PL-Series Set-up and Mounting / Rigging Guide
Contents

PL-11 Features 4
PL-11 Specs 5
PL-12 Features 6
PL-12 Specs 7
Designing & Aiming Rigging / Mounting Solutions 8
Rigging / Mounting Points 10
Portable Flying 11
Installed Flying 14
VESA Mounting 16
Warranty 18

IMPORTANT SAFETY INFORMATION!

1. Read these instructions.
2. Keep these instructions.
3. Heed all warnings.
4. Follow all instructions.
5. Do not use this apparatus near water.
6. Clean only with a dry cloth.
7. Do not block any ventilation openings. Install in accordance with manufacturer's instructions.
8. Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus that produce heat.
9. Only use attachments / accessories specified by the manufacturer.
10. Refer all servicing to qualified service personnel.

Servicing is required when an apparatus has been damaged in any way, such as power-cord or plug is damaged, liquid has been spilled, or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

11. To reduce the risk of fire or electric shock, do not expose this apparatus to rain or moisture.
12. The loudspeaker is easily capable of generating sound pressure levels (SPLs) sufficient to cause permanent hearing damage to performers, production crew and audience members. Caution should be taken to avoid prolonged exposure to SPLs in excess of 90 dB.
The Tectonic PL-11NR Flat Panel Loudspeaker is an ideal choice for small-to medium-sized venues where an equal audio experience for all seats across a very wide listening area is required.

The PL-11NR is a passive speaker system comprised of a single Distributed Mode Loudspeaker (DML) mid-high panel. **PL-11NR system frequency response is 100Hz – 20kHz (+/-6dB) and is used in conjunction with subwoofers.**

The DML mid-high panel utilizes resonant mode acoustic physics to propagate very wide, diffuse audio energy into a given space. The DML has no cross-over network that can introduce phase and time alignment issues or possible distortion in the critical vocal or instrument range.

The PL-11 DML mid-high panel has a **horizontal and vertical coverage of 165°**, is feed-back resistant and generates near-zero amounts of odd-order harmonic artifacts and distortion. The net effect is superior intelligibility throughout a venue.
Tectonic PL-11NR Specifications

- PL-11 Speaker Frequency Response: 100Hz – 20kHz (+/-6dB)
- PL-11 Speaker Frequency Response: 93Hz – 20kHz (+6/-10dB)
- Continuous Power Rating: 200W RMS
- Program Power / Peak Power: 300W/400W (DML)
- Recommended Amplification: 400W @ 8 ohm (DML)
- Sensitivity: 92dB (DML)
- Peak Output: 118dB
- Nominal Impedance: 8 ohm
- Horizontal Coverage: 165°
- Vertical Coverage: 165°
- Recommended Cross-over Frequencies:
  - Sub - LP 100Hz - 18dB/Oct Butterworth
  - DML - HP 100Hz - 18dB/Oct Butterworth, LP 16kHz - 12dB/Oct Butterworth

925mm W x 567mm H x 74mm D
(36.4” W x 22.3” H x 2.9 D”)
- Weight: 26.8 Kg (58.8 lbs.)

*Specifications subject to change without notice.*

Wiring Diagram
The Tectonic PL-11 Flat Panel Loudspeaker is an ideal choice for small to medium sized venues where an equal audio experience for all seats across a very wide listening area is required.

The PL-11 is a passive speaker system comprised of a single Distributed Mode Loudspeaker (DML) mid-range panel and a large format ribbon transducer / horn. **PL-11 system frequency response is 90Hz – 20kHz (+-3dB) and is used in conjunction with subwoofers.**

The DML mid-range panel utilizes resonant mode acoustic physics to propagate very wide, diffuse audio energy into a given space. The DML’s diffuse output has a frequency response of ~ 90Hz to 9kHz with no cross-over network that can introduce phase and time alignment issues or possible distortion in the critical vocal or instrument range.

The PL-11 DML mid-range panel has a horizontal and vertical coverage of 165⁰, is feed-back resistant and generates near-zero amounts of odd-order harmonic artifacts and distortion. The net effect is superior intelligibility throughout a venue.

Complementing the PL-11’s DML is an integrated large-format ribbon transducer with a nominal frequency response of ~7kHz – 22kHz. A shallow horn design provides HF distribution of 120⁰ horizontal by 15⁰ vertical.

For stereo configurations, place ribbons to the outside.
Tectonic PL-11 Specifications

- PL-11 Speaker Frequency Response: 90Hz – 20kHz (+-3dB)
- PL-11 Speaker Frequency Response: 70Hz – 22kHz (+3dB/-10dB)
- Continuous Power Rating: 200W RMS (DML), 60W RMS (Ribbon)
- Program Power / Peak Power: 300W/400W (DML), 120W/240W (Ribbon)
- Recommended Amplification: 400W @ 8 ohm (DML), 240W@ 12 ohm (Ribbon)
- Sensitivity: 92dB (DML), 103dB (ribbon) @ 1W / 1Meter
- Peak Output: 118dB
- Nominal Impedances: 1 x DML, 8 ohm, 1 x Ribbon, 12 ohm
- Horizontal Coverage: 165° (DML), 120° (ribbon)
- Vertical Coverage: 165° (DML), 15° (ribbon)
- Recommended Cross-over Frequencies:
  - Sub to DML ~100Hz, 18dB Butterworth
  - DML - to HF Ribbon ~ 6KHz, 12dB Butterworth, with 0.125ms delay for the DML
- 925mm W x 567mm H x 74mm D
  (36.4" W x 22.3" H x 2.9 D")
- Weight: 27.2 Kg (60 lbs.)

Specifications subject to change without notification.

Wiring Diagram

PIN OUTS

| DML 8Ω | Ribbon 12Ω |

POWER LIMITS

| DML 400W RMS | Ribbon 240W RMS |
Tectonic PL-12 Resonant Mode Loudspeaker

The Tectonic PL-12 Flat Panel Loudspeaker is an ideal choice for medium to large spaces where very wide coverage, high output and extended duty cycles are required.

The PL-12 is a passive speaker system comprised of a pair of Distributed Mode Loudspeakers (DMLs) mid-range panels and a large format ribbon transducer / horn.

DML mid-range panels utilize resonant mode acoustic physics to propagate very wide, diffuse audio energy into a given space. The DMLs' diffuse output has a frequency response of ~90Hz to 6kHz with no cross-over network that can introduce phase and time alignment issues or distortion in the critical vocal or instrument range.

The PL-12 DML mid-range panels have a horizontal and vertical coverage of 165°, are feed-back resistant and generate near-zero amounts of odd-order harmonic artifacts and distortion. The net effect is superior intelligibility throughout a venue.

Complementing the PL-12's DMLs is an integrated large-format ribbon transducer with a nominal frequency response of ~6kHz – 22kHz. A shallow horn design provides HF distribution of 120° horizontal by 15° vertical.

Dimensions in mm and inches.
**Tectonic PL-12 Specifications**

- PL-12 Speaker Frequency Response: 80Hz – 20kHz (+/-3dB)
- PL-12 Speaker Frequency Response: 60Hz – 22kHz (+3dB/-10dB)
- Continuous Power Rating: 350W RMS (DML), 60W RMS (Ribbon)
- Program Power / Peak Power: 700W/800W (DML), 120W/240W (Ribbon)
- Recommended Amplification: 800W @ 4 ohm (DML), 240W@ 12 ohm (Ribbon)
- Sensitivity: 98dB (DML), 103dB (ribbon) @ 1W / 1Meter
- Peak Output: 127dB
- Nominal Impedances: 2 x DML, 4 ohm, 1 x Ribbon, 12 ohm
- Horizontal Coverage: 165° (DML), 120° (Ribbon)
- Vertical Coverage: 165° (DML), 15° (Ribbon)
- Recommended Cross-over Frequencies:
  - Sub to DML ~100Hz, 18dB Butterworth
  - DMLs - to HF Ribbon ~ 6KHz, 12dB Butterworth, with 0.125ms delay for the DMLs

- 1545mm W x 567mm H x 74mm D
  (60.8” W x 22.3” H x 2.9” D)
- Weight: 45 Kg (98 lbs)

*Specifications subject to change without notification.*

**Wiring Diagram**

---

**PIN OUTS**

- **DMLs 4Ω**
- **Ribbon 12Ω**

**POWER LIMITS**

- **DMLs 800W RMS**
- **Ribbon 240W RMS**
Each Tectonic speaker panel is comprised of two types of components:

- One or two very diffuse and broad Distributed Mode low-mid to low-high frequency flat panel transducers handling ~ 90Hz - 6KHz.
- A large-format ribbon and wave-guide to cover frequencies from ~6KHz on up.

The DML mid-range panel(s) propagate an extremely wide and diffuse acoustic field that is ~165° wide by 165° high. This extremely wide audio energy is non-interactive with room boundaries in destructive ways and does not need to be considered when designing a PL Series panel placement or multiple-panel design. DMLs are audio “Floodlights” and do not need to be specifically aimed.

The HF ribbon has a more closely defined coverage pattern of 120° horizontal by 15° vertical. This is the coverage that should be used to design and aim Tectonic PL Series systems.

**When specifying and designing a Tectonic PL Series system, consider the following in this order:**

**SPL**
- Desired SPL from front to back-of-house on main seating level.
- Desired SPL at front and rear of balconies.
- Desired SPL at tertiary locations; transepts, over-flow areas etc.

**HF Ribbon Coverage:**
- How many panels it takes to provide full vertical coverage to areas with the HF Ribbon’s 15° vertical pattern.
- The angles between panels to provide full and even vertical HF Ribbon coverage.

- The key to designing and aiming a Tectonic PL Series system is to manage the HF ribbons.
- If the number and aiming of the ribbons achieves the desired HF vertical coverage, the panels are properly placed.
The key to designing and aiming Tectonic speakers is to manage the coverage of the $15^\circ \times 120^\circ$ HF Ribbon coverage.

Panels can be connected at angles varying from $0^\circ$ to $15^\circ$. The maximum angle between panels in order to maintain HF Ribbon coupling is $7^\circ$.

Design tools including Google Sketchup provide accurate positioning and aiming capabilities for designing a Tectonic speaker system. Here’s an example:
Tectonic PL Series Rigging & Mounting

**WARNING!! - MOUNTING TECTONIC PRODUCTS SHOULD ONLY BE PERFORMED BY TRAINED AND QUALIFIED PERSONNEL FOLLOWING ALL SAFE MOUNTING STANDARDS, AND MUST USE ONLY ORIGINAL TECTONIC, ATM™ AND VESA™ RATED COMPONENTS.**

Detailed data sheets and mechanical drawings for all Tectonic rigging elements are available at www.tectonicaudiolabs.com as pdf downloads.

- Tectonic panels are only attached to mounting and rigging hardware and do not carry any load themselves.
- Each Tectonic PL-Series panel ships with integral rigging and mounting stand-offs. These are the only rigging and mounting connections to the Tectonic panels to be used for safe operation. Stand-offs receive M8 bolts with a 1:25 pitch.
- **Only** Tectonic rigging hardware is to be attached to these mounting points.
- PL-11 safety strap attachment points are non-load bearing and to be used only for safety purposes.

---

**Rigging mount / Safety-strap stand-offs.**

**VESA mount stand-offs.**
Tectonic PL Series Rigging & Mounting

Detailed data sheets and mechanical drawings for all Tectonic rigging elements are available at www.tectonicaudiolabs.com as pdf downloads.

The Tectonic Rigging system is a modular exo-skeleton to which Tectonic PL Series panels are mounted. *At no time is any load placed on the panels themselves.*

The Tectonic rigging system provides all of the components to mount or rig Tectonic PL Series panels in permanent or temporary applications.

1. **Portable / Temporary Hanging Mount**
   
   Attach a pair of CTL rigging mounting tubes to each PL Series panel’s stand-offs.

2. Start with an HS-12 or HS-11 rigging top for chain-hoists, spansets etc...

3. Attach a pair of CGF center-of-gravity heads to the HS rigging tops with load-rated shackles.

(Cont...)
Portable / Temporary Hanging Mount (cont.)

4. Attach the CGFs to top PL Series panel by inserting the CGF tail into the panel’s CTL rigging tube and inserting QPL rigging quick-pins into the mating holes.

5. Attach additional PL Series panels using your choice of CBL-nn rigging connector bars in 0°, 3°, 5°, 7° increments. Attach with QPL rigging quick-pins into the mating holes. CBL connector bars in 10° or 15° can address wide aisle or balcony fasciae coverage issues.

6. Attach EHL pull-back eye hooks on the last panel, if necessary. Attach with QPL rigging quick-pins into the mating holes.
Portable / Temporary Hanging Mount (cont.)

A fully assembled PL Series portable rig looks like this...

- **CGF**
  - Center of Gravity Head
- **CTL**
  - Rigging Connector Tube
- **QPL**
  - Rigging Quick Pin
- **CBL-nn**
  - Rigging Connector Bar
- **EHL**
  - Eye Hook
The Tectonic Rigging system is a modular exo-skeleton to which Tectonic PL Series panels are mounted. At no time is any load placed on the panels themselves.

The Tectonic flying system provides all of the components to mount or rig Tectonic PL Series panels in permanent or temporary applications.

**Installed Flying Rig**

Attach a pair of CTL rigging mounting tubes to each PL Series panel’s stand-offs.

Add a pair of EHL eye hooks to the top of the first set of rigging tubes with load-rated 5/16th” x 1.25” bolts.

Attached load rated aircraft cable or chain to the EHLs using load-rated shackles.

Attach additional PL Series panels using your choice of CBL-nn rigging connector bars in 0°, 3°, 5°, 7°, 10°, 15° increments. Attach with load-rated bolts.
Installed Flying Rig (cont.)

4 Add a pair of EHL eye hooks to the bottom of the last set of rigging tubes with load-rated bolts.

5 Attached rated aircraft cable or chain to the EHLs using load-rated shackles. Use individual pull-backs for each eye hook.

*Do not attach a bridle to the eye hooks to use a single pull back!*
Tectonic PL Series VESA™ Mounting

**WARNING!! - MOUNTING TECTONIC PRODUCTS SHOULD ONLY BE PERFORMED BY TRAINED AND QUALIFIED PERSONNEL FOLLOWING ALL SAFE MOUNTING STANDARDS, AND MUST USE ONLY ORIGINAL TECTONIC AND VESA™ RATED COMPONENTS.**

Detailed data sheets and mechanical drawings for all Tectonic rigging elements are available at www.tectonicaudiolabs.com as pdf downloads.

Tectonic PL-11 and PL-12 speaker mounting solutions are designed to the VESA 400mm x 400mm standard, and are therefore compatible with any load-rated commercially available hardware. *(The PL-12 mounting standoffs to be used are the innermost pair.)*

With this compatibility, the Tectonic VESA mount option is certified by the manufacturer of the mount. Tectonic is not liable for any mechanical, seismic or other failures beyond the connection points between said VESA mount and a Tectonic panel.

*Only one Tectonic PL Series loudspeaker should be connected to a VESA mount, unless said system is rated for load and shear limits of adding additional speakers. Remember that PL panels are not connected to each other. They are connected to the Tectonic VESA mount and the panels themselves carry no load.*

The first step in VESA mounting a Tectonic PL Series speaker is to attach a pair of VML VESA Mount Adaptors to the specified mounting stand-offs of the PL-11 or PL-12 using provided hex-screws. VESA mounting flanges are to face outward from the centerline on the speaker.

VML adaptors provide mounting spacing for the 400mm x 400mm VESA standard pattern. There is built-in adjustment flexibility in this standard to assure an accurate and secure attachment to the VESA mount. *Read, understand and follow all instructions that are provided by the supplier of the VESA mount hardware.*
Installed VESA Mount

1. Attach a pair of VML rigging mounting tubes to each PL Series Panel.

2. Attach to 400mm VESA mount adaptor or mount using load-rated bolts.

Examples:

Swing Arm

Floor Stand
Tectonic PL Series Warranty

General:
Five-year limited component warranty on speaker assemblies and accessories.

WARRANTY CONDITIONS.
a. LIMITED WARRANTY. Each Authorized Product is sold subject to Tectonic’s limited warranty for such Authorized Product then in effect at the time of shipment. Tectonic shall supply any limited warranty with the Authorized Product at the time of shipment. Tectonic may make such warranties available via its website. The limited warranty provided is Tectonic’s sole warranty to Dealer or any third party with respect to the Authorized Products.

b. WHAT IS NOT COVERED BY THE LIMITED WARRANTY: This warranty does not apply to any other hardware or software products or other items other than the Authorized Products, even if packaged or sold with Authorized Products. Manufacturers, suppliers, or publishers, other than Tectonic, may provide their own warranties to you but Tectonic, in so far as permitted by law, provides any third party products "AS IS". This warranty does not apply: (a) to consumable parts, such as batteries, unless failure has occurred due to a defect in materials or workmanship; (b) to cosmetic damage, including but not limited to scratches and dents; (c) to damage caused by use of the Authorized Product with any other product; (d) to damage caused by accident, abuse, misuse, liquid contact, fire, earthquake or other external cause; (e) to damage caused by operating the Authorized Products outside Tectonic’s published specifications; (f) to damage caused by configuration or service to the Authorized Products including upgrades and expansions performed by Dealer or any third party; (g) to an Authorized Product that has been modified to alter functionality or capability without the written permission of Tectonic; (h) to defects caused by normal wear and tear or otherwise due to the normal aging of the Authorized Product; or (i) if any serial number has been removed or defaced from the Authorized Product.

c. EXCEPT AS SET FORTH IN TECTONIC’S LIMITED WARRANTY, TECTONIC EXPRESSLY DISCLAIMS ALL EXPRESS OR IMPLIED CONDITIONS, REPRESENTATIONS, AND WARRANTIES INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OR CONDITION OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, NON-INFRINGEMENT, SATISFACTORY QUALITY, NON-INTERFERENCE, ACCURACY OF INFORMATIONAL CONTENT, OR ARISING FROM A COURSE OF DEALING, LAW, USAGE, OR TRADE PRACTICE, ARE HEREBY EXCLUDED TO THE EXTENT ALLOWED BY APPLICABLE LAW AND ARE EXPRESSLY DISCLAIMED BY TECTONIC. TO THE EXTENT AN IMPLIED WARRANTY CANNOT BE EXCLUDED, SUCH WARRANTY IS LIMITED IN DURATION TO THE EXPRESS WARRANTY PERIOD. BECAUSE SOME STATES OR JURISDICTIONS DO NOT ALLOW LIMITATIONS ON HOW LONG AN IMPLIED WARRANTY LASTS, THE ABOVE LIMITATION MAY NOT APPLY. THIS WARRANTY GIVES CUSTOMER SPECIFIC LEGAL RIGHTS, AND CUSTOMER MAY ALSO HAVE OTHER RIGHTS WHICH VARY FROM JURISDICTION TO JURISDICTION. This disclaimer and exclusion shall apply even if the express warranty set forth above fails of its essential purpose.

NOTES: