



Liberty Series

## LRS400

All Wood • For Remodeling And New Construction • Double Hung Window With Square Frame, Arched Sash

### PRODUCT SPECIFICATIONS

#### FRAME

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- Head, jamb and sill frame parts are constructed of kiln dried ponderosa pine, treated with a water repellent preservative to protect from rot and insects. Optional mahogany available.
- Brickmould, blindstop, sill, exterior grilles and optional screenstop are also available in cPVC in addition to pine (standard) or mahogany.
- Head and jamb wood joints are tenoned, glued and nailed.
- Frame thickness:  $1\frac{1}{16}$ " at jamb and head.
- Standard jamb depth:  $4\frac{5}{8}$ "; (With optional screenstop:  $5\frac{1}{8}$ ")
- Sill is 1" thick on a 9 degree angle and is designed for remodeling or new construction installation.
- Available with optional  $\frac{3}{8}$ " foam wrap for air tight installation.
- A continuous sill (up to 120") is used on mulled units.

#### SASH

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- Sashes are of kiln dried ponderosa pine, treated with a water repellent preservative. Optional mahogany available.
- Sash joints are tenoned, glued and nailed from the interior.
- Silicone glazed from the interior for a positive water tight seal.
- Overall finish sash thickness:  $1\frac{7}{16}$ " (standard), optional  $1\frac{3}{4}$ " sash available.
- Sash profile widths are: stiles ( $1\frac{3}{4}$ " ), top rail ( $2\frac{5}{8}$ " ), meeting rails ( $1\frac{7}{16}$ " ) and bottom rail ( $3\frac{1}{4}$ " ). Optional 4" bottom rail available.
- Unequal sash heights can be specified.
- Top and bottom operating sashes with locking pivot shoe tilt-in and can be removed for finishing or cleaning.

#### EXTERIOR FINISH

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- Standard factory primed white in pine (standard) or mahogany.
- Available in unfinished natural wood or prefinished white in pine (standard) or mahogany. Contact Trimline dealer for custom color details.
- Brickmould, blindstop, sill, exterior grilles and optional screenstop are also available in cPVC in addition to pine (standard) or mahogany. Sash are of pine (standard) or mahogany.

#### INTERIOR FINISH

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- Standard in unfinished natural wood in specified species (pine (standard) or mahogany) which can be painted or stained.
- Available factory primed or prefinished white in pine (standard) or mahogany. Contact Trimline dealer for custom color details.

#### HARDWARE

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- Sash lock and keeper are surface mounted cam action style.
- Recessed E-Z tilt sash release latches for top and bottom sash tilting; top sash fixed.
- Dual lock/lifts standard on units over 28" wide; triple locks standard on units over 50" wide. Sash lifts standard at bottom rail.
- All hardware components are of zinc alloy in matching finish available in: almond, white or bronze powder coat finish; antique brass, oil rubbed bronze or polished chrome and bright brass plated finish also available.

#### BALANCE SYSTEM

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- Concealed block and tackle system for smooth and effortless operation with locking cam action pivot shoes that never needs adjusting. AAMA 902-07 tested for over 28,000 cycles without failure.
- Vinyl jambliner available in almond or white.

#### WEATHERSTRIPPING

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- Head, meeting rails and bottom rail are weather-sealed with Q-Lon® almond color compression seal foam; Fin-Seal® at the sill dam; dual Fin-Seal® and Q-Lon® at the vertical stiles/jambliner, Fin-Seal® at the sill dam and Fin-Seal® dust plugs at the meeting rails for low air infiltration.

#### GLASS

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- Standard clear  $1\frac{1}{16}$ " thick insulating glass, consisting of "double strength" 3 mm annealed glass,  $\frac{7}{16}$ " air space using Tremco's EnerEDGE® warm-edge, dual-seal silicone foam spacer, hermetically sealed with hot melt butyl.
- All insulating glass units meet IGMA and NFRC 706 requirements for seal durability and gas retention per ASTM E2190, E2188-10 & E2189-10.

- Other glazing options Comfort E and Comfort E Plus Low E with argon gas, obscure, tempered, laminated, bronze or grey tint. Decorative glass also available.

## INSECT SCREENS

- Standard full screen of .019" thick roll-formed aluminum.
- Optional half screen of .019" thick roll formed aluminum.
- Optional interior sliding half screen of .050" thick extruded aluminum. (Requires 4 7/8" jamb pocket.)
- Standard colors available: white, bronze, earthtone, beige, black and hunter green. Custom colors also available.
- Charcoal fiberglass screen cloth (18 x 16 mesh) standard; optional screen mesh available in charcoal or aluminum color wire or Better View™ high transparency screening in charcoal fiberglass cloth only.

## GRILLES

- **Simulated Divided Lites (SDL)** in a classic putty glazed 5/8", 7/8", 1", 1 1/4" or 1 1/2" wood (optional cPVC) muntin profile permanently applied to exterior of the insulated glass. Double faced tape is used to apply muntin to the glass which first is prepared with a saline type glass bonding and coupling agent before muntin is applied to help ensure lasting adhesion. An optional between the glass dark bronze shadow bar is available for an authentic true divided lite look. Interior wood in pine (standard) or mahogany matching the interior wood species in either permanent or removable style 5/8" or 7/8" wide divided lite patterns only. Removable style not available in 1", 1 1/4", 1 1/2" widths.
- **True Divided Lites (TDL):** Available in 1 1/8" width in pine only. TDL bar has the look of historically accurate true putty glazing.
- **Removable wood grilles** available in 5/8" or 7/8" wide classic double stepped profile matching window interior wood species in pine (standard) or mahogany in a wide array of standard or custom divided lite patterns only.
- **In-glass aluminum "GBG"** (Grille Between the Glass) muntins are available in 5/8" flat profile or 7/8" sculptured profile in all standard exterior cladding color finishes for dust free easy cleaning. Available in either divided lite or diamond patterns.
- **Combo wood-aluminum:** 5/8" flat or 3/4" sculptured in-glass aluminum muntin with either permanently applied (see SDL) or removable wooden interior wood grille in pine (standard) or mahogany.

## ACCESSORIES

- Brickmoulds available in over a dozen different profiles.
- A standard zero clearance mullion is used for factory mulling of windows without increasing the combined unit dimension of the windows mulled.
- Interior wooden mullion covers in pine (standard) or mahogany are provided loose.
- 1 1/16" interior wooden jamb extension in pine (standard) or mahogany are factory applied to the perimeter of the window and are available in custom sizes to provide an overall jamb depth up to 9".
- Optional 1 3/4" historic sill.

## WARRANTY

- Limited 10 year.
- 20 years non-prorated on insulating glass.
- Non-square, decorative/leaded glass 5 years.

## PERFORMANCE

### Thermal Ratings

| Glazing        | U-Value | R-Value | SHGC | VT  | CRF |
|----------------|---------|---------|------|-----|-----|
| Comfort E      | .28     | 3.57    | .28  | .50 | 58  |
| Comfort E Plus | .25     | 4.00    | .27  | .48 | 48  |

Comfort E – 3mm RLE CS-36 (#2) / Clear / Argon

Comfort E Plus – 3 mm RLE CS-36 (#2) / CS-72 (#4) / Argon

SHGC = Solar Heat Gain Coefficient

VT = Visible Transmittance

### Structural Ratings

| Test Speciman                      | Air Infiltration        | Performance Class-Grade |
|------------------------------------|-------------------------|-------------------------|
| 44.0" x 75.75" (1118 mm x 1924 mm) | .14 cfm/ft <sup>2</sup> | LC-40                   |

## TEST STANDARDS

- NFRC certified: meets or exceeds rating and labeling requirements as per NFRC 100, 200 and 500 test procedures.
- AMMA/WDMA/CSA 101/I.S.2/A440-05
- ENERGY STAR® certified