Wine-R WR2500 – Cooling Capacity Guide

This guide provides a concise overview of the cooling capabilities of the Wine-R WR2500 unit. Please review it carefully prior to purchase or installation to ensure your wine cellar meets the recommended technical criteria (volume, insulation, and glass surfaces).

1. Quick Reference Guide

Cellar Volume	Typical Conditions	WR2500 Recommendation
≤ 450 cu.ft.	Glass walls ≥ 25%, R-20 insulation (minimum required)	Sufficient – Refer to detailed guidelines; consider additional insulation for sensitive collections.
≈ 600 cu.ft.	Standard residential cellar: R-20 insulation, single-pane glass door	**Recommended – Optimal performance range**
≤ 700 cu.ft.	High insulation (R-30+), no glass walls, minimal temperature variance	Maximum limit – Ensure minimal external heat intrusion

Quick Tip: A typical compact cellar (approximately 6 × 10 × 10 ft.) will comfortably fall within the cooling capacity of the WR2500.

Important: If your project is near the upper capacity limits, consider improving insulation (R-30 or higher), reducing heat sources, or installing Low-E (low-emissivity) double-pane thermopane glass. These adjustments will help maintain optimal operation, reduce noise, and extend the life of your cooling unit. For further assistance, please consult your dealer or contact us directly.

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2. Detailed Technical Information

2.1 Nominal Specifications

Parameter	Value
Cooling Capacity (ΔT = 13°C / 55°F)	2,337 BTU/h
Airflow	125 CFM
Voltage / Max Current	115 V / 2.9 A
Nominal Power Consumption	330 W

All BTU ratings comply with North American ARI standards at 60 Hz.

2.2 Quick BTU Estimation Formula

Required BTU ≈ Volume (cu.ft.) × 4 BTU/h/cu.ft.
(For R-20 insulation with a temperature difference ≤ 13°C / 55°F)

2.3 WR2500 Capacity Adjustment Table

Installation Conditions	Adjustment	Recommended Max Volume
No glass surfaces	0%	585 cu.ft.
25% glass surfaces	−25%	440 cu.ft.
50% glass surfaces	−40%	350 cu.ft.
Enhanced insulation (R-30)	+15%	670 cu.ft. (no glass)
High temperature differential (> 15°C / 59°F)	−20%	470 cu.ft.

Note: Adjustments are cumulative. For example, a cellar with 25% glass surfaces and a high temperature difference could have its effective cooling capacity reduced by approximately 45%.

2.4 Steps to Calculate Required Capacity

1. **Calculate the total volume** (Length × Width × Height in feet).
   Example: 7 ft. × 8 ft. × 9 ft. = 504 cu.ft.
2. **Evaluate insulation level:**
   - R-20 (minimum required for warranty)
   - R-30 or better recommended
3. **Calculate percentage of glass surface area** relative to total wall surfaces.
4. **Determine desired temperature difference** (highest ambient temperature – desired wine storage temperature).
5. **Apply relevant adjustments** from the Capacity Adjustment Table.
6. **Compare adjusted volume** to the WR2500 recommended maximum (~600 cu.ft.). If the adjusted volume exceeds capacity, enhance insulation or contact us for alternative cooling solutions.

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3. Warranty and Compliance (Excerpt)

Any installation that does not comply with specified clearances, proper drainage, minimum insulation requirements (R-20), and recommended capacities may void warranty coverage.