



Mandalay Homes

Tyler Road | Prescott Valley, AZ | MandalayHomes.com



Photos courtesy of Mandalay Homes

“During a wildfire in 2021, with outdoor PM-2.5 levels at 68 to 86 $\mu\text{g}/\text{m}^3$, we recorded indoor air quality in four model homes at 7.5 to 9.6 $\mu\text{g}/\text{m}^3$.” Mandalay Homes



PROJECT DATA

- **Layout:** 3 bdrm, 2.5 bath, 1 fl, 2,320 ft²
- **Climate:** IECC 4B, mixed-dry
- **Completed:** April 2023
- **Category:** Production

MODELED PERFORMANCE DATA

- **HERS Index:** without PV 45; with PV 15
- **Annual Energy Costs:** without PV \$1,350; with PV \$650
- **Annual Energy Cost Savings:** (vs typical new homes) without PV \$1,950; with PV \$2,700
- **Annual Energy Savings:** without PV 10,750 kWh; with PV 17,200 kWh
- **Savings in the First 30 Years:** without PV \$81,950; with PV \$112,800

CONTACT

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KEY FEATURES

- **Walls:** 2x6, 16" oc + 1" EPS, R-22 total: 5.5" (R-18) open-cell spray foam in cavity, OSB sheathing; synthetic house wrap, 1" R-4 EPS exterior rigid foam, stucco. Aerosolized acrylic whole-house airsealing, LSL lumber.
- **Roof:** Gabled truss roof, shed roof. OSB, underlayment, solar reflective asphalt shingles. All ventilation is routed through the sides of the home to eliminate roof penetrations.
- **Attic:** Unvented attic, cathedralized 8" R-30 open-cell spray foam.
- **Foundation:** 24" R-10 high-density spray foam.
- **Windows:** Double-pane, U=0.289, SHGC=0.23, low-e, argon fill. Deep porch covers patio sliding doors.
- **Air Sealing:** 0.75 ACH50; open-cell spray foam in all walls and roof deck; whole-house aerosolized air sealant, windows sealed with foam and window wrap.
- **Ventilation:** ERV, Controlled central fan with fresh air intake and timed exhaust (balanced). Humidity sensors in the bathrooms and laundry. IAQ is monitored by system that also controls the ERV and ventilation fans.
- **HVAC:** Air Source Heat Pump, 12.2 HSPF, 18.2 SEER, all ductwork in insulated attic.
- **Hot Water:** Heat pump water heater, 50-gallon tank, 3.42 EF. Smart recirculation pump.
- **Lighting and Appliances:** 100% LED lights. ENERGY STAR appliances, all electric.
- **Solar:** 4.08 kWh PV, no battery but prewired for battery. Software optimizes when PV energy is used, stored, or sold back to grid.
- **Other:** In-duct, hydrogen peroxide, ion, ozone-free, air purification system.

