



# PHOENIX GOLD



## Ti312D2X

## Ti312D4X



### *Subwoofer Manual*

**Models: Ti312D2X , Ti312D4X**

#### **Features**

- 60mm of Peak to Peak Excursion
- 3.0" Ultra High Temp Copper Wound Voice Coil
- Removable tri-LEDs for Customization or Field Service
- Radial Backplate Venting System
- Easy Connect Single Location Speaker Terminal
- Long Throw Dual Spider Suspension
- High Excursion CAE/CAD Motor Design
- Woven Tinsel Leads
- Black Anodized Aluminum Former
- Injection Polypropylene Dustcap
- High Roll Butyl Rubber Double Stitched Surround
- Optimized for Sealed or Vented Enclosures
- Rigid Powder Coated Anti-Resonant Castbasket
- Quick Disconnect Series/Parallel Wires Included
- Spare LED Assembly Included

## VENTED ENCLOSURE RECCOMENDATIONS

VENTED - SPL		VENTED - Normal		VENTED - SQ	
Volume(cu.ft.)	1.75	Volume(cu.ft.)	2.0	Volume(cu.ft.)	2.25
Vent Opening(in.)	2 x 12	Vent Opening(in.)	2 x 12	Vent Opening(in.)	2 x 12
Vent Length(in.)	23.5	Vent Length (in.)	24	Vent Length(in.)	25.5
Tuning Freq	38Hz	Tuning Freq	35Hz	Tuning Freq	32Hz

## SEALED ENCLOSURE RECOMMENDATIONS

SEALED VOLUME(cu.ft.)	
SPL	0.75
Normal	1.1
SQ	1.5

**SPL** = More overall output and compact enclosure size, but sacrifices some low bass and smooth overall output

**Normal** = **Recommended for most listeners.** Excellent blend of low bass, accurate and strong overall output

**SQ** = Smooth and exceptional low bass output, but larger enclosure size and sacrifices some overall output

Additional Notes:

- For vented enclosures a subsonic filter set at 30Hz to 40Hz is highly recommended.
- Sealed enclosure volumes INCLUDE THE DISPLACEMENT of the subwoofer.
- Vented enclosure volumes INCLUDE THE DISPLACEMENT of the subwoofer. But DO NOT include displacement of the vent.
- In many cases, a 4 inch round vent/port can be used instead of a rectangle/slot vent. This can reduce the vent length and simplify the enclosure construction. However, in some rare cases at high power a small amount of port noise maybe audible. The provided slot/rectangle ports will provide maximum performance and the most predictable results. Contact technical support for additional enclosure options.

## LED ASSEMBLY

**LED Terminal:** The small terminal located on the side of the basket labeled "LED" powers the LEDs. Only use 12v and Ground. Do not use the amplifier's speaker output, it will damage the LEDs.

**Spare LED Assembly:** Every Ti3X subwoofer includes 2 spare LED assemblies. Be sure to keep it for future use if necessary.

**Changing LED Colors:** The spare assembly has blue LEDs. The PCB is intentionally not glued to the plastic triangle yet, so users have the option of removing the blue LEDs and soldering in different color LEDs. Most standard 3mm LEDs will work fine as direct replacements.

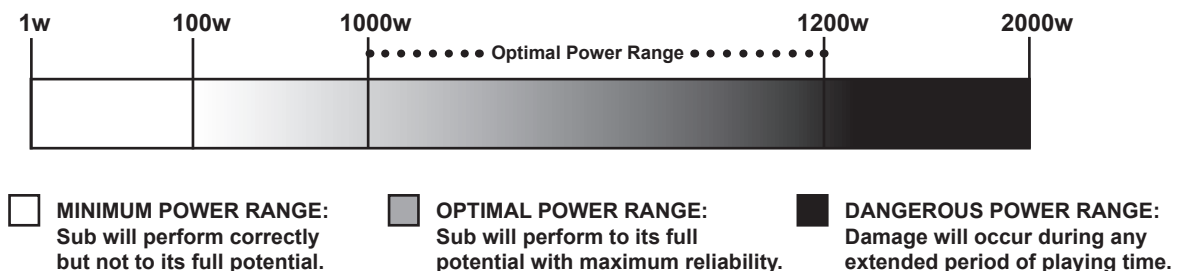
### LED ASSEMBLY INSTALLATION STEPS:

1. Remove the three dustcap screws and unplug the wire harness. *Note: There is a very small dot of glue that holds the male/female connectors together.*
2. If different color LEDs have been soldered to the spare PCB, plug in the PCB to verify the new LEDs work correctly.
3. Glue the PCB to the plastic triangle with high temperature glue. The circle area where the PCB and plastic triangle meet should be air tight. Use plenty of glue and check the original LED assembly as a reference. Let the glue dry.
4. Plug in the PCB. Place a very small drop of glue across the top of the male and female connectors so it holds them together.
5. Place the LED assembly into the dustcap, carefully arrange the wire in the dustcap recess so it can not rattle or vibrate.
6. Apply a very small amount of Loctite 222 (Purple: Low Strength - Small Screw) to each screw. Only a very small amount is needed, just covering the last two threads of the screw is enough.
7. Tighten the three screws so they are snug and LED assembly sits tight and flush against the dustcap. **DO NOT OVER TIGHTEN.**
8. Wait 24 hours for the Loctite and PCB glue to dry completely. Then enjoy.

### LED ASSEMBLY INSTALLATION KEY POINTS:

- Do not over tighten the three mounting screws
- Make sure to let the LED assembly glue and Loctite 222 dry for one day before using
- Use a small amount Loctite 222 on the last two threads of the screws, do not use glue
- Place a very small drop of glue across the top of the male and female connectors so it holds them together

## POWER HANDLING RECOMMENDATIONS



- 1000w to 1200w RMS is the optimal power range for any Ti3X subwoofer. In a sealed or vented enclosure, the woofer will play to its full potential with very high reliability.
- Powering an Ti3X woofer with more than 1200w RMS will create excess heat in the motor and voice coil with minimal additional output.
- Contrary to popular car audio myths, subwoofers do not need as much power as you think. A well engineered subwoofer such as the Ti3X that has the proper balance of efficiency, compliance and excursion **will reach extremely loud levels with much less power than most users would expect.** Practice safe sound.

## SPECIFICATIONS

<b>T/S Parameters:</b>	<b>TI312D2X</b>	<b>TI312D4X</b>
Re (Dcr)	0.8	1.95
FS (Hz)	32.7	33.9
Sd (SqM)	.051	.051
BL (TM)	13.0	17.0
Qms	7.08	5.94
Qes	.45	.62
Qts	.43	.56
Vas (liters)	18.9	18.9
Cms (uM/N)	51.09	51.12
Mms (gms)	381.35	353.96
SPL	90dB	90dB
Impedance	Dual 2	Dual 4

\*Specifications subject to change

<b>Specifications:</b>	
Optimal RMS Power Range	1000 to 1200 watts
RMS Power Handling	1200 watts
Xmax (Peak to Peak)	60mm
Mounting Diameter**	10.86in - 276mm
Mounting Depth	7.5in - 190mm
Overall Mounting Diameter	12.63in - 321mm

\*\*Install Tip: Remove the rubber mounting gasket from the subwoofer and use it as a mounting hole template.



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