Ultimo Installation Guide

Ultimo PRO

PRO 104D
PRO 124D

Dear Customer,

Thank you for choosing the Morel Ultimo PRO Subwoofer Series!

The Ultimo PRO series represents the highest level of performance and engineering in the Morel lineup, embodying decades of acoustic innovation, precision craftsmanship, and uncompromising design. Developed for the most demanding listeners and elite-level car audio systems, the Ultimo PRO delivers extraordinary low-frequency performance with exceptional depth, control, accuracy, and musicality.

Engineered without compromise, every element of the Ultimo PRO has been carefully designed to achieve the ultimate balance of power and finesse. From its ability to reproduce deep, impactful bass to its remarkable detail and tonal accuracy, the Ultimo PRO is built to provide a listening experience that is both emotionally engaging and technically refined. It stands as the ultimate expression of the Morel sound philosophy—natural, dynamic, and true to the music.

Designed for high-performance installations, the Ultimo PRO subwoofers offer outstanding reliability, exceptional power handling, and the level of sonic precision expected from Morel's flagship subwoofer series.

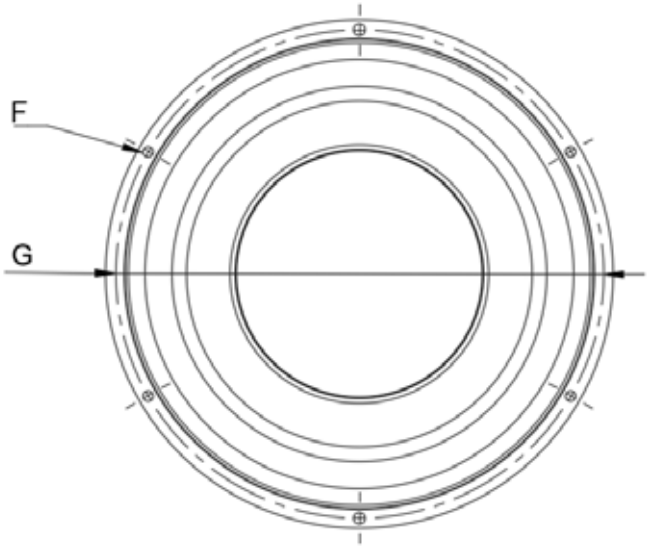
If you need assistance with installation or system setup, please contact your authorized Morel retailer or reach out to our support team:

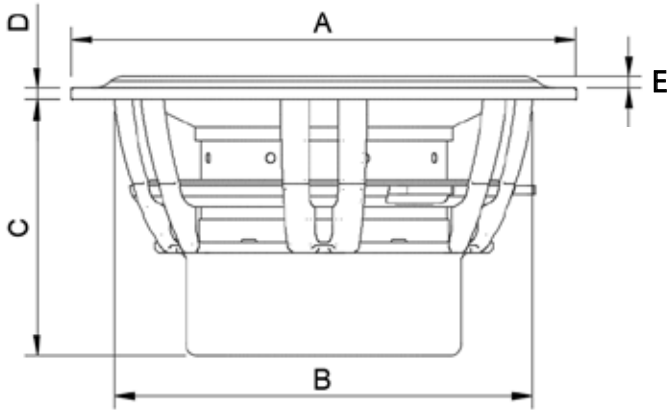
info@morelhifi.com
info@morelamerica.com

We hope you enjoy the exceptional performance of your Morel Ultimo PRO subwoofers for years to come.

Bring Morel's legendary bass performance to any vehicle—beautifully, effortlessly, and with the confidence that comes from world-class engineering.

Dimensions





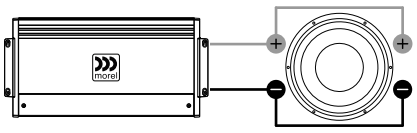
	PRO 104D	PRO 124D
A	10.35″ (263 mm)	12″ (305 mm)
B	9.13″ (232 mm)	10.62″ (270 mm)
C	5.27″ (134 mm)	5.53″ (140.7 mm)
D	0.25″ (6.3 mm)	0.25″ (6.3 mm)
E	0.31″ (7.95 mm)	0.45″ (11.5 mm)
F	0.24″ (6.2 mm)	0.24″ (6.2 mm)
G	9.96″ (253 mm)	11.5″ (292 mm)

Suggested Amplifier Power

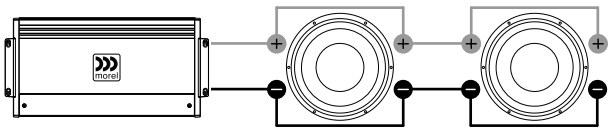
MODEL	MINIMUM	RECOMMENDED POWER
PRO 104D	500 w	1000 w
PRO 124D	500 w	1000 w

Voice coil wired in parallel (1-2 woofers)

2 Ω Load

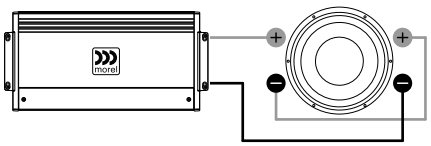


1 Ω Load

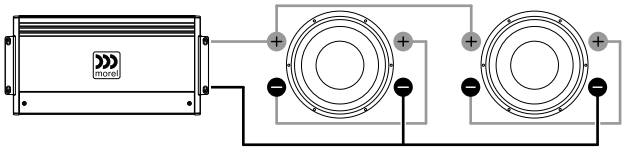


Voice coil wired in series (1-2 woofers)

8 Ω Load



4 Ω Load



Enclosure Recommendations

The Ultimo PRO subwoofers are engineered to deliver outstanding performance in both vented (ported) and sealed enclosures, giving you the flexibility to optimize your system for the space and sound you want. Choosing the right enclosure depends on your goals: if you're looking for the strongest overall output and the most dynamic low-frequency extension, a vented enclosure is the preferred choice. If vehicle space is limited and a compact design is necessary, a sealed enclosure will provide excellent control, accuracy, and smooth, natural bass in a smaller footprint.

Below are the recommended enclosure designs for the Ultimo PRO series. These configurations are optimized to achieve a balanced, linear in-car bass response while ensuring reliable power handling and long-term performance. For custom enclosure designs—including multi-subwoofer systems or unique vehicle constraints—please reach out to the Morel technical team at info@morelamerica.com or tech@morelamerica.com

Enclosure Construction Guidelines

Use 3/4" (1.9 cm) or thicker MDF (Medium Density Fiberboard) when building the enclosure, and be sure to seal all joints with silicone to maintain an airtight seal. For improved rigidity and to minimize panel vibration, interior bracing is strongly recommended. A simple and effective method is to install triangular braces between each large, unsupported panel. When adding internal bracing, the displacement of these braces must be accounted for in the net internal air volume, as the recommended enclosure dimensions do not include bracing displacement.

Port Clearance Recommendations

Do not position the port opening against any solid surface, such as an internal brace, back panel, vehicle trunk wall, seat, or other interior surface. The port opening must remain completely unobstructed to perform properly.

To ensure this, take the smallest internal dimension of the rectangular port (P1 in our enclosure designs) and multiply it by 1.5. This number represents the minimum distance the port opening should be from any solid surface.

Custom Enclosure Designing

If you are designing your own enclosure, refer to the recommended airspace ranges in this manual for best performance. Following the optimal design will result in the most efficient use of space and maximize sound quality.

Note: Enclosures with less airspace than recommended may negatively affect low-frequency extension and power handling.

All airspace measurements listed in this manual already include the displacement of the subwoofer.

Port Displacement Calculation (for Vented Enclosures)

For vented enclosures, the displacement of the port must also be calculated and added to the internal airspace to determine the total (gross) enclosure volume.

Most commonly, a rectangular port is used for ease of construction. If calculating the displacement of the port:

1. Account for port wall thickness between the width (W) and height (H) dimensions. Example, if using 3/4" (1.9 cm) MDF, add this thickness where applicable.

2. Multiply:

$$\text{Width} \times \text{Height} \times \text{Length} = \text{Port Volume in } in^3$$

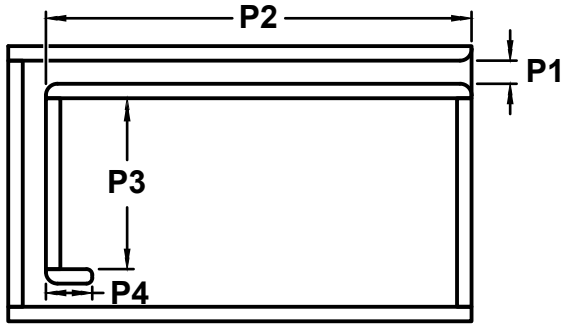
3. Convert the result to cubic feet:

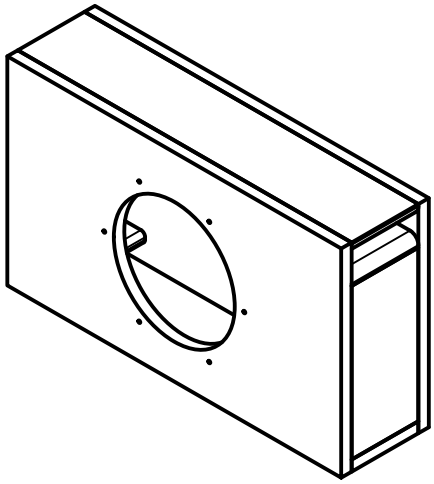
$$\text{Port Volume } (ft^3) = \frac{in^3}{1728}$$

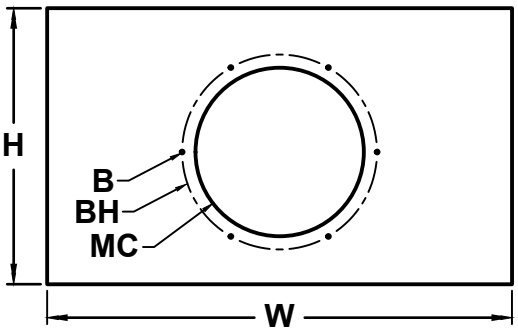
4. Add the port volume to the subwoofer's required airspace to determine the gross total enclosure volume.

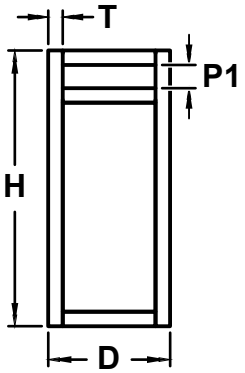
Recommended (Vented) Ported Enclosure

MODEL	VOLUME	VENT	TUNED TO
PRO 104D	0.6 cuft 17 L	W 6.25″ x H 1.25″ x L 42.6″ W 158.8mm x H 31.8mm x L 1082mm	28 Hz
PRO 124D	1.1 cuft 34 L	W 8.5″ x H 1.5″ x L 43.1″ W 215.9mm x H 38.1mm x L 1094.7mm	26 Hz









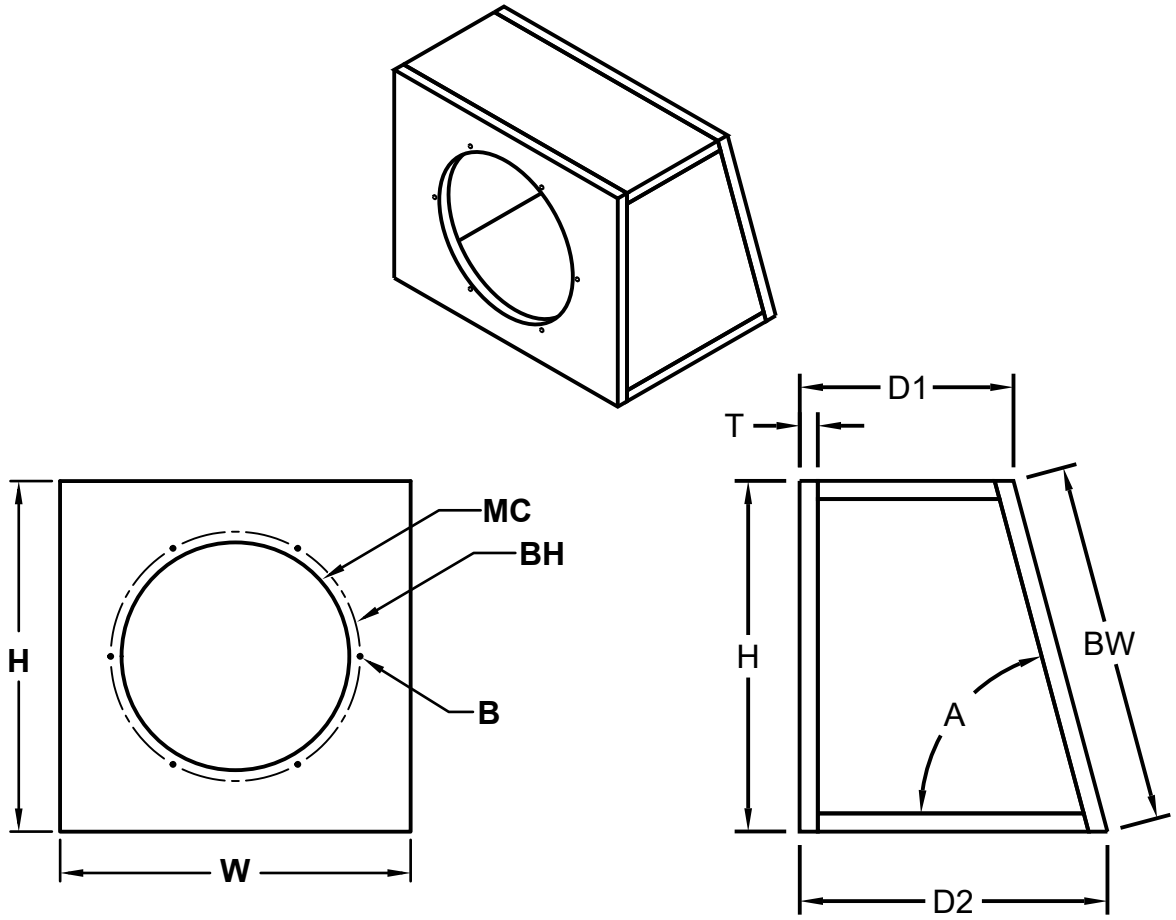
	PRO 104D	PRO 124D
H	14.75″ (374.6mm)	14.5″ (368.3mm)
W	20″ (508mm)	25.63″ (650.9mm)
D	7.75″ (196.8mm)	10″ (254mm)
MC	Ø9.1″ (231.2 mm)	Ø10.63″ (270 mm)
BH	Ø9.9″ (253mm)	Ø9.9″ (292mm)
B	6x Ø0.125″ (3.18mm)	6x Ø0.125″ (3.18mm)
P1	1.25″ (31.8mm)	1.5″ (38.1mm)
P2	18″ (457.2mm)	23.38″ (593.7mm)
P3	9.25″ (234.9mm)	8.5″ (215.9mm)
P4	10.8″ (275.4mm)	5.88″ (149.2mm)
T	0.75″ (19 mm)	0.75″ (19 mm)

* Images of the enclosures are for reference only and may not accurately represent the actual shape or dimensions.

** Please note that enclosure volumes are provided as net internal volumes. Any internal bracing must be added to the net internal volume. If building a vented (ported) enclosure, be sure to add the total displacement of the vent including the construction materials used within the enclosure.

Recommended Sealed Enclosure

MODEL	VOLUME NET	F3
PRO 104D	0.6 cuft 17 L	50Hz
PRO 124D	1.1 cuft 34 L	41.5Hz



	PRO 104D	PRO 124D
H	12.5″ (317.5mm)	14.5″ (368.3mm)
W	12.75″ (323.8mm)	16.5″ (419mm)
D1	8.38″ (212.8mm)	9.34″ (237.3mm)
D2	11.73″ (297.9 mm)	13.2″ (336 mm)
BW	12.94″ (328.7mm)	15″ (381.3mm)
A	75°	75°
MC	Ø9.21″ (234 mm)	Ø10.63″ (270 mm)
BH	Ø9.96″ (253mm)	Ø11.5″ (292mm)
B	6x Ø0.125″ (3.18mm)	6x Ø0.125″ (3.18mm)
T	0.75″ (19 mm)	0.75″ (19 mm)

* Images of the enclosures are for reference only and may not accurately represent the actual shape or dimensions.

** Please note that enclosure volumes are provided as net internal volumes. Any internal bracing must be added to the net internal volume. If building a vented (ported) enclosure, be sure to add the total displacement of the vent including the construction materials used within the enclosure.

Important Safety Warning

To ensure safe operation and protect both your audio system and your vehicle, please follow the safety guidelines below.

Continuous operation of an amplifier, speaker, or subwoofer at excessive volume—especially when the signal is distorted, clipped, or driven beyond its limits—can cause the system to overheat. This may lead to component failure, fire, or significant damage to your vehicle. Amplifiers must be installed with at least 4 inches (10 cm) of open space around them to maintain proper ventilation. Subwoofers should be mounted with a minimum of 1 inch (2.5 cm) of clearance between the front of the speaker and any nearby surface to ensure unrestricted cone movement and adequate airflow.

The Ultimo PRO subwoofers are capable of producing very high sound pressure levels. Extended listening at elevated volumes can result in permanent hearing damage. If the audio becomes uncomfortable, harsh, or physically painful, reduce the volume immediately. Practicing responsible listening habits protects your hearing and ensures your system continues to perform safely and reliably.

Specifications

ULTIMO PRO	PRO 104D	PRO 124D
Overall Dimensions	10″	12″
Power Handling Wrms	900	1000
Max. Trans. Pwr Handling Wrms	2500	3000
Sensitivity (1W/1M) dB	83	83.7
Frequency response Hz	10-500	10-500
Resonance Freq. Fs Hz	34.7	27.7
Voice Coil Diameter mm (inch)	130 (5.1)	130 (5.1)
Voice Coil Height mm (inch)	41 (1.6)	41 (1.6)
Voice Coil Type/Former	Aluminum	Aluminum
Voice Coil Wire	Hexatech Aluminum	Hexatech Aluminum
DC Resistance (ohm) * VC in parallel	2.0 (2 x 4ohm)	2.0 (2 x 4ohm)
Voice Coil Induct. @1 kHz (mH)	0.26 (2 x 3.8ohm)	0.26 (2 x 3.8ohm)
Magnet System	Copper Sleeve Ferrite	Copper Sleeve Ferrite
HE-Magnetic Gap Height mm (inch)	12 (0.47)	12 (0.47)
BL Product/BXL	12.1	11.4
Max. Linear Ex./Xmax mm (inch)	±14.5mm (0.6)	±14.5mm (0.6)
Electrical Q Factor QES	0.60	0.58
QTS	0.49	0.48
QMS	2.64	2.68
Moving Mass MMS - gr/os	196.2 (6.9)	220.2 (7.8)
Equiv. Can Air Load VAS - L (cu.ft^3)	18.2 (0.64)	42.8 (1.51)
Effective Piston Area SD sq.cm (sq.inch)	346.3 (53.7)	448.6 (69.5)
Cone Type	Multi-Layer	Multi-Layer
Cone Material	Paper + Carbon Fiber	Paper + Carbon Fiber
Unit Diameter mm(inch)	263 (10.35)	305 (12)
Mounting Depth mm (inch)	134 (5.27)	140.7 (5.53)
Mounting Cutout	232 (9.13)	270 (10.62)

* Morel is constantly developing new technology and processes to improve its products. Morel reserves the right to modify specifications or change product design without notice.

Wishing you many years of sound enjoyment!

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