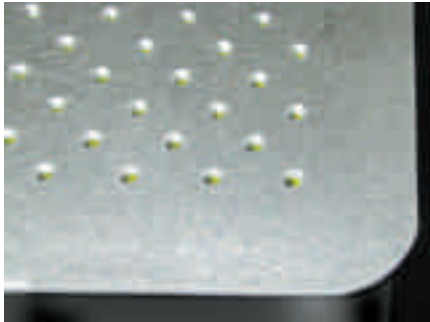
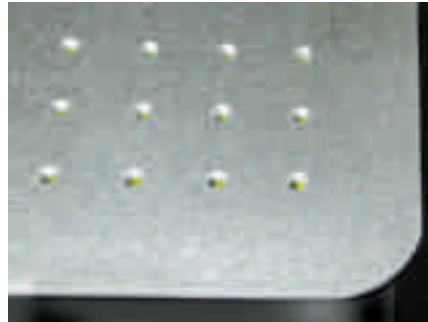


Options & Accessories

TMC offers a comprehensive line of options and accessories to help you obtain maximum utility from TMC optical tables, breadboards, and supports. We also provide unequalled expertise and fast turnaround in designing and building custom configurations to your specifications. Requirements for joined tables, tables made of special materials, and for custom through-hole patterns and ports are readily accommodated.



CleanTop® DoubleDensity™ construction (288 holes per ft²)



Standard TMC CleanTop® construction (144 holes per ft²)

CleanTop® DoubleDensity™

Double the number of tapped holes

TMC introduces the latest in our long history of innovation to the optical table industry. By combining our existing uniquely small honeycomb cell size (0.50 in.²) with our patented CleanTop® individual sealed hole technology, we are now able to offer twice the number of tapped holes. Because we use our existing honeycomb core design, which is twice the cell density as our nearest competitor, there are absolutely no changes to any performance specifications. No alterations to the core design were necessary to accommodate the additional CleanTop cups.

Electro-chemically etched alpha-numeric grid

User-friendly rounded corners

Features

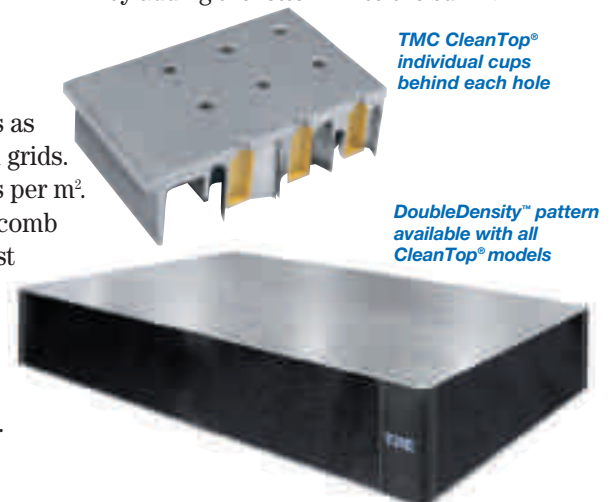
- Twice as many tapped holes as conventional 1 in. or 25 mm grids.
- 288 holes per ft², 3,200 holes per m².
- Twice the number of honeycomb cells (0.50 in.²) as our nearest competitor.
- Core density unchanged, the highest in the industry (13.3 lb per ft³).
- Hole pattern is 1/4-20 on 1 in. staggered centers or M6 on 25 mm staggered centers.
- Available with any version of TMC's CleanTop at a nominal additional fee.
- No change to any performance specifications.

Benefits

- Allows more precise location of positioning equipment
- Translation stages require less travel
- Compatible with existing 1/4-20 on 1 in. and M6 on 25 mm patterns

How to Order

After choosing your optical top, simply specify the corresponding suffix from the chart below by adding the letter "D" to the suffix.



TMC CleanTop® individual cups behind each hole

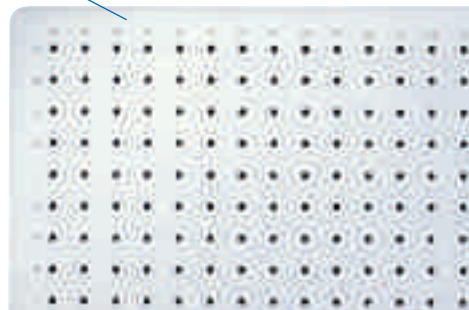
DoubleDensity™ pattern available with all CleanTop® models

Suffix Chart Hole Patterns/Laser Ports

Suffix	Hole Pattern-Threads	DoubleDensity	Laser Port
00R	No Holes	no	no
01R	1" centers - 1/4-20	no	yes
02R	1" centers - 1/4-20	no	no
11R	25 mm centers - M6	no	yes
12R	25 mm centers - M6	no	no
01DR	1" staggered centers - 1/4-20	yes	yes
02DR	1" staggered centers - 1/4-20	yes	no
11DR	25 mm staggered centers - M6	yes	yes
12DR	25 mm staggered centers - M6	yes	no

How to Order:

Alpha-Numeric Grid
To specify the Alpha-Numeric Grid, add the suffix G to the TMC model number (for instance, 78-455-02GR).



Alpha-Numeric Grid

A handy option to ease replicating an optical setup is our Alpha-Numeric Grid pattern. By electro-chemically etching a coordinate pattern on the top surface, each tapped hole has an address. This is also helpful in documenting a setup for OEM applications.



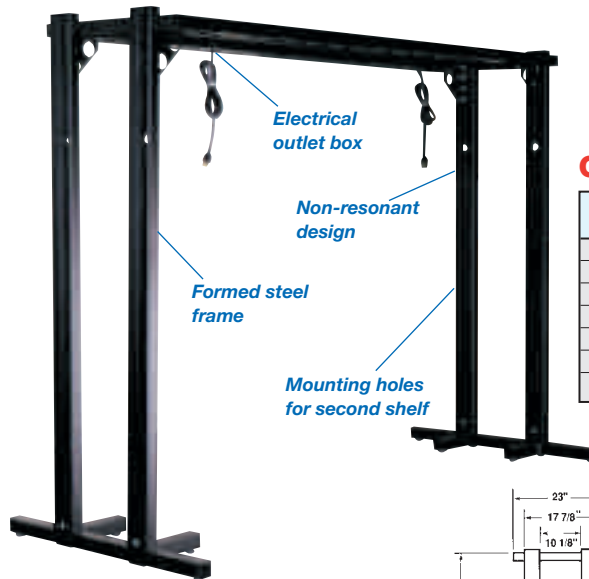
Rounded Corners

CleanTop® Tables now include user-friendly rounded corners as a standard feature. We laser-cut a generous, 1-in. radius at each corner of the table.

Conventional table construction produces a 90° bend which is subsequently “dulled” by grinding or filing. Though dull, this right angle often leads to painful hip bruises for those logging long hours in the lab. The rounded corner feature eliminates this inconvenience. If required, conventional square corners are available at no extra charge.

Laser Shelf

TMC tables larger than 36 in. x 72 in. (900 x 1,800 mm) and supported at least 18 in. (450 mm) above the floor can be fitted with a laser shelf. The shelf consists of an additional undrilled 2 in. (50 mm) thick breadboard attached to the bottom plate of the table. Though such a support system will not match the performance of direct mounting of equipment to the table’s top surface, for less sensitive applications this arrangement can save valuable working space on the top.



Overhead Shelf

An overhead shelf is an ideal storage rack for equipment and instrumentation used in conjunction with an optical table. Spanning the long axis of the table, the overhead shelf is adjustable in height and free standing, so vibration isolation will not be compromised. It includes a UL-approved electrical strip with two eight-grounded outlet strips in the 6-ft shelf and four eight-grounded outlets in the 8- and 10-ft shelves. (125 V, 60 Hz, 15 A).

Optional accessories include a second tier shelf or a hanging monitor shelf. Each shelf includes two rows of holes

Overhead Shelf Ordering Chart

Shelf Model	Description	L	
		in.	mm
81-231-01	Complete shelf system	72.4	1840
81-232-01	Complete shelf system	96.4	2450
81-233-01	Complete shelf system	120.4	3060
81-236-01	Second shelf tier	72.4	1840
81-237-01	Second shelf tier	96.4	2450
81-238-01	Second shelf tier	120.4	3060
81-239-01	Hanging monitor shelf as shown		



on a 2 in. (50 mm) spacing to facilitate mounting of fixtures.

Built to the same rugged standards you have come to expect from TMC, the structure is formed steel with a non-resonant design, black powder coat finish, and leveling feet for uneven floors. Capacity is 200 lb (90 kg).

For custom requirements such as non-U.S. format outlet strips, contact TMC.

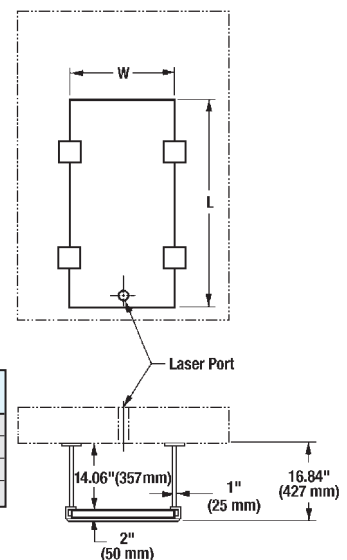


In some cases, our tiebars may interfere with shelf mounting. Contact us if you are in doubt.

Laser Shelf Ordering Chart

Shelf Model	Description	W	L
81-172-01	Shelf-imperial hardware	24"	48"
81-172-02	Shelf-metric hardware	600 mm	1200 mm
81-173-01	Shelf-imperial hardware	24"	72"
81-173-02	Shelf-metric hardware	600 mm	1800 mm

Order as a complete set or order the breadboard separately.



Options & Accessories (continued)



Enclosures

TMC manufactures two types of environmental enclosures to provide draft, dust, light, and acoustic isolation for optical tables.

Caution! The enclosures are not designed to protect eyes from laser hazards.

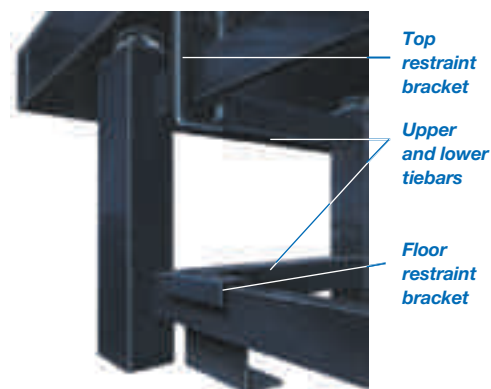
Free-Standing Enclosure

A floor-mounted frame with removable, soft vinyl sidewalls. The panels are opaque with the exception of transparent panels along the front side. This enclosure is designed for tables with an operating height of 36 in. (900 mm). Since this enclosure does not contact the table, it does not compromise any of the table's damping or isolation performance.

This enclosure is also available with a special construction of either all transparent or all opaque panels.

Table-Top Enclosure

Consists of a frame mounted directly to the table top. The side panels are a clear acrylic sheet construction and mount in sliding tracks. "Smoked" panels are available as a special option in place of the clear panels. In addition, an air blower/filter is available with this enclosure as an option, mounted to a side panel for additional dust protection. This is not recommended for vibration isolation systems.



Earthquake Restraint System

TMC's earthquake restraint bracket system provides increased safety and stability for optical tables in high-risk earthquake areas without affecting table performance.

The TMC earthquake restraint system relies on top brackets and upper tiebars to control motion of the table top and, where severe occurrences are anticipated, floor brackets with lower tiebars to secure the support structure to the floor. Under normal conditions, there is no contact between the top brackets and the support structure, so that performance of the optical top and the vibration isolation system are not affected. Clearances are large and brackets are lightweight, stiff, well-damped, unobtrusive and encapsulated with soft elastomer to provide gradual snubbing.

Our earthquake restraint bracket system can be retrofitted to an installed TMC optical table or specified with a new order.

Inferior, competitive designs may depend on large, pendulum-like structures that hang below the table top and connect to the floor. Since pendulums characteristically have low resonant frequencies, these add-on structures lower the resonant frequency of the table top and degrade compliance and damping. In addition, the floor connection creates a potential rigid coupling between table top and floor, which can compromise vibration isolation if it drifts out of calibration.

Enclosure Ordering Chart

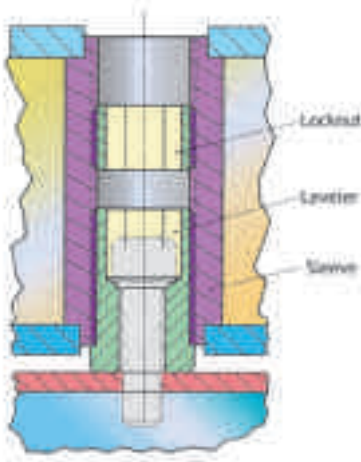
Optical Top Size		Free-Standing Enclosure	Table-Top Enclosure	
in.	mm		Imperial	Metric
48 x 72	1200 x 1800	81-211-01	81-221-01	81-221-02
48 x 96	1200 x 2400	81-212-01	81-222-01	81-222-02
48 x 120	1200 x 3000	81-213-01	81-223-01	81-223-02
48 x 144	1200 x 3600	81-214-01	81-224-01	81-224-02
59 x 72	1500 x 1800	81-215-01	81-225-01	81-225-02
59 x 96	1500 x 2400	81-216-01	81-226-01	81-226-02
59 x 120	1500 x 3000	81-217-01	81-227-01	81-227-02
59 x 144	1500 x 3600	81-218-01	81-228-01	81-228-02
Air blower/filter (for table-top enclosures only)			81-201	

Top Restraint Brackets

Top brackets encircle the upper tiebar and bolt to the underside of the top. They mount within a few inches of a support post and restrict the motion of the top (see illustration). Normally, four brackets are required for a typical table. Specify brackets individually. On new table orders, the top will be supplied with mounting holes. For retrofitting tables, contact TMC for recommendations.

How to Order

No. 83-102-01 = one top restraint bracket (including 8 bolts)



Breadboard Leveler

As an option on 2 in. (50 mm) thick breadboards with 1/8 in. (3 mm) or 3/16 in. (5 mm) skins, TMC provides a breadboard leveler mechanism (see page 36). The leveler consists of a threaded sleeve bonded into the top, a bushing leveler, and a locknut. An M6 or 1/4-20 bolt may then be used to fasten the breadboard to another top. The leveler is adjusted and locked with a simple Allen wrench.

How to Order

Specify the number of levelers required at the end of the breadboard model number suffix. For instance, if 4 levelers are desired, 77-119-02 becomes 77-119-024.

Floor Restraint Brackets

Floor brackets are recommended where quakes are anticipated. They encircle the lower tiebars close to the support posts and bolt to the floor (see illustration). Four brackets are usually recommended. Since standard TMC post-mount support systems are supplied with only upper tiebars, an additional set of four lower tiebars must be specified for both new and retrofitted orders. Specify both floor brackets and tiebars individually. Note that for posts less than 22" tall, a special Floor Restraint Bracket is required. Contact TMC for information.

How to Order

One floor restraint bracket (no bolts)

No. 83-103-01 (for TMC 11 and 12 Series posts)

No. 83-103-02 (for TMC 13 and 14 Series posts)

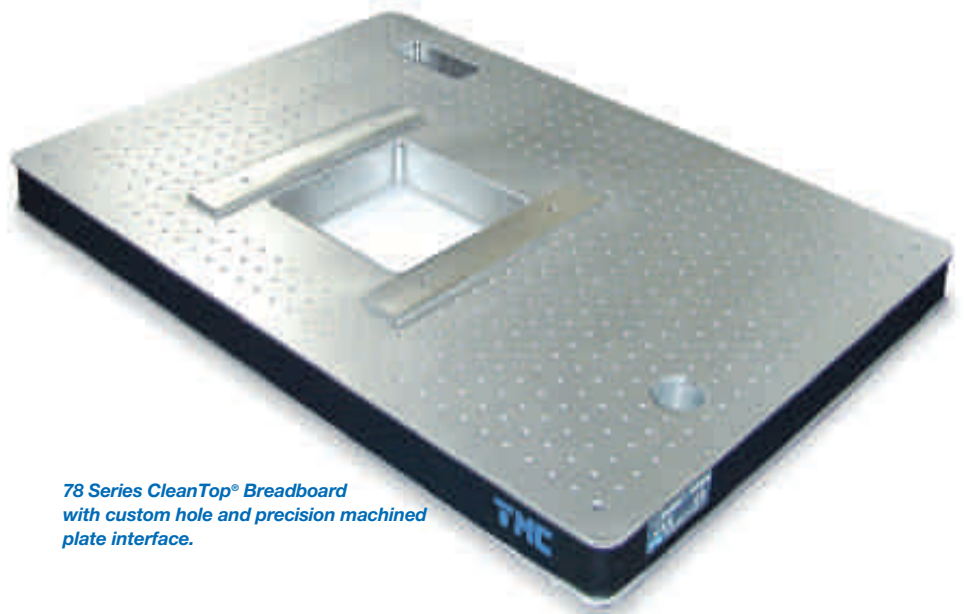
No. 83-103-03 (for TMC 63-500 Series posts)

Upper and Lower Tiebars

Standard post-mount support systems are supplied only with upper tiebars. An additional set of lower tiebars is required when floor restraint brackets are used; or, you may want an additional row of tiebars for extra strength. Tiebars must be specified individually – see ordering chart.

Tiebar Ordering Chart (Including Bolts)

Tiebar Length		Model No.
in.	mm	
15	380	83-101-15
20	510	83-101-20
26	660	83-101-26
30	760	83-101-30
35	890	83-101-35
40	1015	83-101-40
50	1270	83-101-50
60	1525	83-101-60
70	1780	83-101-70



78 Series CleanTop® Breadboard with custom hole and precision machined plate interface.

Custom Configurations



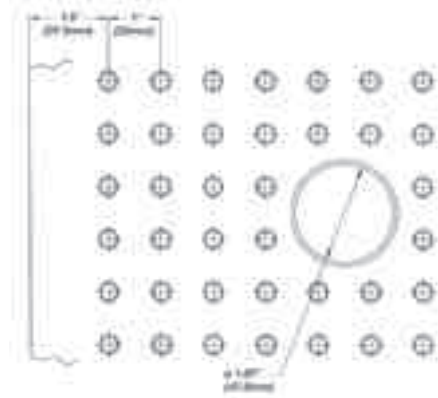
TMC's complete manufacturing facility can readily provide custom configurations to meet your special requirements.

Laser Ports

All TMC optical tops can be supplied with a laser port, as noted in the laser port and hole pattern suffix chart. The laser port is a 1 7/8 in. (47 mm) diameter stainless steel tube running through the table, bonded to the top and bottom skins.

Provisions for mounting a laser shelf underneath the table top are included with this option.

See drawing and chart below.

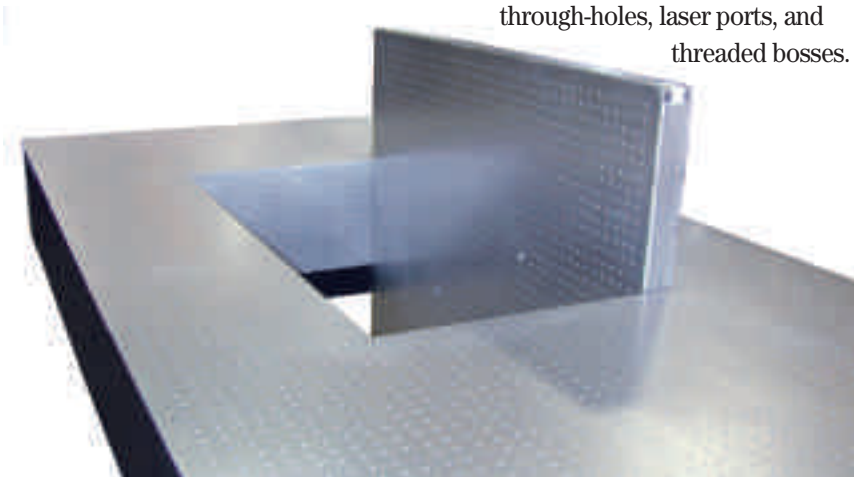


Special Materials

Tables made of any commercially available metallic materials are readily manufactured by TMC. Aluminum, non-ferromagnetic 300 series stainless steel, and thermally stable Super Invar are among the most frequent requests.

Special Through-Holes and Ports

Our multiple new 2,000-watt laser machining centers coupled with our capacity to punch, drill, shear, form, and weld steel makes inclusion of custom hole patterns readily available. Common patterns include notches, rectangular through-holes, laser ports, and threaded bosses.



TMC designed and manufactured this custom three-dimensional, 11-sided optical table system built entirely of non-ferromagnetic 304 alloy stainless steel to support the 500-pound quantum gas microscope housed in the Department of Physics at Harvard University.

Suffix Chart Hole Patterns/Laser Ports

Suffix	Hole Pattern-Threads	Double Density	Laser Port
00R	No Holes	no	no
01R	1" centers - 1/4-20	no	yes
02R	1" centers - 1/4-20	no	no
11R	25 mm centers - M6	no	yes
12R	25 mm centers - M6	no	no
01DR	1" staggered centers - 1/4-20	yes	yes
02DR	1" staggered centers - 1/4-20	yes	no
11DR	25 mm staggered centers - M6	yes	yes

Joined Tables

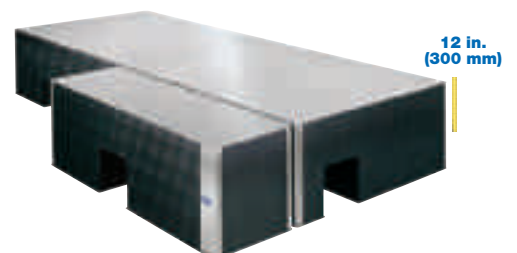
By welding a precision ground and aligned joiner plate system to the table skins, TMC can provide a rigid coupling between optical tables. In addition to tables coupled end-to-end, we can easily join them in "L" or "T" shapes. (Even relatively small tables are sometimes made in sections to allow rigging in elevators, etc.)

In addition, we can provide configurations with two working heights on one table by coupling tables of differing thicknesses.

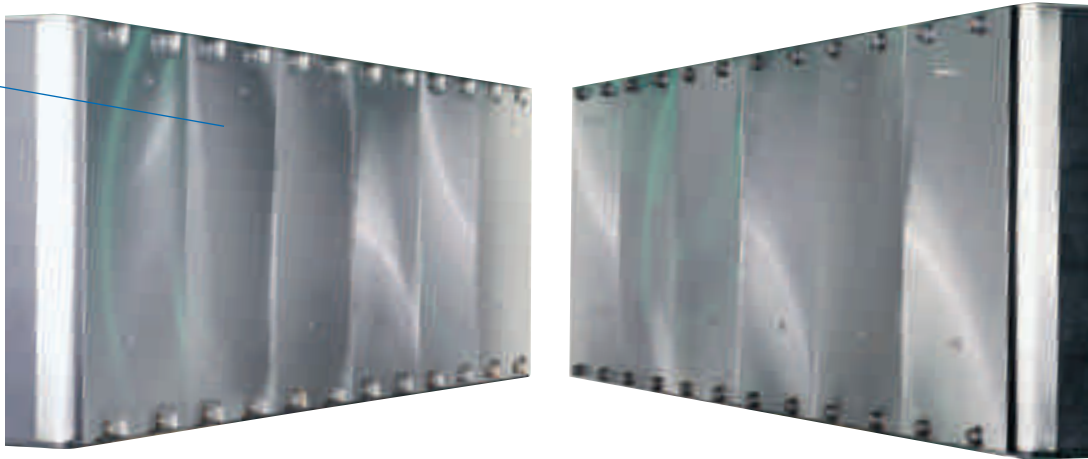
All joined tables are assembled and tested in our factory, shipped separately, and reassembled on site.



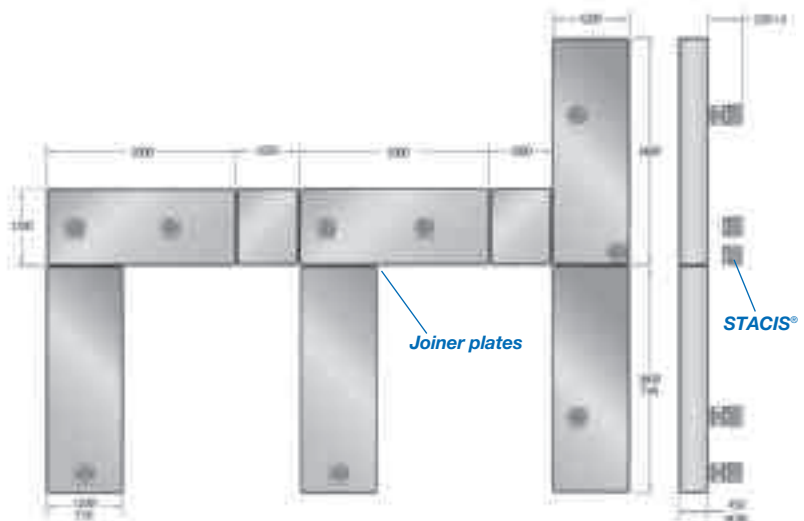
The tables can, at any time, be separated and supported individually or rejoined.



Precision-machined steel mating joiner plates are aligned and welded to multiple tops



This eight-piece CleanTop® Optical Table System is installed at the Max Planck Institute in Heidelberg, Germany. The system may be configured as one entire assembly or smaller assemblies of one or more table units. The entire system is installed on a STACIS® Active Piezoelectric Vibration Cancellation System.



Laboratory Tables and TableTop™ Platforms



Scientifica Limited's unique SliceMaster enables one operator to take independent electrophysiological recordings from up to eight brain slices simultaneously, controlling all eight slice chambers from one workstation. The system minimizes repetitive tasks, improves statistical analysis, and reduces the use of animals. Each two-tier TMC table supports four stations with a temperature-controlled chamber and camera on the top tier and the stimulator and recording manipulators on the lower breadboard, freeing up valuable workspace in the laboratory. The whole rigid assembly is isolated on TMC's patented Gimbal Piston™ Air Isolators.

UCLA Professor Shimon Weiss relies on five TMC CleanTop® Optical Tables with a combination of lasers and confocal microscopes to perform single molecule spectroscopy on proteins and nucleic acids. The lasers excite two different dye molecules respectively attached to two locations on the macromolecule to study folding, translocation on DNA, or molecular interaction. The amplitudes of the two color emissions are related to the spacing between the two dyes. Relative changes between the two signals report on distance and conformational changes. TMC's vibration isolation tables provide the ultra-stable, quiet platform required to obtain the high resolution imaging and spectroscopy needed for this state-of-the-art bioscience research.

