

**EC1PS - July 25, 2019**

Item # EC1PS was discontinued on July 25, 2019. For informational purposes, this is a copy of the website content at that time and is valid only for the stated product.

**BENCHTOP ENCLOSURES FOR ELECTRONIC DEVICES**

- ▶ Stocked Aluminum Enclosures, With or Without Pre-Installed Electronics Modules
- ▶ Customization Available for Front/Rear Panels, Mounting Board, and Overlay
- ▶ Multi-Output Power Supplies, AC Power Inlet, and Ventilation Fan
- ▶ Mounting Boards and Breadboards



**EC2PS**  
15 W Power Supply Module



**EC1AC**  
AC Power Inlet



**EC2C**  
Enclosure with Mounting Board and Pre-Installed Electronics Modules



**EC1F**  
Ventilation Fan



**EC2030B**  
Gray Electronics Enclosure,  
200 mm x 300 mm x 96 mm



**Custom Enclosures**  
Thorlabs offers a service to fully customize the benchtop enclosures sold on this page. See the *Custom Enclosures* tab for

[Hide Overview](#)

**OVERVIEW**

**Features**

- Red or Gray Aluminum Housings
  - 6 Sizes Available (See Table Below)
  - Compatible Electronics Modules Available Separately
- Aluminum Mounting Boards to Mount Components Inside Enclosures
- Housing Available with Pre-Installed Components
- Breadboards for EC2030 and EC2530 Enclosures
- Custom Configurations Available; See the *Custom Enclosures* Tab



Quick Links
<a href="#">Blank Enclosures</a>
<a href="#">Enclosure with Pre-Installed Electronics Modules</a>
<a href="#">Power Supply Modules</a>
<a href="#">AC Power Inlet</a>
<a href="#">Ventilation Fan</a>
<a href="#">Mounting Boards</a>
<a href="#">Breadboards for Enclosures</a>

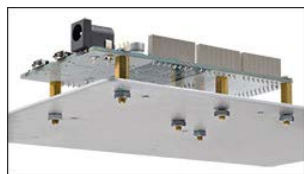
Thorlabs offers several enclosure options, mounting boards, and electronics modules for customers interested in assembling their own benchtop electronic devices. Our enclosures are offered in either red or gray colors and come in six sizes; see the table below for options. Red enclosures are indicated by an R at the end of the enclosure's Item #. The front and rear panels of the enclosure are blank; input and output ports can be added by the user depending on the application.

We offer several modules for building electronic assemblies within the enclosure. These modules include power supplies with output powers of 15 W, 45 W, or 100 W; an AC power inlet; and a ventilation fan. The EC2C Pre-Assembled Enclosure includes an AC power inlet, ventilation fan, and mounting board within an EC2030B housing.

An optional mounting board can be purchased separately to fit inside the enclosure. The mounting board provides a surface for assembling electronic components, such as PCBs, development boards, and power supplies. Four mounting board sizes are available, corresponding to the available enclosure sizes. See the table below for compatibility between the enclosures and mounting boards.

Alternatively, breadboards are available for the EC2030A(R), EC2030B(R), and EC2530C(R) enclosures, allowing optomechanical components to be mounted inside. The breadboard attaches to the mounting studs on the bottom of the enclosure in the same way as the mounting board. Each breadboard features either a double-density hole pattern of 1/4"-20 (M6) tapped holes or a high-density hole pattern of 8-32 (M4) and 1/4"-20 (M6) tapped holes.

For housings that hold smaller, custom electronic circuits, such as electrical filters, voltage dividers, or impedance matchers, see our compact customizable electronics housings.



Click to Enlarge  
Example of Electronic Components Mounted on EC1530MB



Click to Enlarge  
EC2530BB Breadboard Inside EC2530C Enclosure



Click to Enlarge  
Custom Services Available, Including Laser Cutting, Riveting, UV Printing, and Overlay Custom Molding



Click to Enlarge  
Example of EC1530A Enclosure (Shown with Cover Removed) with Electronic Components Installed

Enclosure Item #	Enclosure Dimensions <sup>a</sup> (W x D x H)	Compatible Mounting Board	Mounting Board Dimensions (W x D x H)	Compatible Breadboard	Breadboard Dimensions (W x D x H)
EC1515A(R)	149.8 mm x 149.9 mm x 71.1 mm (5.90" x 5.90" x 2.80")	EC1515MB	130.0 mm x 80.0 mm x 1.5 mm (5.12" x 3.15" x 0.06")	-	-
EC1530A(R)	149.8 mm x 299.9 mm x 71.1 mm (5.90" x 11.81" x 2.80")	EC1530MB	130.0 mm x 200.0 mm x 1.5 mm (5.12" x 7.87" x 0.06")	-	-
EC1530B(R)	149.8 mm x 299.9 mm x 96.1 mm (5.90" x 11.81" x 3.78")				
EC2030A(R)	199.8 mm x 299.9 mm x 71.1 mm (7.87" x 11.81" x 2.80")	EC2030MB	180.0 mm x 200.0 mm x 1.5 mm (7.09" x 7.87" x 0.06")	MSB1823(/M) MSBU1823(/M)	180.0 mm x 230.0 mm x 7.0 mm (7.09" x 9.06" x 0.28")
EC2030B(R)	199.8 mm x 299.9 mm x 96.1 mm (7.87" x 11.81" x 3.78")				
EC2530C(R)	249.8 mm x 299.9 mm x 122.0 mm (9.83" x 11.81" x 4.80")	EC2530MB	230.0 mm x 200.0 mm x 1.5 mm (9.06" x 7.87" x 0.06")	EC2530BB(/M)	230.0 mm x 230.0 mm x 9.5 mm (9.06" x 9.06" x 0.37")

a. These dimensions measure the outside of the enclosure, excluding the feet. Detailed dimensions of each enclosure are available by clicking on the red Docs icons (📄) below.

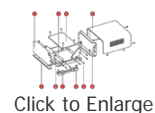
[Hide Assembly Details](#)

## ASSEMBLY DETAILS

### Assembly Details for Blank Enclosures

The blank enclosures are shipped completely assembled with the exception of the two foldable feet and two fixed feet. The feet can be easily attached using the included M3 cap screws and 2.5 mm hex key. The mounting boards are sold separately, and four M3 button head screws (5/64" hex) are included with the enclosure for installing a mounting board. The enclosure can be disassembled for ease of machining. The included 5/64" and 2.5 mm hex keys can be used for all screws in the assembly.

Ref. #	Component	Qty.	Color/Finish	Material
1	Front Panel	1	Silver/Anodized	Aluminum
2	Bottom	1		
3	Mounting Board or Breadboard <sup>a</sup>	1 <sup>a</sup>	See Below	
4	Cover	1	Gray or Red/Anodized	
5	Trim Strip	1	Silver/Anodized	
6	Gusset	4	Unanodized	
7	Foldable Feet	2	Black	ABS Plastic
8	Fixed Feet	2		
9	M3 Screw (5/64" and 2.5 mm Hex Keys Included)	Varies	Unanodized	Stainless Steel



10	Rear Panel	1	Silver/Anodized	Aluminum
----	------------	---	-----------------	----------

a. Neither of these are included with enclosure. See the tables below for details.

Mounting Board <sup>a</sup>							
Ref. #	Item #	Compatible Enclosure	Width	Depth	Height	Color/Finish	Material
3	EC1515MB	EC1515A(R)	130.0 mm (5.12")	80.0 mm (3.15")	1.5 mm (0.06")	Silver/ Hairline Finish	Aluminum
	EC1530MB	EC1530A(R) EC1530B(R)	130.0 mm (5.12")	200.0 mm (7.87")			
	EC2030MB	EC2030A(R) EC2030B(R)	180.0 mm (7.09")	200.0 mm (7.87")			
	EC2530MB	EC2530C(R)	230.0 mm (9.06")	200.0 mm (7.87")			

a. Sold Separately from Enclosure

Breadboards <sup>a</sup>									
Ref. #	Item #	Compatible Enclosure	Hole Threading and Spacing		Width	Depth	Height	Color/Finish	Material
3	MSB1823	EC2030A(R)	8-32 Taps with 1/2" Spacing and 1/4"-20 Taps with 1" Spacing		7.09"	9.06"	0.28"	Black/Anodized	Aluminum
	MSBU1823	EC2030B(R)						Unanodized	
	EC2530BB	EC2530C(R)	1/4"-20 Taps with 1" Spacing, Double Density		9.06"	9.06"	0.37"	Black/Anodized	
	MSB1823/M	EC2030A(R)	M4 Taps with 12.5 mm Spacing and M6 Taps with 25 mm Spacing		180.0 mm	230.0 mm	7.0 mm	Black/Anodized	
	MSBU1823/M	EC2030B(R)						Unanodized	
	EC2530BB/M	EC2530C(R)	M6 Taps with 25 mm Spacing, Double Density		230.0 mm	230.0 mm	9.5 mm	Black/Anodized	

a. Sold Separately from Enclosure

[Hide Blank Benchtop Electronics Enclosures](#)

## Blank Benchtop Electronics Enclosures

- ▶ Empty Housings for Electronic Assemblies
- ▶ Compact Benchtop Design
- ▶ Six Sizes Available
- ▶ Offered in Red or Gray

Six sizes of aluminum enclosures are available. The enclosures sold here come with blank front and rear panels, as well as four padded feet. A mounting board for the inside of each enclosure can be purchased separately below. Four M3 button head cap screws are included with the enclosure for securing the mounting board inside. The EC2030B enclosure is also available with cutouts and pre-installed modules below.



The four padded feet can be installed to provide support when the enclosure is sitting flat on a table. Additionally, the two front feet can be extended to raise the front end by 34 mm, allowing the enclosure to be angled upward. To install the feet, the enclosure must be opened. To open the enclosure, remove the countersunk screws on both the rear and bottom panels using the included 2.0 mm (5/64") hex key, and then slide off the top of the enclosure. Once the enclosure is open, the feet align with three holes at each corner on the bottom panel, allowing the feet to be screwed in from the inside using the included four cap screws and 2.5 mm hex key.

Part Number	Description	Price	Availability
EC1515A	Enclosure for Customizable Electronics, 150 mm x 150 mm x 71 mm, Gray	\$107.16	Today
EC1515AR	Enclosure for Customizable Electronics, 150 mm x 150 mm x 71 mm, Red	\$107.16	Today
EC1530A	Enclosure for Customizable Electronics, 150 mm x 300 mm x 71 mm, Gray	\$150.24	Today
EC1530AR	Enclosure for Customizable Electronics, 150 mm x 300 mm x 71 mm, Red	\$150.24	Today
EC1530B	Enclosure for Customizable Electronics, 150 mm x 300 mm x 96 mm, Gray	\$160.74	5-8 Days

EC1530BR	Enclosure for Customizable Electronics, 150 mm x 300 mm x 96 mm, Red	\$160.74	Today
EC2030A	Enclosure for Customizable Electronics, 200 mm x 300 mm x 71 mm, Gray	\$172.30	Today
EC2030AR	Enclosure for Customizable Electronics, 200 mm x 300 mm x 71 mm, Red	\$172.30	Today
EC2030B	Enclosure for Customizable Electronics, 200 mm x 300 mm x 96 mm, Gray	\$182.80	Today
EC2030BR	Enclosure for Customizable Electronics, 200 mm x 300 mm x 96 mm, Red	\$182.80	Today
EC2530C	Enclosure for Customizable Electronics, 250 mm x 300 mm x 122 mm, Gray	\$214.32	Today
EC2530CR	Enclosure for Customizable Electronics, 250 mm x 300 mm x 122 mm, Red	\$214.32	Today

[Hide Benchtop Electronics Enclosure with Pre-Installed Accessories](#)

## Benchtop Electronics Enclosure with Pre-Installed Accessories

- ▶ Assembly Includes:
  - ▶ EC2030B Gray Enclosure, 200 mm x 300 mm x 96 mm
  - ▶ EC2030MB Mounting Board
  - ▶ EC1AC Power Inlet
  - ▶ EC1F Ventilation Fan
- ▶ Mounting Holes for Direct Compatibility with These Power Supply Modules (Sold Separately Below):
  - ▶ EC2PS, EC3PS, EC4PS, EC5PS

Available Power Supply Modules <sup>a</sup>		
Item #	Output Voltage	Output Power
EC2PS	+5 V / ±12 V	15 W
EC3PS	+5 V / ±15 V	
EC1PS <sup>b</sup>	+5 V / ±15 V	45 W
EC4PS	+5 V / ±12 V	100 W
EC5PS	+5 V / ±15 V	



Click to Enlarge  
EC2C with Cover  
Removed and  
EC5PS Power Supply  
Installed  
(Sold Separately Below)

- a. Power supplies are sold separately. See the table below for additional specifications.
- b. This power supply will require the user to drill the mounting board prior to installation.

This enclosure features cutouts for pre-installed, basic electronic accessories and a mounting board, enabling a wide variety of applications (for specifications on the modules, see below). The AC power inlet and enclosure fan are fixed to the rear panel. The front panel of the enclosure is left blank for the user to customize. The accessories are not electrically connected when the enclosure is shipped.

The mounting board offers pre-drilled holes for mounting one of the power supplies listed in the table to the right and sold separately below. Note that EC1PS power supply will require separate, additional holes to be drilled by the user prior to mounting.

The four padded feet can be installed to provide support when the enclosure is sitting flat on a table. Additionally, the two front feet can be extended to raise the front end by 34 mm, allowing the enclosure to be angled upward. Unlike the blank enclosures above, this enclosure is shipped with the feet attached. To install the feet, the enclosure must be opened. To open the enclosure, remove the countersunk screws on both the rear and bottom panels using the included 2.0 mm (5/64") hex key, and then slide off the top of the enclosure. Once the enclosure is open, the feet align with three holes at each corner on the bottom panel, allowing the feet to be screwed in from the inside using the included four cap screws and 2.5 mm hex key.

The enclosure housing, mounting board, and each of the electronics are available separately as well. Note that when purchased individually, the EC2030B enclosure housing does not have cutouts on the rear panel to install the AC power inlet and ventilation fan.

Part Number	Description	Price	Availability
EC2C	Customer Inspired!&nbsp;Benchtop Enclosure with Pre-Installed Electronics Modules, 200 mm x 300 mm x 96 mm, Gray	\$239.85	Today

[Hide Power Supply Modules](#)

## Power Supply Modules


These power supply modules can be integrated into custom electronics assemblies. The power supplies can deliver 15 W, 45 W, or 100 W of power to the setup. Each module has three possible voltage outputs; see the table below and the spec sheets for details. Mounting taps or through holes on the base of each unit allow it to be mounted to a surface inside an enclosure. See our custom enclosure configurator to design and order an aluminum enclosure to fit the needs of your system.



Click to Enlarge  
EC5PS Power Supply  
Module

Key Specifications <sup>a</sup>					
Item #	EC2PS	EC3PS	EC1PS	EC4PS	EC5PS
Manufacturer Item #	ECL15UT02-S	ECL15UT03-S	GRN-45	ECM100UT31	ECM100UT33

<b>Output Voltage</b>	+5 V / ±12 V	+5 V / ±15 V	+5 V / ±15 V	+5 V / ±12 V	+5 V / ±15 V
<b>Output Power</b>	15 W		45 W	100 W <sup>b</sup>	
<b>Input Voltage</b>	85 - 264 VAC (120 - 370 VDC)		85 - 264 VAC	90 - 264 VAC (120 - 370 VDC)	
<b>Inrush Current</b>	20 A (at 115 VAC)		50 A (Max at 230 V)	40 A (Max at 230 VAC)	
<b>Operating Temperature</b>	-20 to +70 °C		0 to 70 °C	0 to 70 °C	
<b>Mounting Holes</b>	Two Ø0.14" (Ø3.5 mm) Through Holes		Four 4-40 Taps	Four Ø0.16" (Ø4.0 mm) Through Holes	
<b>Dimensions<sup>c</sup></b>	3.31" x 1.36" x 1.04" (84.0 mm x 34.5 mm x 26.4 mm)		4.50" x 2.75" x 1.28" (114.3 mm x 69.9 mm x 32.5 mm)	4.50" x 2.50" x 1.20" (114.3 mm x 63.5 mm x 30.5 mm)	

- a. See the spec sheets by clicking on the red Docs icons below (  ) for complete specifications, including pin diagrams.
- b. Only When Forced Air Cooled at 5 CFM. When convection cooled, the EC4PS can provide 75 W while the EC5PS can provide 80 W.
- c. Including Chassis/Cover

Part Number	Description	Price	Availability
EC2PS	15 W, +5 V / ±12 V Power Supply Module for Custom Electronics Assemblies	\$111.24	Today
EC3PS	15 W, +5 V / ±15 V Power Supply Module for Custom Electronics Assemblies	\$111.24	Today
EC1PS	45 W, +5 V / ±15 V Power Supply Module for Custom Electronics Assemblies	\$126.47	Lead Time
EC4PS	100 W, +5 V / ±12 V Power Supply Module for Custom Electronics Assemblies	\$218.36	Today
EC5PS	100 W, +5 V / ±15 V Power Supply Module for Custom Electronics Assemblies	\$218.36	Today

[Hide AC Power Inlet](#)

## AC Power Inlet

The AC power inlet a receptacle for an AC power cord on the enclosure. The power inlet can be snapped into a 66 mm x 27 mm rectangular cutout in the front or rear panel. The power inlet features an on/off switch and a fuse holder for a 250 V fuse (a fuse is not included).

See our custom enclosure configurator to design and order an enclosure with cutouts for the power inlet or other components.

Key Specifications <sup>a</sup>	
<b>Rated Voltage</b>	115 VAC / 250 VAC
<b>Rated Current</b>	6 A
<b>Maximum Leakage Current</b>	2 µA at 115 VAC / 60 Hz 5 µA at 250 VAC / 50 Hz
<b>Dielectric Strength (One Minute)</b>	Line-to-Ground: 2250 VDC Line-to-Line: 1450 VDC
<b>Flammability Class</b>	UL94 V-0
<b>Connector Style</b>	IEC 320-C14
<b>Fuse Holder<sup>b</sup></b>	IEC 5 x 20 mm
<b>Panel Cutout Dimensions</b>	66.50 mm x 27.00 mm

- a. See the spec sheet for complete specifications.
- b. Use Only with 250 V Fuse (Not Included)

Part Number	Description	Price	Availability
EC1AC	AC Power Inlet with On/Off Switch and Fuse Holder	\$21.26	Today

[Hide Ventilation Fan](#)

## Ventilation Fan

The Noctua ventilation fan is a compact fan for regulating airflow into and out of the enclosure. The fan blades rotate at 3000 rpm, providing 29.2 m<sup>3</sup>/h of air flow. The 200 mm power cord has an A2542-4PIN connector at the end. The fan motor is rated for DC 12 V and 0.09 A. The fan can be attached to

Key Specifications <sup>a</sup>	
<b>Rotational Speed</b>	3000 rpm
<b>Airflow</b>	29.2 m <sup>3</sup> /h



the enclosure using the four included silicone anti-vibration pins; cutouts for these mounting pins will need to be made by the user. Two arrows engraved into the side of the housing indicate the directions of air flow and blade rotation.

See our custom enclosure configurator to design and order an enclosure with cutouts for the ventilation fan or other components.

Click to Enlarge  
Two arrows engraved into the side of the housing indicate the directions of air flow and blade rotation.

<b>Acoustical Noise</b>	19.3 dB(A)
<b>Static Pressure</b>	2.18 mm H <sub>2</sub> O
<b>Operating Voltage</b>	DC 7 V to DC 13 V
<b>Operating Temperature</b>	-10 to +70 °C
<b>Operating Humidity</b>	15% to 90%
<b>Dimensions</b>	60 mm x 60 mm x 25 mm (2.4" x 2.4" x 1.0")

a . See the spec sheet for complete specifications.

Part Number	Description	Price	Availability
EC1F	Noctua Enclosure Fan Module	\$38.51	Today

### [Hide Mounting Boards](#)

#### Mounting Boards

Four sizes of aluminum mounting boards are available. The mounting board provides a surface for assembling electronic components such as PCBs, development boards, and power supplies. Each mounting board is designed to fit inside one or more of the enclosures sold above; see the table above to determine which mounting board is compatible with each enclosure size.

Once the top of the enclosure is removed, the mounting board can be secured inside the enclosure using four M3 button head cap screws (included with the enclosure) and a 5/64" hex key. Each mounting board is 1.5 mm thick. When secured inside the enclosure, the mounting board is 6 mm above the bottom of the enclosure.



Click for Details  
EC2030MB Mounting Board  
Inside EC2030A Enclosure

Part Number	Description	Price	Availability
EC1515MB	Mounting Board for EC1515A Enclosures, 130 mm x 80 mm x 1.5 mm	\$10.71	Today
EC1530MB	Mounting Board for EC1530 Enclosures, 130 mm x 200 mm x 1.5 mm	\$16.08	Today
EC2030MB	Mounting Board for EC2030 Enclosures, 180 mm x 200 mm x 1.5 mm	\$19.33	Today
EC2530MB	Mounting Board for EC2530C Enclosures, 230 mm x 200 mm x 1.5 mm	\$21.43	Today


### [Hide Breadboards for Enclosures](#)

#### Breadboards for Enclosures

Several breadboards are available to fit inside the 200 mm x 300 mm and 250 mm x 300 mm enclosures sold above. The breadboards allow the user to add and remove optomechanical components within the enclosures easily and securely.

The MSB1823(/M) is designed to fit inside the EC2030A(R) or EC2030B(R) enclosures. The hole pattern consists of 8-32 (M4 x 0.7) and 1/4"-20 (M6 x 1.0) through-tapped holes, in the same layout as our Mini-Series breadboards. When the breadboard is mounted inside the EC2030A(R) enclosure, the top of the enclosure is 52.3 mm above the top surface of the breadboard; inside the EC2030B(R), the top of the enclosure is 77.3 mm above the top of the breadboard. The bottom of the breadboard is 6 mm above the bottom of the enclosure in both cases. The MSBU1823(/M) is an unanodized breadboard with the same dimensions and hole pattern.

The EC2530BB(/M) is designed to fit inside the EC2530C(R) enclosure. It features a double-density hole pattern of 1/4"-20 (M6 x 1.0) through-tapped holes. When the breadboard is mounted inside the enclosure, the top of the enclosure is 100 mm above the top surface of the breadboard, and the bottom of the breadboard is 6 mm above the bottom of the EC2530C(R) enclosure.

For more details on the hole patterns, see the PDF drawings by clicking on the red Docs icons (  ) below. All the breadboards sold here have four counterbores for M3 cap screws. When the top of the enclosure is removed, the breadboard can be secured to the threaded mounting studs inside the enclosure.



Click to Enlarge  
EC2530BB Breadboard  
Inside EC2530C  
Enclosure

Item #	MSB1823	MSBU1823	EC2530BB	MSB1823/M	MSBU1823/M	EC2530BB/M

<b>Dimensions</b>	7.09" x 9.06" x 0.28"	9.06" x 9.06" x 0.37"	180.0 mm x 230.0 mm x 7.0 mm	230.0 mm x 230.0 mm x 9.5 mm		
<b>Hole Threading and Spacing</b>	8-32 Taps with 1/2" Spacing and 1/4"-20 Taps with 1" Spacing	1/4"-20 Taps with 1" Spacing, Double Density	M4 Taps with 12.5 mm Spacing and M6 Taps with 25 mm Spacing	M6 Taps with 25 mm Spacing, Double Density		
<b>Distance from Edge to First Hole</b>	0.54" and 0.53", Two Sides Each	0.53" on All Sides	15.0 mm on All Sides			
<b>Number of Counterbored Holes</b>	Four M3					
<b>Material</b>	Aluminum Plate					
<b>Finish</b>	Matte Black Anodized	Unanodized	Matte Black Anodized	Matte Black Anodized	Unanodized	Matte Black Anodized

Part Number	Description	Price	Availability
MSB1823/M	Aluminum Breadboard for EC2030 Enclosures, 180 mm x 230 mm x 7 mm, M4 and M6 High-Density Taps	\$125.66	Lead Time
MSBU1823/M	Unanodized Aluminum Breadboard for EC2030 Enclosures, 180 mm x 230 mm x 7 mm, M4 and M6 High-Density Taps	\$113.30	Today
EC2530BB/M	Aluminum Breadboard for EC2530C(R) Enclosure, 230 mm x 230 mm x 9.5 mm, M6 Double-Density Taps	\$160.74	Today
MSB1823	Aluminum Breadboard for EC2030 Enclosures, 7.09" x 9.06" x 0.28", 8-32 and 1/4"-20 High-Density Taps	\$125.66	Lead Time
MSBU1823	Unanodized Aluminum Breadboard for EC2030 Enclosures, 7.09" x 9.06" x 0.28", 8-32 and 1/4"-20 High-Density Taps	\$113.30	Today
EC2530BB	Aluminum Breadboard for EC2530C(R) Enclosure, 9.06" x 9.06" x 0.37", 1/4"-20 Double-Density Taps	\$160.74	Today