

EC1C - November 21, 2018

Item # EC1C was discontinued on November 21, 2018. 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

- ▶ Aluminum Enclosures for Customizable Electronics
- ▶ Aluminum Enclosure with Pre-Installed Electronics Modules
- ▶ Multi-Output Power Supplies, AC Power Inlet, and Ventilation Fan
- ▶ Mounting Boards and Breadboards



EC2PS
15 W Power Supply
Module



EC1AC
AC Power Inlet



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



EC1C
Enclosure with Pre-Installed
Electronics Modules (Shown with



EC1F
Ventilation Fan



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

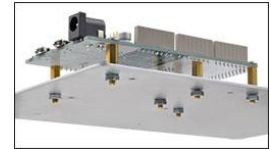
Features

- Red or Gray Aluminum Housings
 - 6 Sizes Available (See Table Below)
 - Compatible Electronics Modules Available Separately
- Enclosure with Pre-Installed Electronics Modules:
 - +5 V / ±15 V Power Supply
 - AC Power Inlet with On/Off Switch and Fuse Holder
 - Enclosure Ventilation Fan
- Aluminum Mounting Boards to Mount Components Inside Enclosures
- Breadboard with 1/4"-20 (M6 x 1.0) Taps for EC2530C(R) Enclosures
- Custom Configurations Available; See the *Custom Enclosures* Tab



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 Custom benchtop services include laser cutting, riveting, UV printing, and overlay custom molding.

Quick Links
Blank Enclosures
Enclosure with Pre-Installed Electronics Modules
Power Supply Modules
AC Power Inlet
Ventilation Fan
Mounting Boards
Breadboard for EC2530C(R)



Click to Enlarge
 Example of Electronic Components Mounted on EC1530MB



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



Click to Enlarge
 EC2530BB Breadboard Inside EC2530C Enclosure

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 EC1C Pre-Assembled Enclosure includes the 45 W power supply (item # EC1PS), the AC power inlet, the ventilation fan, and a mounting board within the 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 the EC1PS power supply. 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, a breadboard is available for the 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. The breadboard features an double-density hole pattern of 1/4"-20 (M6 x 1.0) tapped holes.

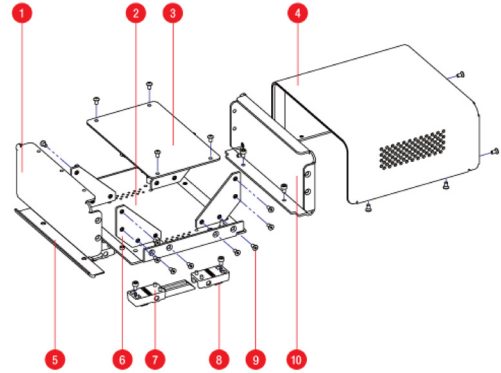
For housing smaller, custom electronic circuits, such as electrical filters, voltage dividers, or impedance matchers, see our compact customizable electronics housings.

Enclosure Item #	Enclosure Dimensions ^a (W x D x H)	Compatible Mounting Board	Mounting Board 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")
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) Breadboard	230.0 mm x 230.0 mm x 9.5 mm (9.06" x 9.06" x 0.37")

- 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.

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 3/32" 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 3/32" hex keys can be used for all screws in the assembly.



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Ref. #	Component	Qty.	Material	Color/Finish
1	Front Panel	1	Aluminum	Silver/Anodized
2	Bottom	1		Hair-Line Finish
3	Mounting Board ^a	1 ^a		Gray or Red/Anodized
4	Cover	1		Silver/Anodized
5	Trim Strip	1		Plain
6	Gusset	4	ABS Plastic	Black
7	Foldable Feet	2		Black
8	Fixed Feet	2	Stainless Steel	Plain
9	M3 Screw (5/64" and 3/32" Hex Keys Included)	Varies		Plain
10	Rear Panel	1	Aluminum	Silver/Anodized

- Not included with enclosure. See the table below for details.

Mounting Board ^a							
Ref. #	Item #	Compatible Enclosure	Width	Depth	Height	Material	Color/Finish
3	EC1515MB	EC1515A(R)	130.0 mm (5.12")	80.0 mm (3.15")	1.5 mm (0.06")	Aluminum	Hair-line Finish
	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")			
	EC2530BB ^b		230.0 mm (9.06")	230.0 mm (9.06")	9.5 mm (0.37")	Black Anodized	

- Sold Separately from Enclosure
- The EC2530BB is an optical breadboard with an array of 1/4"-20 tapped holes. A metric version (EC2530BB/M) is available with M6 x 1.0 tapped holes.

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 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 5/64" (2 mm) 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 3/32" (2.5 mm) hex key.



Click to Enlarge
Bottom View of Gray
Enclosures with
Feet Attached



Click to Enlarge
EC1530BR with
Feet Extended

Part Number	Description	Price	Availability
EC1515A	Enclosure for Customizable Electronics, 150 mm x 150 mm x 71 mm, Gray	\$104.04	Today
EC1515AR	Enclosure for Customizable Electronics, 150 mm x 150 mm x 71 mm, Red	\$104.04	Today
EC1530A	Enclosure for Customizable Electronics, 150 mm x 300 mm x 71 mm, Gray	\$145.86	3-5 Days
EC1530AR	Enclosure for Customizable Electronics, 150 mm x 300 mm x 71 mm, Red	\$145.86	Today
EC1530B	Enclosure for Customizable Electronics, 150 mm x 300 mm x 96 mm, Gray	\$156.06	Today
EC1530BR	Enclosure for Customizable Electronics, 150 mm x 300 mm x 96 mm, Red	\$156.06	Today
EC2030A	Enclosure for Customizable Electronics, 200 mm x 300 mm x 71 mm, Gray	\$167.28	Today
EC2030AR	Enclosure for Customizable Electronics, 200 mm x 300 mm x 71 mm, Red	\$167.28	Today
EC2030B	Enclosure for Customizable Electronics, 200 mm x 300 mm x 96 mm, Gray	\$177.48	Today
EC2030BR	Enclosure for Customizable Electronics, 200 mm x 300 mm x 96 mm, Red	\$177.48	Today
EC2530C	Enclosure for Customizable Electronics, 250 mm x 300 mm x 122 mm, Gray	\$208.08	3-5 Days
EC2530CR	Enclosure for Customizable Electronics, 250 mm x 300 mm x 122 mm, Red	\$208.08	Today

Benchtop Electronics Enclosure with Pre-Installed Accessories

- ▶ Assembly Includes:
 - ▶ EC2030B Gray Enclosure, 200 mm x 300 mm x 96 mm
 - ▶ EC2030MB Mounting Board
 - ▶ EC1PS Power Supply
 - ▶ EC1AC Power Inlet
 - ▶ EC1F Ventilation Fan



Click to Enlarge
EC1C with Cover Removed (All
Items Shown Here are
Included)

This enclosure features three pre-installed, basic electronic accessories and a mounting board, enabling a wide variety of applications (for specifications on the three modules, see below). The AC power inlet and enclosure fan are fixed to the rear panel, while the power supply is attached to the mounting board inside the housing (see photo to the right). 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 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 open the enclosure, remove the countersunk screws on both the rear and bottom panels using the included 5/64" (2 mm) hex key, and then slide off the top of the enclosure.

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
EC1C	Benchtop Enclosure with Pre-Installed Electronics Modules, 200 mm x 300 mm x 96 mm, Gray	\$352.92	Lead Time

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

The EC1PS is also included in the EC1C pre-assembled enclosure sold above.

Key Specifications ^a					
Item #	EC2PS	EC3PS	EC1PS	EC4PS	EC5PS
Manufacturer Item #	ECL15UT02-S	ECL15UT03-S	GRN-45	ECM100UT31	ECM100UT33
Output Voltage	+5 V / ±12 V	+5 V / ±15 V	+5 V / ±15 V	+5 V / ±12 V	+5 V / ±15 V
Output Power	15 W		45 W	100 W ^b	
Input Voltage	85 - 264 VAC (120 - 370 VDC)		85 - 264 VAC	90 - 264 VAC (120 - 370 VDC)	
Inrush Current	20 A (at 115 VAC)		50 A (Max at 230 V)	40 A (Max at 230 VAC)	
Operating Temperature	-20 to +70 °C		0 to 70 °C	0 to 70 °C	
Mounting Holes	Two Ø0.14" (Ø3.5 mm) Through Holes		Four 4-40 Taps	Four Ø0.16" (Ø4.0 mm) Through Holes	
Dimensions ^c	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)	

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

Part Number	Description	Price	Availability
EC2PS	15 W, +5 V / ±12 V Power Supply Module for Custom Electronics Assemblies	\$108.00	Today
EC3PS	15 W, +5 V / ±15 V Power Supply Module for Custom Electronics Assemblies	\$108.00	Today
EC1PS	45 W, +5 V / ±15 V Power Supply Module for Custom Electronics Assemblies	\$122.79	Today
EC4PS	100 W, +5 V / ±12 V Power Supply Module for Custom Electronics Assemblies	\$212.00	Today
EC5PS	100 W, +5 V / ±15 V Power Supply Module for Custom Electronics Assemblies	\$212.00	Today

AC Power Inlet

The AC power inlet a receptacle for an AC power cord on the enclosure. It is included in the EC1C enclosure above and can be purchased separately here.

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

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

Part Number	Description	Price	Availability
EC1AC	AC Power Inlet with On/Off Switch and Fuse Holder	\$20.64	Today

Ventilation Fan

The Noctua ventilation fan is a compact fan for regulating airflow into and out of the enclosure. It is included in the EC1C enclosure above and can be purchased separately here.

The fan blades rotate at 3000 rpm, providing 29.2 m³/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 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.

Key Specifications ^a	
Rotational Speed	3000 rpm
Airflow	29.2 m ³ /h
Acoustical Noise	19.3 dB(A)
Static Pressure	2.18 mm H ₂ O
Operating Voltage	DC 7 V to DC 13 V
Operating Temperature	-10 to +70 °C
Operating Humidity	15% to 90%
Dimensions	60 mm x 60 mm x 25 mm (2.4" x 2.4" x 1.0")

- See the spec sheet for complete specifications.

Part Number	Description	Price	Availability
EC1F	Noctua Enclosure Fan Module	\$37.39	Today

Mounting Boards

- ▶ Aluminum Mounting Boards for Custom Electronics Enclosures
- ▶ Four Sizes Available

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(R) Enclosure, 130 mm x 80 mm x 1.5 mm	\$10.40	Today
EC1530MB	Mounting Board for EC1530(R) Enclosures, 130 mm x 200 mm x 1.5 mm	\$15.61	Today
EC2030MB	Mounting Board for EC2030(R) Enclosures, 180 mm x 200 mm x 1.5 mm	\$18.77	Today
EC2530MB	Mounting Board for EC2530C(R) Enclosure, 230 mm x 200 mm x 1.5 mm	\$20.81	3-5 Days

Breadboard for EC2530C Enclosures

- ▶ Designed to Fit Inside EC2530C(R) Enclosure
- ▶ 1/4"-20 (M6 x 1.0) Taps on 1.00" (25.0 mm) Centers, Double Density Pattern
- ▶ 230 mm x 230 mm x 9.5 mm (W x D x H)
- ▶ Made from Black Anodized Aluminum



A breadboard is available to fit inside the EC2530C(R) enclosure sold above. The breadboard allows the user to add and remove optomechanical components within the enclosure easily and securely. It features a double density hole pattern of 1/4"-20 (M6 x 1.0) through-tapped holes. For more details on the hole pattern, see the PDF drawing by clicking on the red Docs icons () below.

Click to Enlarge
EC2530BB Breadboard
Inside EC2530C
Enclosure

Once the top of the enclosure is removed, the breadboard can be secured inside using the four counterbored mounting holes and four M3 cap screws with a thread length of at least 8 mm (sold separately). This breadboard is 9.5 mm thick, which is thinner than our standard double-density aluminum breadboards. When the breadboard is secured 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 enclosure.

Part Number	Description	Price	Availability
EC2530BB/M	Aluminum Breadboard for EC2530C(R) Enclosure, 230 mm x 230 mm x 9.5 mm, M6 x 1.0 Double-Density Taps	\$156.06	Today
EC2530BB	Aluminum Breadboard for EC2530C(R) Enclosure, 9.06" x 9.06" x 0.37", 1/4"-20 Double-Density Taps	\$156.06	Today

Special

Part Number	Description	Price	Availability
EC1515A-CUSTOM	Custom Enclosure for Electronics, 150 mm x 150 mm x 71 mm, Gray	\$104.04	Lead Time
EC1515AR-CUSTOM	Custom Enclosure for Electronics, 150 mm x 150 mm x 71 mm, Red	\$104.04	Lead Time
EC1530A-CUSTOM	Custom Enclosure for Electronics, 150 mm x 300 mm x 71 mm, Gray	\$145.86	Lead Time
EC1530AR-CUSTOM	Custom Enclosure for Electronics, 150 mm x 300 mm x 71 mm, Red	\$145.86	Lead Time
EC1530B-CUSTOM	Custom Enclosure for Electronics, 150 mm x 300 mm x 96 mm, Gray	\$156.06	Lead Time
EC1530BR-CUSTOM	Custom Enclosure for Electronics, 150 mm x 300 mm x 96 mm, Red	\$156.06	Lead Time
EC2030A-CUSTOM	Custom Enclosure for Electronics, 200 mm x 300 mm x 71 mm, Gray	\$167.28	Lead Time
EC2030AR-CUSTOM	Custom Enclosure for Electronics, 200 mm x 300 mm x 71 mm, Red	\$167.28	Lead Time
EC2030B-CUSTOM	Custom Enclosure for Electronics, 200 mm x 300 mm x 96 mm, Gray	\$177.48	Lead Time
EC2030BR-CUSTOM	Custom Enclosure for Electronics, 200 mm x 300 mm x 96 mm, Red	\$177.48	Lead Time
EC2530C-CUSTOM	Custom Enclosure for Electronics, 250 mm x 300 mm x 122 mm, Gray	\$208.08	Lead Time
EC2530CR-CUSTOM	Custom Enclosure for Electronics, 250 mm x 300 mm x 122 mm, Red	\$208.08	Lead Time

Visit the *Benchtop Enclosures for Electronic Devices* page for pricing and availability information:
https://www.thorlabs.com/newgroupage9.cfm?objectgroup_id=9893